

*Twelfth Century Great Towers - The Case for the
Defence - Richard Hulme*



TWELFTH CENTURY GREAT TOWERS The Case for the Defence

I

Great Towers: Citadels or Symbols?

In 1215 King John's miners brought down a corner of the great tower at Rochester after the castle's defenders had retreated there following the capture of the bailey. Even then the defenders fought on from behind the great tower's internal cross-wall. It was a dramatic siege, well documented, with incidental detail such as John's order for forty fat pigs to help fire the props underneath the tower, and illustrates the traditional view of donjons or tower keeps as 'both the castle's ultimate military strong point and principal residence' (Allen Brown).¹

The authors of the *History of the King's Works* (HKW) declared 'Both (Anglo-Norman and Angevin rectangular tower keeps) were designed for passive rather than active resistance... In an age when the only projectiles were stones, lances, arrows and the like, they were, however, as nearly impregnable as any form of fortification yet devised'. Thus, 'the keep dominated the twelfth century conception of a castle'.²

Recent research has cast doubt on these ideas, questioning both defensive capabilities and residential use. Some towers, like Chepstow, lacked latrines and fireplaces, implying a limited residential role. The Tower of London possessed latrines and fireplaces but seems to have housed only prisoners. At Hedingham the one-way gallery above the grand hall suggests a design for ceremonial use.³ Forebuildings have been interpreted as processional entrance routes rather than defensive features (towers with forebuildings often also had a secondary entrance).

Major sieges like Rochester were rare and few great towers were used as places of final refuge, raising the question whether defensive considerations were important in tower design. Critics point out tower building chronology does not support the idea that military weaknesses associated with exposed right

angles were initially partially countered by polygonal towers before it was discovered round towers provided the solutions. Liddiard also claims: 'Recent work on castles such as Orford and Hedingham has completely demolished the idea that the donjon was primarily designed for defensive purposes'.⁴ New theories emphasise symbolism, displays of wealth, and elements of theatricality or 'choreography' to reinforce their owners' power. It is becoming a commonplace that towers were not designed for defence e.g. 'the fact that donjons were seldom designed to be defended tells us more about the middle ages than (say) whether Rochester tower was mined with a tunnel or a sap' (Coulson).⁵

Liddiard seeks to extend this argument: 'Revisionist arguments over the keep are critical to our understanding of castle development across the whole medieval period, since if it can be shown that keeps were emphatically not raised for utilitarian military purposes (and it should be said that this is still contested) then a central – and arguably the most important – plank of the traditional military interpretation of castles is removed'.⁶ If twelfth century towers were designed in martial style (to denote aristocratic rank) rather than martial substance it supports Coulson's sweeping conclusion: 'The vast majority of castles in England, Wales, Ireland, and France have virtually no 'military history' of sieges or physical conflict across the whole panorama of more than five centuries. Rather than being built for defence, as was once imagined, the majority display a refined aristocratic taste...' (my italics).⁷

Were great towers designed for defence, residence, or ceremonial? Were these different design criteria incompatible?

II

Ceremonial

Recent research into Chepstow castle, Gwent, suggests the great tower was built by William the Conqueror in the 1080s. Its unusual niched first floor room, interpreted as solely for

ceremonial use, for the king to receive homage from the Welsh, may never have been used as intended: 'Perhaps these events (of 1093 – see below) made the Great Tower at Chepstow redundant'.⁸ The concept of a dedicated ceremonial hall implies there was another domestic hall in the castle, although versatility and multi-functional use was a characteristic of structures like Westminster hall, the 'ceremonial centre of the Anglo-Norman kingdom' (HKW).⁹ Ceremonial halls, even with unique features, doubtless functioned as 'normal' halls. Would Chepstow tower's hall have remained little used?

In 1093 the Normans killed Rhys ap Tewdwr, king of south-west Wales, in battle near Brecon and overran south Wales, establishing many castles including Cardigan, Rhyd y gors (Carmarthen) and Pembroke. The Normans had already occupied Anglesey and the north coast. In 1094 the Welsh fought back, storming the castle on Anglesey (the motte of Aberlleiniog) and massacring the earl of Chester's garrison of 125 horsemen. In the south 'the castles of Ceredigion and Dyfed were all taken except two castles, Pembroke and Rhyd y gors; and they were all razed to the ground and the spoils carried off' (Brut Y Twysogyon). In 1095 the Welsh took Hen Domen (Montgomery) castle, killing the earl of Shrewsbury's garrison. In 1096 the Normans abandoned Rhyd y gors but Pembroke withstood a long blockade by the Welsh. There was widespread raiding and counter raiding in Gwent and Brecon. The Brut records two Welsh successes in battle, though 'the castles were still intact and the garrisons in them'.¹⁰

These events doubtless rendered a ceremonial hall redundant but surely increased the need for defensive effectiveness. Chepstow tower's south wall originally contained no windows. Defence would have to be conducted from tower top battlements, but because 'Nowhere is there evidence for crenellations in this phase', reconstruction drawings assume none, postulating a southern parapet some 0.7m high.¹¹ Thus the tower's long south wall,

an exterior castle wall 2.4m thick, was effectively indefensible: the roof and anyone on the wall top would be exposed to archery from high ground 60m away. With serious disorder in Gwent in the 1090s would Chepstow's tower have been left uncrenellated? At Colchester temporary battlements were built on the tower when there was in a break in building operations after one storey was constructed¹², probably due to the Danish invasion scare of 1085.

If Chepstow's tower was intended be undefended why are the walls, except the north wall overlooking the river Wye, so thick and why are the windows, except one over the doorway (a useful defensive and practical feature), concentrated in the north wall? A further (third) storey was later added, necessitating substantial rebuilding of the original tower top. Most of the new upper walls on the east and south have disappeared, so it's questionable whether any traces of early crenellations would survive. The Chepstow researchers accept there are difficulties of interpretation in their reconstructions, particularly if the two tiny round windows high in the west gable wall are original, as they appear to be, because they would block a wall walk that end at the height postulated.¹³

Dixon and Marshall identified Norham tower's first phase (of 1121), approximately 23m x 12m externally with 3m thick walls, within the enlarged mid twelfth century structure.¹⁴ The upper storey, 'with little sign of domestic provision, makes it appear that it was a grand ceremonial chamber – a first-floor hall rather than part of the living accommodation of the bishop'. Although a reconstruction drawing suggests a defensive structure (battlements above a concealed roof) they compare it to the Exchequer hall at Caen, which is thinner walled, had larger windows, an exposed roof and its main door in a gable wall at ground level. The Exchequer hall had no defensive pretensions; it lies within the Conqueror's stone curtain, 50m from Henry I's massive great tower.¹⁵ At Norham the on-

ly other early stonework might be the inner gatehouse.

Bishop Ranulf of Durham built Norham for protection against robbers and Scots. In 1138 the Scots besieged it. Many defenders were wounded during a vigorous defence and, despairing of help from Bishop Geoffrey, they surrendered. The bishop was criticised for inadequately garrisoning his castle (there were only nine knights) and his knights were criticised for their feeble resistance, because 'the wall was in good condition (*vallum optimum*), the tower very strong (*et turris fortissima*), and their provisions abundant' (Richard of Hexham).¹⁶ Internally Norham's tower might have been a ceremonial hall, but externally it was a *turris fortissima*.

In the eleventh century halls could be strongpoints. According to William of Poitiers the stone hall (aula) at Brionne served as citadel (arx) during the long siege of 1047-9, and Mayenne possessed stone fortifications when Duke William attacked in 1063. William's men fired buildings in the outer bailey and burst in. The defenders retreated to the citadel (arx) but surrendered the next day. The arx was probably the early stone hall and its associated courtyard revealed by recent investigation.¹⁷

Whatever their nominal internal function robust stone structures without vulnerable openings could be externally strong and valuable defensively. All Chepstow tower required to have been strongly fortified was a crenellated wall top.

III

Early Siege Warfare

There were a number of protracted eleventh century sieges. At Domfront*, besieged over the winter of 1051-2, the defenders surrendered after Duke William mutilated prisoners captured at nearby Alençon* (taken in a dawn assault following a night march). Rebels in Arques*, 1052-3, surrendered because of supply shortages; relieving columns were ambushed and although one reached Arques an

assault on William's siege castle failed. Rebels holding Norwich* surrendered on terms after three months in 1075. In 1076 William abandoned the siege of Dol after six to eight weeks, fleeing in disarray on the advance of a relieving force. In 1085 William ordered the abandonment of a long blockade of Sainte-Suzanne*, where defenders had killed or captured numerous of his men.¹⁸

William Rufus faced immediate rebellion in 1088. He besieged Pevensey*, which surrendered after six weeks; supplies were running low after sea borne reinforcements were sunk or captured by royal ships. Rochester* eventually surrendered after plague broke out in the city and it was clear the rebellion had failed.¹⁹ In the rebellion of 1095 Rufus took the castle at the mouth of the Tyne by storm after a two month siege (while Tynemouth is the obvious site it may have been Newcastle*, which charter evidence shows was besieged). Bamburgh* only surrendered when Rufus threatened to blind its lord, Robert of Mowbray, who had been captured on a raid.²⁰

In 1105 Henry I abandoned a siege of Falaise* when his coalition collapsed. The following year he defeated and captured his elder brother Robert Curthose in battle when he tried to relieve Henry's siege of Tinchbrai. Henry then hurried to secure the 'almost impregnable castle' (*firmissimam munitionem*) of Falaise (Orderic). Sieges were frequent during this period. Sometimes assault was successful. Often defenders surrendered, for a variety of reasons, but some held out while others repulsed besiegers by effective sallies e.g. Dover's* under strength garrison routed Eustace of Boulogne's men in 1067.²¹

Castles which defied besiegers for lengthy periods (and rarely surrendered because the fortifications were overcome) were obviously powerful fortresses. Those above marked * possessed great towers by c. 1200 – but not, except possibly Sainte-Suzanne and Pevensey, by 1106. Besiegers, due to

crag and undergrowth, had difficulty approaching Sainte-Suzanne castle, and there is no indication Rufus' troops breached the Roman wall at Pevensey, so these great towers, if they existed in the 1080s, were unlikely to have been important factors in the sieges. Powerful early castles usually consisted of strong natural sites enhanced with massive ramparts and ditches defending an inner enclosure. Rectangular great towers were insignificant in eleventh century sieges. This is not surprising; great towers were rare.

