Gleaston Castle, Gleaston, Cumbria

Results of Aerial Survey and Conservation Statement

Helen Evans and Daniel Elsworth
April 2016

Summary

Gleaston Castle is located on the Furness Peninsula, South Cumbria and is a fortified manor in the form of a courtyard or enclosure castle. The site, now ruinous, originally consisted of a large hall and three towers joined by a substantial curtain wall.

The castle may have been constructed in the early 14th Century when Cumbria was subject to raids from Scotland under Robert the Bruce, although there is not necessarily any direct connection to these events, especially given that it is not mentioned in documentary sources before 1350. After a relatively short period as a manorial residence the site was abandoned in the mid-15th Century and recorded as a ruin in the mid-16th Century.

Despite the attentions of antiquarians, the history and remains of Gleaston Castle are poorly understood. It has never been fully recorded and required a detailed archaeological survey to better understand its significance and inform future conservation strategies.

Elements of the ruinous remains of the castle are in a dangerous structural condition requiring extensive repair and consolidation to make them safe. For this reason the site, immediately adjacent to a public road, is not publically accessible.

Gleaston Castle is a Scheduled Ancient Monument and a Grade 1 listed building. Presently there is no coherent management structure in place or funds available for its conservation. Although the castle has significant historical, archaeological and tourism potential, the present complexities of its situation have led to a lack of intervention.

This report outlines the history and condition of the site and suggests ways in which its architectural, historical and archaeological significance could be more fully established, retained and presented to the public. It also takes into account the results of a remote photographic survey carried out in 2015, which forms the first step towards recording the remains and thus better understanding them.

Acknowledgements

Morecambe Bay Partnership, Greenlane Archaeology and Aerial-Cam would like to acknowledge the assistance of the owners of the Gleaston Castle, who have provided permission for site visits and recording work. The support of Richard Newman, Charles Smith and Sarah Howard of Historic England's Heritage at Risk team has also been invaluable throughout this project. The advice and guidance of Mark Brennand, Lead Officer Historic Environment and Commons, Cumbria County Council, is also acknowledged.

The recent and vital work undertaken at the castle and outlined in this report would not have been possible without the grant received from the Castle Studies Trust (CST). Morecambe Bay Partnership would like to thank Jeremy Cunnington, from the CST who provided invaluable guidance through the development of the grant application. The supporters and benefactors of the Castle Studies Trust are also acknowledged, without whom the allocation of grants and funding of such work would not be possible.

Report Information

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1 Introduction

Site Location

1.1.1 Gleaston Castle is located on the south western Furness peninsula, *c.*1km to the north west of the village of Gleaston and *c.*7.5km to the north west of the town of Barrow-in-Furness (Figures 1 and 2).

1.1.2 The Castle is incorporated into a working farm, which is dissected by the road between the villages of Gleaston and Scales. The road runs parallel to the eastern castle curtain wall, beyond which are yards and modern farm buildings (Figure 3). The 19th century farmhouse and further outbuildings lie adjacent to the southern curtain wall (Plate 1). The current condition of the castle presents risks to visitors and the site is currently closed to members of the public.

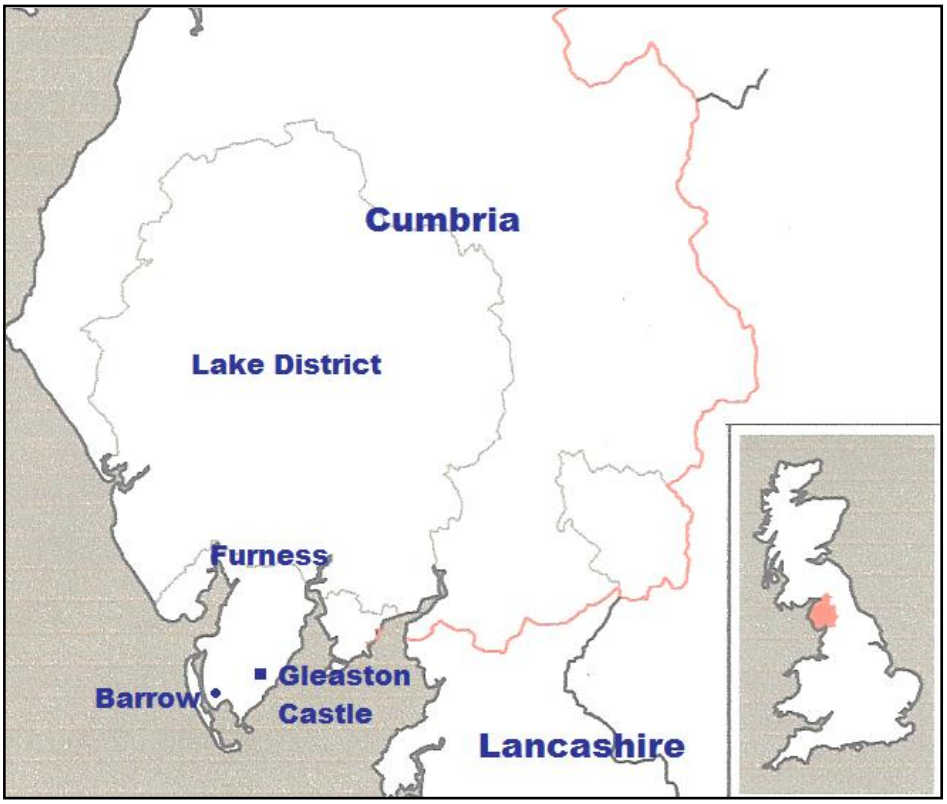

Figure 1: Cumbria, the Lake District and the Furness Peninsula. After Ordnance Survey (2008) ©Crown copyright

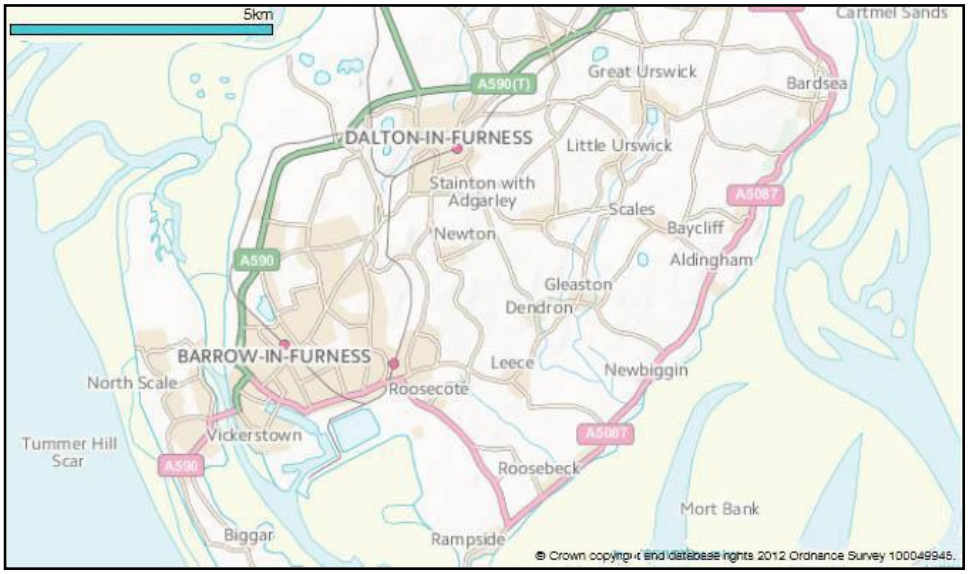

Figure 2: The Furness peninsula showing main locations mentioned in the text. ©Crown copyright Ordnance Survey (2012)

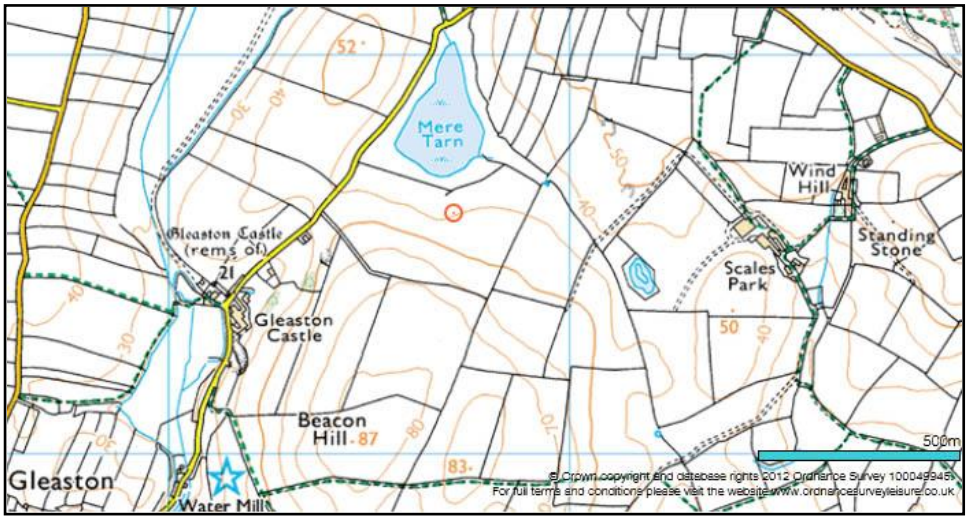

Figure 3: Map showing the location of the castle, strip fields and later field boundaries. © Crown copyright Ordnance Survey 2012

1.1.3 The Castle lies in an apparently obscure location at the head of an inland valley on the Furness Peninsula close to the northern coastline of Morecambe Bay. Historically, Furness was reached by crossing the sands of the Bay estuary at low tide from Lancashire; it was much less isolated than it appears today (Hindle 1984).

Plate 1: Gleaston Castle (south east tower in foreground) and farmhouse

1.2 Project Background

1.2.1 Gleaston Castle is a unique and important site, a status that is reflected by its protection as Scheduled Monument and Grade 1 Listed Building. The current condition of the site has placed it on Historic England's *Heritage at Risk* register (English Heritage 2014).

1.2.2 In 2015, Morecambe Bay Partnership (MBP) secured a grant from the Castle Studies Trust to undertake an aerial survey of the site and enable the creation of a permanent record of the structure.

1.2.3 This survey enabled recording of standing remains of Gleaston Castle to be carried out using an Unmanned Aerial Vehicle (UAV, Plate 2) and other remote photographic survey techniques, as well as more traditional total station survey of the earthworks and plan of the standing elements of the castle. This work was carried out in 2015 by Aerial-Cam and Greenlane Archaeology and has enabled the production of a full 3D model of the entire structure and rectified images of the principal elevations (see Plates 3 to 5).

1.2.4 Current knowledge of the site and a summary of the conservation issues were also deemed to be an important part of this project and a summary of the results of this work are outlined in the following report.

