

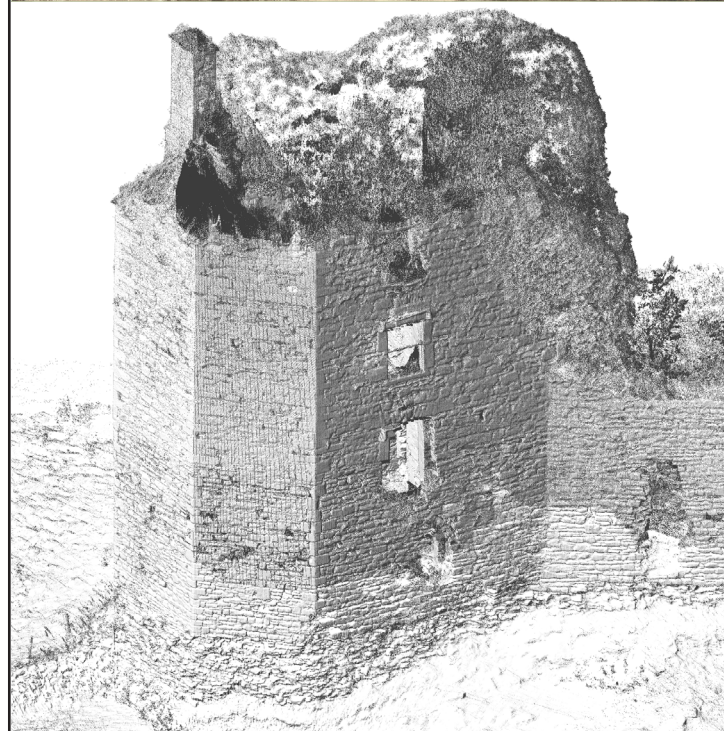
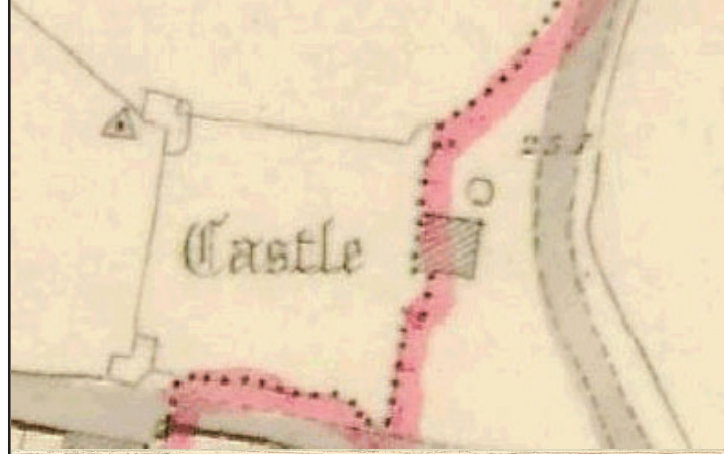
Archaeological Survey
Ballintober Castle
Ballintober, Co. Roscommon
Ireland

RO027-048002-

Niall Brady

for

Castle Studies Trust
2014 Grant award



The archaeological survey work described in this report has been funded by the Castle Studies Trust.

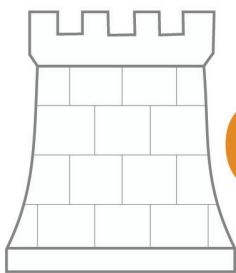
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CONTENTS

EXECUTIVE SUMMARY	1
LIST OF FIGURES	2
LIST OF PLATES	2
1.0 INTRODUCTION	6
2.0 LOCATION	7
3.0 HISTORICAL BACKGROUND	9
4.0 CARTOGRAPHIC SOURCES	25
5.0 ILLUMINATED SOURCES	26
6.0 PREVIOUS ARCHAEOLOGICAL WORK	29
7.0 2014 TOPOGRAPHIC SURVEY	33
8.0 ACKNOWLEDGEMENTS	52
9.0 BIBLIOGRAPHY	53
10.0 APPENDIX 1: 3D LASER SCANNING, BALLINTOBER CASTLE, SURVEY REPORT	55

EXECUTIVE SUMMARY

The Castle Studies Trust has generously funded a new topographical survey of Ballintober Castle, Co. Roscommon, Ireland. The castle is believed to have been built at the start of the 14th century by Richard de Burgh, Earl of Ulster and perhaps the wealthiest and most powerful Anglo-Norman baron in Ireland at the time.

Ballintober is a keepless castle, comprising four corner towers and a fortified entrance positioned on its eastern wall. The site is far larger than other keepless castles in Ireland, and notably the royal Castle of Roscommon (commenced in 1269), and another de Burgh castle at Ballymote, Co. Sligo (very early 1300s).

Geophysical surveys completed in 2008 and 2009 reveal a sequence of features within the large open interior space that form a courtyard, but the relationship of these elements to the perimeter walls is not known.

The topographical survey completed in 2014 presents a revised and up-to-date survey that can provide more detail on the component parts of the castle complex and create a new baseline of information to facilitate future conservation needs. The report presents a narrative of the castle's structure, and is supported by laser-scanned survey detail and a sequence of photographs.

The inherent asymmetry of Ballintober Castle's design is known. The individual nature of its component parts is important to understanding the site's chronology and context. The castle lacks the coherence and integration of Roscommon and Ballymote Castles. The four corner towers are quite individual structures, and the western towers retain elaborate elements. The ground-floor ceiling of the southwest tower may have been an intricate timber structure, while the entire northwest corner tower was remodelled in the 17th century and retains lavish stonework that celebrates the wealth and confidence of the Catholic O'Connor lords who resided there at the time. It is however possible that the noticeably smaller and more ruined southeast corner tower retains clues to the earliest castle construction on the site, and this element may be contemporary with the twin-towered eastern entrance. What emerges is a sense of a complex and dynamic history to the castle that would benefit from further enquiry through investigation, the nature and extent of which is now admirably informed by the present survey.

The electronic version of this report is divided into four (4) .pdf files, dealing with the text, figures 1-17, figures 18-34, and plates respectively. The point-cloud data and the photographic record are retained by the author.



27/01/2015

LIST OF FIGURES

- Figure 1 Plan of Ballintober Castle, published in 1889
Figure 2 Location map
Figure 3 Landscape context based on surrounding townland units
Figure 4 Ortho Image, showing an aerial perspective of the landscape in 2012
Figure 5 Distribution of royal and baronial principal places within Connacht
Figure 6 Comparative groundplans of keepless castles
Figure 7 Detail of John Browne's Map of Connacht, 1591
Figure 8 Nineteenth-century maps of Ballintober
Figure 9 Ordnance Survey 25-inch/mile map detail showing Ballintober
Figure 10 Ballintober Castle, as drawn by Bigari in 1779
Figure 11 Ballintober Castle, historic images
Figure 12 Gradiometry and Resistance Survey, Ballintober Castle 2008
Figure 13 Ground Penetrating Radar Survey, Ballintober Castle 2009
Figure 14 Ballintober Castle ground plan and sections, 2014
Figure 15 Ortho-images of Castle's west wall, exterior and interior view
Figure 16 Ortho-images of Castle's east and south walls, exterior view
Figure 17 Ortho-images of Castle's north wall, exterior and interior view
Figure 18 Plan and section of the mural stairs on the north wall
Figure 19 Isometric view through the Southwest tower, looking southwest
Figure 20 Southwest corner tower, floor plans and sections
Figure 21 Ortho-images showing internal perspectives of Southwest tower
Figure 22 Isometric view of the Northwest tower, looking east
Figure 23 Northwest corner tower, floor plans and sections
Figure 24 Ortho images showing interior perspective of main chamber in Northwest tower
Figure 25 Long-section view through the Northwest tower
Figure 26 Isometric view of the Northeast tower, looking northeast
Figure 27 Northeast corner tower, floor plans and section
Figure 28 Ortho images showing north and east walls of Northeast tower
Figure 29 Isometric view of the Southeast tower, looking southeast
Figure 30 Southeast corner tower, floor plans and section
Figure 31 Ortho images showing east and south walls of Southeast tower
Figure 32 Isometric view through eastern entrance, looking out southeast
Figure 33 Eastern entrance towers, floor plans and section
Figure 34 Ortho images showing internal perspectives of eastern entrance

LIST OF PLATES

- Plate 1 Ballintober Castle, from the Southwest
Plate 2 Roscommon Castle, from the Southwest
Plate 3 Ballymote Castle, from the Northwest
Plate 4 Ballintober Castle, view looking East of the fosse
Plate 5 Ballintober Castle, view looking South of the fosse
Plate 6 Ballintober Castle, view looking East of the fosse
Plate 7 Ballintober Castle, view looking South of the fosse
Plate 8 Ballintober Castle, view looking North showing the counterscarp bank
Plate 9 Ballintober Castle, view looking at the stonework on the exterior of the west wall
Plate 10 Ballintober Castle, view looking at the exterior of one of the gun loops on the north wall

- Plate 11 Ballintober Castle, view looking at interior of west wall on the south side
- Plate 12 Ballintober Castle, view looking view at interior of west wall
- Plate 13 Ballintober Castle, view looking at interior of west wall on the north side
- Plate 14 Ballintober Castle, view looking at interior of north wall showing gun loop
- Plate 15 Ballintober Castle, view looking at interior of north wall showing gun loop
- Plate 16 Ballintober Castle, view looking at interior of north wall showing gun loop
- Plate 17 Ballintober Castle, view looking northeast showing the entrance to the mural stairs
- Plate 18 Ballintober Castle, view looking at the exterior of the southwest corner tower
- Plate 19 Ballintober Castle, view looking at the exterior of the southwest corner tower
- Plate 20 Ballintober Castle, view looking South at exterior of the southwest corner tower
- Plate 21 Ballintober Castle, view looking North from interior of the southwest corner tower
- Plate 22 Ballintober Castle, southwest corner tower, view looking at ground floor window in south wall
- Plate 23 Ballintober Castle, southwest corner tower, view looking at ground floor window in east wall
- Plate 24 Ballintober Castle, southwest corner tower, view looking at ground floor window and fireplace in west wall
- Plate 25 Ballintober Castle, southwest corner tower, view of the east window
- Plate 26 Ballintober Castle, southwest corner tower, view looking up the ground-floor chimney flue
- Plate 27 Ballintober Castle, southwest corner tower, view looking at the steeply-pitch arched recess above the south window
- Plate 28 Ballintober Castle, north chamber in southwest corner tower, view looking at west-facing window
- Plate 29 Ballintober Castle, north chamber in southwest corner tower, view looking at the oblique corner in the south angle
- Plate 30 Ballintober Castle, north chamber in southwest corner tower, view looking north to the inserted garderobe wall
- Plate 31 Ballintober Castle, southwest corner tower, view looking at the north side of the east wall
- Plate 32 Ballintober Castle, southwest corner tower, view looking up at the first- and second-floor windows on the east wall
- Plate 33 Ballintober Castle, southwest corner tower, view looking up to the fireplace on the first floor west wall
- Plate 34 Ballintober Castle, southwest corner tower, view looking up to the first and second floors on the east wall
- Plate 35 Defensive slit openings, Roscommon Castle
- Plate 36 Defensive slit openings, Ballymote Castle
- Plate 37 Ballintober Castle, northwest corner tower, view from outside looking at northeast-facing window on ground floor
- Plate 38 Ballintober Castle, northwest corner tower, view looking onto the north exterior at ground-floor level, showing two blocked-up openings of former slit windows
- Plate 39 Ballintober Castle, northwest corner tower, view looking above entrance at mezzanine level to a short vertical opening

- Plate 40 Ballintober Castle, northwest corner tower, view showing the buttressing added to the south wall
- Plate 41 Ballintober Castle, northwest corner tower, view looking through entrance to two doorways
- Plate 42 Ballintober Castle, northwest corner tower, view of doorway into stair passage
- Plate 43 Ballintober Castle, northwest corner tower, view of the ground-floor window in the east wall
- Plate 44 Ballintober Castle, northwest corner tower, view of the north end of the ground floor level
- Plate 45 Ballintober Castle, northwest corner tower, view showing the ground floor looking south towards the entrance
- Plate 46 Ballintober Castle, northwest corner tower, view looking west to the base of the stairs
- Plate 47 Ballintober Castle, northwest corner tower, detailed view of base of steps
- Plate 48 Ballintober Castle, northwest corner tower, detail of ceiling above entrance to first floor
- Plate 49 Ballintober Castle, northwest corner tower, external view showing the remains of the west-facing windows on the ground- and first-floor levels
- Plate 50 Ballintober Castle, northwest corner tower, view of the east-facing window opening in the first floor
- Plate 51 Ballintober Castle, northwest corner tower, view of the first-floor fireplace
- Plate 52 Ballintober Castle, northwest corner tower, view looking out (West) of the doorway into the mezzanine first-floor level
- Plate 53 Ballintober Castle, northwest corner tower, view of stairwell light in south wall between the first and second floors
- Plate 54 Ballintober Castle, northwest corner tower, view of the spiral stairs ascending above the first floor
- Plate 55 Ballintober Castle, northwest corner tower, looking at the west-facing second- and third-floor windows from outside
- Plate 56 Ballintober Castle, northwest corner tower, view looking at the west-facing second- and third-floor windows from inside
- Plate 57 Ballintober Castle, northwest corner tower, view of the second floor
- Plate 58 Ballintober Castle, northwest corner tower, detail of the plaque adorning the right (South) side of the second-floor fireplace
- Plate 59 Ballintober Castle, northwest corner tower, view looking up to the third-floor fireplace in the north wall
- Plate 60 Ballintober Castle, northwest corner tower, exterior view of the roofline and chimney
- Plate 61 Ballintober Castle, northeast corner tower, view looking north at the standing remains
- Plate 62 Ballintober Castle, northeast corner tower, view looking at the gun loop at ground level
- Plate 63 Ballintober Castle, northeast corner tower, view of reworked recessed opening in northeast angle of the ground floor
- Plate 64 Ballintober Castle, northeast corner tower, view of the fireplace on the east wall of the first floor
- Plate 65 Ballintober Castle, southeast corner tower, exterior view from the southeast
- Plate 66 Ballintober Castle, southeast corner tower, interior view from the north
- Plate 67 Ballintober Castle, southeast corner tower, view of the ruined recessed opening in the central angle

- Plate 68 Ballintober Castle, southeast corner tower, view looking south, showing stone massing above the ground-floor openings
- Plate 69 Ballintober Castle, eastern entrance, showing its two towers
- Plate 70 Ballintober Castle, eastern entrance, view from within handball alley showing the standing remains of the north tower
- Plate 71 Ballintober Castle, eastern entrance, view looking north across entrance from the south tower to the north tower
- Plate 72 Ballintober Castle, eastern entrance, view of the north tower's interior
- Plate 73 Ballintober Castle, eastern entrance, exterior view showing the basement-level window/ gun loop
- Plate 74 Ballintober Castle, eastern entrance, view of the south tower's interior
- Plate 75 Ballintober Castle, eastern entrance, interior view looking East at ground-floor level
- Plate 76 Ballintober Castle, eastern entrance, interior view of the basement level in the south tower
- Plate 77 Entrance detail, Ballymote Castle
- Plate 78 Ballintober Castle, postern gate entrance area
- Plate 79 Ballintober Castle, view of interior from the north wall looking southeast
- Plate 80 Ballintober Castle, view of interior from the north wall looking southwest
- Plate 81 Ballintober Castle, view of interior from the southwest looking northeast

1.0 INTRODUCTION

Ballintober Castle is a substantial stone-built complex in north Co. Roscommon, which is privately owned and under the care of its ancestral occupants, the O'Conors of Connacht (Plate 1). The castle was built at the start of the 14th century for the Earl of Ulster, Richard de Burgh, but it passed into O'Connor hands within a century and has witnessed a sequence of occupation that extends into the 17th century. Although ruined today, Ballintober Castle is an example of a 'keepless castle', and is one of several Anglo-Norman castles still standing in Roscommon, including the royal castles at Rindown built from 1227, and at Roscommon built from 1269.

The castle was surveyed in the late 1800s by Charles O'Connor Don, whose account and plan have remained its principal study.¹ Fresh enquiry was conducted in 2008 and 2009, when two programmes of geophysical survey were carried out. The state's archaeological register has absorbed these observations within the complex of seven elements that constitute its entry in the Register of Monuments and Places (RMP), reference RO027-048002-. The Discovery Programme carried out a rapid survey of the castle walls in 2009 as part of its Medieval Rural Settlement Project, but the need for more substantive survey is required to consider the nature of the standing remains.