From 1066 castle numbers in England and Wales rose rapidly to something over 500 by 1100 (only approximately 100 of these early sites are documented). New castles continued being founded throughout the twelfth century, particularly in Wales and northern England. Between 950 and 1,150 castles in total were built before 1216, but many were abandoned or not maintained so the numbers of active castles probably remained around 500 to mid century, perhaps increasing slightly under Stephen. In the second half of the century active sites declined for a variety of reasons (royal action, changing technologies and increasing stone construction, and economic, social and political changes, particularly as they affected lesser lords). By 1216 there were probably around 400 active castles (over 300 of which are documented).²²

In 1100 there were perhaps 10 to 15 great towers, rising to 50 or 60 by mid century, and over a 100 by 1216.²³ Thus, the proportion of castles with towers (excluding shell-keeps), over 25% by 1216, barely exceeded 10% at the end of Stephen's reign, nineteen years of widespread warfare including over 100 known attacks on castles.

In 1138 Stephen abandoned a projected siege of Bristol, power base of his main opponent, Robert of Gloucester, because the town of Bristol, between two rivers, was naturally too strongly fortified. Corfe withstood a blockade by siege castle in 1139. Pevensey surrendered after a long land and sea blockade in

1147. These three castles possessed rectangular great towers.

In 1136 Exeter only surrendered after nearly three months of expensive and diverse methods of attack when the wells ran dry. The aggressive defenders of Wark kept the Scots at bay throughout 1138, until ordered to surrender by their lord. From 1139 to 1153 Wallingford consistently defied Stephen, three blockades failing (in 1139, 1146, and 1152-3). Lincoln castle resisted Stephen twice, in the winter of 1140-1 (when Robert of Gloucester's relieving army forced him to battle and captured him), and in 1144. Oxford castle surrendered after a three months siege in 1142, but only after Empress Matilda had made a dramatic escape on foot over the frozen Thames, dressed in white.²⁴ These were motte and bailey castles (usually stonework strengthened), except Exeter (a ring work with stone curtains and gatehouse).

Many fortresses in Normandy submitted to Geoffrey Plantagenet after Stephen's capture at Lincoln, including Falaise. Geoffrey had failed to take it in 1138, fleeing at night on (incorrect) reports of an approaching relieving force.²⁵

The most remarkable siege of Stephen's reign occurred while he was held captive in the tower at Bristol. Matilda and Robert of Gloucester besieged Henry, bishop of Winchester's men in the bishop's fortified palace (Wolvesey castle) and his *castellum* or *turri fortissima* in the middle of the city. From the two castles Bishop Henry's men flung firebrands, burning down much of the city. Meanwhile the queen rallied Stephen's supporters and organised a blockade around Winchester, besieging the original besiegers. After seven weeks, with the blockade causing famine, Matilda and Robert of Gloucester attempted to break out but were defeated. Matilda managed to escape in the confusion, but Robert was captured and incarcerated in the tower at Rochester.²⁶

Rectangular great towers had little impact on Anglo-Norman castle warfare. The

‘traditional castle story’ overstated their military role and importance. Rectangular great towers were neither common nor a necessary element of a powerful castle. Therefore, even if their defensibility was suspect, it has little relevance to military interpretations of twelfth century castles.

IV

Mottes

The charter of Westminster, 1153, recorded the terms ending the wars of Stephen’s reign, including custodial arrangements to ensure that on Stephen’s death specific castles were handed over to Henry Plantagenet: the Tower of London, Winchester (castles with towers), Windsor, Oxford, Lincoln, and Southampton (castles with mottes, the mota at Windsor and Oxford being specifically referred to in a context implying the whole castle).²⁷ On the Bayeux Tapestry the castles of Dol, Rennes, Dinan, and Bayeux are represented by their mottes.

The origins of the motte remain a matter of debate but they were common in England from the early 1070s. Possibly the circumstances of the conquest, hundreds of castles built to protect limited numbers of Normans, were conducive to a design offering protection to a small garrison.

Mottes come in many shapes and sizes, castle builders preferring natural hills if possible. Height made them easy to defend; attackers were exposed to defenders’ missiles while climbing the steep slopes. Motte top towers provided observation posts and could overtop siege towers, which would be prevented from approaching by the motte’s bulk. At Berkhamsted, Hereford, Southampton, Durham and Warwick there are references to the domus (house) on or in the motte implying residential use.²⁸

The use of mota in chronicles before the mid twelfth century is rare e.g. Orderic (died c. 1142) referred to castles/ strongholds/ fortresses about 750 times (employing, in descending order of usage, *castrum*, *oppidum*, *munitio*, *castellum*, *municipium* etc.) and *arx*

(citadel) and *turris* some 95 times each but only used *mota* 3 times (two of which are a place name). *Dangio* appears 4 times, in the sense of royal citadel; twice of Évreux, once of Gisors and once generally (in 1119 Henry I restored certain *castra*, including Alençon, to William Talvas except for the dangiones, in which he placed his own guards).²⁹ Évreux castle has disappeared but at Gisors the *dangio* was probably the shell keep though there is a small octagonal tower on the motte. Lambert d’Ardres late twelfth century description of Ardres around 1060, ‘a very high motte or lofty donjon’ (*motam altissimam sive donjonem eminentem*), supports Allen Brown’s observation that mottes, like freestanding great towers, could be referred to as ‘donjons’, and both fulfilled the symbolism of lordship.³⁰ The Round Tower at Windsor was regularly called the great tower (*magna turris*) in the thirteenth century.³¹

Pipe roll references to the *turris* at motte castles such as Arundel, Berkhamstead, Oxford, Shrewsbury, Southampton, and Worcester appear to refer to the structure on the motte.³² The Gesta Stephani describes extensive defences at Bedford in 1137, when Stephen besieged it, including an ‘unshakable keep’ (*inquassabili turri*), presumably the shell on the motte (ironically in the 1224 siege the tower was brought down by mining).³³ Mottes and their superstructures were (cheaper) alternatives to rectangular great towers, similar in function if not form. There was no contemporary term for ‘shell keep’.

Around 1075 the Welsh plundered and burned the bailey at Rhuddlan, but the Normans held out in the tower (*twr* in Welsh), probably a wooden tower on the motte. In 1116 the Welsh failed to take Llandovery and Swansea, only managing to burn the ‘outer castles’. At Carmarthen they plundered and burned the ‘outer castle’ in a night attack but ‘the towers had escaped’ (Brut). Presumably the mottes at these castles held out. Garrisons of castles overrun in Wales were sometimes massacred. Negotiated surrender in exchange for ‘life and limb’ (i.e. no mutilation) was one

way of avoiding this fate, and could be achieved after having retreated to the tower, as at Dinefwr in 1213, where the defenders surrendered a day after the bailey was captured by assault.³⁴ At Le Puiset in 1111 Abbot Suger, an eyewitness, describes how, after French royal troops breached the bailey palisade, Hugh of Le Puiset 'took himself off to the motte and the wooden tower on top of it. He cowered there... (and) surrendered without delay'.³⁵

Towers were also used as refuges. In 1140 mercenaries nominally supporting Matilda made a surprise night attack on Devizes. Using scaling ladders they eluded the guards and captured most of Stephen's men asleep, except for a few who 'took refuge in a very high tower' (*turri eminentiori*) (*Gesta Stephani*). Not expecting help they surrendered a few days later. The tower, which John of Worcester calls an interior tower (*turrim interiorem*) was probably similar to the surviving tower at Sherborne, also built by Bishop Roger of Salisbury.³⁶ In 1202 eighty year old Eleanor of Aquitaine was besieged in Mirabeau castle by forces hostile to her son, King John. 'As there was not strength in the garrison to resist them, the castle was surrendered to them except for a tower into which Queen Eleanor had thrown herself with a few soldiers... They therefore directed their attacks against the tower' (Roger of Wendover). John, however, made a lightning advance and surprised and captured the besiegers.³⁷

Retreating to a citadel (motte or great tower) was a last resort if the bailey was taken, usually used to negotiate an orderly surrender, not carry on a protracted resistance. Failure to reach a refuge could be fatal. In 1138 King Stephen's men assaulted Shrewsbury castle, burning and forcing the gate. Rather than retreat to the motte the defenders fled, but many were captured. Stephen, 'because unruly men regarded his gentleness with contempt', ordered 'Arnulf (the commander) and about 93 of the men who had defied him should be hanged on gibbets or put to death in some other fashion' (Orderic).³⁸

V

Defensive Capabilities

Early castle defences were often constructed of earth and timber. However, medieval incendiaries were remarkably effective, and timber defences were frequently destroyed by fire. Stone structures therefore potentially strengthened a castle.