Plate 2: UAV survey being undertaken by Aerial-Cam

1.3 Project Scope and Limitations

1.3.1 Alongside the lack of funds, one of the reasons Gleaston Castle has never been fully recorded is its physical condition. Many elements of the site are in danger of collapse, which limits safe accessibility for survey and assessment. The acquisition of the remote photographic data now means that an important step has been made in understanding the site, but there remains a considerable amount of work to be done in terms of recording and consolidation.

1.3.2 The only records currently available for the site are based on published antiquarian sketches, descriptions and interpretations of its manorial history. Whilst these provide information on the layout of the two towers, which are currently inaccessible, they illustrate just how poorly the site is understood. In addition, there remain a number of unpublished documentary sources in the local archives. For example, a document at Cumbria Archive Centre in Barrow-in-Furness (CAC(B) *c.* 1905 mentions the discovery of three or four human skeletons during building work in the 19th Century (CAC(B) Z/2509). As yet, such sources have not been examined in detail, and are likely to be valuable resources in terms of understanding the site.

1.3.3 In 1998, Lancaster University Archaeological Unit produced a feasibility study regarding the potential for survey and consolidation of the site and its presentation to the public. The study (LUAU 1998) was limited in scope however and now requires significant revision. The use of digital technologies in archaeological research, interpretation and presentation has progressed significantly in recent years and can provide new ways to survey the site. Additionally, the LUAU report focussed on the interior of the castle's curtain walls. Representing a fundamental shift from a site specific study to a holistic landscape-based approach, this report focuses on establishing associative context for the site (see Section 2.4) as recommended by Newman and Newman 2007, 97. Gaining a fuller understanding of the castle's local and regional significance is important for its wider interpretation and it is hoped that further work, building on this project, will contribute to the understanding of the site and its relation to the wider landscape.

1.3.4 This study has not utilised the descriptive content, interpretations, or recommendations of the LUAU report; all the research presented here is the work of Helen Evans, with additional information added by Dan Elsworth of Greenlane Archaeology following the completion of the UAV survey.

1.4 Consultation Process

1.4.1 Whilst there are a number of potential stakeholders, at present there is no coherent management structure for the site. MBP intend to use this study to initiate discussion and establish a long-term plan for the castle's conservation. Contact has been established with the Historic England *Heritage at Risk* advisor and with the Lead Officer Historic Environment and Commons at Cumbria County Council. The castle is in private ownership and the owners are supportive of organisations attempting to find solutions for the site. Full access to MBP for assessment and for the remote photographic recording was provided by the owners.

1.5 Site Survey

1.5.1 The site survey was undertaken in the summer of 2015 by Aerial-Cam, with the project managed by Greenlane Archaeology. The survey largely

comprised the use of an unmanned aerial vehicle (UAV; Plate 2) but also a high-level telescopic pole and more traditional ground-based photography. This was accompanied by an earthwork survey completed by Greenlane Archaeology using a total station (Plate 3).

Plate 3: Total station survey being undertaken by Greenlane Archaeology

1.5.2 The photographic survey using a Remotely Piloted Aircraft (RPA, UAV, Drone) was carried out with a DJI Inspire 1 quadcopter fitted with an X3 gimballed camera with still images at 12 megapixels shot in raw (DNG) format. A number of flights were undertaken for vertical and oblique photography at altitudes between 60m and 90m above ground level. Additional photographic recording with a 24 megapixel DSLR was carried out at ground level and at heights between 5m and 20m using telescopic masts for close range and internal detail of the surviving structure. The resulting 600+ overlapping images were then processed using the Structure from Motion (SfM or Photogrammetry) method with Agisoft Photoscan Pro to accurately generate 3D models of the entire site (with a ground resolution of 2.25cm/pix) and of each area of the structure from which details can be analysed for historic building recording purposes (Plate 6). A model with links to detail via annotations is being

hosted on the Castle Studies Trust and Morecambe Bay Partnership websites and can also be viewed via a direct link to Sketchfab (https://sketchfab.com/models/c04bfe13b2b842d3b935ddfe166c0e1).

Plate 4: 3D view of the remains of the north tower

1.5.3 The data captured has also been shaded to show details of the earthworks (Plate 4). The data collected during the survey will be archived with the Archaeological Data Service (ADS).

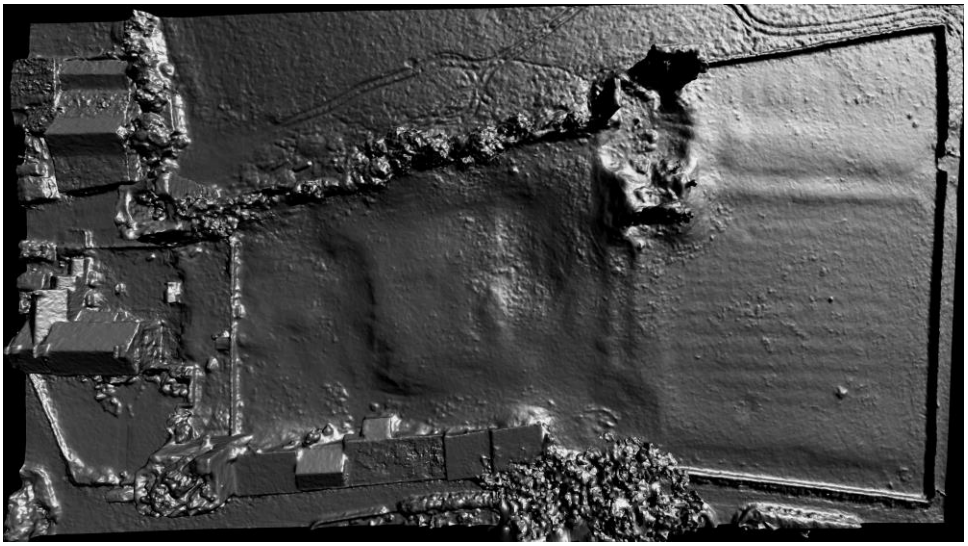

Plate 5: Shaded view showing the earthworks across the site

Plate 6: Rectified view of part of the north tower

2 Understanding the Asset

2.1 The Castle

2.1.1 The site incorporates two square corner towers at its southern extent with a third much larger structure, the manor or hall house, at the north west (Plates 7 and 8). The north eastern tower is identifiable as an earthwork. The buildings were set in a rough quadrangle surrounding an open central area and were connected, but not surrounded, by substantial curtain walls (Figure 4).

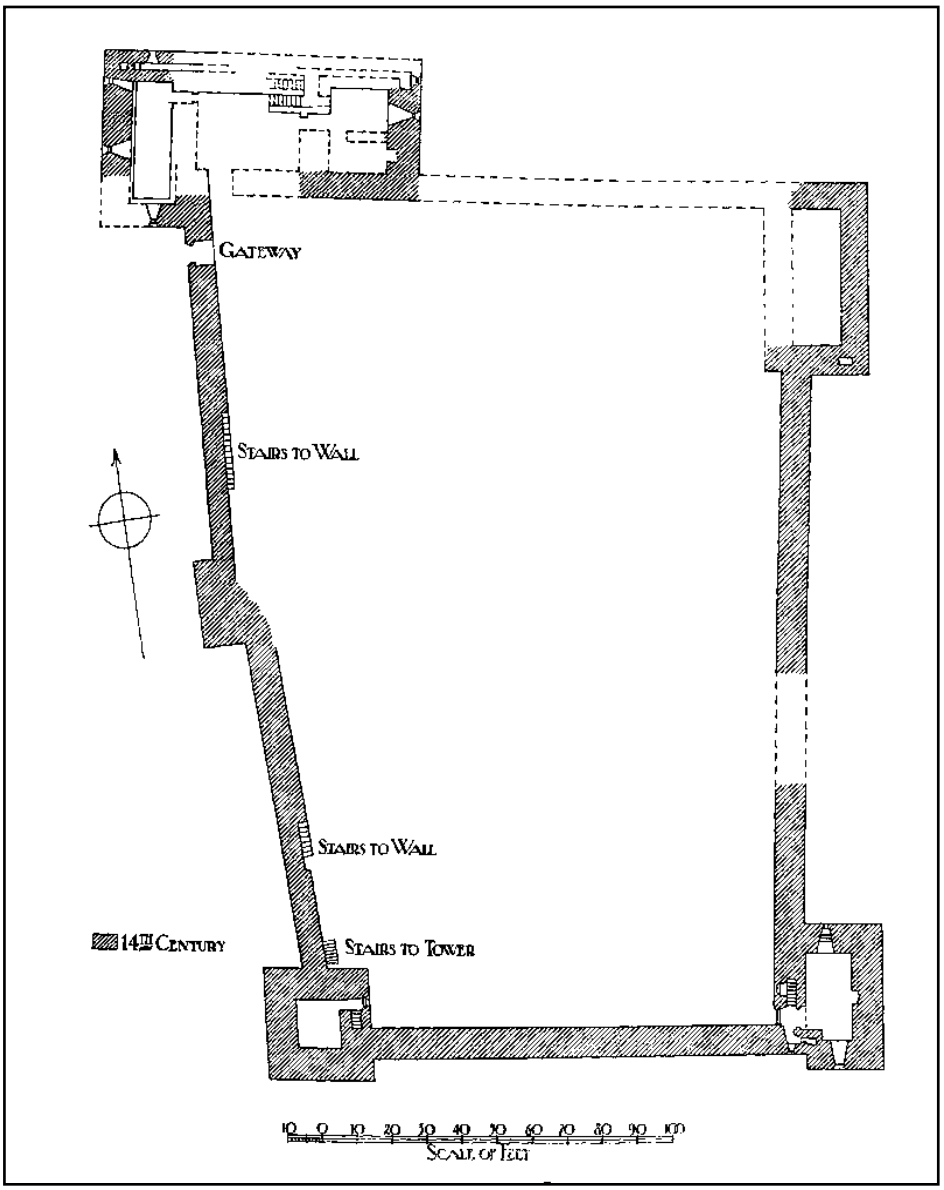

Figure 4: Plan of Gleaston Castle from Kendal (1906)

Plate 7: Remains of the north west hall, facing east

Plate 8: Corner section of the north west hall

2.1.2 The enclosure measures approximately 80m in length and is 55m wide at the north and 45m at the south (Jackson 1990). The ground slopes from the north to the south, with the hall on the highest northern part of the site. On a terraced area below the hall is a large square earthwork apparently representing a building. This is picked out particularly well by the topographic and remote survey (Plate 5), and in addition earthworks to the north of the castle were also recorded, which had previously seen little investigation. These included evidence for ridge and furrow cultivation that is otherwise not visible to the naked eye.

2.1.3 The buildings are of local unfaced limestone construction with local red sandstone used for detailing around the doors and windows. All are roofless and ruinous; the hall is characterised by three areas of standing masonry and the two southern towers are in dangerous structural states. Section 3 contains a detailed site description.