In summary terms, the castle consists of a large sub-square area that is laid out irregularly and measures approximately 73.8 m North/South by 80.5 m East/West. It is enclosed by a perimeter wall which is ruined but stands in places more than 4 m high externally above its base batter (Figure 1). There are four corner towers, which appear to be all polygonal in plan, although the extent of overgrowth today obscures the detail particularly on the southeast tower. A double-bastioned entrance on the east wall has two protruding rounded towers. A corresponding gap in the west wall may have accommodated a postern gate. The walled area lies within a substantial external ditch that survives on the north, south and west sides, and also in the southeast corner. The west side retains indications of a counterscarp bank. A handball alley has been built to the north of the entrance towers on the east side, and landscaping appears to have buried much of the ditch on this side. The castle structure is overgrown by ivy, which in places is very well established.

¹ [Charles] O'Connor Don, 'Ballintubber Castle, County Roscommon', *Journal of the Royal Society of Antiquaries of Ireland* 9 (1899): 24-30; Charles O'Connor Don and John O'Donovan, *The O'Conors of Connacht, an historical memoir*, (Hodges Figgis, Dublin, 1891), pp 166-. See also Niall Brady, *Ballintober Castle, County Roscommon*, Heritage Guide poster (Roscommon County Council, 2012).

The present survey has been funded by the Castle Studies Trust and comprises a topographical survey. The data informs a new archaeological study of the castle and its complex, and is intended as a baseline for future work that may also address the conservation needs of the standing remains.

2.0 LOCATION

The castle stands on slightly elevated ground in an area defined by low drumlin hills to the northeast, expanses of peat bog to the west, and slightly lower-lying rolling landscape to the south (Figure 2). A network of small streams run east, south and southwest of the castle as tributary streams to the River Suck, which flows 2 km to the west and helps to form part of the county boundary between Roscommon and Galway.

Limestone lies close to the surface across much of north Roscommon, creating a karst landscape complete with sinks and dolines.² Extensive drainage works during the 19th century transformed the landscape, removing many areas of wet ground and reducing the size and frequency of seasonal lakes or *turloughs*. Any study of the medieval landscape needs to appreciate the role that such features played in defining communication and settlement areas in the past. Writing in 1870 Sir William Wilde, for instance, recalls the tour of landscape artists Gabriel Beranger and Angelo Bigari to Connacht in 1779, when they encountered difficulties moving from Ballintober to Ballenagare during August.³ Heavy rains had led to localized flooding, and their roadway was a sheet of water, resulting in a colourful entry in Beranger's diary that reveals the artists' frustration and discomfort. Wilde suggests that it was most likely the large turlough of Carrowkeel that had overflowed. The turlough lies beside a local road between Ballintober and Castlerea, approximately 5 km north of Ballintober. Wilde recalls seeing its waters overflow the road in the early 1800s. The First Edition Ordnance Survey 6-inch-to-the-mile maps completed in the 1840s records the landscape during land improvement works. It showed the turlough as a long linear wetland that the road ran through. By 1870, when Wilde was writing, the turlough was scarcely perceptible owing to drainage works, and today is a much reduced lake area close to the roadway.

² Matthew Parkes and Robbie Meehan, *Karst, Turloughs and Eskers: the geological heritage of county Roscommon*, Roscommon County Council, 2014.

³ William R. Wilde, 'Memoirs of Gabriel Beranger, and his labours in the cause of Irish art, literature, and antiquities, from 1760 to 1780, with illustrations', *Journal of the Royal Society of Antiquaries of Ireland* 1 (1870): 33-64, 121-152, 236-260, at p. 243.

Ballintober castle lies for the most part in Rosmeen townland, where it forms the eastern angle of a long narrow block of land that radiates out to the northwest from Ballintober village (Figure 3). The townland name in Irish is *Ros Mí*- 'the smooth wood', and provides some suggestion of former vegetation cover in what is today open pasture.⁴ A series of other townlands also radiate out from Ballintober on the north side of the village, and their names suggest other former associations. Toberkeagh lies to the east of Rosmeen, and its name was interpreted by the antiquarian scholar John O'Donovan as *Tobar coach*-'blind well'. It lies next to Ardnamullagh, or *Ard na mullach* – 'height of the hill top'. Willsgrove lies to its east, while Timanagh townland lies to the southeast and Ballyfineagan to the southwest. Timanagh is derived from *Tigh Manach* – 'house of the monks', where the *tech* element for house occurs frequently in early sources as a synonym for church. Ballyfinnegan/Ballyenegan is traditionally viewed as *Baile Uí Fhionnacáin* – 'the homestead of the O'Finnegans'.

The townland of Ballintober/Ballintubber, *baile an tobair*-'place of the well', is at the centre of these units, forming an irregular circular shape that encloses 58 acres 3 roods and 39 perches (approximately 23.31 ha). Its southwest border is defined by a stream. The castle straddles the northwest boundary of Ballintober townland, giving it an appearance that seems to be at the edge of an existing core. The village of Ballintober lies within the townland of its name, and is today a planned settlement, laid out probably in the 18th century (Figure 4). An old church yard dedicated to St. Bridget lies between the village and castle. There is a series of early tombstones within the grave yard, including that of Charles O'Connor Don, who died in 1634. A holy well (RO 027-048006) attests to an early foundation and offers the most obvious source for the settlement's toponym. A market cross (RO 027-048004) is indicated on the early Ordnance Survey maps to the north of the church yard and may suggest where fairs and markets occurred. Aerial photography indicates a sequence of earthwork features lying to the east of the castle and north of the church, highlighting a now disused roadway and associated earthworks (RO 027-048014). Extensive rock quarrying has occurred within the village to the east of the church yard.

⁴ I am grateful to Anne Connon for her input to the placename associations.

3.0 HISTORICAL BACKGROUND

3.1 Royal and baronial castle-building

The Anglo-Norman castles in Roscommon were designed to contain the Gaelic lordships in the north of the county and ultimately provide a secure line of communications across Connacht to the Atlantic coast. The construction of Ballintober castle is not documented and it has been suggested that it was built by the O'Conors, but current thinking is that the great earl of Ulster, Richard de Burgh, whose family was closely connected to the court of King Edward I, is responsible for its construction. As the most northerly of the great castles in the county, Ballintober imposes a presence on the landscape.

The conquest of Connacht by Anglo-Norman interests took effect somewhat later than those events which mark the Anglo-Norman Conquest of Ireland in 1169. Connacht was at a further remove from the east coast and proved to be more difficult to control directly, and its local rulers were resilient to pressure from London. The King's interests did however prosper when Gaelic authority weakened. The King was able to act directly through his Justiciar from the beginning of the 13th century, as well as through his barons who provided other avenues.

The King's efforts were focussed at first along the River Shannon, as the principal river that separates Connacht from the rest of the country. The river provides excellent navigation along much of its length, from its headwaters close to Ulster in the north, right down the west side of Leinster and along the northwest border of Munster before issuing into the sea at Limerick. It is no surprise that the Plantagenet King John was busy building a magnificent castle in Limerick in 1200. By 1210, the king had started the construction of Athlone Castle, mid-way along the Shannon. In doing so, King John established a controlling interest in Connacht, as Athlone was also the principal crossing point from Leinster (Figure 5). In 1214, he had a castle built at Clonmacnoise to the south of Athlone, directly next to the ancient monastic town.⁵ Though ruined today, the stature of Clonmacnoise Castle remains impressive, and its location overlooks the river downstream of the monastery. This was clearly intended as a statement of authority to those approaching Athlone from the south. In 1227, Henry III, John's eldest son, began works to the north of Athlone at Rindown, or *Rinn Duinn* – 'fort of the promontory', which lies at the north end of Lough Ree and

⁵ Kieran O'Connor and Conleth Manning, 'Clonmacnoise Castle', in Heather King (ed.) *Clonmacnoise Studies 2* (Stationary Office, Dublin, 2003), pp. 137-165.

close to Roscommon town. As its Gaelic name suggests, the King took over a site that had been an important place. He built a castle at Rindown and established a planned town alongside it. These works curtailed Gaelic interests along the Shannon and affected communications across the river between Connacht in the west, and Leinster in the east.

Royal authority then began to extend inland. Roscommon town had thrived under the lordship of Felim O'Connor, but Henry III became more directly involved following Felim's death in 1265. Felim's son Aedh (anglicised Hugh) had been ruling with his father and became the new O'Connor king, but his was a troublesome relationship with Anglo-Norman authority and it was not long before the Justiciar was charged with the task of bringing further control to the region. Robert d'Ufford was appointed Justiciar in 1269 and that same year began building Roscommon Castle. The Irish annals explain that this was possible by way of a muted excuse, as Aedh 'was sick of a disease at this time'.⁶ The suggestion that the new castle was built directly in front of O'Connor's crannog residence on Loughneane underscores the impact of the Justiciar's message to O'Connor.⁷

Roscommon Castle is a keepless castle, and provided the essential plan for Ballintober Castle (Figure 6, Plate 2). It comprises an enclosed rectangular space that measures 53 m by 38 m internally and is defined by corner towers and a double-bastioned gate along one long side. The castle had an outer ward measuring 110 m by 110 m in size which extended outside all but the west side of the castle, and was defined by an external fosse and an internal wall. The west wall looked out onto a lakebed and had a postern gate. The Justiciar's men proceeded to build a new town close to the castle in the 1270s. It was planned and laid out to the south of the castle, between it and the pre-existing Irish town.

The King's control within the territories was now enhanced significantly. However Connacht remained an active frontier. The new town of Roscommon was harried by the O'Conors, and as early as 1270 Aedh O'Connor raided and assaulted the castle. It was a pattern to be repeated on many occasions through the late 13th and early 14th centuries. Aedh died in 1274, and what stability he and his father Felim had effected during their combined reigns was quickly lost as competing O'Conors vied to become king of Connacht. The numbers of contenders becomes bewildering. Within the year of Aedh's death alone there were three successors recognized and elected, the first

⁶ *AConn* 1269.3.

⁷ The location of the crannog is discussed in Margaret Murphy and Kieran O'Connor, *Roscommon Castle, a visitor's guide* (Roscommon County Council, 2008).

two of whom were killed after reigns of three months and two weeks respectively. The third successor, Tadhg, son of Turlough of the Cathal Crobhderg line, reigned for three years before he was killed in 1278.

Contention between factions remains a feature of O'Connor claimants in the ensuing decades, and lies behind a reference to Ballintober in 1311 that should be more or less contemporary with the building of the castle, and which is concerned to record a double killing:

Seonac Mac Uidilin do marbad in Gruelaig a mBaile Tobair Brigti > a marbad fein ind fo cetoir, > is don gerssamthaig dar marb se Aed Breínech O Conchobair do marbad he, > bendacht don tí ros marb.

Seonac Mac Uidilin killed the *Gruelach* at Ballintober and was himself killed at once therefor; and it is with the same short-handled axe wherewith he killed Aed Brefnach O Conchobair that he was killed. A blessing on the man who killed him.⁸

There is no reference to the castle *per se* in this entry, but one senses a frontier-like context of the location, while the details recorded reveal the complex nature of local relations and politics at the time. The *Annals of Connacht* is a principal contemporary source recorded by Gaelic chroniclers between 1224 and 1544, and the entry reflects O'Connor patronage of the chronicle. Seonac Mac Uidilin was the leader of a mercenary band who had killed Aedh Brefnech O'Connor the previous year. Aedh Brefnach was the son of Cathal Roe O'Connor and was a claimant to the kingship of Connacht. In 1310, Aedh Brefnach had attacked Maelruanaid McDermott in Clogher, Co. Tyrone, and McDermott's wife was killed during the incident.⁹ Seonac Mac Uidilin was a mercenary apparently in O'Connor's pay, as the *Annals* record that he was billeted close to O'Connor. However Mac Uidilin had previously struck a deal with William *Liath* (Grey) de Burgh to kill O'Connor.¹⁰ When this was done, O'Connor's forces had to retreat, and William de Burgh and McDermott exerted their control of the O'Connor heartlands by billeting 200 soldiers within the *Síl Muiredaig* territory, which lay close to Ballintober. Seonac Mac Uidilin and his company were those troops.

⁸ *AConn* 1311.13. Editing reflects Freeman's published version with abbreviations highlighted and expanded. > shorthand for *agus*-‘and’. It is accessible online as well <www.ucc.ie/celt>. The incident is also recorded in the *Annals of Loch Cé*, 1311.12.

⁹ *AConn*, 1310.3-.

¹⁰ William *Liath* de Burgh was a cousin to Richard, the Red Earl, and went on to defeat Felim O'Connor in battle at Athenry in 1316, where O'Connor was killed.

It is not clear from the entry what Mac Uidilin was doing at Ballintober when he was killed there in 1311. As will be described below, Ballintober was considered to lie within the cantred of *Síl Máel Ruain*, which lay beside and to the west of the *Síl Muiredaig*, but it is possible that it was considered within the latter as its tribal leaders, the Ó Floinn, were tributary lords to the O'Conors. As a retainer now of William de Burgh, one might understand that Mac Uidilin was exacting de Burgh's authority. The man he killed is referred to as a *gruelach*, which is a word without any obvious translation. The use of a short-handled axe however is linked to the presence of Galloglasses.¹¹ Mercenaries were used by both Gall and Gael, and while Seonac appears to have been able to play one side off the other, it was ultimately a short-lived opportunity for him.

It is against this background of unrest that we see construction of Ballintober Castle. Unlike Roscommon, Rindown, Clonmacnoise and Athlone, the new castle is not a royal build, and this may explain why no account of its construction survives. Its patron was arguably the most influential person in Connacht at the time. The de Burghs were chief among the king's barons to have their eyes set firmly on controlling the province. De Burgh fortunes had wavered somewhat during the mid-1200s but returned to ever-growing strength, so that by 1264 Walter de Burgh had become Earl of Ulster. The earl's position was consolidated in 1298 when the powerful Geraldine lord, John FitzThomas, rendered all of his interests in Ulster, Uriel and Connacht to Walter's son and successor Richard de Burgh, also known as the 'Red Earl'.¹² It established the Red Earl as the principal baron across western Ireland, while the Geraldines retained sway in the east. Their authority was further consolidated through marriage, ultimately uniting with the Fitzgeralds and with the Bruces in Scotland. Life under Richard's rule during the early 1300s has been considered a prosperous time, yet this is qualified by the observation that unrest was contained and localized to particular areas.

The earl is associated with the construction of other castles in the region. In 1300, he started building a castle at Ballymote, Co. Sligo, some 40 km north of Ballintober. The castle is located at the site of *Ath cliath an chorainn*- 'the ford of hurdles at Corann', and is positioned to command an important pass to the Gap of Collooney, which funnelled traffic northwards to Sligo town.¹³ Ballymote and its relative proximity to

¹¹ G. A. Hayes McCoy, 'The Galloglach axe', *Journal of the Galway Archaeological and Historical Society*, 17 (1937): 101-121, at p. 108.

¹² Goddard Orpen, 'The earldom of Ulster, Part 1: introductory to the inquisitions of 1333', *Journal of the Royal Society of Antiquaries of Ireland*, 3 (1913): 30-46, at p. 43.

¹³ J. E. Fitzpatrick, 'Ballymote Castle', *Journal of the royal society of antiquaries of Ireland*, 17 (1927): 81-99, at p. 81; ALC 1300.3.

Collooney was a strategic place. The king maintained control in Sligo through the Geraldines since 1245, when the Justiciar Maurice Fitzgerald erected a castle there and required Felim O'Connor to pay for it. Although it does not survive today, Sligo Castle was positioned across a narrow land bank that separates Lough Gill and the upper Shannon waterways from the Atlantic Ocean. The location also served as the natural crossing from Connacht to Ulster. Following the surrender to de Burgh in 1298 of Geraldine interests across this contested landscape, the Red Earl was probably not encouraged to assume Sligo Castle but instead consolidated his claim by building Ballymote Castle 20 km to the south. The importance of the place to de Burgh interests may explain the elaborate nature of the castle that was built (Figure 6, Plate 3). It survives today as a keepless castle that is almost square in plan, with four angle towers, a tower that is positioned mid-way along the east and west walls, and a large twin-towered gateway on the north wall.¹⁴ The internal space measures 40 m by 41.9 m, which is half the size of Ballintober but the castle shares many of the overall structural features and the comparison with the royal castle at Roscommon is clear.