It was rare for an adequately defended stone castle tower to be burnt. In June 1090 the wooden shingles of the roof of the hall (aula) at Brionne were set alight by fire arrows while a successful assault was launched. As the defenders mustered only six knights (defenders such as archers are frequently omitted in chronicles) the garrison was probably under-strength. Henry I burnt the stone building (*lapideam domum*) in the castle of Le Renouard in 1119, but only after it surrendered. In 1174 the Scots set fire to the tower at Brough after the defenders, with only half a dozen knights, abandoned the bailey when it was assaulted on the first day of the siege.³⁹

Stone churches however were regularly destroyed by fire e.g. Bayeux cathedral (during Henry I's assault on the town in 1105), Évreux cathedral (during Henry I's assault on the town in 1119), Nottingham (when Anjevins looted the town in 1140) and many others. 'Civilian' casualties usually resulted, because people commonly sought refuge within churches. Churches defended by knights were also often burnt down e.g. St. Pierre-sur-Dives abbey (by Henry I in 1106) and Wherwell Abbey, near Winchester, in 1141, where John Marshal evaded capture by hiding in the burning church tower, though molten lead dripping from the roof blinded him in one eye.⁴⁰

Westminster hall was one of the largest halls in Europe when built by William Rufus around 1097. It had one storey, probably four doors, a dozen large windows in each of its long walls (set in arcaded wall galleries), and low, exposed, multiple roofs.⁴¹ This was

an undefended structure. By contrast the Tower of London has thicker walls, three storeys, one (perhaps two) doors on the second storey, fewer windows (larger ones above the reach of scaling ladders), and high walls carried up to conceal the roofs. These features, common in great towers, were unnecessary for residential or ceremonial use, but are useful defensively. Dixon concedes it is 'hard to find convincing alternatives (to 'keeps designed as points of last resort') for the tall, almost windowless, unheated and insanitary towers...' though he defines the class narrowly: Irish monastic round towers, German Bergfrieden, and the like.⁴² Wells, fireplaces and latrines added domestic comforts but enhanced rather than detracted from a tower's refuge capabilities.

Protracted and successful castle defences involved retaining control of the main bailey. The primary defensive role of a great tower or motte was therefore supporting bailey defences. Tower top panoramic views could reveal besiegers' dispositions. Signals could be sent to allies outside the castle using banners and trumpets. Arrows, stones and javelins hurled down assisted bailey defenders. It was pointless attackers attempting to throw javelins up at a tower top and arrows shot upwards lost much of their stopping power.

Rather than being sited at the least vulnerable position in a castle towers were often placed to directly support bailey defences. Many towers were built on the line of the curtain wall e.g. Barnard, Brough, Chepstow, Conisborough, Corfe, Helmsley, Monmouth, Norham, Old Sarum, Pevensey, Portchester, St. Briavels, White, Winchester, Usk, often by a gate e.g. Bamburgh, Brougham, Coity, Kenilworth, Lydney, Peveril, Nottingham, Omore, Scarborough, and the Tower of London. Bramber and Ludlow towers were converted gatehouses and Richmond built on the site of the original gate. Other towers were placed close (within about 10m) behind the curtain at vulnerable points or on the line of approach e.g. Carlisle, Goodrich, New Buckenham, Newcastle, Norwich, Pembroke, and Rochester. Round or polygonal towers were often

built on mottes e.g. Bronllys, Caldicot, Longtown, Richard's Castle, and Tickhill. Guildford's rectangular tower was also built on a motte, facing high ground.

Robert of Torigni, listing Henry I's castle building in Normandy (1106-35), records the construction of other defences as well as a tower at most important castles.⁴³ In England Henry II's expenditure on castles from pipe roll records was, in descending order: Dover £6,440, Nottingham £1,816, Windsor £1,476, Orford £1,471, Winchester £1,233, Newcastle £1,144, Scarborough £683, Bowes £617. These eight castles account for nearly 70% of Henry's castle expenditure of £21,500 (the pipe rolls do not record all expenditure but it is unlikely major works are not reflected in them).⁴⁴

The great tower at Dover overlooks its contemporary surrounding bailey, which has regularly spaced rectangular flanking towers, including two twin-towered gatehouses, each protected by a barbican. Tower and bailey provided a concentric defence. A partial third (outer) line of defence incorporated the semi-octagonal Avranches tower, equipped with dedicated arrow-loops. The HKW's observation that the great tower was 'obsolete almost as soon as it was built'⁴⁵ obscures the castle's many advanced features.

At Nottingham Henry II constructed curtain walls around the upper bailey (sometimes referred to as the mota) and middle bailey, a great hall and other domestic accommodation, and possibly the tower (it might be earlier).⁴⁶ At Windsor he rebuilt Henry I's shell keep, spent £550 on 'the king's houses' and walled the upper bailey, the middle bailey, and part of the lower bailey, including numerous rectangular, open backed towers.⁴⁷

At Orford the polygonal great tower was surrounded by an oval bailey wall containing (probably) seven flanking rectangular towers, one of which was a gatehouse approached by a passage flanked by parallel walls.⁴⁸ The 15m wide outer ditch was around 20m from the curtain. Possibly the original plan was for a

larger bailey but the wide berm allowed archers at the great tower battlements to shoot over the curtain into the ditch and beyond (the counterscarp bank of the ditch is between 60 and 80m from the great tower). Orford incorporates the principles of concentric defence, flanking towers, and barbican walls, to be defended as a unit.

Two thirds of Henry's expenditure on Winchester comprised houses and chapels. However, it already possessed a late eleventh century stone curtain and an early twelfth century rectangular great tower, revealed by excavation. In 1169-71 over £237 was spent rebuilding the curtain walls.⁴⁹ Newcastle tower and surrounding bailey wall were built 1168-78 (building operations were interrupted by the Scots in 1173, a siege abandoned due to their lack of engines).⁵⁰ Scarborough tower was built 1158-68, though other work, including the curtain, was probably undertaken.⁵¹ £425 was spent on Bowes between 1171 and 1173 though the tower was incomplete when the Scots unsuccessfully besieged the castle in 1174. The tower occupies the corner of a Roman fort, inside a ditched enclosure without evidence of stone fortifications.⁵²

The defensive capabilities of a great tower need to be considered in conjunction with the strength of the site, the castle's other defences (commonly upgraded simultaneously with the tower's construction) and the position of the tower within those defences.

VI

Defensive Deficiencies?

Liddiard regards the existence of large windows in towers as a 'potentially serious weakness', illustrated by an incident at Torrington in 1139. Henry of Tracy, learning from scouts that part of the garrison was engaged on a plundering expedition, made a stealthy night attack, eluded the guards, and flung torches through the *turris fenestras*, setting the interior aflame. Note the absence of 'siege etiquette' - this was a surprise attack on an under-strength garrison.⁵³

Liddiard points out besiegers could shoot arrows through windows, and cites experiments demonstrating attacking archers even had a reasonable chance of shooting in through arrow-loops. The results (at 25 yards 30% of arrows passed through the slit) were obtained at close range without, obviously, anyone trying to shoot the archers.⁵⁴ There is little doubt that in action an archer behind an arrow-loop, or shooting from a window, where wooden shutters could aid protection, had a significant advantage over a besieging archer sheltering behind a mantlet shield.

Many French towns retained their Gallo-Roman town walls. Surviving examples, such as Le Mans and Carcassonne, have D shaped towers, usually solid to wall-walk height, where rooms have round arched windows. The Romans used windows to shoot ballistae, anti-personnel torsion catapults, effectively.⁵⁵ Eleventh century warriors lacked equivalent weaponry (medieval references to *ballistae* usually mean crossbows) but the principle of shooting at attackers while they negotiated obstacles was understood so tower builders probably copied Roman windows. Fulk Nerra, count of Anjou (d 1040), an early builder of great towers, went on pilgrimage to the Holy Land where he would have observed Byzantine fortifications, which often employed relatively wide rectangular loops.⁵⁶

The introduction of proper arrow-loops, probably connected to increasingly powerful crossbows, occurred in the later twelfth century. The Hospitaller castle of Belvoir in the Kingdom of Jerusalem (started 1168) has many arrow-loops.⁵⁷ The Avranches tower at Dover (1180s), designed to block a causeway, probably contain the earliest in England, apparently designed for crossbows.⁵⁸ Throughout the thirteenth century arrow-loops became more sophisticated (offset cross-loops, plunging loops etc.) but usually provided a restricted view. However, for snipers and lookouts seeking to observe specific features without fear of being shot they were valuable.