2.1.4 Architectural details such as loop windows and the massive scale of the curtain walls may suggest a structure built for defence, although the Harringtons' desire to construct the castle to demonstrate their noble status cannot be ruled out (see Section 4.2.3). The site lacks many of the features normally associated with 'classic' castles; it has no obvious keep (although there are earthworks in the central part of the site that were particularly visible as a result of the survey that might relate to a keep) or gate tower (there are, however, entrances in the east and west sides), and no obvious outer ditches or earthworks (although it is suggested that there may have been a moat on the south side, a claim that has not been tested archaeologically (CAC(B) ZK/204/6 *c*1910)).

2.1.5 The remote survey also revealed a number of earthworks to the north comprising probable elements of the curtain wall and linear banks that may relate to a trackway into the site from this side, These do not align with any known entrance and seem to denote one side of a rectangular platform outside the enclosed area of the castle (Plate 5). The purpose and date of this platform is uncertain; although it may be a later garden feature, it is this area that has the remains of ridge and furrow crossing it.

2.1.6 The type of fortification represented at Gleaston Castle is relatively common in northern England and typical of the early and mid-14th Century when many pele towers were constructed and farmsteads and manorial residences fortified against the threat of Scottish border raids (Curwen 1913; Jackson 1990; Salter 1994; Perriam and Robinson 1998; Brunskill 2002). However, many castles of this type include 'non-standard' features, and Gleaston is not an exception, although the lack of detailed investigation and phasing makes interpretation difficult at present. In this regard it is perhaps closer in form to Millom Castle, in former Cumberland, which was a 'fortified house' (Emery 1996, 229) built as much for comfort and prestige as defence (*op cit*, 230). It is also therefore similar to Beetham Hall (Lancashire), again a 'fortified house' with a large outer curtain wall containing a range of high-status domestic buildings of similar mid-14th century date to both Millom and Gleaston (*op cit*, 189-191).

2.1.7 The actual date of the establishment of a castle at the site is unclear and a topic requiring further research. Although there are no documentary records pertaining to the castle until the 1350s, it has been postulated that a 13th century timber tower was built on the site prior to the construction of the manor house (Kendal 1906; Perriam and Robinson 1998). It has also been suggested that the south west tower and southern part of the western curtain wall (up to the so-called 'bastion' half way along its length) are earlier than the rest of the site (ibid.). This interpretation is based on the change in the west wall's alignment north of this structure (Figure 4). South of the 'bastion', antiquarian records indicate that the west wall was of different construction to the remainder of the curtain, incorporating a clay core (Kendal 1906). Today however, only the outer skin of this wall remains (Plate 9). The analysis and identification of structural phasing is made difficult by the castle's condition, although the completed remote survey now means that the site can be examined in detail from the records created.

Plate 9: South west tower and western curtain wall

2.1.8 Sections 2.2 to 2.6 provide an overview of the historic background to the establishment of a castle and its use and abandonment. It is acknowledged that further research is required to fully understand the date/reason behind the construction of the castle and its relationship with the Scottish Raids.

2.2 Aldingham and the Manor of Muchland

2.2.1 To begin to understand the construction of the castle at Gleaston, it is important to consider earlier landholdings and the manorial seat of Aldingham.

2.2.2 In the early 12th Century, Furness was split into two landholdings; the east being granted in 1107 to Michael de Fleming and the west in the 1120s for the establishment of Furness Abbey (Farrer and Brownbill 1914). Fleming's land, known as Muchland after its namesake, and later known as Aldingham manor, stretched from Walney Channel in the south to Great Urswick in the north (Barnes 1968).

2.2.3 Prior to the construction of Gleaston Castle, the manorial residence is believed to have been on the coast at Aldingham, 2km to the east (Farrer and Brownbill 1914). Here there is a motte (SAM 1013819) with an adjacent moated site (SAM 1013830). Virtually nothing is known about the moated site but the motte saw partial excavation in 1968 due to damage from coastal erosion (Davison 1969). The results of the excavation have recently seen re-analysis with dates suggesting an 11th or early 12th century date for the construction of a ringwork, although there is some evidence for earlier activity, followed by a period of infilling and enlargement to create the motte between the 12th and 14th Centuries, and a 14th century stage of occupation and apparent abandonment (Elsworth and Mace 2015). Antiquarian records suggest Aldingham village (now only a handful of buildings including the church and rectory) was once larger but was lost to the sea during the medieval period alongside a number of other low-lying villages (West 1774). It has been suggested that coastal erosion may have contributed to the move of the manorial seat inland to Gleaston (Elsworth and Mace 2015).

2.3 The 14th Century

2.3.1 Aldingham manor passed to the Harrington family in 1291 (Barnes 1968). John Harrington was knighted in 1306 and saw military service under Edward II in the Scottish border wars (Burke 1831). He was an ally of Andrew de Harcla 1st Earl of Carlisle who, in 1323, signed an unsanctioned peace treaty with Robert the Bruce (*ibid.*). Although Harcla was hung, drawn and quartered without trial, Harrington was pardoned and created 1st Baron Harrington in 1326 (*ibid;* Barnes 1968). Towards the end of his life he accumulated many honours including being sent to Ireland on the king's service in 1344 (*ibid.*).

2.3.2 How Harrington avoided the wrath of Edward II is unknown however the reasoning behind his involvement with Harcla's truce is perhaps easier to surmise. In 1316 and 1322 the Scottish raids reached as far south as Furness. In 1316 the Chronicle of Lanercost reports that marching west from Richmond, the Scots laid '*waste everything as far as Furness and burnt that district...taking away with them all the goods of the district, with men and women as prisoners. Especially were they delighted with the abundance of iron which they found there, because Scotland is not rich in iron*' (Maxwell 1913, 216-217). During the 'Great Raid' of 1322, Robert the Bruce was paid £10,000 to secure Furness Abbey and its lands from damage (Raymond 2012). The Scots moved across the peninsula and laid waste to Cartmel Priory, amongst other places (Barnes 1968).

2.3.3 Damage to Harrington's lands may be evidenced by taxation reductions for Aldingham and Urswick in 1341 due to the 'incursions of the Scots' (Barnes 1968, 32). However, the effects of coastal erosion were probably a major factor in the abandonment of the motte at Aldingham and perhaps even the loss of the large part of the village, which also seriously affected his land holdings (Elsworth and Mace 2015). Harrington would also have felt the effect of the raids on Cartmel Priory, which is 12 km across the sands from Gleaston. He was its primary benefactor and is buried there in an ornate chantry tomb (Hyde and Pevsner 2010; Cameron 2013).

2.3.4 Whilst the documentary evidence is circumstantial, the Scottish raids may have had some bearing on Harrington's rise to power in the early 14th Century and perhaps even influenced the relocation of the manorial seat to Gleaston, although the erosion at Aldingham no doubt encouraged this. Despite suggestions that the site had earlier origins (see Section 4.2) it seems likely that the manorial residence, if not the castle as a whole, can be attributed to John Harrington. Whether it was constructed as a response to the Scottish Raids or rather to reflect wealth and status is still unclear and requires further research.

2.4 The Wider Medieval Landscape

2.4.1 Harrington was granted a license to empark 600 acres of wood, moor and marsh on his manor in 1340-41 (Burke 1831). At their height in the 13th

and 14th Centuries many noblemen had deer parks; not only to enjoy the thrill of the chase and the high status of venison on the table, but also managed for their woodland resources (Rackham 1986; Evans 2007).

2.4.2 The exact location of the emparkment is unknown, however modern maps show that whilst much of the land surrounding Gleaston Castle is characterised by strip-fields, to the east, later field boundaries may represent the formerly emparked landscape (Figure 3). Perhaps, Gleaston Castle was sited to capitalise on the valuable hunting rights of the manor. At the death of John Harrington in 1347, Aldingham manor had a garden, a dovecote and land including three mills and an enclosed park containing wild beasts (Barnes 1968: 35).

2.4.3 The landscaped area north of the north western hall of Gleaston Castle has been interpreted as the 'pleasure garden', although the dating of this is not certain, and a building illustrated by Buck in 1727 as the dove-cote (Kendal 1906).

2.4.4 Of the three mills recorded at Harrington's death, only Gleaston Mill remains. There was a second mill at the nearby lost village of Hart and a third at Sea Mill, close to Aldingham motte and lost to coastal erosion (Farrer and Brownbill 1914).

2.4.5 Although the present buildings at Gleaston Mill date to the 1770s, it is thought to have been established around the same time as the castle (Gleaston Mill nd). The mill is fed by the outflow of Urswick Tarn 5km to the north, Gleaston Castle spring and a second spring between the castle and mill. The three becks converge directly below the castle and it seems likely that this important resource, used to process corn at the mill, may have fallen under direct manorial control.

2.4.6 The position of Gleaston Castle, to allow the Harringtons to take advantage of natural resources, in addition to valuable hunting rights, are themes which require further consideration beyond the remit of this report.

2.5 Later Manorial History

2.5.1 Following the death of John Harrington in 1347, the manor passed through several generations of the family until 1457 when it is believed that Gleaston Castle ceased to be a manorial residence (Farrer and Brownbill 1914). During the century following the first Baron's death, the family increased their landholdings and fortunes and made advantageous marriages. Following the 5th Baron's death in 1457, Aldingham passed to his brother in law William Bonville (Kendal 1906). Bonville died at the Battle of Wakefield in 1460, following which, the manor passed to Thomas Grey, Marquis of Dorset. His son was Henry Grey Duke of Suffolk, father to Lady Jane Grey. Beheaded for treason in 1554, Aldingham, among his other assets, reverted to the Crown (*ibid*.). It is acknowledged that there is a current lack of understanding of why the castle appears to have been abandoned in the late 15th Century and further research is required to explore potential explanations. Perhaps, the abandonment was connected to the Bonville's family's political affiliation with the Yorkist faction during the reign of Edward IV, or civil unrest in the Furness peninsula during the early part of the reign of King Henry VII. Whilst this is outside the remit of this current study, it is recommended that this important element of the history of the site be the focus of research in the future.

2.5.2 Aldingham manor was acquired by the Preston family in 1671 (Farrer and Brownbill 1914). Thomas Preston bought Furness Abbey's lands after the Dissolution and the family acquired Cartmel Priory in the 1620s (West 1774; Burke 1838). Aldingham manor and Gleaston Castle were thus incorporated into the holdings of the Cavendish family of Holker Hall (descendants of the Prestons), in whose hands they remained until Gleaston was sold to the present owner's family in 1922.

2.6 Post-abandonment

2.6.1 Although it is assumed that Gleaston Castle was dismantled soon after it ceased to be a manorial residence (and was described as a ruin in 1539), 17th and 18th century leases suggest parts of the site may have been habitable (Roper 1880; Kendal 1906). In the following period there are a

number of detailed descriptions of the building due to antiquarian investigation sources that can be utilised, which include some of the earliest views of the structure. A 1727 engraving by Samuel and Nathanial Buck shows the Castle in a ruinous state with a building up against the south east tower (Plate 10).