The Red Earl is also associated with building Greencastle, Co. Donegal, on the Inishowen peninsula in 1305, to maintain the overlordship of Tyrconnell among his Ulster assets.¹⁵ Greencastle has a different ground plan and makes use of a large outcrop to occupy a position overlooking the surrounding area. Comparison has been drawn with Edward I's castles in Wales, at Caernarvon and Harlech.¹⁶ Greencastle is based on an oval shape with a gate house at one end and a great polygonal tower at the other. The earl was involved with works at other sites, and is attributed with building at Sligo Castle in 1310, which is regarded as having been a major and lavish rebuilding event.¹⁷

The prosperity enjoyed by Anglo-Norman interests that marks the early 14th century was upset by the Bruce invasions of 1315-1318 from Scotland, after which Gaelic interests returned to the fore and Anglo-Norman authority began to wane. Within Connacht during the Bruce Wars, the young king Felim O'Connor emerges as the principal antagonist and de Burgh authority was vigorously unsettled. At first, Felim supported de Burgh's opposition to Edward Bruce, and accompanied the Earl to Ulster in 1315. However, Felim's rival Rory O'Connor took advantage of their absence,

¹⁴ P. D. Sweetman, 'Archaeological excavations at Ballymote Castle, Co. Sligo', *Journal of the Galway archaeological and historical society*, 40 (1985/86): 114-24.

¹⁵ Referred to as the 'new castle', *ALC* 1305.7.

¹⁶ Tom McNeill, *Castles in Ireland. Feudal power in a Gaelic world*, (Routledge, London and New York, 1997), p. 103.

¹⁷ *AConn* 1310.9; H. T. Knox, 'Occupation of Connaught by the Anglo-Normans after A.D. 1237', *Journal of the Royal Society of Antiquaries of Ireland* 33 (1903): 58-74, at p. 73.

and with Bruce's tacit support attacked the great castles of Connacht and proclaimed himself king. He burned the town of Sligo, Ballymote, the great castle of Kilcolman, Ballintober, Dunamon with its castle, Roscommon, Rindown and Athlone.¹⁸ The accounts do not reveal what O'Connor did with the castles, but we might understand that de Burgh's ownership of Ballintober was momentarily lost. His trusted cousin William *Liath* (Grey) Burke, the Earl's principal enforcer in Connacht, was taken prisoner by Bruce, leaving Richard quite helpless.

Dispossessed of his kingship, Felim waited until the following year and met Rory in battle.¹⁹ The annals record great losses on both sides, and Rory was killed. Felim emerged victor and proceeded to regain his kingdom by targeting English strongholds. He attacked Ballymote Castle and he also burned and broke de Burgh's ancestral powerbase on the Shannon at Meelick. He had his eyes set on Roscommon before being diverted by William *Liath* Burke's return from Scotland and met him on the field at Athenry. This is the same William who had secured the mercenary Seonac Mac Uidilin to assassinate Aedh Brefach O'Connor in 1310. King Felim O'Connor was killed in battle at Athenry, aged 23.²⁰

The Red Earl continued in power until his death in 1326 and one sees a repossession of the assets lost during 1315-16. The relative stability of his lordship was vested in his authority, and matters went awry when he died. The deterioration was no doubt affected by the death in 1322 of his able lieutenant, William *Liath*, who is buried in the Dominican priory in Athenry.²¹ In 1333 the Red Earl's grandson heir William was murdered, 'by the English of Ulster'. It is within the inventory of the third earl's estate drawn up after William's death that reference is made to the earl's assets at Ballintober, which provides the only detailed account of the castle to survive from this period.

3.2 The 1333 *inquisitions post mortem*

The de Burgh lordship as outlined in the *inquisitions post mortem (ipm)* for 1333 was significant in size, extending across much of Connacht and Ulster.²² The Earl's Connacht lands were divided between two principal manors, Loughrea and Sligo, the

¹⁸ *AConn* 1315.2-9.

¹⁹ *AConn* 1316.

²⁰ *AConn* 1316.4-5.

²¹ *AConn* 1322.10.

²² The 1333 *inquisitions post mortem (ipm)* has been published in part in a series of papers by H.T. Knox, which remain the most accessible source on the document: H. T. Knox, 'Occupation of Connaught by the Anglo-Normans after A.D. 1237. Part 1', *Journal of the Royal Society of Antiquaries of Ireland* 32 (1902): 132-138, at p. 137.

latter reflecting the settlement with John Fitzmaurice in 1298. In determining the value of his assets, the *ipm* provides two values; a larger figure that related to the expected value prior to the Earl's murder, and a lesser value that represented the expectations following the loss of authority that occurred after his death. The former figure amounted to £1,434, while the latter was substantially less at £426. In Connacht, the Earl's assets extended over large areas of counties Galway, Mayo, Sligo and Roscommon. He held Ballintober in direct management as part of his Loughrea estate, which is to say that the Earl derived income from Ballintober by having a direct involvement with it, presumably through a reeve or appointed official, rather than by letting it to a trusted tenant or follower. This arrangement was common during the High Middle Ages when manorial profits were high, as it secured maximum gain for the lord. It has been suggested that the Earl would also have wanted to exercise a direct hand at Ballintober for strategic reasons because the castle could support a large garrison.²³ The entry for Ballintober, or *Toberbride*, reads:

Cantred of Sylmolron (Castle of Toberbride)

At Toberbride is an old castle surrounded by a stone wall, which would be very useful for keeping the peace of those parts, if a sufficient ward was. . . In the castle are ruinous buildings, a hall, a chamber, a kitchen, and other houses, worth nothing beyond cost of repairs, because they need great repairs.

In demesne two carucates and sixty acres of arable land were under the lord's plough, worth 12d an acre, in all £15, but now nothing.

12 acres of meadow, 12s, but now nothing.

One pasture 13s 4d, but now nothing.

Another woodland pasture in Rathfernan, 26s 8d, but now nothing.

Another pasture, 10s, now nothing.

A watermill at Rathfernan, 46s 8d, now nothing, because ruinous, and on account of the war.

20s from prisage-of beer, with *Staus*, now nothing.

Grass of a certain place, 3s, now nothing.

At Toberbride, a water-mill, 66s 8d, now nothing.

26s 8d from prisage of beer there, now nothing.

Free Tenants. £14 from one townland in Balymacgagan, three townlands in Dyrydunus and elsewhere, which McCortan held at will, but now nothing.

Pleas and perquisites of the Hundred of Toberbryd, £4, now nothing.

10s from one townland in Fichbary [or Fithbary], which the heirs of John de Barry held, but now nothing.

6d from one piece of land in Clanfadd, which Lucas McCortan held, now nothing.

40s from one townland in Curran, which Adam de Burgo held, but now nothing.

£12 14s 4d from five townlands in the Burgage of Rathfernan, but now nothing.

²³ H. T. Knox, 'Occupation of Connaught by the Anglo-Normans after A.D. 1237', *Journal of the Royal Society of Antiquaries of Ireland* 33 (1903): 58-74, at p. 67.

£20 from five townlands at Toberbrid, now only £10.
40s from half a townland which was under the lord's plough, but now nothing.
52s from one townland in Myntyman, now nothing.
Total of old value of this cantred, parcel of the manor of Loghry, £84 1s 10d.
Total of value now, £10.²⁴

Ballintober is ascribed to the cantred of the *Síl Máel Ruain*.²⁵ This cantred lay next to and west of the *Síl Muiredaig*, or *Síl Murray* territory, which is traditionally considered to be the heartlands of O'Connor rule. The *Síl Máel Ruain* lands extend north of Ballintober, and are focused on Ballinlough and Lough O'Flynn to the west of Castlerea. The lords of the *Síl Máel Ruain* were the Ó Floinn, or O'Flynns. The family was separate from the O'Conors, but is named among the twelve dynasts of the *Síl Muiredaig* expected to attend the inauguration of O'Connor kings.²⁶ Within the context of the early 14th century, we might consider that the *Síl Máel Ruain* had been absorbed within the territory of O'Connor lordship.

The entry for Ballintober in the 1333 *ipm* reveals a typical manorial structure, comprising a demesne that was exploited directly by the lord, with significant income accruing from two water mills and a Hundred Court, and free tenants who held lands in various locations outside the demesne. The demesne comprised 300 medieval acres of arable land, and a much smaller area set aside for pasture, woodland pasture and meadow. The high level of arable may reflect the opportunistic emphasis on arable husbandry that marks the economic growth of the 13th century prior to the calamities that distinguish the 14th century across the medieval West. Such opportunity is highlighted in north Roscommon, as this is a landscape that is more suited to pasture. A certain element of the arable was also devoted to beer. Within the context of the overall estate, Ballintober appears to have contributed up to 6% of the income prior to 1333, and the expected £84 1s 10d from the cantred in the good times represents a sizeable annual amount. The dramatic collapse of that income following the third Earl's death echoes the erosion of de Burgh and Anglo-Norman influence across the province at this time. The Ballintober demesne failed to produce any income in 1333 and was worth nothing, the only income (£10) being generated from half the rent returned from 'five townlands'.

The toponymic or placename references recorded in the *ipm* offers an opportunity to consider where the places named exist on the present-day landscape, and so attempt

²⁴ Translation adapted from Knox, 'Occupation of Connaught by the Anglo-Normans after A.D. 1237', pp 59-60.

²⁵ I am grateful to Anne Connon for discussion on this topic.

²⁶ John O'Daly and John O'Donovan, 'Inauguration of Cathal Crobhdhearg O'Connor, King of Connaught', *Journal of the Royal Society of Antiquaries of Ireland* 2 (1853): 335-347, at pp 342-343.

a topographical reconstruction of the 14th-century manor, but this is a task for another day.

The description of the castle is the only contemporary reference to its structure and contents.²⁷ The description of ‘an old castle surrounded by a wall’ appears to indicate a separation between the castle building and its walls.²⁸ It suggests a contrast with the archaeological designation of the site as a ‘keepless castle’, where the curtain walls contain the principal elements of the complex, including residential as well as defensive aspects, and where the central space enclosed by the curtain walls is open and devoid of substantial structures. The designation accords with the castle as it survives today, where the large area enclosed by the boundary walls has no standing remains. As will be described in Section 6, there are indications of structural remains within the interior arising from the 2008-2009 geophysical surveys, and it will be suggested that the nature of these remains does not materially affect the designation. The 1333 reference does not lend itself to literal interpretation but the reference does raise a question of the relative association between the castle and an outer wall that further research should examine, and will be returned to below.

The 1333 reference refers to the castle as being ‘old’. The structure was built perhaps only 30 years before it was referred to in this way. It is possible that the qualification was added because the castle was built by Richard de Burgh and that it had passed through inheritance to his grandson heir, William, and was therefore no longer considered current. It is more likely that the term was used within the context of an *inquisitions post mortem*, whose purpose was to identify the extent and value of the deceased’s estate. The declaration is made to the royal escheator, who was tasked with responsibility for securing an assessment of the value of an estate following a person’s death, and before those assets might be returned to the deceased’s family or otherwise disbursed. As the *ipm* recorded, this declaration was made in witness of the great men of the time, and included a number of William’s relatives.²⁹ Within the context of 1333, when Anglo-Norman interests were declining and the murder of

²⁷ The reading of the *Inquisitions* is based on the translation provided in the publication by H.T. Knox in 1903, p. 59. It would be useful on another occasion to re-examine the original source (*IPM*, 7 Edw. III., No. 39, documents 21, 22, 23, referred to in Knox’s 1902 paper, pp 132-133). As stated by Knox, his is a reading that is based on a transcript and is an abstract.

²⁸ A point noted recently by Tadhg O’Keeffe, ‘Liscarroll Castle: a note on its context, function, and date’, in Eamonn Cotter (ed.), *Buttevant. A medieval Anglo-French town in Ireland*. (Eamonn Cotter, Rathcormac, 2013), pp 51-66, at pp 62-63.

²⁹ The Inquisition was made to the escheator in Athenry, ‘by oath of Bernard de Staunton, knt., John de Staunton, knt., Richard de Burgo le Hore, William son of the same Richard, Robert Baret, Robert Gaynard, Hugh de Lecto, William son of Maurice de Bermyngham, Eudo de Barry, Philip de Bermyngham, Adam de Laweles, and Thomas de Halton, jurors...’; Knox, ‘Occupation of Connaught by the Anglo-Normans after A.D. 1237. Part I’, p. 133.

William represented a particular moment of disturbance, the *ipm* makes extensive use of the loss of income from demesne assets in particular, and for income arising from free tenancies to a lesser degree. There is no question but that these issues existed and were prescient, but equally some appreciation for more prosaic declarations for inheritance purposes might be allowed for. It is suggested that the term 'old' might be understood in this context.

The remainder of the 1333 description is concerned with individual buildings, and it is probably more accurate to refer to these structures as being 'within' the castle, rather than simply being 'in the castle'.³⁰ It infers that the castle is an inclusive structure, and the curtain walls that stand there would accommodate such. This may help to understand reference to the 'old wall' surrounding the castle as an outer defensive work that has not yet been identified in the present-day landscape.³¹ The description provides a list of buildings that include a hall, a chamber, a kitchen, 'and other houses' that were all ruinous and deemed to be worth nothing because of the significant cost of repairs due. There are elements within the standing remains that could accommodate certain of these buildings, within the corner towers. As the geophysical survey data will show, it is also possible for such buildings to have been located within the central space of the castle site.

3.3 Remaining timeline³²

Ballintober is mentioned in subsequent sources where the place features as the location for various events. The information does not provide insight to the castle structure or its associated buildings, but it does distinguish the castle, its bawn, and the town, highlighting these as three distinct but contiguous elements. It is also useful in charting changes in ownership and the political rivalries that occurred in subsequent years, giving insight to the many varied and overlapping O'Connor interests.

In 1347, a William mac David Burke was killed by Tadhg Roe MacDermot Gall at Ballintober, but the entry makes no mention about who possessed the castle at the time.³³

³⁰ This point requires an examination of the original *ipm* document to ascertain the exact words used.

³¹ It is, for instance, the case that an outer ward was identified at the keepless castle of Roscommon Castle; Murphy and O'Connor *Roscommon Castle*, pp 21-23.

³² Based on a list provided by Anne Connon.

³³ *ALC* 1347.4

The first reference to the castle being in Gaelic possession occurs in 1362, when Cathal Og and the son of Felim O'Connor, Aedh, king of Connacht seized Ballintober and went on to make a great hosting into Meath.³⁴ Aedh was from the family that was later to be O'Connor Roe. The entry does not record who they wrested control of Ballintober from.

In 1375, Turlogh Roe O'Connor (ancestor of O'Connor Roe) gave Roscommon Castle to Rory O'Connor, king of Connacht from the O'Connor Don line, in exchange for Ballintober and other concessions.³⁵

In 1381, Rory O'Connor, king of Connacht belonging to a proto-O'Connor Don line, plundered O'Connor Roe and took back Ballintober.³⁶

In 1385, David son of Edmund de Burgo was captured by Aodh O'Connor Don and died as a captive in Ballintober.³⁷ It was in this year too that the *Síl Muiredaig* territory was divided between the O'Connor Roe and O'Connor Don lines.³⁸ The castle is not mentioned in this context, but Ballintober became the O'Connor Don caput, while Tulsk became the O'Connor Roe caput, 10 km northeast of Ballintober. Both family groups continued to use the O'Connor inauguration site at Carnfree.

In 1409, Ballintober is mentioned as the site where those who were helping to provision the besieged castle of Roscommon met Mac William Burke.³⁹

In 1426, Aedh O'Kelly, king of Uí Maine (a territory in south Roscommon), raided Ballintober and took many cows. Turlough son of Abad O'Connor was killed while trying to recover the plunder.⁴⁰ The sequence of entries continues and records further raids, suggesting that there was a second plunder. It may also be a clarification of the first raid. The entries recorded that Cathal son of Rory O'Connor took Tulsk Castle from Cathal Dubh O'Connor, and that Cathal Dubh joined forces with Aedh O'Kelly and raided Ballintober, taking many cows.⁴¹

³⁴ *AConn* 1362.5-6.

³⁵ *AConn* 1375.3.