We underestimate the usefulness of windows for both archery and visibility. An analogy is helmet design. Eleventh century helmets provided only partial facial protection, as a number of high profile casualties hit in the face attest, but allowed unimpeded visibility and movement. Later, heavier helms provided almost complete protection but limited visibility and movement. There were still casualties, because knights raised their visors to see...

Rectangular towers had a weakness; the corners restricted visibility and were vulnerable to mining. The 'traditional castle story' held that before discovering the solution, round towers, a number of 'transitional' towers, of varying shape, were built. However, chronology confounds this theory: New Buckenham's round tower was probably built in the 1140s and Henry II's polygonal tower at Orford (1165-70) pre-dates his rectangular towers at Newcastle (1168-78) and Dover (1180s). Speight tracked Allen Brown's changing published views from initially proposing a category of transitional, polygonal keeps without vulnerable sharp angles to finally thinking fashion and rival theories influenced shape rather than progress to a superior form. As Speight notes, he moved significantly towards the 'symbolists'.⁵⁹

Liddiard argues that analysis of donjons reveals 'alarming deficiencies' defensively; 'even when allowing for the reduced defensibility of square towers, some were built to extremely poor military designs' e.g. Orford's three buttresses multiplies the number of corners and creates blind spots; Conisborough and Trim towers incorporated similar drawbacks. Thus 'while some aristocrats may have favoured rounded keeps... this was certainly not due to the fact that builders had finally realised the best 'military' form for their great towers'.⁶⁰

Building great towers for display or as an aristocratic badge were doubtless partial motivations so we cannot completely reject the idea of round or polygonal designs as fashion statements, but it is interesting that Richard I

was at the forefront of the new ideas. Whereas Henry II's militarily sophisticated Dover, like Hospitaller Belvoir, overwhelmingly incorporated rectangular designs, Richard's Château-Gaillard, built 1196-8 at huge expense (the equivalent of about £8,000 - his total expenditure on English castles during his ten year reign was some £7,146), employs rounded shapes. It blocked the French approach route to Rouen and provided a base from which to re-conquer the Norman Vexin, lost while Richard was imprisoned in 1193. Liddiard, however, is unconvinced by military explanations: 'Explaining some alarming military defects at Château-Gaillard (the castle is built on soft chalk and there does not appear to have been a well) is rendered unnecessary when it is considered as a visible statement of Angevin intent to reassert lordship over lost territories. The provision for the probable throne room (in the donjon) underlines the castle's political purpose...'⁶¹

Throughout 1194 and 1195 Richard successfully fought to regain losses in his French territories using tactics of speed, rapid assaults on enemy field forces, and taking castles.⁶² How would Richard reassert authority over the Norman Vexin from Château-Gaillard; by holding ceremonies or by war?

VII

Visibility and Mining

Round towers are inconvenient for incorporating complex internal domestic arrangements. Might non-domestic utilitarian reasons have inspired Richard to build round towers at Château-Gaillard?

The theoretical military weaknesses of rectangular towers were: (i) restricted visibility and limited ability to shoot outwards at the corners, leading to 'dead zones', (ii) corners were vulnerable to mining, and (iii) flat tower walls were vulnerable to battering from stone-throwing siege engines hitting them at right angles. The Romans knew the answer: Vitruvius advocated round or polygonal towers.⁶³ Note that octagonal was almost as

effective as round in minimising ‘right angle’ weak points (polygonal and round towers could be mined, though with more difficulty).

Using hoards, wooden galleries projecting from the battlements, a tower base could be covered by dropped missiles or archers leaning through crenels to shoot down; tower shape was largely irrelevant. Hoards are usually depicted, often by Viollet-Le-Duc’s drawings, as substantial structures on stout beams (like those reconstructed at Carcassonne).⁶⁴ Twelfth century hoards were probably simpler. Hides, matting, and wickerwork protected siege towers, the apparently flimsy barriers absorbing much of the force of arrows and missiles, and could have also provided protection at wall tops. At Brough in 1174 a knight hung two shields over the battlements and threw javelins, killing three Scots.⁶⁵ The curious feature ‘hanging’ from the top of the tower at Dol on the Bayeux Tapestry may be shields or a fire-protection.⁶⁶ Such temporary defences only required a light framework. Hoarding protected archers aiming towards ‘dead zones’, less significant anyway when a tower was defended in conjunction with its bailey. In short, visibility problems were not insurmountable.

Mining was a technique known to the ancients, clearly described by Vegetius, whose fourth century military text was influential in the middle ages.⁶⁷ There were two types of mining: digging into the lower courses and foundations under the cover of an armoured roof (direct) and tunnelling under a wall (galleried), as at Rochester in 1215. In both cases when props used to hold up the foundations were fired the wall collapsed. Mining was rarely a complete technique – success usually required a simultaneous assault.

In 1068 the Conqueror attempted to ‘undermine the (city) walls’ (*subtus murum suffodere*) (Orderic) of Exeter. It was probably insignificant because after eighteen days Exeter surrendered on generous terms.⁶⁸ At Nicea in 1097 the First Crusaders dug into a tower’s foundations, inserted props and set

them alight. The tower collapsed during the night but by morning the Turks had blocked the breach, thwarting an assault.⁶⁹ The Crusaders did not employ mining at the sieges of Antioch (taken through treachery after a long blockade and the defeat of several relieving armies) and Jerusalem in 1099 (a bloody assault by siege tower).⁷⁰

Evidence of mining is scanty in the numerous sieges of Stephen’s reign. At Exeter in 1136 the *Gesta Stephani* reports Stephen ‘summoned those who have skill in mining under ground and ordered them to search into the bowels of the earth with a view to demolishing the walls’, but Exeter castle eventually surrendered because the wells ran dry.⁷¹ In 1144 Stephen abandoned the siege of Lincoln in disorder following a successful sally by the defenders. Apparently engaged in erecting a siege castle, ‘nearly eighty of (Stephen’s) workmen were buried alive by the enemy’ (Henry of Huntingdon); perhaps they were attempting to dig a mine.⁷²

An early western use of galleried mining occurred during the Second Crusade at Lisbon in 1147. Crusaders from Cologne and Flanders took a month digging a mine tunnel, with five entrances, into a slope under the town wall. ‘Thirty cubits’ of wall collapsed when the props were fired but the Crusaders’ subsequent assault up the slope was repulsed. Lisbon’s Moslem defenders later surrendered after the Anglo-Norman contingent manoeuvred a siege tower up to the city walls.⁷³ In the Anglo-Norman world mining was rare, and success elusive.

There was greater familiarity with mining in the east. In his memoirs, Usamah, a twelfth century Arab warrior, describes the underground tunnel at Kafartab in 1115, and the subsequent collapse of the outer part of a tower, though the Crusader defenders only surrendered after further fighting.⁷⁴ In 1144 Zangi, emir of Mosul, undermined the town wall of Crusader Edessa. After desperate fighting, Zangi’s men broke in and ‘the looting and kill-

ing began' (Ibn al-Qalanisi). The citadel surrendered on terms.⁷⁵

In 1179 Saladin besieged the new, and probably incomplete, Templar castle of Le Chastellet near Jacob's Ford, north of the Sea of Galilee. It was a great shock when the Saracens quickly undermined a tower and stormed the castle, killing or capturing the garrison. As Kennedy notes: 'It was the first time Muslim sappers had shown their effectiveness against a major Crusader fortification and it was a sign of things to come'.⁷⁶ Saracen sappers had rarely been given an opportunity to mine Crusader castles, a time consuming and skilled activity, because Crusader field armies usually relieved threatened fortresses. Notwithstanding the loss of Edessa the Crusaders were generally expansionist and their castle building aggressive.⁷⁷ However, Saladin's rise to power changed the strategic balance. In 1187 his army annihilated the Crusaders at the battle of Hattin. Saladin overran the Crusader kingdom, Jerusalem surrendering after the city wall was undermined.⁷⁸

VIII

Stonethrowers

Machina, *mangana*, *mangonella*, *petraria*, *tormentum*, *instrumenta*, *ballista*, and *funda* (with variations such as Balearic *funda*) were all terms used by chroniclers to describe stonethrowing engines, unfortunately usually used imprecisely. *Machina* was a general term, *ballista* also meant crossbow, and while *funda* was a sling it might be a small hand held or stave sling. The evidence for Roman style torsion powered engines is limited; most medieval artillery was lever artillery i.e. a long beam with a sling attached at one (rear) end rotated about an axle raised on a frame, the motive power being human traction, pulling ropes attached to the front end of the beam (traction lever artillery). The trebuchet was a development incorporating a heavy counterweight, which substituted human power as the motive force, suspended from the front of the beam. Trebuchets required much stronger frames and axles than ordinary lever artillery

to cope with the greater weights and forces involved. Highly skilled specialists were required to operate all types of artillery.⁷⁹