Plate 10: Engraving by Samuel and Nathanial Buck, 1727

Plate 11: View of Gleaston Castle by William Close (West 1805)

2.6.2 Subsequent illustrations produced in the early 19th Century by the local antiquarian William Close (Close in West 1805) and artist William Green (see Burkett and Sloss 1984) also exist and show a similar state of decay (Plate 11 to Plate 13). An engraving published in 1860 (Waugh 1860)

shows it in much the same condition as it appears today (Plate 14). This engraving is from the east, it does not include the present farmhouse (with a date stone of 1830), but clearly illustrates the eastern wall and gateway before the addition of farm buildings.

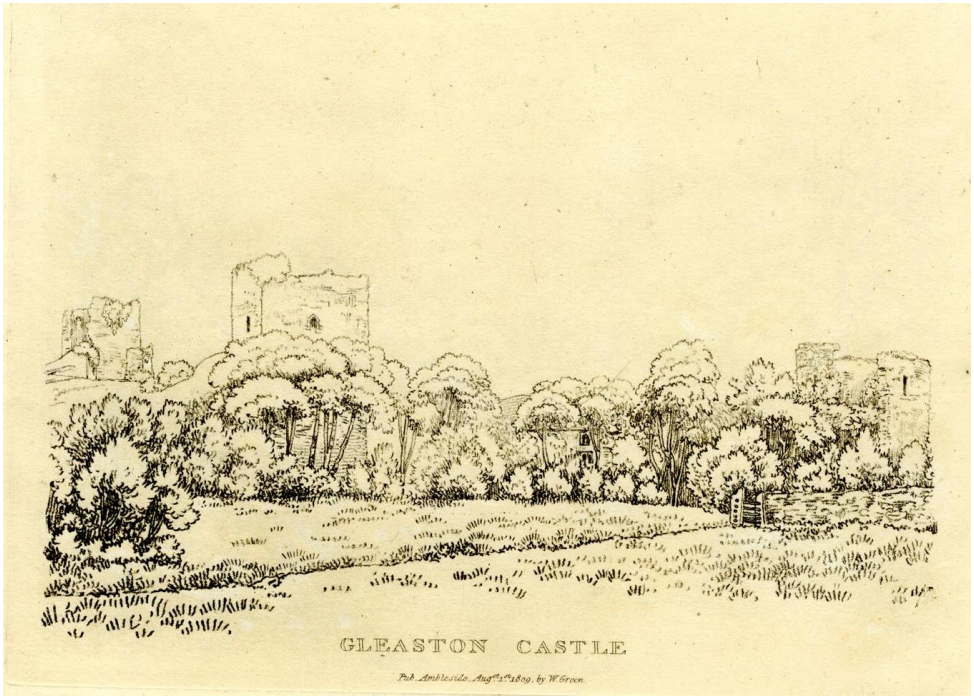

Plate 12: View of Gleaston Castle by William Green, dated 1809 (Green 1809)

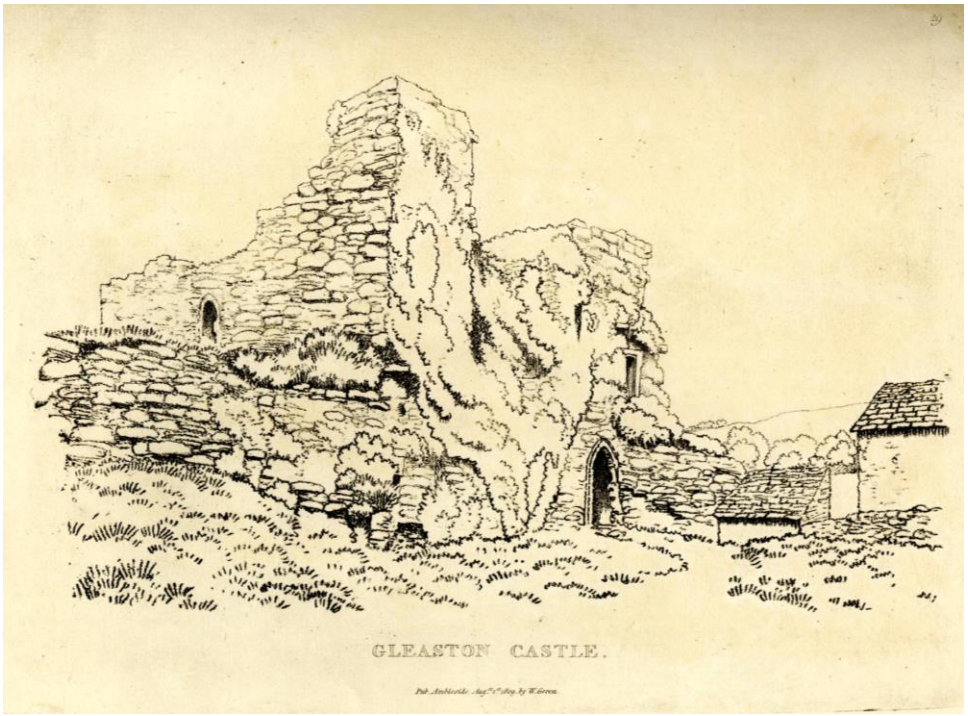

Plate 13: View of Gleaston Castle by William Green, dated 1809 (Green 1809)

Plate 14: View of Gleaston Castle dated 1860 (Waugh 1860)

3 Site Description and Appraisal of Survey Results

3.1 Introduction

3.1.1 The following section provides an overview of each of the structures forming the castle and comment on remains and condition noted as part of the survey.

3.2 The Hall

3.2.1 The hall (also referred to as the north west tower) has dimensions of approximately 28m by 16m and is defined by three separate areas of ruinous masonry surviving to a height of c.12m (Jackson 1990). The external ground level at the north of the house is higher to that of the south, allowing a cellared ground floor probably accessible at ground level from the south elevation. Kendal (1906) records a stone stairwell providing access from first floor height at the north of the building (see Figure 3). The north, west and east walls of the hall, alongside the southern pier, protruded from the line of the curtain wall, forming the north western boundary of the castle.

Eastern Gable (Plates 15a-d)

3.2.2 The easternmost of the three areas of masonry defining the hall is the remains of a gable wall containing embrasures/window pockets and a chimney. In its west face, an arched fireplace/oven and flue are identifiable at ground floor level, above which much of the chimney has collapsed. The remains of the stack are covered with ivy with the stonework beneath not discernible. In the corner of the east and north walls is a passage or doorway that served a privy, lit by a narrow arched sandstone window visible in the gable (Kendal 1906). The east-facing wall has lost some of its facing stones at ground floor level, one section apparently where a window pocket has collapsed. What appear to be the remains of the northern curtain wall, one or two stones in length, stand to a height of *c.* 2 m at the south east corner of the structure. Adjacent to the east gable, the north and south walls of the hall are represented by a turf covered mounds of rubble.

Plate 15a. The Hall: East facing eastern gable wall

Plate 15b. The Hall: West facing eastern gable wall

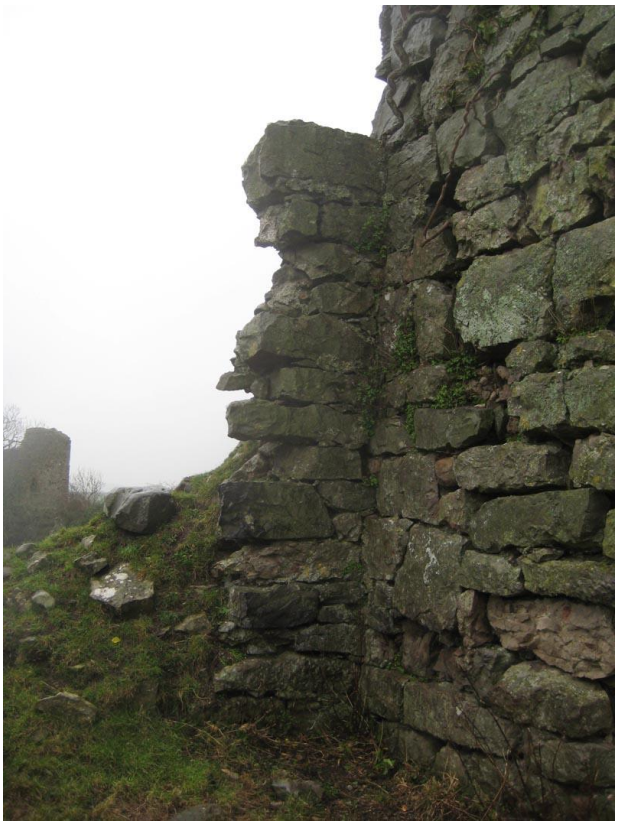

Plate 15c. Remains of northern curtain wall attached to eastern gable

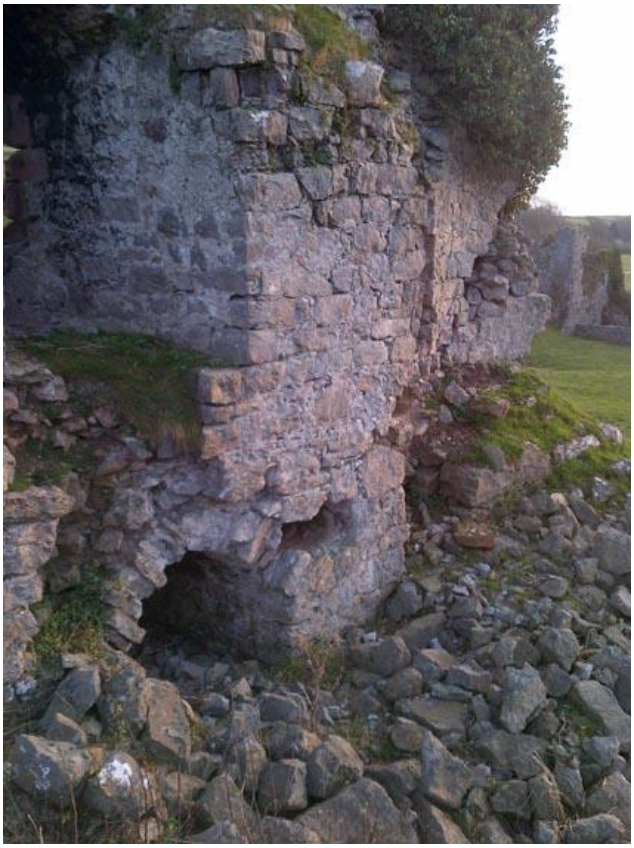

Plate 15d. The Hall: Close up of fireplace/oven and flue

West End Corner Section (Plates 15 e-f)

3.2.3 The north western element is represented by a corner section incorporating the west facing end wall and a small section of the building's north frontage. Due in part to the loss of face work, there are no internal features visible at ground floor level apart from corbelled stones to support the floor above. At first floor height an arched opening at the south end of the west wall is in precarious condition and may threaten the collapse of masonry above. The second floor incorporates three arched openings, a window, a doorway into a privy in the angle of the north and west walls and a possible fireplace at the south. Above the second floor the stonework appears loose and unconsolidated and the wall tops are covered with grass and shrubs. A vertical crack visible on the north end of the external elevation rises the full height of the wall and suggests its movement away from the north wall.