³⁶ *AClonmacn* 1381.

³⁷ *AConn* 1385.4.

³⁸ *AConn* 1385.17.

³⁹ *AConn* 1409.7.

⁴⁰ *AConn* 1426.2

⁴¹ *AConn* 1426.7-8.

In 1434 or 1435, O’Kelly and his allies burned Ballintober.⁴² O’Kelly, Mac Dermot and Teige son of O’Conor Roe attacked Ballintober; a battle was fought in which many were wounded, both within and without the town. One of the attackers took a chip from the end of a wattle and set fire to it, casting the wattle into the bawn (*badhb-dún*). It stuck in the side of a house that was then burned, as was the adjoining house, and finally the greater part of the town. The bawn was also burned, and a vast deal of every kind of property in the town was destroyed.

The incident does not mention the castle in its own right. It is unlikely that there was any confusion at this time with words to describe a stone castle. By referring to a bawn, the annalist raises the possibility of an outer enclosure or ward that is separate from the castle. The bawn appears to have been separate from the town. On this occasion, the castle’s considerable defences may have served as a suitable deterrent, while the bawn and the town in contrast were less defensible and more easily plundered.

In 1461, Aodh son of Turlogh O’Conor Don, described as ‘half king of Connacht in opposition to Tadg O’Conor Roe’ died at Ballintober at the age of 63, and was buried at Roscommon.⁴³

In 1468, huge prey was taken from Ballintober by the leading O’Conor Roe dynast Felim Finn and the king of Moylourg, Conchobar Mac Dermot. Rory O’Conor Don with his people and Clan Conway (the Mac David Burkes of Ballymoe) pursued, but Felim Finn and his group escaped.⁴⁴

In 1487, the sons of Felim Finn O’Conor Roe burned and plundered Ballintober while Mac William Burke of Clanrickard was attacking Athleague, and other places in Uí Maine and the Machaire Chonnacht.⁴⁵

In 1488, Rory O’Conor Don, the son, and likely heir (until that point), of Felim O’Conor Don, died at Ballintober in August.⁴⁶

The annals begin the year 1489 with a list of noble deaths from plague, which included a string of O’Conor retainers.⁴⁷ The differences between the O’Kellys and

⁴² *AFM* 1434.13; *AConn* 1435.2.

⁴³ *AConn* 1461.2

⁴⁴ *AConn* 1468.35.

⁴⁵ O’Conor Don, p. 26.

⁴⁶ *AFM* 1488.22 and .38.

⁴⁷ *AFM* 1489.5.

the O'Conors continued. It was a year that saw war between O'Conor Roe and O'Conor Don, and the recorded details give some insight to the wider landscape, where known locations are mentioned. Turlough, son of Felim Finn O'Conor was killed at *Caislen Riabhach*, in Castlerea, by Rory, son of Felim of the O'Conor Roe.⁴⁸ A revenge attack took place when Rory, son of Felim of Tadhg Og and Tadhg Roe (ie O'Conor Don) attacked Cathal Roe O'Conor at Ardakillen and struck him down.⁴⁹ Ardakillen is a lakebed that is immediately south of Cloonfree moated site and just west of Strokestown, and 20 km east of Ballintober. The whole area forms a clustering of O'Conor princely residences. O'Conor Roe rallied at Ardakillen and pursued his attackers as far as Tulsk, 8 km to the west and another O'Conor stronghold. At this point, O'Conor Roe's own galloglasses turned against him and he beat a 'heroic' retreat. O'Conor Roe clearly reorganised, as he later marched to Ballintober, and demolished the bawn of the town. O'Conor Don's sub-lords—O'Flynn, Mac Keherny, and O'Mulrennin—submitted to O'Conor Roe.⁵⁰ The year's events continued with further disruption, but away from Ballintober.

In 1503, Turlough Og O'Conor (the O'Conor Don) died at Ballintober, after a long sickness.⁵¹

The castle of Ballintober (*caislén Bhaile an Tobair*) is specifically mentioned in 1505, when it was involved in an internal conflict between divisions of O'Conor Don.⁵² Rather than being in the hands of the ruling O'Conor Don, it had been in the hands of a division of O'Conor Don known as the *Sliocht Gráinne inghine Uí Cheallaigh*. This sept were the descendants of Rory (died 1424), the son of Turlogh Og O'Conor Don (the original O'Conor Don) by his wife Gráinne, daughter of O'Kelly. The reigning O'Conor Don (descended from the son of Turlogh Og O'Conor Don by another wife) and Mac Dermot of Moylurg took Ballintober Castle from them. Peace was made afterwards and Gráinne's descendants were given a different patrimony.

At this time, mention of the O'Conors seems to fade somewhat from the *Annals of the Four Masters*, which become more concerned with events in Ulster and in Munster. Connacht remains part of the overall picture, but the reduced presence of the O'Conors may indicate a weakening of their overall authority in the *real politique* of the period.

⁴⁸ AFM 1489.14.

⁴⁹ AFM 1489.15.

⁵⁰ AFM 1489.30.

⁵¹ AFM 1503.8.

⁵² AFM 1505.15.

In 1526, the Earl of Kildare hosted through Machaire Chonnacht at the instigation of O'Connor Roe and captured Ballintober as well as the castle of *Caislen Riabhach* of Clann Fhoghartaigh. He gave these castles to O'Connor Roe.⁵³

In 1530, O'Donnell of Donegal led an army into Connacht in mid-summer. As part of his campaign he ruined and burned Ballintober, and returned the castle to O'Connor Don.⁵⁴

In 1570/71, O'Connor Don was captured by the English as a pledge for 'his whole sept', but shortly afterwards escaped.⁵⁵ The President of Connacht, Sir Edward Fyton, responded quickly with a host of 1200 Scots and Galloglass and razed *Caislen Riabhach* in Castlerea, deemed to be O'Connor Don's best castle, and attacked Ballintober Castle as O'Connor's chief castle. Fyton desired that a ward be put into Ballintober, as well as at several other castles.

In 1581, Ballintober, which was still in the hands of the English, was given to An Dubhaltach son of Tuathal O'Connor. Dubhaltach was of the O'Connor Don line, but not the official O'Connor Don – at the time that position was held by Dubhaltach's uncle Dermot, son of Carbury O'Connor Don. That same year, the 'mound of Ballintober' (*Dumha Baile an Tobair*) is mentioned as the burial place of Brian Caoch O Coinneagain, as chosen by himself. The precise location of this place is not known.

In 1585 O'Connor Don died at Ballintober and was buried at Roscommon. In the same year, the castle and its adjoining lands were surrendered to Queen Elizabeth by his son and heir Hugh O'Connor Don, who received them back under patent from the Queen, with the lands amounting to 120 acres.⁵⁶ Elizabethan attempts to conquer the province led to much disruption during the ensuing Nine Years War (1594-1603). Sir Richard Bingham's governorship was particularly brutal. In 1596, Ballintober Castle is recorded in a list of castles, forts, abbeys, and houses taken by the rebels (the Irish) and is described as 'burnt and defaced'. In 1598, the English led an expedition north with Irish support to defeat O'Donnell, but the expedition failed at the Curlews, some 35 km north of Ballintober. The English leader Sir Conyers Clifford was killed there. The expedition had been supported by Hugh O'Connor Don, and in the wake of its defeat, O'Donnell sought to drive home his victory, and attacked Ballintober. O'Donnell had a large gun that had been given to him as a present from Spain. He

⁵³ *AConn* 1526.9.

⁵⁴ *AConn* 1530.4; O'Connor Don, p. 26.

⁵⁵ *CSPI 1509-1573*, at pp 438, 448.

⁵⁶ O'Connor Don and Donovan, *memoir*, pp 166, 195.

placed the gun on high ground in Ballyfineagan townland to the south and battered down the castle, forcing O'Connor Don to surrender.⁵⁷

Hugh O'Connor's tenure outlasted the Nine Year's War, and continued until his death in 1632, during which time he was knighted. In 1599 he married Mary O'Rourke of the O'Rourkes of Brefne. Under James I, he surrendered his lands and was regranted them in 1617, when mention was made of the castle, bawn and town.⁵⁸ As is evident in the standing remains, the early 1600s witnessed extensive renovation within the castle, and the northwest corner tower was made into a suite of luxurious apartments, attested by a date stone of 1627 that adorns the fireplace of the second floor. Despite the turbulent political climate where Catholic interests continued to be regarded with deep suspicion by the Protestant power-base, Hugh O'Connor Don's estate appears to have been secure and opulent. The archaeological detail is the first demonstrable phase of building works at the castle that can be associated with the O'Conors, and one senses the confidence of their presence in the lavish nature of the northwest tower.

Sir Hugh's son Charles became the next O'Connor Don and he also resided at Ballintober, although his reign was short (died 1634). The castle features as a place where Catholic lobbies met before the Civil War of 1641, and Charles' son Hugh was appointed Colonel in one of the Catholic regiments.⁵⁹ The *Books of Survey and Distribution*, dating to approximately the same period, refers to 'Rosmeane alias Ballintubber whereon Charles ó Connors house & Castle standeth containing of arable and pasture [177 acres]'.⁶⁰ One might argue that the record distinguishes the house of Charles O'Connor Don as a separate structure from the castle. However, it may be that O'Connor's house was the northwest tower within the castle.

In 1642, the castle was the backdrop for one incident during the Civil War, when parliamentary forces intent on tackling the Catholic forces stopped short of attacking the castle for fear of being overwhelmed.⁶¹ The castle remained in O'Connor hands until 1652, when ownership was taken back by the Crown. In 1657, two years after Charles O'Connor Don had died, his widow Mary O'Connor was given five townlands close to Ballintober amounting to 700 acres, and the Castle was given to Lord Kilmallock.

⁵⁷ O'Connor Don, 'Ballintubber Castle', p. 26.

⁵⁸ O'Connor Don, 'Ballintubber Castle', p. 27.

⁵⁹ O'Connor Don, 'Ballintubber Castle', p. 27.

⁶⁰ Accessed online: <http://irishmanuscripts.ie/digital/surveydistributionv1/index.html>

⁶¹ O'Connor Don, 'Ballintubber Castle', pp 27-28.

The lands were restored to the O'Conors through Colonel Hugh O'Connor, who sought recognition of the restoration under Charles II, but this did not transpire until 1677, at which point the colonel had died and his son Hugh succeeded to the claim. The details are presented as the 'castle, bawne, and lands of Ballintubber, alias Rosmeen, Moyne, Rameege, Brackloon, Keily, Ballymagheiher, Lara, and Ross, and some portion of other townlands, in all about 1,100 acres'.⁶² It appears to be a reduced estate compared to the lands named as the O'Connor Don's in the *Books of Survey and Distribution*, but comparison with the latter helps to gain some insight to the nature of the property. By 1677, the estate was dispersed to the west and north of Ballintober. In the *Books of Survey and Distribution*, O'Connor Don had two quarters of land in Moyne and Rameege, amounting to 219 acres of profitable land. There is no clear correlation with Rameege/Rameege in the present-day townlands of Roscommon, which suggests that the holding has been absorbed into a larger or different entity. However, there is a Moyne townland, which is a 731-acre area to the north of Castlerea and west of Frenchpark, in Tibohine parish today, Frenchpark barony. Brackloon appears to be more clearly preserved. It is named as Bracklone in the *Books of Survey and Distribution*, where the O'Connor Don had one quarter amounting to 210 profitable acres. There are four Brackloon townlands in the county today, and one of these is a 336-acre area in Ballintober parish. Keily is cognate with Keely in the *Books of Survey and Distribution*, where the O'Connor Don held a half quarter, containing 53 acres of profitable land. It is perhaps the modern-day townland of Keely in Ballintober parish, containing 102 acres. Ballymagheiher was recorded as Ballymageher in the *Book of Survey and Distribution*. O'Connor Don held one quarter here of good arable and pasture, containing 206 acres, but there is no obvious cognate in the modern townland names. Laragh and Ross is a 736-acre area in Drumatemple parish, Ballymoe barony, located approximately 5 km southwest of Ballintober on the county border with Galway.⁶³

The estate quickly passed back out of O'Connor hands, and was formerly sold in 1790 to the Mahons of Strokestown House.⁶⁴ Griffith's Valuation (1847-1864) does not cite the castle *per se*, but names John Mahon as occupier of a herd's house and 222 acres in Rosmeen townland that includes the castle site, and was valued at £131.⁶⁵

⁶² O'Connor Don, p. 29. According the Landed Estates database, this grant appears to have been in 1683, when Hugh O'Connor was granted over 1,800 acres in county Roscommon, including the castle of Ballyntobber and lands at Laraha and Ross; www.andedestates.ie, search O'Connor/Dundermot.

⁶³ The mapping of the O'Connor Don's lands is possible through the 17th century by referring to the Books of Survey and Distribution, which will show a larger estate than the lands regranted in 1677, but that is a task for another day.

⁶⁴ O'Connor Don, pp 29-30.

⁶⁵ Griffith's Valuation, accessed online at <http://askaboutireland.ie/griffith-valuation>.

The Castle returned to O’Conor ownership following publication of its archaeological study by the antiquarian Charles O’Conor Don, who purchased it from Mahon. The site is currently closed to the public, but can be viewed by appointment with the owners.

4.0 CARTOGRAPHIC SOURCES

John Browne’s *Map of Connacht*, completed 1591, presents a visual representation to support Sir Richard Bingham’s efforts at plantation (Figure 7). Ballintober is included on the map and as a symbol, like many of the castle sites, comprising two towers separated by a lower central bay. All three elements are shown with pitched roofs, and the towers have windows. Ballintober was clearly regarded strategically, and it is interesting to see its location with respect to the River Suck. Other elements are also highlighted, including the placenames of Brackloon (*Bracklonne*) and possibly also Caslean Riabhach (*Castle....reagh*), in present-day Castlerea town, which are shown as simple dot symbols, perhaps indicating less complex but notable places nevertheless.

A more detailed map survives on an estate map from 1812 by James Johnston, as part of Pakenham-Mahon collection, now held at the National Library of Ireland (Figure 8 top). The detail is simple and is concerned only with locating the castle, the church yard and the well in relation to the roads and nearby streams. The ‘old castle’ is shown simplistically as a blocky rectangular form with four corner towers. Two distinct entrances are indicated, in the east and west walls respectively, suggesting perhaps that the entrance on the west wall was standing in 1812.

The Ordnance Survey First Edition map of 1838 shows the first metrically accurate plan of the castle, set within its wider landscape context (Figure 8 bottom). There is no indication of a western entrance recorded on the map but both the southwest and the northwest towers are recorded as complex angled structures, in contrast to rather simply formed and possibly rounded corner towers on the east side. The eastern entrance is drawn in diminutive outline, and its presence is overshadowed by a large square block, where the handball alley is today. There is no indication of internal or external features, and there is no suggestion of a fosse. A small circular symbol is recorded north of the handball alley, which may indicate the presence of a well, while a trigonometric station off the northwest corner of the site gives some indication of elevated ground levels. The townland boundary separating Rosmeen from Ballintober

uses the alignment of the east and south perimeter walls of the castle, and results in a rather curious intrusion into the Ballintober element. There is little to suggest a bawn area, while the roadway to the east of the castle is not entirely synchronised with the field boundary to its east. A more formal and regular street pattern lies to the south of the church yard, where the modern village was developed, while the discordant nature of the field boundaries relative to the roadway north of the church yard might indicate a location of the older settlement focus. The remains of a 'Stone Cross' is also recorded here. A small quarry lay immediately east of the church yard, and a somewhat larger one in the field further east.

More recent editions of the Ordnance Survey reveal a progressive infilling of the space between the church yard and the castle. The historic 25-inch-to-the-mile map becomes the exemplar for the Third Edition 6-inch series (1912), and shows the external ditch for the first time (Figure 9). The quarried areas east of the church yard expand in size, while the suggestion of the former market area to the north becomes unclear due to sub-division of the plots. Since then, the grave yard has been extended to the west over a sizeable area, while modern housing developments have filled in the space further between it and the castle (Figure 4). The quarries have ceased to be worked, and the excavated areas are filled in where necessary.

Aerial photographic coverage highlights a parallel-banked feature in the field to the north of the main quarry (Figure 4). It follows a broad curvature aligned roughly East/West. It is not known what purpose this feature served or what age it might be. Elements of a relict field system excavated to the north revealed furrows, pits and small cobbled surfaces (RO027-048002). It would be worth assessing whether these remains are related and form part of a deserted settlement from the medieval period.