Stonethrowers could be fatal to men; at Mayet in 1099 a knight standing next to William Rufus had his head crushed by a stone. Orderic records engines at Breval in 1092 hurling great stones (*saxa*) which could demolish palisades (*vallum*), roofs, and the boundary wall (*sepes*, which also means hedge or fence), all apparently wooden.⁸⁰ Despite frequent mentions of stonethrowers, damage to stone structures was unusual; a slightly confusing account of Geoffrey Plantagenet's siege of Rouen in 1144 provides a rare example. It seems part of the tenth century tower had collapsed in 1143. Geoffrey aimed his engines at that side of the tower, 'but they could not win the castle, partly on account of the strength of its position, and partly on account of the stability of the building... At length the besieged, finding their victuals were failing them, surrendered'. In 1146 Geoffrey 'repaired the roof of the tower of Rouen, and the castle, which had been endamaged during the siege' (Robert of Torigni).⁸¹

Early throwing engines were certainly used to hurl firebrands, sometimes in support of an assault, as at Jerusalem in 1099. Crusaders, besieging Tyre in 1124, recruited a specialist whose expertise was accuracy in neutralising the defender's artillery atop the fortifications.⁸²

The trebuchet (a French word) originated in the east, probably invented by the Byzantines. One appears in an illustrated Arabic treatise presented to Saladin around 1180. Primitive versions of counterweight *manjaniqs* may have been used in Saladin's campaigns of 1187-9 against the Crusaders.⁸³ War is a catalyst for the development and spread of new technologies. Richard I's logistical preparations for the Third Crusade, an extremely difficult campaign, were comprehensive, and doubtless included the investigation and adoption of the latest military ideas. His arrival at Acre in early June 1191 soon after Philip Au-

gustus, king of France, re-energised a siege in progress since 1189. The Saracens, battered into submission, surrendered on 12 July, despite the presence of Saladin's army attempting to break the siege. Eyewitness accounts report extensive destruction of walls and towers by Crusader stonethrowers and miners, sometimes both targeting the same tower.⁸⁴

The level of professionalism in Richard's army is illustrated by the siege of Darum, south of Gaza. The castle, built by the Crusaders in the 1160s, was 'square in form and at each corner was a tower, one of which was more massive and better fortified than the rest' (William of Tyre). In 1170 Saladin besieged it, apparently forcing the defenders to retreat to the main tower until a relieving force arrived.⁸⁵ Saladin strengthened the castle because when Richard besieged it in 1192 it had seventeen towers. Three stonethrowers, transported by ship in sections, were assembled and commenced a bombardment. Aleppan sappers captured at Acre (spared when Richard executed 2,700 prisoners) were suborned to mine the castle. A tower collapsed, weakened by mining and shaken by repeated blows. The Crusaders pursued those fleeing from the ruins, killing about sixty Turks, those on the ramparts being flung off the walls, while archers shot Turks running for refuge in the main tower. Richard had refused to grant terms but the Turks in the tower (three hundred, plus women and children), realising their situation was hopeless 'threw themselves on the royal mercy and surrendered themselves into perpetual slavery' (Itinerarium). The whole operation took four days.⁸⁶

In England a trebuchet is first mentioned at the abandoned siege of Dover in 1217 but probably the French used one during their unsuccessful three month siege of Dover in 1216, during which they undermined the north gate.⁸⁷ Many castles were badly damaged in the wars of 1215-17. At Carlisle the Scots undermined the walls and seriously damaged a number of towers, implying the use of siege engines.⁸⁸ French engines threw

down a considerable portion of Winchester castle walls in 1216. Damage may explain why Winchester's tower was demolished around 1222 as part of rebuilding operations.⁸⁹

At the Albigensian Crusade siege of Castelnaudry (southern France) in 1211 Peter of les Vaux-de-Cernay mentions the enemy deploying an enormous siege-engine (*machina*), which another source calls a trebuchet. Peter probably wrote this section of his chronicle in 1213. At Toulouse in 1218 Peter describes the defenders showering Crusaders attempting to protect their own siege engines with a storm of arrows and a hail of stones from 'two trebuchets, a mangonel and numerous sling-staves' (*duobus trabuchetis, manganello et pluribus machafundis*). Simon de Montfort, leader of the Crusaders, was killed when a mangonel stone hit him on the head.⁹⁰ Either Peter's knowledge of weapon terminology improved or he overcame a reluctance to use a French term in his Latin text.

Armitage, finding no instance of *mota* in pre twelfth century chronicles, suggested writers of good Latin might have avoided using 'vulgar' French words.⁹¹ Similarly, early appearances of trebuchets may have been unrecorded for want of a Latin word. Perhaps Philip Augustus' magna petraia called *Chadabula* at the siege of Château-Gaillard in 1204 was a trebuchet. Its pounding brought down the inner gatehouse, already weakened by mining.⁹² This six month siege featured virtually every siege technique but mining and stone-throwers were particularly destructive. The defenders surrendered without trying to hold the fourth line of defence (the donjon) because there was no prospect of aid; a relief expedition had been repulsed and King John had departed for England. Château-Gaillard was a powerful fortress with a number of flaws (the middle bailey fell after a daring climb up a latrine chute), but no castle is impregnable without field forces to support it. 4 knights were killed and 36 captured. As scarcely 90 of the garrison survived this implies only 54 sergeants and archers survived from a force of 120 'and

many others' (total garrison strength was probably between 200 and 300). Many hundreds of non-combatants also perished after the defenders ejected 'useless mouths' to preserve food, but the besiegers refused to allow them passage, so they starved in no-man's-land.⁹³

IX

Tower Shape

Before 1190 mining was rare and often unsuccessful, and thick walled towers unlikely to be damaged by stonethrowers. The vast majority of towers were rectangular, a choice doubtless preferred for ease of interior space utilisation. From 1190 into the fourteenth century round, polygonal or D-shaped tower designs predominate. One explanation is a change of fashion, followed fairly consistently from *Krak des Chevaliers* to *Conway*. Another is that dramatic technical improvements in siege techniques, forged on *Crusade*, revolutionised tower design. Trebuchets could shatter stone buildings and exploit damage caused by mining. Constant pounding from stone-throwers by day and night (as at *Darum*) hampered defenders attempting to temporarily repair breaches, thereby eliminating the need for assaults to be launched immediately after undermined walls collapsed. Trebuchets and mines, used in combination by increasingly skilled engineers, shifted the advantage to the attack. Militarily there was no 'transitional' phase of tower shape; Richard I returned home with new ideas to thwart siege techniques he had perfected.

Round, oval or polygonal structures were built before 1190 for reasons other than the threat of mining and stone-throwers. Shell-keeps were adapted to motte shape. *Cardiff's* shell is a regular twelve sided polygon though many, such as *Lincoln* and *Carisbrooke*, are irregular polygons, probably reflecting motte irregularities. *Windsor's* 'Round Tower' is almost flat on the south, where subsidence was a problem.⁹⁴ On constricted motte tops roofing the whole structure created a 'true' tower, such as the eleven sided tower raised on the high motte at *Tickhill* in 1179-8, superficially similar in plan to *Orford* but much cheaper at

around £120.⁹⁵ The Tower of London has a round corner stair turret and a projection to accommodate the Chapel's semi-circular apse.

Semi-circular apses were common in Romanesque ecclesiastical architecture. A fine example is *Norwich Cathedral's* early twelfth century apse, which has two bi-lobed rounded chapels attached. The circular Chapel of the Resurrection in the Church of the Holy Sepulchre in Jerusalem inspired a number of round churches e.g. *Cambridge* (1130s). The Temple Church in London, and *Ludlow castle's* chapel (1130s), also with Templar associations, are round.⁹⁶ Around 160 churches in East Anglia have round towers, including about twenty of Saxon origin, some of which were refuge towers.⁹⁷ William d'Albini perhaps adapted local building expertise for his round great tower at *New Buckenham, Norfolk*, in the 1140s. Unusually, it had a cross-wall at basement level and probably contained only two storeys.⁹⁸ Another inspiration may have been the oval shell keep at *Arundel*, probably built by Henry I, but perhaps by D'Albini⁹⁹, a social climber who married Henry I's widow.

Castle Rising, another of D'Albini's towers, has many similarities to Henry I's towers at *Norwich* and *Falaise*.¹⁰⁰ *Rising*, in a sparsely populated region with poor agricultural land and no strategic significance, more resembles a palatial hunting lodge.¹⁰¹ However, *Norwich* was a royal castle overlooking one of the largest and wealthiest cities in the kingdom, and *Falaise* a fortress commanding southern Normandy. The towers of these castles were similar, but the castles differed in importance and function. Philip Augustus, after conquering Normandy, attached a round donjon to Henry's tower at *Falaise*.¹⁰²

Whatever the design inspiration for *Orford's* polygonal tower, and its complexity invites exotic interpretations¹⁰³, its buttresses and the corners in the rectangular curtain wall towers show the elimination of exposed right angles for military reasons was not an influ-

ence. Possibly royal builders found the tower's polygonal design unsatisfactory. Orford contains a basement under two halls, each just less than 60sqm in area. The turrets provide a number of small chambers (a 1m thick turret wall resulting where a kitchen was squeezed in).¹⁰⁴ The rectangular tower at Newcastle, commenced as Orford neared completion, also contains a basement under two halls, each just larger than 60sqm. It contains numerous chambers within its thick walls, two of which are quite spacious with fireplaces. Orford's short external flight of steps and awkward forebuilding (incorporating a nearly triangular chapel) compares unfavourably with Newcastle's processional forebuilding leading into the high-roofed upper hall. Orford has only one entrance, so reaching both basement and upper hall involved going through the lower hall. Newcastle has a postern at first floor level leading into the main stairway, useful as a service entrance. Despite Orford's sophisticated novelty, Newcastle was more convenient to use and, costing around £800 to £1,000, probably less expensive. The king of Scots interrupted building operations in 1173 but concluded he wouldn't take Newcastle without siege-engines.¹⁰⁵

Expense probably explains why no-one copied Conisborough. The six massive buttresses increased the external wall surface and material required by over a third but provided minimal extra accommodation in a tower containing only two well appointed rooms, a tiny chapel and storage areas. Undermining one of the buttresses, where combined wall thickness is over 6m, might bring down the buttress but would almost certainly leave the cylindrical core unbreached. Conisborough, probably built c.1180 to 1200 (by an illegitimate half-brother of Henry II), is a variant on round, rather than a 'transitional' shape.