3.2.4 The north wall also incorporates an arched intramural passageway leading to a privy at first floor level, again the angle of the north and west walls. The passageway supports the stonework above, which is characterised by the partial remains of a large wide window with sandstone detailing.

Plate 15e The Hall: East facing corner section

Plate 15f. The Hall: Arched passageway in north wall

South section (Plates 15 g-h)

3.2.5 The southern section of the hall is characterised by a high narrow pier of stonework illustrating a substantial lean to the north. Externally, the wall appears to be buttressed by the remains of a gateway through the western curtain wall, which is now blocked. There is an arched window at second floor height, the top of which has eroded and may pose a threat to the unconsolidated stonework above. The eastern extent of the pier illustrates quoin work, suggesting it formed a corner to the L-shaped hall.

Plate 15g. The Hall: Leaning southern section

Plate 15h. The Hall: West facing corner section and south facing southern section

3.3 The Western Curtain Wall

3.3.1 The western curtain wall (Plates 16a-e) runs from the southern section and gateway of the main hall to the corner of the south west tower. At its northern extent the arched gateway, recorded in Waugh's sketch of 1860 (Norgate 2014) has now fallen with the entrance blocked by a modern drystone wall. To the south of the gateway the curtain wall stands to a height of *c*.3m and is in relatively good condition. A set of stone stairs onto the battlements was recorded by Kendal (1906).

Plate 16a. East facing south west tower and western curtain wall (south)

Plate 16b. East facing hall and western curtain wall (north)

Plate 16c. North facing wall of south west tower and east facing section of curtain wall

3.3.2 Approximately half way along the western curtain wall is a substantial lump of masonry. It is in poor condition and obscured by vegetation. This structure has seen interpretation as a 'bastion' or the base of a ruined tower defining a site layout preceding the construction of the hall (e.g. Kendal 1906; Curwen 1912).

3.3.3 South of the bastion structure, the curtain wall stands to a height of *c*. 9m and it is *c*.3m thick where it meets the south west tower. The wall is aligned slightly differently to that to the north of the bastion. Although externally it appears to be in good condition, internal inspection reveals only its outer face remains. Both Curwen (1912) and Kendal (1906)

recorded that this section of wall had a clay core, the erosion of which may account for its ruinous state. Internally, there was access onto the wall and into a doorway at first floor height of the south western tower.

Plate 16d. West facing western curtain wall and south west tower

Plate 16e. Full length of the east facing western curtain wall. Earthwork remains of the northern wall are in the foreground

3.4 The South Western Tower

3.4.1 The south west tower (Plates 17 a-c), situated downslope of the main hall, is *c.*10m by 9.4m and incorporating four storeys stands to a height of

*c.*19m (LUAU 1998). The interior of the structure is not accessible due to its ruinous condition but it consists of a ground floor store reached from a courtyard doorway, three single-room floors with fireplaces, latrines and small pointed arched sandstone windows (Kendal 1906; Curwen 1913). Battlements with a small watch tower were reached by a winding internal stair.

3.4.2 Externally, the west wall of the tower has a massive vertical crack which is *c*. 0.8m wide at its base at ground level from where it narrows progressively as it reaches the top of the wall. There is a single third floor pointed arched window. The east facing elevation has a denuded ground floor entrance and narrow arched windows at first and second storey height. A narrow crack from the top of the doorway runs upwards through the second storey window and continues to the wall top. A section of facing is missing at ground floor height adjacent to a possible collapsed window pocket and quoin work is missing from the south east corner. The south facing wall incorporates second and third floor windows. The north facing wall has arched windows at first and third storeys. The inner face of the wall, inside the curtain wall, is partly obscured by tumble and a large tree, but it is possible to discern a second floor arched doorway accessible from steps incorporated in the curtain wall.

Plate 17a. East facing wall of south west tower

Plate 17b. West facing wall of south west tower

Plate 17c. North and west facing walls of south west tower

3.5 The South Curtain Wall

3.5.1 The presence of the southern curtain wall is difficult to establish. The present boundary wall defining the enclosure appears to be of some age but does not represent the original curtain wall. What appears to be part of the original curtain wall is built up against (or is integral to) the south west corner of the south east tower. Its line corresponds with several lumps of masonry and a break of slope in the garden of the farmhouse close to the south west tower although it is interrupted by other walls and a small outbuilding.

3.6 The South Eastern Tower

3.6.1 The south east tower (Plates 18a-c), situated on low ground adjacent to the road, is of two storeys, measuring *c*.9.5m by 13m and standing *c*.12m high (LUAU 1998). As with the south west tower, its dangerous structural condition means it is inaccessible.

3.6.2 The ground floor, accessed through a wide arched door from the yard, contains a trapdoor to a cellar and has a fireplace and two windows (Kendal 1906). The upper room, accessed by a staircase in the west wall, contains a fireplace, latrine, arched windows and a doorway leading out onto the southern curtain wall (*ibid*.). The battlements and a watch turret are reached by an internal spiral stair (*ibid*.).

3.6.3 Most of the external south and east facing elevations are obscured by ivy making their condition impossible to establish. Both walls incorporate a single second storey window. The north facing wall is partly obscured by modern farm buildings, above which there is also a second storey window.

3.6.4 The west facing elevation of the south east tower has a ground floor doorway with a pointed red sandstone arch, and two second floor windows. The wall is in a dangerous structural condition with its north west corner exhibiting signs of imminent collapse. Part of the face of the wall has fallen away at second storey height. The precariously wedged voussoir of a badly eroded window threatens the existence of the unconsolidated core work and high battlements above.

3.6.5 The south west corner of the tower appears to have been added to at some point. It is covered with ivy and was not accessible for close examination; however Buck's sketch of 1727 (West 1774) shows a building, probably a house, built up against this part of the tower; elements of the low walls remaining form a small enclosure within the garden of the current farmhouse.

Plate 18a. South facing wall of south east tower

Plate 18b. East and north facing walls of south east tower

Plate 18c. West facing wall of the south east tower, and wall defining the south of the enclosure

3.7 The East Curtain Wall

3.7.1 The eastern curtain (Plates 19a-c) wall stands *c.*4m high externally where it has been incorporated into modern farm buildings. It survives in relatively good condition where it has been covered in, although the walls have been disturbed by blockwork piers built to support the roofs. Within the enclosure the wall is not visible, its west face being obscured by grassed-over rubble mounds. The original entrance to the enclosure was in the east wall, as illustrated by Waugh's 1860 engraving (Norgate 2014). There is a wide gap in the wall into which a small shed of traditional lime-mortared construction has been inserted (also shown in the engraving). The remainder of the gap is gated and currently acts as the entrance to the enclosure.

Plate 19a. The interior of the enclosure, the remains of the east wall and the south east tower

Plate 19b. West facing eastern curtain wall and farm buildings

Plate 19c. East facing eastern curtain wall inside farm buildings

3.8 The North Eastern Tower and the North Wall

3.8.1 A fourth tower at the north east corner of the complex and a wall connecting the tower to the hall are identifiable only as earthworks (Plate 20a). A wall within the modern farm buildings built over the eastern curtain wall survives in relatively good condition and may be the southern wall of the tower. A lump of ruined masonry survives in the modern boundary wall adjacent to the road; an infilled gap in this wall suggests it may have served as a relatively recent entrance to the site, or provided access for robbing. The remainder of the structure is represented by poorly defined low rubble mounds.

3.8.2 The northern curtain wall, running between the hall and the north east tower, is largely represented by an earthwork. Despite interpretations that the northern wall was never completed beyond footing height (e.g. Kendal 1906), it is discernible (although poorly defined) to *c.*2m in height at the south east corner of the hall (Plate 15c).

Plate 20a. Site of the north east tower, facing south east

3.9 Earthworks

3.9.1 Within the enclosure, the ground slopes quite steeply downhill between the hall and the southern towers. Towards the centre of the enclosure is an apparently terraced area which incorporates a square earthwork feature which appears to be the remains of a stone building. North of the earthwork remains of the north curtain wall, and external to the enclosure, there are a number of earthwork features including two north/south aligned features. One of these runs from the front of the hall into the fields to the north of the site.

4 Assessment of Significance

4.1 Architecture

4.1.1 Gleaston Castle is a 14th century fortified manorial site, its quadrangular form related to northern traditions of using square towers with few or no projections beyond the curtain wall (Cathcart-King 1991).

4.1.2 At present the castle's architectural significance can be interpreted only in terms of what is known about other fortified 14th century sites in Cumbria. Many remained unfinished as the threats of Scottish raids subsided; some were abandoned and others developed into larger and more comfortable manorial residences (Jackson 1990; Perriam and Robinson 1998; Brunskill 2002).

4.1.3 Additional to its regional importance as a 14th century fortified manor, the architectural significance of Gleaston Castle relates in part to its early abandonment; despite its ruinous condition, what remains appears to relate to its original and intended form.

4.2 History

4.2.1 Although the archaeological evidence from Aldingham motte suggests that it was abandoned during the 14th Century (Elsworth and Mace (ed) 2015), the available information relating to the early motte and moated manor and the move to Gleaston are based on the repetition of antiquarian sources and do not stand up to close scrutiny.

4.2.2 Interpretations of the castle's date (which vary widely) are largely based on trying to 'accommodate' its construction around the known Scottish raids of 1316 and 1322 and again rely on the repetition of antiquarian sources. However, Harrington was involved both with the repair and enlargement of Cartmel Priory following the 'Great Raid' of 1322 and with Harcla's unsanctioned truce with Bruce in 1323. These actions are of great regional and local significance and may add weight to the supposition that John Harrington was the architect of Gleaston Castle.

4.2.3 Although historical records pertaining to the Harringtons are limited, evidence for their activities across the wider landscape is significant. The

emparked landscape and three mills recorded in the mid-14th Century suggest Gleaston's local economic significance and the family's fashionable aristocratic concerns. After being summoned to parliament as a Baron in 1326 (Burke 1831), John Harrington clearly wished to demonstrate his new noble status. The construction of a large stone castle would have been a significant undertaking signalling the power and wealth of its owners. The patronage of Cartmel Priory also illustrates great expense with the Harrington tomb (representing the height of the English Decorated Style) being comparable to examples in Beverley and York Minsters (Hyde and Pevsner 2010; Cameron 2013).