5.0 ILLUMINATED SOURCES

Charles O'Connor of Bellanagare (1710-1791), whose great grandfather was a third son of Sir High O'Connor Don, was a significant figure and scholar in late 18th-century Ireland, and has been remembered as ushering in the new antiquarian rediscovery of Ireland's past.⁶⁶ He has been described as probably the most literate person in Irish and in English at the time, and could read French and Latin easily. O'Connor worked closely with other eminent figures in Irish society, and together with General Vallancey, William Burton Conyngham, Reverend E. Ledwich, Dr Ellis, Reverend

⁶⁶ Diarmaid Ó Catháin, 'Charles O'Connor of Belanagare: Antiquary and Irish Scholar, *Journal of the Royal Society of Antiquaries of Ireland* 119 (1989): 136-163, at p. 136.

Mervyn Archdall, and William Beauford, he helped to set up the Hibernian Antiquarian Society, which lasted from 1779 to 1783.⁶⁷ Burton Conyngham was the Society's first President, and he employed Gabriel Beranger to make plans and drawings of antiquities for the Society. A French Huguenot from Rotterdam, Beranger, had settled in Dublin and became an eminent, accurate landscape artist and draughtsman with a keen interest in ancient structures. Beranger began the Society's brief with a tour through the west of Ireland in 1779, accompanied by Angelo Maria Bigari, an Italian landscape artist from Bologna.⁶⁸ The tour resulted in a significant number of drawings, some of which were engraved for Grose's *Antiquities of Ireland*, published in 1791. One drawing by Bigari is of Ballintober Castle (Figure 10).⁶⁹

Beranger's diary does not appear to reveal much detail of the event.⁷⁰ He and Bigari arrived at Ballintober on 2nd August, having travelled in from Co. Galway. Their journey across the River Suck was difficult because the bridge had been broken down. Wilde's study of the diary makes no comment on the castle, other than attributing its drawing to Bigari. Elsewhere Wilde mentions that the castle had a cave, into which a calf dragged its owner and both emerged at Rathcroghan.⁷¹ 'The Castle of Ballintober' presents a perspective of the complex from the east, showing an elevation view of the east wall before construction of the handball alley. The view extends from the southeast tower on the left side of the image to the northeast tower on the right side, and includes the eastern entrance. There is no indication of an external ditch. Though dilapidated in the main, the walls and towers stood higher than they do today. The southeast tower is shown as rounded in plan and several storeys high, containing a round-arched window looking east that may be double-ogee in design. The entrance is drawn as a twin-towered feature with rounded towers and the suggestion of a simple narrow round-headed light on an upper level of the south tower. The north tower is truncated but noticeably higher. The drawing stops short of showing the full extent of the northeast corner tower, but it is recorded correctly as extending in a straight line from the perimeter wall. A single tall opening or doorway is shown at ground floor level, opening east outside the castle.

The drawing includes a depth perspective of the castle, looking in towards the west wall. The angular form of the southwest tower and its accompanying block appears to

⁶⁷ Ó Catháin, 'Charles O'Connor of Belanagare, p. 155.

⁶⁸ Peter Harbison, 'Beranger and Bigari: Lost and Found!', *Archaeology Ireland* 16. 4 (2002): 28-29. See a longer account in Peter Harbison, *Our Treasure of Antiquities: Beranger and Bigari's Antiquarian Sketching Tour of Connacht in 1779* (Wordwell, Bray, 2002).

⁶⁹ National Library of Ireland, 2122.TX(3)33.

⁷⁰ Wilde, *Memoirs of Gabriel Beranger*, pp 242-243.

⁷¹ Wilde, *Memoirs of Gabriel Beranger*, p. 137.

be essentially correct, and includes a significant fracture or vertical break in the tower's wall. The detail suggests a four-storeyed tower, complete with window openings. A view of the western entrance is partially blocked by the east entrance but the drawing does show a straight return on the north side, indicating the line of the entrance. The northwest corner tower is also shown as a four-storeyed building, with a simple round-arched entrance on the ground floor. A complex multi-light lintelled window is recorded on the third floor looking out onto the castle's interior, and it appears that the uppermost storey was gabled with the roof alignment running North/South. The north perimeter wall had a long narrow two-storeyed chamber extending out from it, creating a narrow rectangular structure, with a ground-floor entrance and two windows at first floor level.

There are elements of the drawing that urge caution in its reading. The artist has shown the background landscape as hilly but this is not the case as the topography is low-lying. On the other hand, the essential elements of the building, which is the subject of the drawing (namely the east-facing elevation of the castle) compares well with those elements of the standing structure today. It suggests there is merit in taking insight from those elements of the standing structure that have either collapsed further or been covered over in ivy and other vegetation. This is specifically relevant to the southeast and northeast corner towers which are quite reduced today and immersed in ivy.

A drawing by Wakeman (1822-1900) is used in Charles O'Connor Don's 1889 paper, and shows a view looking north to the southwest tower and through an opening to the northwest tower (Figure 11 top). Wakeman was careful to record the polygonal design of the southwest tower, and indicated a causeway across the outer ditch. The feature exists today and provides ready access to the castle interior but the causeway is a more modest infilling of the ditch than Wakeman's drawing indicates, and is unlikely to have been used as a formal entrance feature contemporary with the castle. The shattered nature of the tower's base shows where façade stones had been lost. The drawing includes a largely intact stairwell appended to the southwest tower, complete with a series of narrow lancet windows that extend up the wall to illuminate the stairwell. The northwest tower, framed elegantly through a gap in the south wall, shows a chimney stack rising above the upper chambers and is adorned with a series of lintelled windows throughout.

An early photograph taken looking east at the southwest tower shows the results of reconstruction work, where the façade stones were replaced at base of the tower (Figure 11 bottom). Ivy growth was well established at this time, but was far less

developed than it is today. It is possible to see a series of windows in the residential wing at first and second floor levels.

6.0 PREVIOUS ARCHAEOLOGICAL WORK

There is no record of antiquarian or archaeological investigations or excavations at the castle site, although it is clear that certain remedial works were carried out to stabilise elements of the structures, presumably in the 19th century. O'Connor Don's 1899 paper remains the most detailed survey and study of the castle's standing remains. A revised ground-plan survey appeared in McNeills' *Castles in Ireland*, while substantive new work was completed as a series of two unpublished geophysical surveys, completed in 2008 and 2009 by Target Archaeological Geophysics for the Ballintober Community Group.⁷²

6.1 Geophysical survey, overview

Gradiometry and resistance survey completed in 2008 included the castle interior and a series of survey panels outside the standing walls. The two surveys overlapped to ensure comprehensive coverage of a 1.2 ha area, while the gradiometry was extended over a slightly larger area (1.3 ha) to include panels outside the walls to the north and west of the castle (Figure 12). The interiors of the northwest corner tower, the southwest corner tower and the eastern gatehouse were not surveyed, and only partial access was possible for the southeast corner tower. Complete survey of the external fosse was precluded to the south and west by steep slopes and deep water. The village green, which forms on the east side of the site, reveals the presence of recent ground-works that cause large-scale interference in the geophysical data. Ground penetrating radar survey was carried out in 2009 within the castle's interior, and that work focussed on certain features identified in 2008, to try to gauge their depth and provide a 3D model of the buried features.

6.2 Gradiometer survey

Gradiometry can be very useful in discerning distinctions within buried strata of different soils, and can highlight the presence of cut features and fills, as well as areas of burning. The 2008 survey recorded a dense concentration of archaeological features, including the remains of former buildings, interlinking enclosures, pit

⁷² Tom McNeill, *Castles in Ireland. Feudal power in a Gaelic world* (Routledge, London and New York, 1997), p. 102; John Nicholls, 'Geophysical survey report: Ballintober Castle, county Roscommon, Licence 08R262', TAG project 08/036 (TAG 2008); John Nicholls, 'Geophysical survey report: Ground penetrating radar survey, Ballintober Castle, county Roscommon, Licence 08R262', TAG project 09032 (TAG 2009). The factual data described below is taken directly from these two reports.

concentrations, ditch remains and pit-type features. These responses are for the most part concentrated within the perimeter wall, and indicate an extensive array of activity associated with the settlement. In addition, there is an indication of possible earlier settlement in the south-east region of the survey area.

Within and throughout the castle interior, the gradiometer data shows high levels of magnetic response (Figure 12). These are recorded as a dense scatter of short ditch features, broad sub-angular / sub-circular responses and isolated positives that appear to be concentrated away from the west side. Three more substantive anomalies were identified. Two represent small ditched enclosures and are recorded at the north edge of the survey area and appear to adjoin the perimeter wall. They measure approximately 10 m and 5 m across, are curvilinear and sub-rectangular in form, and appear to connect with a series of fragmented linears to the northeast, suggesting foundation levels and pit features.

The line of a curving ditch extends through the southeast quadrant, indicating a diameter of 45 m. Further features are identified within the interior area enclosed by this anomaly. The nature of this feature may indicate a pre-castle feature associated with an existing earthwork fortification or ringfort site. The detail of the anomaly is however fragmentary, and the conclusion that it may form part of a pre-castle structure is tentative.

The gradiometer data reveals high levels of burning or firing throughout the castle interior, one of which is associated with the western small enclosure at the north side of the survey area. A further area of burning is located opposite the castle entrance, and measures between 10 m and 12 m in diameter. It may be associated with a kiln or metal-working activity. No significant features were identified within the interior of the northeast corner tower.

6.3 Resistance survey

Resistance survey in this geological environment is a useful technique for identifying hard structures within the buried strata, such as walls. Within the area surveyed, clear linear patterns and sub-rectangular regions of high resistance were discernible. These include the remains of several former buildings (Figure 12). The buildings are not un-associated or isolated structures, but appear to be linked to enclose a courtyard area inside the perimeter walls. The courtyard is squared in shape. It shares an alignment with the standing perimeter walls but there is not an exact symmetry between the two, with the courtyard appearing to be closest to the southwest corner of the standing remains.

A substantial rectangular building is indicated forming the southwest corner of the courtyard and extending eastwards on its south side. The building is c. 34 m long and 12 m wide. A possible sub-division is indicated on its east side. A linear extension is indicated on its north side, measuring c. 12 m wide, and forming a structure on the west side of the courtyard.

Another building is indicated on the northeast side of the courtyard. It measures c. 15 m long East-West by 9 m North-South and appears to have well-defined corner structures, as well as a series of one and possibly two aligned short linears extruding north and south on both long walls. At a glance these might be buttresses, but the data is not entirely clear, and they could indicate wall-stub fragments for rooms off a main structure, although it is unlikely that this would explain southward projections into the courtyard. An early consideration that this anomaly could represent a buttressed building such as a chapel has been rebuffed with the suggestion that it could be a hall structure.⁷³ Clearly it presents an interesting question worth pursuing through investigation.

A less distinct structure occupies an area to the west. It appears to be of similar dimensions (15 x 9 m) but is not as clearly aligned with respect to the courtyard, and may represent a building of different date. It coincides with a distinct platform area in the covering grass. There are other resistance anomalies throughout the surveyed area that do not form clear complex features, the presence of which should be expected at a castle site that has witnessed an extended period of occupation. No significant features were identified within the interior of the northeast corner tower, the only corner tower surveyed.

6.4 Ground penetrating radar survey

Ground penetrating radar (GPR) records features at depth in relation to time, which allows for the generation of depth-slice images and 3D modelling of anomalies. It is particularly useful in the present landscape for hard anomalies such as buried buildings. A selection of depth slices can be generated to show the progressive emergence/termination of features that exist (Figure 13). Cultivation furrows are indicated at surface level, aligned East-West across the site and extending to a depth of c. 40 cm. This observation indicates that the topsoil levels are disturbed across the interior of the castle. A series of stronger indicators begin to be seen at depths below 40 cm, associated with the three substantial structures that define the west, south and northeast corners of the courtyard. The building to the southwest came out clearly in the data, suggesting a slight adjustment in size compared with the information

⁷³ For the alternative view that redrew the geophysical anomaly in a rather distorted way, see O'Keefe, 'Liscarroll Castle', pp 59-62.

presented in the resistance data. The GPR data indicates that it measures c. 30-35 m long and 15 m wide externally. In contrast to the resistance data, the GPR indicates that the line of its long walls are not continuous. Between 60 cm and 160 cm below the surface, the building appears to be supported on a series of large piers or columns. The elements are not entirely in alignment between the north and the south walls, but there is a suggestion of possibly four pairs of supports, indicating that it may have been built as a five-bay design. Where such arrangements are seen in standing buildings, such as medieval barns or hospitals in England, such piers are the internal elements of a timber-framed structure supporting an aisled design. Aside of churches, there is little strong evidence for aisled buildings in medieval Ireland. The geophysical signatures of this structure presents an interesting question that might be pursued through investigation.

There was no indication in the GPR data of the building indicated in the resistance data running north and forming the west side of the courtyard.

The GPR data acquired for the building in the northeast quadrant of the courtyard corresponds almost entirely to the results from the resistance survey, confirming a north-facing entrance, external buttressing, and the absence of a western wall. The detail on the building's layout is most evident at depths of 80 cm and 160 cm below the surface. No significant reflectors have been recorded within its interior.

The GPR data returns some indication of the structure shown on the resistance data in the northwest sector of the courtyard. There is a group of strong reflectors occurring in the upper 20 cm of soil, with further indications of potential foundations or demolition debris at a depth range of 80-160 cm. The discontinuous form of these signals suggests that the structural remains are eroded significantly.

There are other less coherent indications of structural remains throughout the survey area, while the data also shows a zone in the southeast that lacks buried structural remains. This may equate with an open area and it coincides broadly with the curvilinear ditch feature indicated in the gradiometry data.

6.5 Geophysical survey results

The most obvious result from the geophysical surveys is the identification of a range of interlinked structures within the interior of this 'keepless castle'. The observation of a courtyard defined in part by buildings at its edges populates the interior of the castle site. The courtyard is not entirely in symmetrical alignment with the standing perimeter walls, but it is perhaps seeking too much to expect this. The chronological association of the courtyard complex with the perimeter remains unknown, and there

is little clear indication for direct associations between the buildings highlighted within the interior and the perimeter.

The gradiometry survey presents a further sequence of anomalies that appear to relate to activities conducted within the interior, and may also reflect pre-castle usage. As a site that was only built in the early 1300s, it would be in keeping to discover earlier strata. The suggestion that the curvilinear ditch feature might be part of a former ringfort enclosure could explain de Burgh's choice of location for his castle, where he would usurp an existing authority and replace it with a very definite and confident statement of his 'new order'.

It is also clear that during its three or four centuries of occupation, the castle was inhabited by many groups and was a contended place. We can only expect a myriad of occupation levels and debris to reflect this.

There is opportunity to conduct further geophysical survey at the castle site, and consideration might be given in the future to micro-surveys of each of the corner towers, the entrance towers, and the external ditch areas.

7.0 2014 TOPOGRAPHIC SURVEY

7.1 Method

New survey of Ballintober Castle was carried out in 2014 using laser-scan technology. A factual report on that work is included as Appendix 1 of the present report. The survey took place over three working days, 26-28 August. The survey team comprised Robert Shaw, Surveyor at the Discovery Programme; the author; and Cameron Brady, assistant. The aim was to record the complete upstanding remains of the castle at a sufficient resolution to enable a stone-by-stone model to be generated, and to deliver a registered, geo-referenced 3D point-cloud, which can be used for detailed analysis of the 3D geometry of the castle and as an aide to unravelling the phasing and interpretation of the site (Figure 14).

The castle is heavily overgrown, principally with ivy. To assist the survey, certain vegetation was removed at the lower levels, but this was not possible for the higher levels of the castle which are inaccessible. Vegetation removal entailed cutting away branches and foliage but leaving root stocks in place unless the growth was clearly free-standing and not embedded in the structural remains. A photographic record was also made of the standing remains. The survey was ground-based, in that no scaffolding was available to provide access to the upper levels safely. This imposed a constraint on being able to record and describe the upper levels of the site in detail. The results achieved are nevertheless robust, and provide the basis for further

investigation, enabling extraction of scaled dimensions, formal views such as elevations and plans, and user-defined cross-sections. The full digital archive is available through remote server via the report's principal author, along with the photographic record taken in 2014.