X

Conclusions

Most building projects include elements of display or ostentation but we should be wary of overemphasis.¹⁰⁶ Decorated tower exteriors

(blind arcades, dummy windows etc.) or display windows were not incompatible with military effectiveness in an era lacking destructive artillery i.e. before 1190. Nor was display; Richard Basset, having become wealthy, built a well-fortified stone turrin at Montreuil to make 'a show of superiority to all his peers and fellow countrymen by the magnificence of his building' (Orderic). When Geoffrey Plantagenet invaded Normandy in 1136 he twice assaulted it but withdrew after some of his men were killed.¹⁰⁷

The presumption that military considerations took priority in castle design has been convincingly challenged for peaceful fourteenth century England.¹⁰⁸ Defence was sometimes accorded low priority in the twelfth century; Woodstock and Clarendon were royal palaces rather than castles because they lacked fortifications.¹⁰⁹ Castles were usually centres of estate management, sometimes featuring parks, fishponds and gardens in arranged landscapes. A lightly defended country house (a thin-walled two storey building with a cross-wall) was built at Castle Acre around 1080, more *domus defensabilis* than castle, and it is unlikely to have been unique.¹¹⁰ From an early date the balance between fortification and residence at individual castles varied due to political circumstances, region (Wales and East Anglia experienced differing levels of insecurity), and strategic importance (most castles had only local significance). Comparisons of castles, or great towers, are therefore fraught with pitfalls, especially since grandiose projects by wealthy, individualistic lords could result in idiosyncratic towers such as New Buckenham and Conisborough. Each castle was different, builders' motives varied, and thus military theories are unlikely to encompass every castle.

However, twelfth century England witnessed far more war than the fourteenth century. In the 1130s and 1140s the defences of Castle Acre, which has no 'military history', were considerably strengthened, the country house rebuilt as a thicker-walled, taller, narrower, great tower and the upper ward curtain

built and shortly thereafter heightened.¹¹⁰ Military purpose may be inferred from history as well as architectural interpretation. Though sieges are only one manifestation of castles' role in war, between 1066 and 1300 AD, the main era of Anglo-Welsh castle warfare, 60% of castles with great towers were attacked. For those in royal possession the figure rises to 80%.¹¹¹ The possibility of physical threat to these castles was not remote, and the defensive capability of towers added to castles which had already been besieged must have been a consideration.

Castle defenders' primary objective was to retain control of their main bailey, from which they could launch sorties to disrupt besiegers' operations. Fundamentally, a well provisioned and determined veteran garrison was more important than clever design in defending a fortress. Wide and deep ditches (double or water filled if possible), steep ramparts, difficult approaches covered by barbicans, and robustness and quality of masonry were more important than tower shape. The 'traditional castle story' exaggerated the military importance of great towers and shell-keeps. They were not intended to be freestanding, impregnable fortresses. Although towers provided security for small garrisons and were available as a refuge of last resort, usually used to negotiate surrender, their main defensive role was aiding bailey defences. The question is not: was a great tower primarily designed for defence?, but: was it capable of providing effective defensive support?

Powerful twelfth century fortresses did not require rectangular great towers. Therefore military 'deficiencies' in tower design (which I do not believe have been demonstrated) would have had little impact on castle strength. Re-interpretations of internal tower function as ceremonial (usually vague in nature and for which non-structural evidence seems scanty) rather than residential does not necessarily affect 'external' defensive capability. 'Revisionist' arguments over keeps fail to undermine military interpretations of castles.

Shell-keeps, 'towers' to twelfth century writers, were an alternative design functionally and symbolically similar to rectangular great towers, though most would have been ill suited for ceremonial purposes. As perceived deficiencies in tower design focus on exposed right angles and windows, it implies shell-keeps, usually lacking external windows, were militarily superior towers. However, before 1190 exposed right angles were not practical military weaknesses. After siege weaponry became sophisticated enough to exploit exposed angles builders altered tower shape though rectangular designs continued for other castle buildings.

The 'traditional castle story' presumed military necessity predominated castle architecture, thus underestimating other influences. Conversely 'revisionist' theories resolutely seek non-military explanations. Higham pondered if 'In the later twentieth century, however, in a society experienced in the horrors of total war and with a sense of post-colonial guilt, historians and archaeologists were perhaps inclined to seek "peaceful" (and thus more socially acceptable) explanations of the past where possible, with emphasis on social and economic matters?' He also reflected how 'revisionist' arguments had become 'familiar to and had been largely accepted by most practitioners' during their long gestation period.¹¹² Perhaps intellectual culture and consensus in the academic mainstream has muted counter argument, which is thus emerging from outside academia.¹¹³

When war intrudes (because no-one denies some castles were besieged) new theories characterise it as aristocratic war, the preserve of the social elite, fought within the conventions of chivalrous ritual.¹¹⁴ Though beyond the scope of this paper, the nature and conduct of medieval war requires deeper understanding because even 'chivalrous war' provided little protection for its main victims, the innumerable non-noble victims killed, kidnapped, raped, or left starving after their property was burned or plundered during ravaging raids, the main activity of medieval war.¹¹⁵

Ultimately, the story of castles is the history of those who lived in and built them. In the twelfth century warriors outnumbered dilettantes. ‘Gentle’ King Stephen was obliged to fight almost every year to retain his throne. Others embraced war; from the age of fifteen in 1173 to his death from a crossbow bolt in 1199 Richard I campaigned every year except when he was captured and incarcerated in Germany returning from the Holy Land and 1180, when his activities are unrecorded.¹¹⁶ Even on a sick bed at the siege of Acre he had himself carried forward to a defensive shield. ‘There he used his crossbow, with which he was skilled, and killed many (Saracens)’ (Itinerarium). He later shot a Saracen flaunting himself in captured armour.¹¹⁷ In 1194 the garrison of Nottingham castle failed to submit to Richard on his return to England. He shot dead a knight in an initial unsuccessful assault, then had some prisoners hanged to concentrate the defenders’ minds.¹¹⁸ Richard consistently waged war ruthlessly and professionally. He was skilled at besieging and fortifying - and had little need of architectural stage settings to command awe.

Richard Hulme

Notes

1. Brown: quote p18, description of Rochester siege p180, 191.
2. HKW quotes p71, 77.
3. Philip Dixon and Pamela Marshall ‘The great tower at Hedingham: a reassessment’ in *A-N Castles* p 297-306.
4. Liddiard: on tower chronology p49, courtly choreography p51, quote p53.
5. Charles Coulson, Viewpoint in *Castles Studies Group Bulletin* 17 p115.
6. Liddiard p48.
7. Charles Coulson ‘*Castles in Medieval Society*’ p382.
8. Chepstow p35, quote p42.
9. HKW p491.
10. Early castles, R R Davies ‘*The Age of Conquest*’ p34; Anglesey, Gruffud p73; Hen Domen, ASC 1095AD; Pembroke 1096, Gerald of Wales ‘The Journey through Wales/The Description of Wales’ translated by Lewis Thorpe p148-9; Wales generally, Brut p19, 20 and notes p158.
11. Chepstow: quote p34, plans p33, reconstructions fig. 19 p28, and drawings fig. 12 p20, fig. 25 p34.
12. P J Drury ‘Aspects of the Origins and development of Colchester Castle’ in *Archaeological Journal* 139 for 1982 p398, 400.
13. Chepstow p24 n8 (p275) acknowledges the problem, p29 notes uncertainty about reconstruction fig. 19, the west internal elevation.
14. Philip Dixon and Pamela Marshall ‘The Great Tower in the Twelfth Century: The Case of Norham’ in *Archaeological Journal* 150 (1993) p410-32.
15. Edward Impey ‘The Seigneurial Residence in Normandy, 1125-1225: an Anglo-Norman Tradition?’ in *Medieval Archaeology* 43 (1999) p45-73, especially 62-4 on the Exchequer hall; Chatelain p117 plan IV for Caen great tower.
16. Richard of Hexham in ‘The Hexham Historians and the chronicle of Jordan Fantosme’ translated by Joseph Stevenson (reprint from *The Church Historians of England*) p45-6, Lat in quoted in King ii p371 n228.
17. Brionne, WP p11; Mayenne, WP p67, Rob Early ‘Le Château de Mayenne’ in *Château-Gailard* 20 p247-262, Richard Hulme ‘William of Poitiers and Castle Warfare in Normandy before 1066’ in *Castles Studies Group Journal* 19 p247-51.
18. Arques, WP p35-43, OV iv p85, Hulme in *Castles Studies Group Journal* 19 p248-9; Norwich, OV ii p317; Dol, ASC Manuscripts D,E; Sainte-Suzanne, OV iv p49, Chatelain p127 dates the tower to the 1080s on his time chart.
19. ASC 1088AD; OV iv p127; JW p53.
20. ASC 1095AD; JW p77; HH p38; Newcastle charters HKW p745 n10.
21. Abandoned siege of Falaise, C Warren Hollister ‘Henry I’ p189-91, OV vi p90/91 for quote; Dover, OV ii p205.
22. Richard Eales ‘Royal power and castles in Norman England’ in *A-N Castles* p47-53 for castle numbers; Brown p215 for numbers documented by 1216.
23. Thompson p64-66 contains tables of ‘keep details’ of towers, excluding unroofed shells, built by 1216. Eliminating wooden, non English and Welsh towers, and ‘repetitions’ leaves 38 hall-keeps, 22 solar-keeps and 15 round and polygonal keeps, totalling 75 towers. As ever in castle studies, the great tower status of some