4.2.4 The later significance of Gleaston Castle is even less well-understood than its earlier history. The best evidence for the castle in later periods is documented in antiquarian descriptions and sketches. These clearly illustrate the romantic notions ascribed to medieval ruins (see Thompson 1981), which are an important aspect of its present significance.

4.3 Archaeology

4.3.1 Neither the castle nor its environs have been subject to detailed archaeological recording or investigation, although the completion of the remote survey does now mean that this is possible. The archaeological importance of Gleaston Castle is therefore defined primarily by its potential; the ruins are a considerable archaeological resource and are key to establishing the castle's significances and presenting it to the public (see 6.4).

4.3.2 Section 7.1 details archaeological research priorities. The first of these should be a full fabric and landscape survey, based on the remote survey that has now been carried out. This could provide evidence of the constructional history of the castle, record earthworks within and outside the enclosure and aid the specification of future conservation works. Across the wider landscape, identification of historic field boundaries and other features may add to understandings of the castle's history and wider significance.

4.3.3 Excavations at Aldingham motte have recently seen re-analysis and provided material for radiocarbon dating (Elsworth and Mace (ed) 2015).

Given questions regarding the establishment of Gleaston Castle, further investigation of the motte and moated site have the potential to provide evidence which could more closely establish the relationship between the two locations.

4.4 Ecology

4.4.1 The ecological significance of the castle is presently unknown and requires assessment. It is likely that the towers and ruins provide habitats for a variety of species, some of which may be protected (see Section 8.3).

4.5 Tourism

4.5.1 The tourist industry forms a significant part of the Cumbrian economy, perhaps more so than in other regions (Cumbria Tourism 2008). Cumbria and the Lake District attract *c*. 40 million visitors per year, who spend around £1.1 billion (Cumbria Tourism 2014). Although Furness is outside the Lake District National Park it attracts *c.*1,908,000 visitors per year and approximately £60 million (Cumbria Tourism 2008).

4.5.2 The core attribute of Cumbria's tourist economy is its natural landscape and within this, cultural heritage has an important part to play. The aesthetic significance of Gleaston Castle is evidenced by the site itself, which is set within an idyllic rural landscape close to the coastline and headlands of Morecambe Bay. It is also close to the ruined Furness Abbey and the medieval fortification of Piel Castle, on Piel Island, which are important heritage attractions.

4.5.3 Despite the castle being closed to the public, it is visible from the road and stimulates a great deal of interest. At present, interpretation is limited to a small and outdated display at Gleaston Mill, an established tourist venue 0.5 km south of the castle, which incorporates a working water wheel, museum and cafe.

4.5.4 One of the qualities of a good visitor destination is the provision of information regarding its unique local history and its place within national events (Cumbria Tourism 2008). Alongside its mill, Gleaston Castle has the potential to contribute significantly to understandings of

the history of Furness and its relationship with the wider world. Taken together with other historic sites in its environs, the castle could form part of a coherent group of heritage destinations on the peninsula.

5 Defining Issues

5.1.1 Gleaston Castle's physical condition is the biggest threat to its current and potential significance. It is not currently possible to fully assess the extent of fabric deterioration across the site in detail. The completion of the remote survey does mean that a more detailed assessment can be carried out although it would still require more examination on site. It is apparent, however, that most of the areas in apparently dangerous condition are at significant heights (see below and Section 3). Most of these exhibit shrub and ivy growth obscuring inspection from the ground.

5.1.2 The remains of the castle are substantial and the potential costs involved in making them safe are considerable. It has been in a similar condition for many years and has passed through the hands of a succession of local authority archaeologists and English Heritage (now Historic England) representatives. The site is privately owned and the owners do not have the funds required to conserve the site; there is no coherent management structure in place and therefore no one responsible for moving these issues forward. The present owners are enthusiastic about progressing conservation but lack the funds; however, should ownership change this might potentially put the structure at more risk if the new owners were less interested. Such a change in ownership might also precipitate increased development around the site, although this is always a possibility, albeit slim, which would further impact on the setting of the Scheduled Monument.

5.1.3 The long term nature of the problem has been thrown into relief by the recent work at the site and the Bay Cycle Way (MBP nd b), established in line with Cumbria Tourism's (2008) strategy for promoting the less-visited regions of coastal Cumbria. Part of the route runs through Aldingham, passed Gleaston Castle and Gleaston Mill. Attention is likely to be focussed on the site and its continuing conservation and management issues. Given its significances, it is important the site sees some form of interpretation and public presentation.

6 Conservation Policies

6.1 Philosophy

6.1.1 Gleaston Castle is a Scheduled Ancient Monument, protected from any disturbance unless sanctioned by Historic England (English Heritage 1996a; DCMS 2010). Their policy for the conservation of archaeological ruins (English Heritage 2001) is one of minimum intervention; conservation works should be designed to avoid damage to archaeological or extant features and not affect the authenticity of the site.

6.1.2 Issues surrounding the conservation of Gleaston are similar to those tackled by Historic England at the ruinous Wigmore Castle in the Welsh Marches (Coppack 1999). Here, it was possible to design a scheme of recording and stabilisation which allowed the site to be conserved sensitively without significant damage to its ecology and 'natural' aesthetic (ibid.).

6.1.3 Public access is likely to be a requirement of any grants for repairs to Gleaston Castle. Its aesthetic attributes and quiet rural location demand a sensitive and low-impact approach, one which could also be economically sustainable in the longer term (see Coppack 1999).

6.1.4 Following archaeological recording, the castle's physical conservation requirements relate almost exclusively to masonry consolidation and repair. Ideas of 'minimal intervention' provide a valuable philosophy to direct conservation practise however this cannot always be achieved where large scale intervention is required to prevent structural collapse (Ashurst and Burn 2009).

6.2 Retaining Significance

6.2.1 Although the archaeological significance of the castle is considerable, there are limited current records of the site or its condition; the completion of the remote survey has provided a detailed photographic record, which in turn provides the potential means to carry out detailed recording of the fabric. Given that it seems unlikely that the site will see repair and consolidation in the near future, preservation by record should be prioritised, in the first instance by the instigation of a fabric survey,

which can be produced utilising the photographs taken during the remote survey.

6.2.2 Under the advice of an ecologist, works should be timed so as to avoid disturbance of any protected species identified (Gunnel 2012). Where necessary for visual access, and if safe to do so, plants and shrubs should be removed bearing in mind that these may be helping to consolidate the buildings (Coppak 1999; Ferraby 2007; English Heritage 2010; appendix iii).

6.3 Repair Priorities

6.3.1 Based on site visits and archaeological survey data, a structural engineer specialising in historic buildings should provide a condition report and technical specifications for repair derived from the identification of specific pathologies (e.g. Abrey 2007).

6.3.2 Section 4 describes some of the obvious problems visually exhibited at Gleaston Castle. These range from the loss of pointing mortar, robbing and de-stabilisation of walls and cores through to wide vertical cracks and the loss of window detailing creating structural collapse in the masonry above (see Ashurst & Burns 2007; How 2007; Government of Ireland 2010). The likely methods of repair and consolidation required range from stone replacement, consolidation and re-pointing of large expanses of wall to the dismantling and re-building of structurally dangerous areas.

6.3.3 Structurally dangerous fabric should be prioritised; the more general areas requiring consolidation pose less of an immediate safety threat (see Section 8).

6.4 Public Appreciation and Access

6.4.1 Any potential for the site to be re-opened to the public demands significant repair works which are unlikely to happen in the short term. However, the remote survey means that a record of the remains in their current condition can be visited ‘virtually’ through the 3D model. This is something that could also be adapted and improved as the understanding of the site increases and following more detailed recording through a range of possibilities, including 3D reconstructions and web-based

applications (Bath 1996). These could be utilised to provide interpretation to the public by facilitating remote access to the site, which might be preferable for a number of practical reasons to increased numbers of actual visitors.

6.4.2 The owners of Gleaston Mill are also keen to promote the castle and have conditionally said they would be happy to house an appropriate display (which would lead to increased numbers of visitors at the mill). Access between the two sites is currently by road and may not be suitable in health and safety terms; it could be possible however to establish an off-road footpath.

6.4.3 Should the castle be re-opened to the public in the future, car parking and safe access would be required. There is limited parking on the roadside close to the farmhouse, although this would interfere with farm traffic. There are only two access points at present; through farm buildings adjacent to the eastern curtain wall or via a field gate north of the site.

6.4.4 As this has the potential to increase traffic on the road adjoining the castle, which also serves a working farm, this has a number of safety implications. It may be possible to establish a small parking area and gated entrance away from the farm. This would need to take into account the presence of any archaeological features and further assessment would be necessary to ensure that such a development did not impact on areas of archaeological interest (Plate 4).

6.4.5 It is envisaged that visitor numbers would be relatively low and most would also visit Gleaston Mill. Beyond the provision of limited parking and small interpretation boards, there would be no need for the development of intrusive visitor facilities.

6.5 Management and Funding

6.5.1 Before any intervention can take place, the landowners, Historic England, the local and district authority and any other interested parties (including MBP) should reach agreement regarding the future management of the site. Consideration of successful consolidation projects, such as those

undertaken at Sherriff Hutton Castle, should form the basis on which proposals for Gleaston Castle are established.

6.5.2 Section 17 agreements under the *Ancient Monuments and Archaeological Areas Act* (1979) (often in conjunction with other partners such as Natural England and the local authority) are often used to help manage sites in private ownership (English Heritage 2014). The specific requirements of Gleaston Castle demand complex and major intervention.

6.5.3 Under the *Ancient Monuments and Archaeological Areas Act* (1979) it would be possible to set up a guardianship agreement between the site's owners and the local authority in conjunction with Historic England (English Heritage nd a). Although the local authority would not own the site, they would have rights over it; they would be responsible for its management, repair and maintenance and must also facilitate public access (*ibid*.). Given present local government funding environments, it seems unlikely that the local authority would appreciate the financial burden of Gleaston Castle unless appropriate external funding could be established.

6.5.4 A third option would be to establish an independent charitable trust to whom ownership would have to be transferred and who could manage the site (English Heritage nd a). Trusts exist for conservation, education and interpretation purposes and, in addition to public sources of income, are eligible for tax aid and grants from organisations such as the Heritage Lottery Fund (CEM 2010). Trusts can be financially and organisationally complex however and may require sites to be financially self-sufficient upon completion of conservation work.

6.5.5 At present, under Historic England's *Historic Buildings, Monuments and Designed Landscapes* grants scheme, finances may be available for the owners of designated sites for urgent works to prevent loss or damage where there is no other funding available (English Heritage nd b). It is possible that potential funders may be willing to provide the resources necessary to gain a better understanding of the site prior to grant applications for repairs. Historic England may assist with project development to determine the full scope of work required (English

Heritage 2014) and the authors have been advised that the Historic England North west Heritage at Risk team are currently looking at potential ways to take the site forward.