7.2 Construction Narrative

7.2.1 External fosse

As was the case in O'Connor Don's survey published in 1899, the fosse today is well defined on its north and west sides and to a lesser extent on the south side (Figure 14, Plates 4-7). It is not so visible on the east side, where it is only exposed to the south of the entrance towers. Where it is clearest on the north side, the fosse occurs directly below the walls, is steeply-sided on both faces, and measures between 18 m and 20 m wide on the north and west sides at the top of the ditch, and is less defined on the south side because it has been clipped by modern road-building. Where best defined on the northwest, the ditch is 3.3 m in greatest depth to the top of the filled-in levels (from crest to trough). It appears to be filled with soft soil and stone, much of which can be attributed to collapse from the walls. There is some slippage on the outer slope on the northwest corner and it is here that the fosse achieves its greatest surviving width and depth. The fosse is mostly dry but water pools in the southwest corner and also along the south side. A causeway occurs on the west side in line with the possible postern entrance, where the causeway is 6 m wide on top and 9 m at the bottom of the exposed ditch surface. A less defined causeway feature exists on the south side close to the southwest tower, providing access to a modern entrance to the castle site, as indicated in a drawing by Wakeman published in 1899 and showing it from perhaps a slightly exaggerated perspective (Figure 11 top). It is hardly an original feature.

A counterscarp bank is apparent on the north and west sides where the original ground surface appears to be intact, in contrast to the south and east sides where this is not the case. The bank is best preserved along the west where it is broadly curved in profile and measures 17.5 m wide and 1 m high (Figure 14. Plate 8).

The geophysical surveys may suggest the presence of the fosse along the east side, shown in Figure 12 as a zone of lighter colour but interpreted in the survey report as part of a wider area of general disturbance. The landscaping of this area to create the open area that is today a green space, coupled with the intrusion of the handball alley has blurred the distinctions to be gleaned from this data set.

7.2.2 Castle walls, general

The castle walls connect the four corner towers and survive to an impressive height when viewed from outside the castle (Figures 15-17). Although heavily covered in vegetation on each of the four lengths, the north wall is the most visible. It reveals a tall straight-sided wall for much of its height. Where a battered profile should exist at its base, the facing stone has been lost, either through collapse or through reuse.⁷⁴ The suggested profile indicates the presence of a steeply-sloping base batter that measured 2.3 m high while the overall wall height externally appears to have been 4.2 m above the base batter. The wall is 3.6 m high internally. The wall heights recorded in 1899 were somewhat higher; the west and north walls were 25 feet tall (7.62 m), while the east wall was 21 feet tall (6.4 m).⁷⁵ Comparison between the 19th-century record and today may indicate an element of collapse, but it should be noted that wall height varies along each wall, and it may be that measurements are taken from different locations to those recorded by O'Connor Don.

The west wall stands in a similar manner to that of the north wall in similar fashion and has large sections on its south side that are entirely buried by ivy. The south wall in contrast is buried in vegetation from the outside, and retains a series of vertical gaps that correspond in places to window openings internally. A section of exposed walling close to the southwest tower is a modern rebuilding to facilitate a gateway entrance to the castle today. While the south wall is in poor repair generally, it is preserved in far better condition than the east wall, which has been largely removed to ground level either side of the entrance towers.

There is little distinction between the fabric of the main walls and the corner towers. The walls were built in courses, using roughly shaped limestone blocks, which vary in size but the more substantial pieces are on average 27 cm long by 22 cm high (Plate 9). Smaller stone is used to fill spaces between the larger blocks. Any indication of mortar or pointing has weathered away from the façades but is clearly visible in the lowest courses where the façade stones do not survive, exposing the core structure. There is little vertical distinction in the stonework, but there are some indications of horizontal building lines, provided on the one hand by a line of thinner stone that distinguishes the top of the base batter in places, and on the other hand by lines of similar-sized stone that correspond to floor levels in the adjacent corner towers.

⁷⁴ O'Connor Don 'Ballintubber Castle'. See also comments by Máirín Ní Cheallaigh, 'Mechanisms for monument-destruction in nineteenth-century Ireland: antiquarian horror, Cromwell and gold-dreaming', *Proceedings of the Royal Irish Academy* 107 C (2007): 127-145, at p. 134.

⁷⁵ O'Connor Don, 'Ballintubber Castle', p. 30.

It is clear on the north wall that several openings were inserted into the wall as gun loops. In one instance the façade around the loop retains a render, highlighting the insertion (Plate 10).

Internally, the walls are noticeably lower, highlighting the distinction between the heights of the interior over the depth of the fosse. Where the internal façades of the walls survive in height, they measure on average 3.6 m high. It is likely that the interior ground level has been built up over time, but the GPR data indicates that solid internal structures exist at depths of 40 cm and greater. This helps to qualify a suggestion that the internal surface is significantly heightened by occupation and usage. It is possible to conclude that the base of the perimeter walls follow a scarp in the fosse slope. It is likely that the scarf was created in cutting the fosse outside the walls.

There is nothing to record of the interior façade of the east wall and the south wall is heavily overgrown. The interior of the west wall retains two arched sections to the south of the possible postern gate, and one arched section to the north (Figure 15, Plates 11-13). These features are to accommodate short vertical slit openings below. On the south side and close to the southwest corner tower, a low pointed arch extended over a generous splayed opening. The splay is on its north side, but is partially blocked up in a subsequent crude rebuilding to insert a gun loop. A series of three flat lintels form a section of corbelling that frames the upper side of the gun loop, which appears to be a simply formed square hole. A second arch lies 6 m to the north. There are a few stones on its south side that suggest the line of the former splay, but the interior space is filled with a mortared rubble mass that clearly blocks the former feature. The third arch on the west wall lies next to the northwest corner tower and is less pointed than the other two but covers the largest opening of the three. The wall is recessed beneath the arch and within the recess it is slightly splayed. However the formal surround of the opening is robbed, leaving a gaping vertical hole that betrays nothing of the former structure internally or externally.

The north wall retains six openings, and is widened along part of its length to accommodate a mural stairs (Figure 17). There is a symmetry in the distribution of the six openings along the wall, lying either side of the mural stairs. The openings are constructed in a similar way to those on the east wall but with lower arches, and were originally fitted with splayed recesses but little of the original stonework survives. In three instances gun loops have been inserted and the wider opening adapted to accommodate a series of three flat lintel stones set in a corbelled manner above (Plates 14-16). In two instances the gun loop is a low rectangular opening. In the gun loop closest to the northwest corner tower, the loop is circular in shape. There is little

indication of the later insertion of these openings into the wall as the masonry work is well accomplished, but the render and pointing for these features survives better than elsewhere along the north wall.

The thickening of the north wall to accommodate a mural stairs occurs centrally but is closer to the northwest tower than it is to the northeast tower. The feature extends over a length of 7.75 m (Figure 18, Plate 17). A series of quoin stones formalize the widening of the wall at either end of the feature. The entrance is ruined but the base of the steps lies at the west end, and ascend in a straight line eastwards. The steps are roughly shaped substantial rectangular blocks, whose exposed dimensions measure 72 cm wide, 26-43 cm deep and 24 cm high. The two lowest surviving steps are slightly wider to facilitate direct entrance from the ground floor level. The steps open onto the wall-top, which today permits a short walking area to the east end of the feature. The surface area is heavily overgrown, masking any detail that might indicate footings for an associated structure, such as a boardwalk or other cantilevered structure that would assist in the defence of the castle's northern flank. Bigari's drawing of the castle in 1779 indicated a series of windows within the structure of the mural stairs, suggesting a two-storeyed building, but there are no such features indicated in the exposed façade today (Figure 10).

The north wall also retains a square column or buttress that was inserted as a structural support measure presumably in the 19th century, and is recorded on O'Connor Don's plan of 1899 (Figure 1).

7.2.3 The southwest corner tower

O'Connor Don's description of the corner towers is quite brief. He highlights the fact that they are polygonal in plan, drawing comparison with Edward I's castle at Caernarvon (built in the 1280s), and gives only fleeting mention of the architectural details. In contrast, his ground plan is much more informative.⁷⁶ The plan shows the southwest tower comprising three principal elements: a rectangular central keep that is aligned northeast/southwest; a stairwell in the northeast corner that is within the perimeter wall but external to the tower; and a short rectangular chamber adjoining the northwest side that is also within the perimeter wall. Three window openings were recorded on the external walls of the main chamber as well as two recesses, and a further recess is indicated in the northern chamber. It is possible that Wakeman's drawing of the southwest elevation which is used in O'Connor Don's paper shows the tower some time prior to 1899 because there is no indication of the square-shaped buttress that supports the masonry above the entrance to the main chamber, but which is shown on O'Connor Don's plan as an open square that distinguishes it from

⁷⁶ O'Connor Don, 1899, pp 24-25 insert facing page 30.

original stonework (see Figure 11 top). Wakeman's drawing also records the base batter of the tower as a shattered façade, but the façade has since been made good. Although not addressed by O'Conor Don, the replacing and repointing of the stonework on the base batter has much in common with the squared buttress, and may indicate that these are contemporary stabilization measures conducted in the late 1800s.

McNeill's plan published in 1997 repeats much the same detail as that recorded in 1899, and indicates the presence of a garderobe chute within the chamber on the north side of the central unit.

The tower is a three-storeyed structure. Externally, it is covered heavily in ivy today, and this growth buries the wall of the stairwell and much of the north chamber. (Figure 19, Plates 18-19) Quoin stones run up the length of each polygonal angle. Window openings are evident across all three floors, but the cut stonework is robbed out in all but one case, where a ground-floor window facing west from the main chamber is represented by a narrow vertical slit, framed with cut limestone ashlar. In overall external dimensions, the tower's principal chamber measures 13.4 m long to the top of the base batter, 9.5 m wide and stands 14 m high today above the base batter.

Ground floor

The internal details reveal a complex structure (Figures 20-21). The floor plans are based on a simple rectangular space in the main tower that measures 5 m wide and 10 m long, extending from outside the line of the perimeter walls and into the interior of the castle space. The ground floor level extends 4.4 m high above current ground level. There are three recessed windows opening onto the castle's exterior, on the south, east and west walls, while a fireplace is situated more or less centrally on the west wall. The north wall provides entrance to the tower today but is very dilapidated and exists only because a substantial masonry buttress pier was built there by 1899 to support the upper levels of the tower (Plates 20-21). The window recesses are each constructed under a low rounded arch, similar to what survives along the western perimeter wall of the castle, with a generous splay on either side that leads to a narrow window opening (Plates 22-24). A slight ledge was built below the cut stonework. The window facing east has been adapted to include a round gun loop below the window sill, while a box-shaped recess on its north embrasure provides a second gun loop facing northeast (Plate 25). Wicker centring survives below the arches on the east-facing and west-facing windows. The fireplace is generously proportioned but the cut stonework that would have formed the mantelpiece and front sides has been removed. It appears to have measured 1.8 m wide, 2.3 m high to the

mantle, and is 40 cm deep with straight-sided walls. The flue is well built and reduces in size gradually to a square-shaped form at height (Plate 26). The surviving stonework does not indicate how the ground floor was connected to the stairwell in the tower's southeast angle, or to the narrow north chamber, but it is possible that this connection was via the north end of the tower, which is much ruined.

There is no indication of a barrel vault in this main chamber. In its place is a series of pointed arch-shaped recesses that are built into the long walls and the south end wall, which indicate the presence of a vaulting mechanism (Figure 21, Plates 22, 28). There are two recesses along each long wall, and one is each of the three angles of the south wall. Each arm of the recess is approximately 10 cm deep and 45 cm wide. There are no springing stones to suggest a stone vault, and it is possible that the recesses were to facilitate timber supports. The plan of such a timber framework suggests a ribbed vault arrangement, where the timbers from each supporting arch interconnected to create a complex high ceiling. Such a structure would have been quite elaborate, and its occurrence at ground-floor level, coupled with the defensible yet elegant windows and the fireplace, suggests that this space was important and may have functioned as a hall.

Access to the narrow chamber to the north is only possible today at ground floor level, but it remains unclear how this chamber was connected to the main hall, due to various repair works that have been carried out. The ground floor area is an awkward space, with an obliquely angled wall at its south end (Figure 24, Plates 29-30). This is because the castle's perimeter wall runs against the long wall of the corner tower's main chamber at its mid-point. There may be some stones of the perimeter wall that are keyed into the chamber wall at height but the lower courses clearly abut the chamber wall, indicating that the perimeter wall's construction followed building of the main chamber. The subsequent enclosure of this small space created a tight triangular area, with the area directly next to the main chamber being of little use. A recessed window with splayed embrasures below a round arch is preserved on the perimeter wall. It is similar to those within the main chamber and has a short vertical opening. To its north, the west side of the chamber has been boxed-off to facilitate the insertion of a garderobe chute, and a crude pointed arch is extended across to the east wall, creating a narrow floor-to-ceiling recess at the north end of this chamber (Plate 30). This is a false end wall however, as a second garderobe chute lies behind it on its north side, and that chute extends the full width of the chamber. The entrance to the chamber is from the east wall, with a splayed wall end on the north side. The details to the south are confused by later rebuilding works associated with the 19th-century buttressing. A second modern buttress supports the north end of the chamber. The chamber is vaulted with a simple barrel vault aligned North-

South and running from east to west, adapted in shape to accommodate the triangular space.

First floor

Access to internal details relating to the first and second floors is only possible today from the main chamber, as the stairwell is collapsed, and the upper floors of the north chamber are not reachable (Figures 20-21). The first floor of the main chamber was a large open space, measuring 10 m long by 4.5 m wide. The presence of a linear recess cut into the long walls and/or simple recesses for joists indicates the presence of a timber floor (Plate 31). The chamber is illuminated by a tall window in two of the angles of the south wall, and was heated by a generous fireplace in the west wall. The cut stonework within the chamber does not survive. The windows were recesses with deep splays and wide openings, measuring 1.1 m wide (Plate 32). The fireplace was situated above that on the ground floor but is larger, measuring 2.8 m high and 2.2 m wide, and is funnel-shaped reducing to a simple squared-shaped flue at height (Plate 33). One assumes that access to the chamber was via the stairwell at the northeast end, while passage into the north chamber was at the northwest corner.

Second floor

The second floor appears to have been more illuminated. It measures 10.2 m long by 5 m wide, and was also fitted with a timber floor on joists. The chamber has a similar tall generous window in each of the angles of the south wall, and smaller recessed windows placed opposite each other on the long walls. There is a probable doorway evident at the north end of the west wall. There is no clear indication of a fireplace, but there is some suggestion of a feature in the west wall that is unfortunately buried in ivy growth (Plate 34). Viewed from the castle interior, it is also clear that there is a window from the north chamber that looks out onto the interior space.

Conclusions

Construction of the southwest tower appears to pre-date that of the western perimeter wall, but it is likely that this was purely from the perspective of the building programme rather than being significant chronologically. Removal of the ivy would permit a more comprehensive record of the various components and the relationships between the elements. This was a substantial residential tower above the ground floor. The use of narrow slit windows on the ground floor reflects the defensive nature of such towers, but these are not so tall or so narrow as those, for instance, at either Roscommon Castle or Ballymote Castle (Plates 35-37). The cut stonework that frames the windows at Ballintober is also well proportioned and elegant. If there was any doubt about the intended comfort, the presence of the fireplace on the ground

floor would suggest caution, while the indications of an elaborate timber vault goes further and suggests that this may have served as a hall for the castle's lord.

7.2.4 The northwest corner tower

The northwest corner tower has a different design and a different relationship with the castle's perimeter walls, which highlights the irregular layout of the overall site. It is a more integrated structure to that of the southwest tower, and shares much in common with stand-alone tower house castles (Figures 22-24). The polygonal plan of the external walls conceals the essentially rectangular plan of the structure, much like the southwest tower, but the stairwell in this instance is integral to the overall footprint, and there is no additional chamber to one side. The tower is entered from the south, where the visitor can proceed along a short passage directly into the ground floor chamber, or the visitor can turn left along a second short passage to the base of the stairwell. This element divides the building into two principal units, with the entrance and stairwell serving as an ante-chamber through the height of the building, and the main chamber space to the north being somewhat shorter and more compact than is the case in the southwest tower. The northwest tower is a four-storeyed building. It measures externally 13 m long, 9 m wide and stands 13 m tall above the base batter, excluding the roof and chimney stack that rises a further 6 m.