- is debatable e.g. Berkhamsted, Gosmont, Oxford (St. George's tower), and West Malling. Other towers survive e.g. Coity, Colchester, New Buckenham, Pevensey, Usk, and Winchester. Some 'royal' towers have disappeared e.g. Bristol, Gloucester, Horston, Northampton, Nottingham, and St. Briavels. Adding vanished baronial towers a total exceeding a 100 by 1216 was probable. Approximate numbers by date were obtained by tentative individual dating, erring towards early dates.
24. Bristol, GS p37 (ch27), 43-4 (ch30); Corfe, GS p56 (ch39); Pevensey, John Goodall English Heritage guide p22, GS p134-5 (ch106); Exeter, GS p25 (ch18); Wark, Richard of Hexham (see note 16) p46-7, 51, 54; Wallingford, GS p61 (ch42) for 1139, 122 (ch94) for 1146, 150 (ch117), 156-7 (ch120) for 1152-3; Lincoln, HH p75 for 1140/1, 82-3 for 1144; Oxford, GS p94-5 (ch70-2), WM p133, HH p82.
 25. 1138 siege, OV vi p 527; surrender in 1141, RT p55.
 26. Nicholas Riall 'The New Castles of Henry of Blois as Bishop of Winchester: The Case against Farnham, Surrey' in *Medieval Archaeology* 67 (2003) reproduces the Winchester annual of 1138 concerning the turri fortissima on p118. Siege of Winchester: GS p86-89 (ch65-7); JW p209; HH p81; Robert's imprisonment in Rochester turrin, WM p117.
 27. English Historical Documents Vol II 1042-189 edited by David Douglas and George re-enaway p438-9 for the charter; HKW p772, 65 for references Oxford and Windsor mottes; rmitage p181 and St John Hope 'Windsor Castle' p13 for Latin.
 28. HKW individual castle entries, p562, 674, 40; Durham, H&B p118-9; Warwick, Armitage p 232 n1.
 29. OV mota refs i p328; dangio refs iv p114, vi p148, 224, 342.
 30. Brown: quote p32, p35, 86; H&B reproduce and analyse Lambert's description of Ardres p115-6.
 31. St John Hope 'Windsor Castle' many references, particularly p60-1.
 32. HKW individual castle entries, p554 n3, 562, 772, 835, 840, 888.
 33. GS p32-3 (ch23); Brown p191-4 for the 1224 siege.
 34. Rhuddlan, Gruffud p62; 1116 attacks, Brut p40-41; Dinefwr, Brut p87-8; generally John R Kenyon 'Fluctuating Frontiers: Normanno-Welsh Castle Warfare c1075 to 1240' in Château-Gaillard XVII 1994 p119-26, especially p124, 126 (reprinted in A-N Castles).
 35. 'Suger The Deeds of Louis the Fat' translated by Richard Cusimano and John Moorhead p89.
 36. GS p69-70 (ch50); JW p286-7; Bishop Roger's castles at Devizes and Sherborne, WM p45.
 37. 'Roger of Wendover's Flowers of History' translated by J A Giles Vol 2 Part 1 p203 (1995 reprint).
 38. OV vi p521-3; JW p251.
 39. Brionne, OV iv p207-11; Le Renouard, OV vi p217; Brough, JF p111.
 40. Bayeux, C Warren Hollister 'Henry I' p185-6; Évreux, OV vi p229; Nottingham, JW p291; St Pierre, OV vi p83; Wherwell, Sidney Painter 'William Marshal' p7-8.
 41. HKW p45-7; building date, ASC 1097AD.
 42. Philip Dixon 'The Myth of the Keep' in SRWE p9.
 43. The castles are listed in: RT p34, 45; HKW p35; Richard Hulme 'Henry I and Norman Castles' in *Castles Studies Group Journal* 20 p220-1.
 44. Allen Brown 'Royal Castle-Building in England, 1154-1216' in *Charters*.
 45. HKW p75.
 46. Christopher Drage 'Nottingham Castle – A Place Full Royal' p38-9; Armitage p176/7 for references to the mota.
 47. HKW p865.
 48. John Rhodes 'Orford Castle' English Heritage guidebook.
 49. Martin Biddle and Beatrice Clayre 'Winchester Castle and the Great Hall' especially p5, 8, 14; expenditure, HKW p855.
 50. HKW p746; abandoned attack, JF p45.
 51. HKW p830; 'Scarborough Castle' English Heritage guide by John Goodall p12 attributes the inner bailey east curtain to Henry though it may be earlier, as William of Au male built a wall, 'The History of William of Newburgh' translated by Joseph Stevenson p445-6.
 52. HKW p574.
 53. Liddiard p50-1; GS p55 (ch38), where fenestras is translated loopholes.
 54. P Jones and D Renn 'The military effectiveness of arrow-loops', in Château-Gaillard IX-X p445-456.

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55. Stephen Johnson 'Late Roman Fortifications' p40-41, reconstruction of tower p34, illustrations after p112.
56. Clive Foss and David Winfield 'Byzantine Fortifications', esp. photos of eighth to tenth century walls of Constantinople p248, 250; Stephen Turnbull 'The Walls of Constantinople' (Osprey) for illustrations of the walls.
57. Denys Pringle 'Secular Buildings in the Crusader Kingdom of Jerusalem' p32 with plan and references; Kennedy p58-61.
58. Derek Renn 'The Avranches Traverse', in *Archaeologia Cantiana* 84 (1969) p79-92.
59. Brown 'English Castles' 2nd ed 1962 p52; Brown 'The Architecture of Castles' 1984 p51; Sarah Speight 'British Castle Studies in the late Twentieth and early Twenty First Centuries' at www.history-compass.com.
60. Liddiard: 'traditional story' p47, deficiencies and quote on round towers p50.
61. Liddiard p54.
62. John Gillingham 'Richard the Lionheart', purpose of Château-Gaillard p262-5, wars of 1194-5 p245-259.
63. Kennedy p114.
64. e.g. Brown 'English Castles' 3rd ed. p184; Brown 'The Architecture of Castles' 1984 p54, 55.
65. JF p113.
66. H&B p151.
67. 'Vegetius: Epitome of Military Science' translated by N P Milner p128.
68. OV ii p213; ASC, D manuscript for 1067AD.
69. 'Gesta Francorum' edited and translated by Rosalind Hill p15.
70. Sieges of Antioch and Jerusalem: Rogers p25-39, 47-63.
71. GS p23 (ch16), 25 (ch18).
72. HH p83; 'William of Newburgh Book 1' translated by P G Walsh and M J Kennedy p73.
73. 'De Expugnatione Lyxbonensi – The Conquest of Lisbon' translated by C W David p143-5, 165.
74. 'An Arab-Syrian Gentleman & Warrior in the Period of the Crusades – Memoirs of Usamah Ibn- Munqidh' translated by Philip K Hitti p102-4; long quote in Kennedy p103-4.
75. Ibn al-Qalanisi in 'Arab Historians of the Crusades' edited by Francesco Gabrielli p49-50;
- Michael the Syrian in 'Chronicles of the Crusades' edited by Elizabeth Hallam p118-121.
76. Kennedy: quote p57, 106.
77. R C Smail 'Crusading Warfare 1097-1193', especially p209-13.
78. The Old French Continuation of William of Tyre in 'The Conquest of Jerusalem and the Third Crusade – Sources in Translation' by Peter W Edbury p56-8.
79. Rogers, Appendix III p254-273, discusses terms and twelfth century artillery.
80. Mayet, OV v p259-61; Breval, OV iv p289-91.
81. RT p58 for siege, p60 repair, p34 for attribution of the tower to Duke Richard I (died 996).
82. Rogers p83, 114, 247.
83. Suggested by Kennedy p107; David Nicolle 'Medieval Siege Weapons (2) Byzantium, Islamic World & India AD 476-1526', (Osprey), discusses Saracen machines, p22 illustration of the manjanik.
84. Howden Vol 2 Part 1 p209-14; Itinerarium p201-18, especially 208-9, 213; Baha al-Din p155-61.
85. T S R Boase 'Castles and Churches of the Crusading Kingdom' p42-3 for quote and siege.
86. Itinerarium p316-9, executions at Acre p231; Baha al-Din, for Aleppan sappers p203, executions p165.
87. John Goodall 'Dover Castle and the great siege of 1216' in *Château-Gaillard* 19 p91-102, trebuchet p95.
88. M R McCarthy, H R T Summerson, and R G Annis 'Carlisle Castle – A survey and documentary history' p126.
89. HKW p858; John R Kenyon 'Medieval Fortifications' p46; M Biddle 'Excavations at Winchester, 1969, eighth interim report' in *Antiquaries Journal* 50 (1970) p277-326 especially p291-2.
90. 'The History of the Albigenian Crusade - Peter of les Vaux-de-Cernay' translated by W A Sibly and M D Sibly, Castelnau p133, 52 n45, dates of writing p xxv, Toulouse p276, 277.
91. Armitage p91 n2.
92. D J Cathcart King 'The Trebuchet and other Siege-Engines' in *Château-Gaillard IX-X* p457-469, quote from William the Breton