6.5.6 The grant obtained from the *Castle Studies Trust* to carry out the remote survey has effectively already initiated archaeological and historic research into the building, but further work is needed to more fully make use of the information it has produced. It may also be possible to gain funding from local bodies such as *Cumberland and Westmorland Antiquarian and Archaeological Society* (CWAAS 2013), Historic England Heritage at Risk Team or further funding from *Castle Studies Trust* (Castle Studies Trust nd) in order to carry this out. The possibility of carrying out research work, such as geophysical survey, via a university archaeology department such as the University of Central Lancashire (UCLAN), who have an active fieldwork component to their course (UCLAN nd) might also be considered. Whilst small-scale research projects will not address the castle's immediate structural issues, they may provide an impetus for action and influence future intervention, as well as provide understanding about its development, which would be of use during consolidation.

6.5.7 It is also worth noting that Cumbria County Council's *Historic Environment Strategy* (CCC 2005) includes the aims intended to increase awareness and understanding of Cumbria's historic environment, particularly in local communities, and the improvement of public access to heritage, which are clearly pertinent in the case of Gleaston Castle. This is especially important given the likely public interest and the opportunity to add to the site's tourism potential.

7 Recommendations and Research Priorities

7.1 Archaeology

High Priority

7.1.1 As discussed above it is important that a full archaeological survey of the castle's fabric is undertaken. As well as providing a basic and much-needed record of the castle, this will allow archaeological analysis and interpretation of the ruins and may provide evidence for building phases.

As well as establishing the site's significance, fabric assessment will provide records on which to base condition surveys and subsequent specifications for repair.

7.1.2 Given the issues pertaining to safe access of the structures, remote photographic survey, via UAV and other means, coupled with more traditional topographic survey using a total station was the only practical method of gathering the initial data (see Section 6.2). With this work now completed, it allows the opportunity for subsequent more detailed recording to be carried out and this should take the form of the production of stone-by-stone drawings of each elevation (Plate 5) and plans of each floor level showing the relationship to earthwork features so that a detailed phasing of the site can be produced. This will also allow the analysis, interpretation and illustration of the results in a variety of formats suitable for site work, archiving and presentation to the public (Coppack 1999; Bedford and Papworth 2009).

7.1.3 The appropriateness of photogrammetric survey for recording buildings is well established (e.g. Bryan *et. al.* 2009; Bedford and Papworth 2009). Although the use of UAV survey is relatively new to archaeology, it is becoming increasingly accepted as a useful technology especially for providing data from locations that would otherwise be inaccessible. UAV survey has recently been used by the National Trust to provide high-resolution photographic records of Corfe Castle to specify repairs (Aztecmedia 2015).

Medium Priority

7.1.4 Visible earthworks and terracing on the site (the dating of which are uncertain) have variously seen interpretation as a possible early tower or hall, barracks, stables, workshops and a 'pleasure-garden' to the north of the hall (e.g. Kendal 1906; Curwen 1913). The second priority for archaeological research would be the completion of a measured earthwork survey, based on the data captured as part of the remote survey (Plate 4). Particular points of interest within the castle enclosure would be the terraced area in its centre, the poorly defined earthworks adjacent to the south west tower, the north wall and north west tower. Outside the

enclosure, the survey should include the whole area to the north of the northern curtain wall up to the modern field boundary.

7.1.5 Following or as an adjunct to the measured survey, geophysical survey of these areas should also be undertaken. Whilst the efficacy of geophysical survey on earthworks formed largely of stonework may be questionable, the technique could illustrate the existence of sub-surface archaeological features. If deemed appropriate, the survey results could lead to a specification for trial trenching to establish the condition, survival and extent of archaeological remains. Survey and the possibility of small scale excavation have the potential to reveal previously unrecognised features, to further understanding of the site and could be used to enhance its public appreciation.

7.1.6 In the event of repair and consolidation works taking place, the records produced could also form base plans for designing site works and access so as not to disturb archaeological features.

7.2 Historical and Landscape Research

7.2.1 As discussed, the landscape beyond Gleaston Castle may reveal something of its local context. Studies of the castle's archaeological landscape could provide important historical and associative evidence to further identify and interpret its significance and manorial history. Such wider landscape studies are one of the initiatives outlined in the research agenda for the medieval period in the North West (Newman and Newman 2007, 97).

7.2.2 In addition to the possibility of identifying the medieval emparked landscape (see Section 2.4 and Figure 3), there are large limestone quarries, a limekiln and a variety of earthwork features including medieval field systems in the immediate environs of the castle. In conjunction with archival research and the analysis of historic maps, surveys of aspects of the surrounding landscape are likely to reveal features and activities associated with its history.

7.2.3 At a wider geographical scale, little is known about the history of Aldingham manor prior to the construction of Gleaston Castle. Aldingham motte has seen small-scale excavation and been surveyed in some detail (Davison 1969; Elsworth and Mace 2015). However, virtually nothing is known about the associated moated site; given its likely significance to the dating of Gleaston Castle, detailed survey and investigation of this site should be prioritised.

7.2.4 These wider studies, incorporating various avenues of research, would benefit the understanding of the history of Aldingham manor and may add to the significance of Gleaston Castle. As discussed above Gleaston Mill is not only intimately linked with the castle but is also a heritage attraction; furthering and disseminating understanding of the medieval history of the area would be beneficial both for the purposes of research and tourism.

7.3 Research and Recording in Advance of and During Construction and Consolidation Works

7.3.1 Should repair and consolidation works to the castle go ahead, archaeological recording should take place at various times and levels of detail throughout the conservation project. This will be specified by English Heritage as part of Scheduled Monument Consent. Specific interventions should be recorded archaeologically, both before and after consolidation works (Coppack 1999; Ashurst and Burn 2007). Whilst data derived from the fabric survey may prove sufficient for records prior to the works, closer examination and recording will be required once appropriate access can be provided.

7.3.2 Construction works are likely to involve the erection of structural scaffolding and the use of vehicles on site and potential damage to archaeological deposits should be considered (Abrey 2007). It may be necessary to ascertain soil depths and the existence of archaeological deposits in areas of possible disturbance.

8 Conservation Priorities and Methods

8.1 Repair Priorities

8.1.1 Section 3 describes the remains of Gleaston Castle based on a limited visual inspection (not including the interiors of the southern towers) and identified a number of structural problems. Given the ruinous condition of the site generally, it may be that some of the cracks and fractures are historic and may be relatively stable. Others however are likely to require immediate attention to arrest the possibility of catastrophic structural failure.

8.1.2 The site needs to be investigated in detail by a structural engineer, who will be able to identify building pathologies and specify methods and priorities for repair and consolidation.

8.1.3 The highest priorities for repair relate to those areas which are dangerously unsafe. Whilst the site is not open to the public, it is relatively accessible. The southern towers are close to the farmhouse and the road and present a danger to the owners of the site as well as to passers-by. The west wall of the south east tower is an immediate priority as it appears to be at risk of imminent collapse. The wide vertical crack in the west face of the south west tower is also of concern. Elements of the north west hall are in very poor condition, for example where eroded window openings threaten the collapse of the masonry above. The south pier exhibits very loose masonry at wall top height and leans visibly to the north.

8.1.4 Where extensive intervention is required this may include the dismantling of unstable elements, the insertion of structural supports and subsequent rebuilding or consolidation of core and face work (see Ashurst and Burn 2007).

8.1.5 Additional to structural interventions that are an immediate priority, most elements of Gleaston Castle require general repair and consolidation. This includes the stabilisation of loose core work and wall tops. The replacement of lost facing stones may be required in

some areas to protect exposed rubble cores and stabilise specific areas of masonry. Extensive re-pointing will also be necessary to consolidate loose stonework and prevent further water ingress.

8.2 Thermal/Moisture Dynamics and Repair Materials

8.2.1 The decay and destabilisation of masonry ruins is usually based on uncontrolled water ingress into wall cores. This is often exacerbated by wind-driven rain, salt mobilisation and freeze-thaw cycles which can damage not only the core, but also sensitive materials such as lime mortar and soft stone (How 2007; Laycock and Wood 2013).

8.2.2 Ruinous masonry structures can move due to the dynamic cycles of temperature, wetting and drying to which they are exposed. In the past, many have been repaired with inflexible materials such as concrete and hard cement mortars. These can cause cracking due to the differential permeability and flexibility of the softer materials surrounding them (Abrey 2007; Ashurst and Burns 2007). The use of lime mortars, grouts and cements which are similar in nature to those used in the original structure is required to maintain flexibility and porosity (e.g. Oxley 2003; Abrey 2007; Wood and Burns 2013). Studies of hard and soft capping for wall-tops in ruined structures have illustrated that capping with lime and earth is preferable to cementitious mortars as it reduces thermal and moisture dynamics and contributes positively to site ecology (Lee et. al 2009; Coppack 2009).

8.3 Vegetation and Ecology

8.3.1 Plans to conserve the site should anticipate and resolve the potential conflicts between attempts to stabilise its ruinous masonry and the effects this might have on the site's ecology and environment. Like many ruinous sites, Gleaston Castle is likely to have a diverse ecology and prior to any works being initiated, must be subject to a biological assessment.

8.3.2 It is possible that the two ruined towers in particular may be colonised by bats and/or owls. The presence of protected species is

likely to affect the timing of any work and may require the provision of substitute nesting/roosting accommodation (Gunnel 2012). Reptiles and insects are common in voided walls and weathered surfaces and their presence may require consideration in conservation methodologies (Ferraby 2007). The presence of burrowing animals should also be established as these may impact on ground stability and the survival or archaeological deposits.

8.3.3 In order to undertake archaeological recording and establish the condition of various elements of the castle, it will be necessary to remove ivy and other vegetation. Ivy and trees roots are invasive; they can grow into areas of masonry and their removal can result in local collapse or destabilisation. For this reason, the removal of vegetation should not take place until a work programme has been established (Ashurst and Burn 2007; Ferraby 2007).

8.3.4 Areas of masonry which have the potential to retain moisture are suitable for a wide variety of plants. Horizontal ledges, wall tops in particular, provide a suitable environment and often support grasses, mosses and shrubs forming an organic mat (Ferraby 2007). The majority of wall tops at Gleaston, in particular those of the north west hall, exhibit the growth of grasses and woody shrubs. As outlined above, soft capping of exposed wall tops can be beneficial both to building conservation and ecological diversity. If appropriate, plants can be removed to facilitate survey and consolidation, and if kept in suitable conditions can be re-instated following the required works (Ferraby 2007).