Externally, the tower presents an impressive and tall character overlooking the fosse (Figure 22). The base batter façade is robbed from the walls but the stonework otherwise survives quite well, blending seamlessly with the perimeter walls and also preserving a series of putlog holes high up, to provide scaffolding access to the uppermost levels. Quoin stones run up the length of each polygonal angle. A set of ornate windows on the first floor and higher overlook the fosse facing west, and there are similar windows looking into the interior of the castle facing east. There are two narrow slit windows at ground floor level which overlook aspects of the fosse, looking west and northeast respectively (Plate 37). The stonework indicates that such windows formerly existed in each of the polygonal angles but have since been blocked up (Plate 38). From within the castle's interior a narrow hooded window looks out over the entrance from the first floor mezzanine level (Plate 39). The stonework on either side of the entrance has been repaired to provide more or less vertical façades that serve to buttress the floors above (Plate 40). These works appear to be in keeping with the more direct buttresses added elsewhere in the castle during the 19th century.

Ground floor

Much of the cut stone adorning doorways and windows survives in the northwest tower, and the predominant tooling is punch-dressing. The formal entrance to the

tower does not survive but as one enters through the buttressed gap at ground-floor level the visitor is presented with a pointed arch to the left and one to the north, which leads into the passage to the stairwell and on into the main chamber respectively (Plate 41). Overhead, the ceiling is gone but one might expect a murder hole to have been there at one time. In its place, the fabric of the stone ceiling is revealed, showing a robust mortared vault at this entrance point, which extends northwards to be flush with the internal south wall of the main chamber. The stone arches of the doorways are simply formed with formal panels of punch dressing (Plate 42). A stack of three limestone blocks forms each half of a doorway, with two verticals beneath a single arch stone, all of which share a chamfered edge. The functional simplicity gives an elegant result, and it is a style repeated throughout those parts of the building that were to be seen.

The main chamber is a simple rectangular space, measuring 7 m long and 5 m wide (Figures 23-24). It was a low space compared to the ground floor of the southwest tower, and is 2 m high today above current ground level. There is a recessed area to the left (west) of the doorway, which extends beneath the stairwell, and there is a window located on the west wall and on the east wall looking out over the fosse. The windows are similar in design to those that exist in the ground floor of the southwest tower, and the window stones are only preserved in the east-facing window (Plate 43). There is no indication internally of the blocked-up windows in the polygonal angles, which suggests the degree to which the interior spaces have been redesigned over time (Plate 44). A series of square-shaped recesses in the north wall and in the south wall would have held joists to support a timbered ceiling, and two corbels would have supported cross beams (Plate 45). There is no indication of a fireplace at ground floor level; it is likely that this was an area for general storage.

The passage to the stairwell measures 3 m long and is 1.5 m wide (Plate 46). The stairs spiral to the right and are made from single limestone blocks, some of which retain punch dressing on the vertical face and do not appear to be reused (Plate 47). An arched doorway beside the west wall leads directly to the main chamber on the first floor, while the stairs continue to climb eastwards to a mezzanine level that is above the entrance. The remains of wicker centring survive above the entrance to the first floor main chamber (Plate 48).

First floor

At first floor level, the main chamber was an accommodating space measuring 7 m long, 5 m wide, and 4 m high, with a tall window in either long wall and a fire-place in the east wall. There are no windows in the north wall. The window in the west wall is more or less centrally placed. All but the upper corner stones on its north side are

robbed out and those that remain represent a flat hood moulding in keeping with that over the narrow first floor light above the tower's entrance (Plate 49). The window retains a deep splayed recess that measures 1.5 m wide and 2.7 m high. The second window is also in poor condition. It was placed in the east wall at the most southern part, overlooking the wall-walk of the north perimeter wall (Plate 50). It was tall and narrow, measuring 1.4 m wide. The fireplace lies next to the window in the east wall (Plate 51). It is a simple rectangular recess into the wall that is shaped obliquely at its top to accommodate a flue on its left (north) side. The jambstones on its right (south) side survive intact, some of which are punch-dressed. The uppermost stone is curved in its angle to present an ogee-shaped form. Fragment of a single stone above represents the only surviving element of the mantelpiece. The uppermost jambstones survive on the corresponding north side of the fireplace but they are less worked. The slot to receive the mantelpiece above is clearly evident. The fireplace measures 2 m wide, 1 m deep and was 2 m tall to the mantelpiece. A series of recesses for joists above corbels indicate a similar ceiling arrangement to that of the ground floor.

The small chamber above the tower's entrance is entered from the stairwell through an arched doorway, and is illuminated by a small recessed and splayed window looking into the castle interior over the entrance. The chamber's mezzanine floor level is 3.2 m above the current ground floor, to accommodate the height of the vaulted entrance to the tower. The doorway's original finish was quite elaborate but today suffers from dilapidation (Plate 52). The stairwell continued outside the door to the second floor, lit by a narrow slit window in the south wall (which was not highlighted in the laser-scan survey) (Plate 53). This essential plan of the stairway and ante chamber is repeated above in the second and third floors. The stairs were well executed. At ground floor the keystones are merged into a vertical column, but this changes above the first floor, where the stones are keyed directly into the tower walls and there is no central column. The individual steps are carved to convey a seamless curving slope on their undersides (Plate 54). Whether there was a central timber balustrade to give some security while ascending and descending the steps is not known, but the stonework results in a central void as one climbs above the first floor.

Second floor

The second floor is very similar in layout to the first floor, containing two windows and a fireplace in the main chamber, and a similar ante chamber and stairway to the south. The main chamber measures 7 m long, 5 m wide and 4 m high. It is entered from the south in the same way as on the first floor. The windows and fireplace are however more elaborate. The windows are placed directly on top of those on the first floor. That on the west wall is a more complete version of the first floor window, and

preserves its square-headed form more or less intact, and was divided by two mullions into two orders of three lights (Plates 55-56). Internally, the window's recess is lined with lengths of cut stone that are curved in profile to match the rounded arch overhead. There are two orders of this stonework, which represents the most accomplished feature in the building. If woodland remained in Rosmeen townland at this time, the principal residents would enjoy a luxurious viewing platform out onto a wooded landscape.

The window in the east wall is obscured by ivy growth but it too was a square-headed form, although it lacks the ornate stonework lining its recess (Plate 57). The fireplace matches the elegance of the west wall window opposite. Its jambstones are made from single lengths of cut limestone, with a three-ordered chamfered moulding. An elegant plaque is carved onto the surviving right (south) side of the mantle, and comprises a confident monogram with *fleur de lys* terminals set above the date 1627, which is above a five-lettered inscription 'CONró', an abbreviation for 'O'Conor' (Plate 58). The monogram appears to be the Christogram, showing the abbreviation 'IHS' with a backwards-facing S.⁷⁷ The plaque is a strident declaration of O'Conor's Catholicism at a time when Roman Catholicism was suffering persecution under the Penal Laws. Sir Hugh O'Conor resided in the castle at the time until his death in 1632. The finer architectural points of the northwest tower belong to this period, especially the square-headed windows and the mantelpieces, but also the pointed form of the doorways which continued into the 17th century, and the use of formal fields of picked or tooled stonework.⁷⁸ The splendour of the tower's redesigned interior belongs to Sir Hugh's time, and matches the bold comfort of the plaque's declaration, leaving the O'Conors and their visitors in no doubt as to their faith and their financial success. It is a reinvestment of O'Conor landed wealth in the renovation of 'their' castle, in keeping with contemporary opulence and presented with refined elegance.

The fireplace measures 2 m wide, 90 cm deep and is 1.8 m high to the mantle, and has a generously proportioned rectangular-shaped flue. The chamber's ceiling was once again a simple affair of timber beams supported by the stone walls, as evidenced in the recesses for joists and simply carved stone corbels that stand proud of the walls in particular places. The stairwell and ante chamber are not accessible today, but the ground plan is mirrored with that of the first floor, missing only the presence of a window overlooking the castle interior on the second and third floors of the ante chamber.

⁷⁷ I am grateful to Martin Timoney for suggesting this interpretation.

⁷⁸ For comparison, see H. G. Leask, *Irish Castles* (Dundalgan Press, Dundalk, 1977), pp 104-105.

Third floor

Much of the third floor does not survive or the detail is masked by ivy growth. A similar floor plan exists for the stairway and ante chamber to that which exists on the second floor, while the main chamber has a somewhat different layout. The chamber measures 7 m long, 5 m wide and is 2.2 m high, and lies directly beneath the gables. A window is indicated on the west wall which is square-headed but it is somewhat shorter than that on the second floor. It is not known whether there is a window on the east wall, but the fireplace is on the north wall, directly under a gabled chimney (Plate 59). The fireplace is less extravagant than those on the lower floors but is more intact and is quite substantial, measuring 2 m wide, 30 cm deep and 1 m high to its mantelpiece. It is framed by simple jambstones on either side whose only embellishment is a simple chamfered edge. A corbel stone is of the same design as the roof corbels, and juts out above both jambstones to support a single-piece limestone lintel that is flush with the wall overhead and is as plain as the jambstones and corbels, adorned only with a chamfered edge. The orthostatic design of the fireplace conveys a monumental and comfortable space. The line of the fireplace and the short height of wall above is noticeably out of synch with the gable overhead. It is a further indication of how the northwest tower was remodelled in the 17th century, while maintaining its polygonal external plan. It indicates that the gable is probably an original feature of the tower, but the chimney above it is not. The upper floor of such towers is classically considered the bed chamber, and the presence of the fireplace on the exposed north wall would help to heat such a space.

Roof line

Without getting onto the roof line it is possible only to report some details that are visible from ground level. In addition to the pitch of the north gable, there is a series of dripstones protruding beyond the edges of the polygonal tower (Plate 60). One can see them on the northwest corner. They are standard types, consisting of a slightly tapered long edge that runs from the roofline out beyond the wall edge, with a channelled dorsal surface to carry the run-off.

The chimney rises above the north gable, and it is rectangular in plan. Quoin stones run up its corners, and a drip ledge is at its top. The stones are angled above the ledge, suggesting that a triangular arrangement originally surrounded the flue.

Conclusions

The northwest corner tower retains a similar polygonal design to the southwest tower, but is otherwise quite different; it is more compact and exudes a more integrated layout. It was also subject to much redesign in the 17th century, when it was

transformed or upgraded to a lavish suite of contemporary apartments. Despite the absence of cut window stone in the southwest tower, the presence of comparable narrow windows in the ground floor reveals the similarities. Here again, these narrow slit openings lack the more functionally defensive nature of such openings seen at Roscommon Castle and at Ballymore Castle. When considered in cross-section, it is clear that the wall separating the main chamber from the ante chamber is not plumb, and tilts slightly to the south (Figure 25). It appears to be pulling the larger front area of the tower away from the main structure. Structural cracks are focused on the area between the main chamber and the ante chamber. It explains the subsequent buttressing evident in the south wall, to prevent its collapse. It is unclear where the garderobes were located in this tower.

7.2.5 *The northeast corner tower*

The corner towers on the east side of the castle are in much poorer states of preservation, and are for the most part buried in thick ivy growth. The northeast tower appears originally to have been almost as large as the corner towers on the west side in terms of floor plan but, unlike those towers, it is aligned North-South and appears as an appendage to the perimeter walls (Figures 26-28, Plate 61) . It measures 12.5 m long and is 9 m wide, while its ruined height rises to 13 m above the base of the fosse on the north side. There is little to be seen of the tower from its exterior, where it is noticeable that the base batter façade does not survive, but the north wall of the tower is polygonal in plan.

The remains of two floor levels survive internally. The stonework is quite functional with little indication of ashlar, but this may in part be due to the poor preservation. At ground floor level, a former recessed window opening in the northwest angle of the north wall has been partially filled in and reset as a gun-loop, with the directional view sloping down into the fosse (Plate 62). A similar reworking of a recessed opening exists on the northeast angle of the north wall, and the infilled masonry is done crudely, with the stonework being not level (Plate 63). Elements of a relieving arch occur at the very south end of the east wall, which may represent the top part of another window recess, but the vegetation needs to be removed to provide a clearer perspective. The return of the south end wall is evident at this point.

The most striking element on the first floor is the remains of a fireplace, which is positioned in the east wall (Plate 64). In comparison with those in the western towers, this is a simple affair. The upper levels of the recess are evident and the clearest element is the flue. The fireplace measures 1m wide and 1 m high, and is 30 cm deep.

Though ruined and covered in overgrowth, the northeast corner tower enjoys a different orientation and relationship to the perimeter walls of the castle than is the case with the southwest and northwest towers. It suggests that the patron's needs were different on this side of the castle. The east side is where main entry was possible. The green space outside the castle to the east is landscaped and evidence for the fosse is obscured, but it may be worth considering in the future whether these distinctions are associated with the presence of an external bawn or enclosed area outside the castle walls, between it and the town proper. It may also allow for a consideration of the accuracy of Bigari's 1779 drawing, which appears to show a doorway from the tower facing east onto the green (Figure 10).

7.2.6 *The southeast corner tower*

The fosse continues around both external faces of the southeast corner tower and while the tower itself is quite obscured by ivy, it appears to be a two-storeyed structure today (Figures 29-31, Plate 65). The tower measures 11.5 m long by 10.5 m wide externally. O'Connor Don's plan indicated that the tower is polygonal in plan, while Bigari's drawing suggests it is rounded. The depth of ivy growth today obscures this detail, but the south wall of the tower is faceted in three angles, as seen in the western corner towers and suggesting a polygonal plan overall.

Internally, the tower measures 9 m long, 8 m wide and is 2.8 m high (Plate 66). It retains three angled faces that look out over the fosse to the south and east. In each angle is a large vertical opening at ground floor level. The openings are all exaggerated by dilapidation but it is reasonable to understand that they formerly held defensive windows. A splayed recess is evident in the middle opening (Plate 67).

There is a massing of stonework in the northwest angle of the tower (Plate 68), suggestive of both a substantial vault and also a return end wall or other partition. If a vault, it appears to have been oriented North-South, and this gives some indication of the structure's massing. It may be the remains of a barrel vault, which would be in keeping with the early date of the castle. An attempt to buttress this end of the tower is evident in the square-shaped masonry pier that is presumably 19th-century in date, which is itself succumbing to aggressive ivy growth. A large section of masonry lies to the north, and appears to be collapsed from the original tower.

There is no clear indication of detail above the ground floor, which contrasts with the 18th-century drawing by Bigari, who recorded a tall rounded tower with an elegant window in its upper level (Figure 10).

The southeast tower is the smallest of the castle's corner towers and it has quite a different plan, being more truly rounded in form. It is also not in alignment with the

northeast tower, in the way that the western corner towers share a similar balance to each other. If diminution is an indicator of age, which is not to suggest that it necessarily is, then the southeast tower might be the oldest standing element of the castle. It is a question that further investigation might be able to address, both through the exposure of more masonry by the careful removal of ivy, and by an investigation of the buried horizons.

7.2.7 *The east entrance*

The principal entrance to the castle was through a fortified gate with twin towers on the east wall (Plate 69). The structure is not quite centrally located and is closer to the southeast corner tower than it is to the northeast tower. The ground level approaching the entrance is noticeably elevated, suggesting the potential for buried remnants of a causeway or draw bridge arrangement. The image captured by Bigari remains essentially the same today, where the northmost of the two towers stands taller than that on the south side of the entrance. Originally the two towers were no doubt of similar height. Each tower appears to be based on a rectangular plan with a half-round tower that projects beyond the perimeter wall on the east side, giving a ground plan that is approximately 8 m long and 7.5 wide for each tower (Figures 32-34). The western end of the both towers does not survive above ground, and the geophysical surveys do not distinguish these details clearly because of the presence of a lot of stonework in this area. The rounded nature of the half towers contrasts with the angled nature of the corner towers.

The north tower reaches 9 m in height externally, where it is incorporated into the handball alley. A base batter survives that is rendered, and there is the suggestion of a relieving arch in the tower's upper levels (Plate 70). A mass of shattered stonework that appears to be the ruined east end of the tower is buried in grass and partly incorporated in a modern perimeter wall to stop access into the castle (Plate 71). Internally, the tower was divided into a front (east) chamber and a rear (west) chamber (Figures 33-34, Plate 72). A round arch in the front chamber highlights the presence of a window opening at ground floor level that has been largely blocked up in recent times using concrete blocks. A more segmented arch in the rear chamber supports a splayed recess at ground-floor level, whose opening has been blocked up using other castle building stone. The mass of stone work between both chambers, indicates a thick wall separated them, and may have supported a barrel vault over the rear chamber.