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- and possibility that Chadabula was a trebuchet p461.
93. Jim Bradbury 'Philip Augustus' p147-50; Sir Maurice Powicke 'The Loss of Normandy' p255-6; Sean McGlynn 'Useless Mouths' in *History Today*, June 1998 p41-6; John S Moore 'Anglo-Norman Garrisons' in *Anglo-Norman Studies* 22 p205-259, p242 and for garrison numbers and casualties.
- n312
94. *Medieval Archaeology* 36 (1992) p195.
95. HKW p76 (plan of tower), p844; R Allen Brown 'Castles from the Air' p214-6.
96. 'Ludlow Castle Its History & Buildings' edited by Ron Shoesmith & Andy Johnson p145-54 (by Glyn Coppack).
97. Stephen Friar 'The Sutton Companion to Churches' p451.
98. Derek Renn 'The Keep at New Buckenham' in *Norfolk Archaeology* 32 (1958-61) p232-5.
99. Bill Woodburn and Neil Guy 'The Castle Studies Group Conference – April 2005' in *Castles Studies Group Journal* 19, Arundel p9-24, consider D'Albini a possible builder c1138 (p16), without ruling out Henry I. King (King ii p469) thought the shell late eleventh or early twelfth. I favour Henry because of Arundel's importance in south coast defence after Robert Curthose's 1101 invasion. Caen stone, used in the shell, might have been difficult to obtain in 1138.
100. Philip Dixon and Pamela Marshall 'Norwich castle and its analogues' in *SRWE* p235-243, at p238; HKW p38-9.
101. Robert Liddiard 'Castle Rising, Norfolk: a 'Landscape of Lordship'?' in *Anglo-Norman Studies* 22 p169-186.
102. Jean Mesqui 'Châteaux et Encientes de la France Médiévale – Vol 1 Les Organes de la Défense' photo and plan p119, 123.
103. T A Heslop 'Orford Castle, Nostalgia and Sophisticated Living' in *A-N Castles* p272-96.
104. John Rhodes 'Orford Castle' English Heritage guide for plans.
105. Barbara Harbottle 'The Castle of Newcastle upon Tyne' (guidebook) contains a section and plans; abandoned siege, JF p45.
106. A point made by Philip Dixon 'The Myth of the Keep' in *SRWE* p11.
107. OV vi p467-9.
108. Liddiard on the 'battle of Bodiam' p7-11 (and its implications), chart p72 showing much reduced levels of sieges in the fourteenth and fifteenth centuries; Matthew Johnson 'Behind the Castle Gate'.
109. HKW p910, 1009. Matilda fortified Wodstock in 1142, GS p91.
110. J G Coad and A D F Streeen 'Excavations at Castle Acre, Norfolk, 1972-77' in *Archaeological Journal* 139 for 1982 p138-301, particularly 178-94 for the country house and its transition to a tower.
111. King's data for attacks on castles for the 75 towers listed by Thompson p64-6 revealed: 45, 60%, were attacked. 30 of the 75 castles were in royal possession at 1189 (from Allen Brown 'A List of Castles, 1154-1216' reprint ed in *Charters*) of which 24, 80%, were attacked. While some of King's incidents were minor he excluded occasions when attackers declined a siege because of the strength of fortifications e.g. Bristol in 1138 and Newcasttle in 1173.
112. Quotes from R A Higham's favourable review of Liddiard's 'Castles in Context' in *Castle Studies Group Journal* 19 p256-7. Another positive reviewer, Amanda Richardson in *Medieval Archaeology* 50, 2006 p405-6, would, however, have liked more explanation of why military interpretations are avoided.
113. e.g. Peter Purton 'Donjons: some heretical thoughts' in *Castle Studies Group Newsletter* 16p86-88, questioned the pre-eminence of ideas of symbolism over multi-purpose and practical interpretations based on military history, views advanced with some 'trepidation' as he lacks a background in archaeology.
114. e.g. Liddiard Ch 4 p70-95, especially p78-80 and 84-87; Sarah Speight 'Castle warfare in the Gesta Stephani' in *Château-Gaillard* XIX p269-74.
115. Ravaging in the 'minor' rebellion of 1123-4, Hulme 'Henry I and Norman Castles' in *Castles Studies Group Journal* 20 p216-223, especially p217-8. All chroniclers of Stephen's reign emphasise violent disorder, examples from GS include p41-2 (ch29) robbery, 75 (ch55) slaughter and plundering in Lincoln, 97 (ch74) pillaging Wilton nunnery, 101-4 (ch78), 112 (ch86), 127-8 (ch100) general lamentations, 145 (ch114) firing crops to cause starvation.
116. John Gillingham 'Richard I and the Science of War in the Middle Ages' in *Anglo-Norman Warfare* edited by Matthew Strickland p194-

207, p195-6; still an excellent introduction to the theory of twelfth century warfare.

117. *Itinerarium* p213, 214.

118. Howden Vol 2 Part 2 p314-5.

Abbreviations and Bibliography

A-N Castles, '*Anglo-Norman Castles*' edited by Robert Liddiard, 2003 (collection of papers).

Armitage. Ella. S. Armitage '*The Early Norman Castles of the British Isles*', 1912.

ASC *Anglo-Saxon Chronicle*.

Baha al-Din. '*The Rare and Excellent History of Saladin by Baha al-Din Ibn Shaddad*' translated by D S Richards

Brown. R Allen Brown '*English Castles*' 3rd edition, 1976

Brut '*Brut Y Tywysogyon or The Chronicle of the Princes*' Peniarth Ms 20, translated by Thomas Jones.

Charters. '*Castles, Conquest & Charters – Collected Papers*' by R Allen Brown.

Chatelain. André Chatelain '*Donjons Romains des Pays d'Ouest*' 1973

Chepstow. '*Chepstow Castle Its History & Buildings*' edited by Rick Turner & Andy Johnson, 2006.

Gruffud. '*The Life of Gruffud ap Cynan*' translated by D Simon Evans

GS. '*Gesta Stephani The Deeds of Stephen*' translated by K R Potter 1955 (chapter numbers are given because the 1976 edition has radically different page numbering)

HH '*Henry of Huntingdon: The History of the English People 1000-1154*' translated by Diana Greenway.

H&B Robert Higham and Philip Barker '*Timber Castles*', 1992.

HKW. R Allen Brown, H M Colvin, and A J Taylor '*The History of the King's Works*' 2 vols 1963.

Howden. '*The Annals of Roger of Hovedon*' (Howden) translated by Henry T Riley 1997 reprint

Itinerarium 'The Chronicle of the Third Crusade – The Itinerarium Peregrinorum et Gesta Regis Ricardi' translated by Helen J Nicholson

JF. '*Jordan Fantosme's Chronicle*' edited and translated by R C Johnston 1981

JW. '*The Chronicle of John of Worcester*' Vol III edited and translated by P McGurk

Kennedy. Hugh Kennedy '*Crusader Castles*' 1994

King. D J C King '*Castellarium Anglicanum*' 2 vols 1983

Liddiard. Robert Liddiard '*Castles in Context*' 2005

OV '*The Ecclesiastical History of Orderic Vitalis*' edited and translated by Marjorie Chibnall 6 vols

Rogers. R Rogers '*Latin Siege Warfare in the Twelfth Century*' 1992

RT. '*The Chronicles of Robert de Monte*' (aka Robert of Torigni) translated by Joseph Stevenson 1991 reprint

SRWE. '*The Seignorial Residence in Western Europe AD c800-1600*' edited by G Meirion-Jones, E Impey and M Jones, 2002.

Thompson. M W Thompson '*The Rise of the Castle*' 1991

WM '*William of Malmesbury: Historia Novella*' edited by Edmund King, translated by K R Potter, 1988

WP. '*The Gesta Guillelmi of William of Poitiers*' edited and translated by R H C Davis and Marjorie Chibnall.