9 Bibliography

Primary Sources

CAC(B) Z/2509, *c*1905 *Gleaston Castle Notes & Plans by Harper Gaythorpe*

CAC(B) ZK/204/6, *c*1910 *Gleaston Castle Plan (part of unpublished manuscript 'Muchland and its Owners' by WB Kendall)*

Secondary Sources

Abrey, G, 2007 Condition Surveys of Masonry Ruins, in J Ashurst (ed), *Conservation of Ruins*, Oxford, 44-81

Ashurst, J, and Burn, C, 2007 Philosophy, Technology and Craft, in J Ashurst (ed) *Conservation of Ruins*, Oxford, 82-145

Axtecmedia 2015 *Case study Corfe Castle*, http://www.aztecskycam.com/case-studies/2/60/Corfe-Castle

Barnes, F, 1968 *Barrow and District*, 2nd edn, Barrow in Furness

Bath, B, 2006, The Use of New Technology in the Interpretation of Historic Landscapes, in A Hems and M Blockley (eds), *Heritage Interpretation*, Abingdon, 163-172

Bedford, J, and Papworth, H (eds), 2009 *Measured and Drawn: Techniques and Practise for the Measured Survey of Historic Buildings*, Swindon, available at: www.english-heritage.org.uk/publications/measured-and-drawn/

Brunskill, R, 2002 *Traditional Buildings of Cumbria: The County of the Lakes*, London

Bryan, P, Blake, B, and Bedford, J, 2009 *Metric Survey Specifications for Cultural Heritage*, Swindon

Burke, J, 1831 *A General and Heraldic Dictionary of the Peerages of England, Ireland and Scotland; Extinct, Dormant, and in Abeyance*, London

Burke, J, 1838 *Genealogical and Heraldic History of the Commoners of Great Britain and Ireland, Enjoying Territorial Possessions or High Official Rank: But Uninvested with Heritable Honours, Volume 4*, London

Burkett, ME, and Sloss, JDG, 1984 *William Green of Ambleside: Lake District Artist (1760-1823)*, Kendal

Cameron, J, 2013 The Harrington Tomb in Cartmel Priory: Making, Agency and Audience, unpubl dissertation, available at: http://www.academia.edu/9519717/The_Harington_Tomb_in_Cartmel_Priory:_Making_agency_and_audience

Castle Studies Trust, nd *Grants from Castle Studies Trust*, available at: http://www.castlestudiestrust.org/grants.html

Cathcart-King, D, 1991 *The Castle in England and Wales: an Interpretative History*, Abingdon

CEM, 2010 Private Houses Open to the Public, *Heritage Management and Cultural Tourism*, paper 6062, Reading

Coppack, G, 1999 Setting and Structure: the Conservation of Wigmore Castle. In Chitty, G, and Baker, D, (eds), *Managing Historic Sites and Buildings: Reconciling Repair and Presentation*, Abingdon, 60-70

Cumberland and Westmorland Antiquarian and Archaeological Society (CWAAS), 2013 CWAAS Grants and Bursaries, available at: http://www.cumbriapast.com/cgi-bin/ms/main.pl?action=grants

Cumbria County Council (CCC), 2005 *Cumbria County Council's Historic Environment Strategy*, unpublished

Cumbria Tourism, 2008 A Realistic Dream: a 10 Year Strategy for Improving the Visitor Economy of Cumbria and the Lake District, available at: http://mediafiles.thedms.co.uk/Publication/CU-CTB/cms/pdf/realistic-dream.pdf

Cumbria Tourism, 2014 Research in Cumbria: Surveys and Data Overview, available at: http://www.cumbriatourism.org/research/surveys-data.aspx

Curwen, J, 1913, The Castles and Fortified Towers of Cumberland, Westmorland and Lancashire North of the Sands, *Cumberland and Westmorland Antiquarian and Archaeological Society*, extra series 13, Kendal

Davison, B, 1969 Aldingham Motte, *Current Archaeology* **2,** 23-24

Department of Culture Media and Sport (DCMS), 2010 Scheduled Monuments, available at: https://www.gov.uk/government/publications/scheduled-monuments-policy-statement.

Dickinson, J, 1985 The Harrington Tomb at Cartmel Priory Church, *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, 2nd ser, **85**, 115-122

Elsworth, DW, and Mace, T (ed), 2015 Aldingham Motte Cumbria and its Environs in the Medieval Period, *Cumberland and Westmorland Antiquarian and Archaeological Society Cumbria Archaeological Research Reports* **5**, Bowness-on-Solway

Emery, A, 1996 *Greater Medieval Houses of England and Wales 1300-1500: Volume 1 Northern England,* Cambridge

English Heritage, 1970 *Gleaston Castle, List entry Number: 1312114*. available at: http://list.english-heritage.org.uk/resultsingle.aspx?uid=1312114

English Heritage, 1996a *Enclosure Castle Known as Gleaston Castle, Scheduling List Entry Number 101396*, available at: http://list.english-heritage.org.uk/resultsingle_print.aspx?uid=1013966&showMap=1&showText=1

English Heritage, 1996c *List Entry Summary: Moat Farm Moated Site, Scheduling List Entry Number 1013820*, available at: http://list.english-heritage.org.uk/resultsingle.aspx?uid=1013820

English Heritage, 2001 *English Heritage Policy Statement on Restoration, Reconstruction and Speculative Recreation of Archaeological Sites Including Ruins*, available at: https://www.english-heritage.org.uk/publications/re-arch2001.pdf

English Heritage, 2010 Ivy on Walls Seminar Report, available at: https://www.english-heritage.org.uk/publications/ivy-on-walls/

English Heritage, 2014 *Heritage at Risk Register 2014: North West*. available at: http://www.english-heritage.org.uk/publications/har-2014-registers/nw-HAR-register-2014.pdf

English Heritage, nd a Public or Charitable Ownership and Guardianship of Listed Buildings and Other Heritage Assets, available at: http://www.english-heritage.org.uk/professional/advice/hpg/HAR/ownership-gardianship/

English Heritage, nd b Grants for Monuments, Historic Buildings and Designed Landscapes, available at: https://www.english-heritage.org.uk/professional/funding/grants/grants-available/hbmdl/

Evans, H, 2007 Who's Afraid of the Big Bad Woods: Forest Wilderness in the Middle Ages, In A Chadwick (ed), *Stories from the Landscape: Archaeologies of Inhabitation*, *British Archaeological Report* (International Series) **1238**, 73-86

Farrer, W, and Brownbill, J, 1914 *A History of the County of Lancashire:* **8**, London

Ferraby, S, 2007 The Ecology of Ruin Sites, in J Ashurst (ed), *Conservation of Ruins*, Oxford, 194-211

Gleaston Mill, nd The Early Mill, available at: http://www.watermill.co.uk/watermill/mainsitemill.htm

Government of Ireland, 2010 *The Conservation and Repair of Masonry Ruin*, Dublin

Gray, S, 2015 UAV Survey: a Guide to Good Practise. Available at: http://guides.archaeologydataservice.ac.uk/g2gp/AerialPht_UAV#ref-AerialPht_UAV-1

Green, W, 1809 *Seventy-Eight Studies from Nature*, Ambleside

Gunnel, K, 2012 Conserving Bats and Buildings: a Natural Synergy, available at: http://www.buildingconservation.com/articles/bats/bats.htm

Hindle, P, 1984 *Roads and Trackways of the Lake District*. Nottingham

How, C, 2007 Stability and Survival, in J Ashurst (ed) *Conservation of Ruins*, Oxford, 11-43

Hyde, M, and Pevsner, N, 2010 *The Buildings of England: Cumbria: Cumberland Westmorland and Furness.* London:

Jackson, M, 1990 *Castles of Cumbria*. Carlisle

Jisc. 2015 Archaeology Use Case: 3D Surveying with a UAV, available at: http://www.jiscdigitalmedia.ac.uk/infokit/3d/uav-survey

Kendal, WB, 1906 Gleaston Castle, *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, 2nd ser, 6, 184-190

Lancaster University Archaeological Unit (LUAU), 1998. *Gleaston Castle, Cumbria: Feasibility Study, May 1998*, unpub rep

Laycock, E, and Wood, C, 2013 Understanding and Controlling the Ingress of Driven Rain Through Exposed Solid Wall Masonry Structures, available from Sheffield Hallam University Research Archive (SHURA) at: http://shura.shu.ac.uk/7508/

Lee, Z, Viles, H, and Wood, C, (eds), 2009 Soft Capping Historic Walls: a Better Way of Conserving Ruins? *English Heritage Research Project Report*, available at: http://www.english-heritage.org.uk/publications/soft-capping-historic-walls/

Maxwell, H, 1913 *The Chronicle of Lanercost, 1272-1346, Glasgow*

Morecambe Bay Partnership, nd a *About Us*, available at: http://www.morecambebay.org.uk/about-us

Morecambe Bay Partnership, nd b *Communities, Heritage & Nature*, available at: http://www.morecambebay.org.uk/what-h2h

Morecambe Bay Partnership, nd c *Bay Cycleway*, available at: http://www.morecambebay.org.uk/bay-cycle-way

Newman, C and Newman R, 2007, The Medieval Period Research Agenda, in Brennand, M (ed) *Research and Archaeology in North West England, Volume 2 Research Agenda and Strategy* 95-114

Ordnance Survey, 2008 *The English Lakes: South-Eastern Area, Windermere, Kendal & Silverdale*, Outdoor Leisure **7**, 1:25,000

Oxley, R, 2003 *Survey and Repair of Traditional Buildings: A Sustainable Approach*, Shaftsbury

Perriam, D, and Robinson, J, 1998 *The Medieval Fortified Buildings of Cumbria: an Illustrated Gazetteer and Research Guide*, Cumberland and Westmorland Antiquarian and Archaeological Society, extra series **24**, Gateshead

Rackham, O, 1986 *The History of the Countryside*, London

Raymond, M, 2012 A Forgotten Medieval Powerhouse: Furness Abbey, *New Histories*, **3:7**, available at: http://newhistories.group.shef.ac.uk/wordpress/wordpress/a-forgotten-medieval-powerhouse-furness-abbey/

Roper, WO, 1880 *The Churches, Castles and Ancient Halls of North Lancashire*, Lancaster

Salter, M, 1998 *The Castles and Tower Houses of Cumbria*, Malvern

Thompson, M, 1981 *Ruins: Their Preservation and Display*, London

UCLAN, nd *Archaeology BSC (Hons)*, available at: http://www.uclan.ac.uk/courses/bsc_hons_archaeology.php

Waugh, E, 1860 *Over Sands to the Lakes*, Manchester

West, T, 1774 *The Antiquities of Furness*, London

West, T, 1805 *The Antiquities of Furness*, 2nd edn with additions by W Close, Ulverston

Wood, C, and Burns, C, 2013 Grouting Solid Masonry Walls, available at: http://www.buildingconservation.com/articles/grouting/grouting.htm