The south tower is best presented externally on its east façade, where ivy has not extended down its full length. The façade is robbed of its former ashlar, but it is clear that there was a steeply inclined base batter. The presence of two openings indicates

that the tower included a ground-floor level and a lower level representing a basement level. The lower opening has a flat lintel and a series of three internal lintels arranged in a descending manner that is identical to those in the perimeter walls, which provide access to gun loops (Plate 73). A hole has been punched through the south wall of the tower giving access to the castle from the fosse, and this location is now filled with briars and other barrier vegetation. Internally, the tower appears to copy the two-chambered separation seen in the north tower, with low arches supporting an opening in each chamber looking south. The opening in the rear (west) chamber is filled, while that in the front (east) chamber retains a flat lintel (Plate 74). The front chamber at ground level also includes an east-facing window under a low arch, with deep recessed splays. The cut stonework of the opening is missing, although part of an upper lintel stone may be in place. Access to the basement is possible today from the ground floor through a linear depression that continues south to the hole that is punched through the south wall (Plate 75). The depression appears to be a result of a collapse in the basement roof. The roof is a v-shaped arch, with two layers of edge-set limestone. The ceiling retains a rough limestone plaster render. The basement space is filled with rubble collapse, allowing very limited access today (Plate 76).

The main entrance to the castle may be dilapidated and its elements quite buried by vegetation, but it was a well-designed structure. It is difficult to appreciate the original ground level, but the entrance was well defended, with ample openings provided to cover all ingress. The arrangements of a gate and draw-bridge are not clear, and the walling between the towers is not apparent. Overall, it bears a striking resemblance to the entrances of Roscommon Castle and Ballymote Castle, although on a smaller scale (Plates 3, 77).⁷⁹ The entrance at Ballymote suggests how the space between the towers at Ballintober might have been occupied. We can imagine that the end space was populated with further structure, and that the towers were joined above the ground floor level at the west end. At Ballymote there is a first and a second storey above the ground floor. There is ample opportunity for such to have existed at Ballintober, as attested by the height of the north tower. The scale of the entrance at Ballymote is however larger, and the barbican towers are also taller and more massive than the corresponding corner towers. At Roscommon, the entrance towers are comparable in size to the corner towers, while at Ballintober the entrance is more modest in scale, and is smaller than the corner towers, although the full height of the southeast corner tower is not known. Entrance towers more generally develop to absorb many of the domestic and administrative functions of a castle, and this helps to explain the large nature of the entrances at Roscommon and Ballymote. In

⁷⁹ Murphy and O'Connor, *Roscommon Castle*, pp 10-13.

contrast, the western corner towers in Ballintober appear to have been the primary accommodation blocks, and this might explain the more modest nature of its eastern entrance.

7.2.8 *The postern gate*

The postern or west gate at Ballintober was described by O'Connor Don in 1899, but today there is only a simple gap in the wall. Its presence is indicated by a causeway across the fosse at this point (Figure 14, Plate 78). Investigation would be needed to clarify the relationship of these elements and the existence of more substantive remains associated with a postern.

7.2.9 *The interior space*

The geophysical surveys of 2008 and 2009 identified a large range of features within the castle interior, lying concealed beneath the grass. The surface is not entirely level, and there are certain low mounds and also a central hollow (Plates 78-80). Detailed contour survey is warranted to map these features and then compare them with the anomalies detected in the geophysical survey.

7.2.10 *Conclusions*

Ballintober Castle is one of a few surviving keepless castles in Connacht, and fits well with the series that includes Roscommon Castle to the south, built for the king from 1269, and Ballymote Castle to the north, built by Richard de Burgh in the very early 1300s. Both Roscommon and Ballymote represent substantial compact castles, with towering rounded corner towers and unambiguously confident entrance towers (Figure 6). Ballintober Castle, in contrast, occupies a much larger ground plan, which is double the size of both Roscommon and Ballymote. The great interior space of Ballintober reduces the monumental stature of its walls and towers. While there are common points across the castle, its asymmetry is equally clear, as is the individual nature of its component parts. It leads to a conclusion that the castle lacks the coherence and integration of Roscommon and Ballymote. The early 14th-century date is based on a combination of its keepless plan and the use of polygonal towers. The historical reference to the presence of a complex castle here broadly supports these details. The use of the polygonal design however is not seen at either Roscommon or Ballymote, and is considered to be an acknowledgement of Edward I's Welsh castles, and especially that of Caernarvon. Caernarvon is an elaborate castle, and very monumental in appearance (Figure 6). Its polygonal towers are much larger and lack the depth extension into the interior space that is seen at Ballintober. Where they do extend inwards, the towers in Wales continue the polygonal form, rather than being essentially rectangular shapes. The one place where this element

may exist at Ballintober is at the southeast corner tower, but vegetation clearance and investigation is needed to reveal this tower's details more clearly.

Ballintober also lacks other features such as the tall narrow arrow loops that occur frequently at both Roscommon and Ballymote. In their place, the vertical slits in Ballintober are shorter and perhaps wider; they are effectively windows rather than open slits, and suggest a level of comfort over practical defence.

As a keepless castle, Ballintober conforms to a type of great castle construction from the late 13th- and early 14th centuries. Yet the irregularity of its principal components presents an opportunity to pause and think about what it represented to the people who built it and to those who lived under its shadow. The irregular detail or lack of symmetry might reflect the fact that this was a baronial castle, whose patron lacked the assets of the King's treasury. On the other hand, de Burgh was quite capable of monumental and defensive/offensive builds, as witnessed by Ballymote Castle in Co. Sligo. The southeast corner tower, and the non-central location of the eastern entrance warrant further consideration. These two elements remain rather less massive than the other elements of the castle. Could they reveal the earliest elements of the castle? Is it merely coincidental that this quadrant of the site is where the curving ditch feature revealed in the gradiometry survey exists, and could that feature be the remnant of a pre-castle Gaelic fortification? Such questions would inform any proposed investigations at Ballintober, but for the present these elements combine to suggest a possibility that Ballintober Castle was built in stages, during which the designs became bolder and more lavish.

The relationship of the internal features indicative of an inner courtyard to those of the standing walls also needs to be considered, and this can only be resolved through investigation.

The 2014 survey of Ballintober Castle is the most detailed topographical survey prepared to date. If it achieves a new baseline of information it will have fulfilled its principal task, while the detailed structural detail acquired through laser scanning will inform future needs for both archaeological and conservation perspectives. A castle of this size will always repay further assessment, and additional thought needs to be given to a detailed study of the masonry work, to see whether it is possible to extract more insight to the phasing of construction. A thought with which to conclude this study might be to consider the overall opulence that the castle's details retain. Even in the absence of so much of its cut stonework, the impression of luxury comes across. It is represented perhaps most repetitively in the short slit windows at ground-floor level and on the perimeter walls, while the suggested elaborate timber ceiling of the southwest tower is remarkable in Ireland. It suggests to this writer that Richard de

Burgh's estate is long overdue a fresh study. He was one of the most powerful lords in Ireland during the transition into the 14th century, and Ballintober was one of several centres within his Loughrea estate. The manor generated a healthy annual income, and its castle was clearly robust and defensive. It was also elegant and comfortable. In the likeness of his King, the Earl of Ulster knew the benefit of powerful and munificent display. To what extent Ballintober was truly placed on an embattled frontier may become apparent with further research, but this study concludes that the castle's fabric reveals a pragmatism that respected comfort over defence and may well embody what was, if only for a short time, a successful and profitable English manor in Gaelic Ireland.

8.0 ACKNOWLEDGEMENTS

I wish to thank Pyers and Marguerite O'Connor Nash for their permission to conduct this survey of their castle. Our discussions in recent years have led to the present work, which we all hope will be the start of a new phase of interest in the castle, to make it safe for wider access. Kieran O'Connor has also been a great support and discussant of observations, although I take responsibility for any strident views that may take time to be absorbed. I am most grateful to Anne Connon, my former colleague in the Medieval Rural Settlement Project of the Discovery Programme, for a discussion on placenames and for her notes on the historical timeline relating to the castle. The work has also benefited greatly from the surveys of 2008 and 2009 by Target Archaeological Geophysics, and I am indebted to John Nicholls for his surveys and to the Ballintober Community Group who applied for and won the funds from the Heritage Council grants schemes. Jeremy Cunnington has been a great aid too, quietly and diplomatically nudging the process along as the officer of the Castle Studies Trust charged with managing their grants. I am entirely indebted to the Trust's generosity. I wish to thank the Discovery Programme for continuing to take their interests in Roscommon to heart and providing the survey work and post-processing of the point-cloud detail: Terry Barry, Chairman, Edel Bhreathnach, CEO; and especially Rob Shaw, chief surveyor. Nollaig Feeney, Heritage Officer for Roscommon, remains a great support for this research, as does Pat Garvey and the Ballintober Tidy Towns committee. Finally I wish to thank Cameron Brady for his assistance in the field; a great opportunity for Transition Year, and one that he took seriously and enjoyed.

9.0 BIBLIOGRAPHY

9.1 Manuscript sources

National Library of Ireland, 2122.TX(3)33.

9.2 Printed sources

AConn Annals of Connacht (A.D. 1224-1544), edited by A. Martin Freeman, Dublin Institute for Advanced Studies, 1944, reprinted 1996.

AFM Annals of the Four Masters, accessed online at: <http://www.ucc.ie/celt/>

ALC Annals of Loch Cé, accessed online at: <http://www.ucc.ie/celt/>

CSPI Calendar of State Papers relating to Ireland 1509-1573, edited by Hans Claude Hamilton, London, Public Records Office, 1860.

9.3 Secondary sources

Brady, Niall, *Ballintober Castle, County Roscommon*, Heritage Guide poster (Roscommon County Council, 2012).

Fitzpatrick, J E, 'Ballymote Castle', *Journal of the royal society of antiquaries of Ireland*, 17 (1927): 81-99.

Harbison, Peter, 'Beranger and Bigari: Lost and Found!', *Archaeology Ireland* 16. 4 (2002): 28-29.

Harbison, Peter, *Our Treasure of Antiquities: Beranger and Bigari's Antiquarian Sketching Tour of Connacht in 1779* (Wordwell, Bray, 2002).

Hayes McCoy, G A, 'The Galloglach axe', *Journal of the Galway Archaeological and Historical Society*, 17 (1937): 101-121.

Knox, H T, 'Occupation of Connaught by the Anglo-Normans after A.D. 1237', *Journal of the Royal Society of Antiquaries of Ireland* 33 (1903): 58-74.

Knox, H T, 'Occupation of Connaught by the Anglo-Normans after A.D. 1237. Part 1', *Journal of the Royal Society of Antiquaries of Ireland* 32 (1902): 132-138.

Leask, H G, *Irish Castles* (Dundalgan Press, Dundalk, 1977).

McNeill, Tom, *Castles in Ireland. Feudal power in a Gaelic world*, (Routledge, London and New York, 1997).

Murphy, Margaret and O'Connor, Kieran, *Roscommon Castle, a visitor's guide* (Roscommon County Council, 2008).

Ní Cheallaigh, Máirín, 'Mechanisms for monument-destruction in nineteenth-century Ireland: antiquarian horror, Cromwell and gold-dreaming', *Proceedings of the Royal Irish Academy* 107 C (2007): 127-145, at p. 134.

Nicholls, John, 'Geophysical survey report: Ballintober Castle, county Roscommon, Licence 08R262', TAG project 08/036 (TAG 2008).

Nicholls, John, 'Geophysical survey report: Ground penetrating radar survey, Ballintober Castle, county Roscommon, Licence 08R262', TAG project 09032 (TAG 2009).

Ó Catháin, Diarmaid, 'Charles O'Connor of Belanagare: Antiquary and Irish Scholar', *Journal of the Royal Society of Antiquaries of Ireland* 119 (1989): 136-163.

O'Connor Don, [Charles]. 'Ballintubber Castle, County Roscommon', *Journal of the Royal Society of Antiquaries of Ireland* 9 (1899): 24-30.

O'Connor Don, Charles and O'Donovan, John, *The O'Conors of Connaght, an historical memoir* (Hodges Figgis, Dublin, 1891).

O'Connor, Kieran, and Manning, Conleth, 'Clonmacnoise Castle', in Heather King (ed.) *Clonmacnoise Studies 2* (Stationary Office, Dublin, 2003), pp. 137-165.

- O'Daly, John and O'Donovan, John, 'Inauguration of Cathal Crobhdhearg O'Conor, King of Connaught', *Journal of the Royal Society of Antiquaries of Ireland* 2 (1853): 335-347.
- O'Keefe, Tadhg, 'Liscarroll Castle: a note on its context, function, and date', in Eamonn Cotter (ed.), *Buttevant. A medieval Anglo-French town in Ireland*. (Eamonn Cotter, Rathcormac, 2013), pp 51-66.
- Orpen, Goddard, 'The earldom of Ulster, Part 1: introductory to the inquisitions of 1333', *Journal of the Royal Society of Antiquaries of Ireland*, 3 (1913): 30-46.
- Parkes, Matthew and Meehan, Robbie, *Karst, Turloughs and Eskers: the geological heritage of county Roscommon* (Roscommon County Council, 2014).
- Sweetman, P D, 'Archaeological excavations at Ballymote Castle, Co. Sligo', *Journal of the Galway archaeological and historical society*, 40 (1985/86): 114-24.
- Wilde, William R., 'Memoirs of Gabriel Beranger, and his labours in the cause of Irish art, literature, and antiquities, from 1760 to 1780, with illustrations', *Journal of the Royal Society of Antiquaries of Ireland* 1 (1870): 33-64, 121-152, 236-260.

9.4 Online sources

<http://askaboutireland.ie/griffith-valuation>
<http://irishmanuscripts.ie/digital/surveydistributionv1/index.html>
<http://www.archaeology.ie/archaeological-survey-ireland>
<http://www.ucc.ie/celt/>

10.0 APPENDIX 1: 3D LASER SCANNING, BALLINTOBER CASTLE, SURVEY REPORT



3D LASER SCANNING
BALLINTOBER CASTLE
SURVEY REPORT

THE DISCOVERY PROGRAMME
ROBERT SHAW, NOVEMBER 2014

3D Laser Scanning: Ballintober Castle

Survey Objective

The Discovery Programme was contracted by Dr Niall Brady to undertake the 3D recording of the castle using terrestrial laser scanning technology. The aim was to record the complete upstanding remains of the castle, at a sufficient resolution to enable a stone-by-stone model to be generated.

The final deliverable from this survey is a registered, georeferenced 3D point-cloud, which can be used for detailed analysis of the 3D geometry of the castle, and as an aide to unraveling the phasing and interpretation of the castle. This data is often the basis for further advanced surface modeling or speculative 3D digital reconstruction of a site, beyond the agreement of this current project.

Laser scanning Equipment

The laser scan was undertaken using a Faro Focus 120 phase-based laser scanner and a spherical target system for registration. Images of the scanner in action, and the specification of the scanner are detailed below.



Figure 1 – Faro Focus 120 laser scanner at Ballintober

Distance	accuracy up to $\pm 2\text{mm}$.
Range	from 0.6m up to 120m.
Measurement rate	up to 976,000 points/sec.
Measurement values	Intensity & RGB. Integrated colour camera.
Georeferencing	Using RTK GPS with VRSnow corrections

Table 2 –General specification of Faro Focus 120 laser scanner at Ballintober

Resolution

As a radial system, laser scanning resolution is defined by the point spacing at a distance from the scanner. As such it reduces the further the object is from the scanner. For Ballintober, where the objective was to clearly define each stone, the instrument’s pre-defined survey profile for ‘Outdoor - up to 20m’ was selected. This defined a point-spacing of 7.67mm at 10m, with each scan taking less than 10 minutes to complete.

Georeferencing

The final registered pointcloud was georeferenced to the Irish National Grid coordinate system using GPS observations. These were surveyed using a Trimble 5800 real-time kinematic differential GPS system, using the VRS Now correction service provided by Trimble.

Results

Laser scans were undertaken over a three-day period in August 2014 from a total of 64 individual stations, generating a final project pointcloud with approximately 800 million points.

Scan Coverage

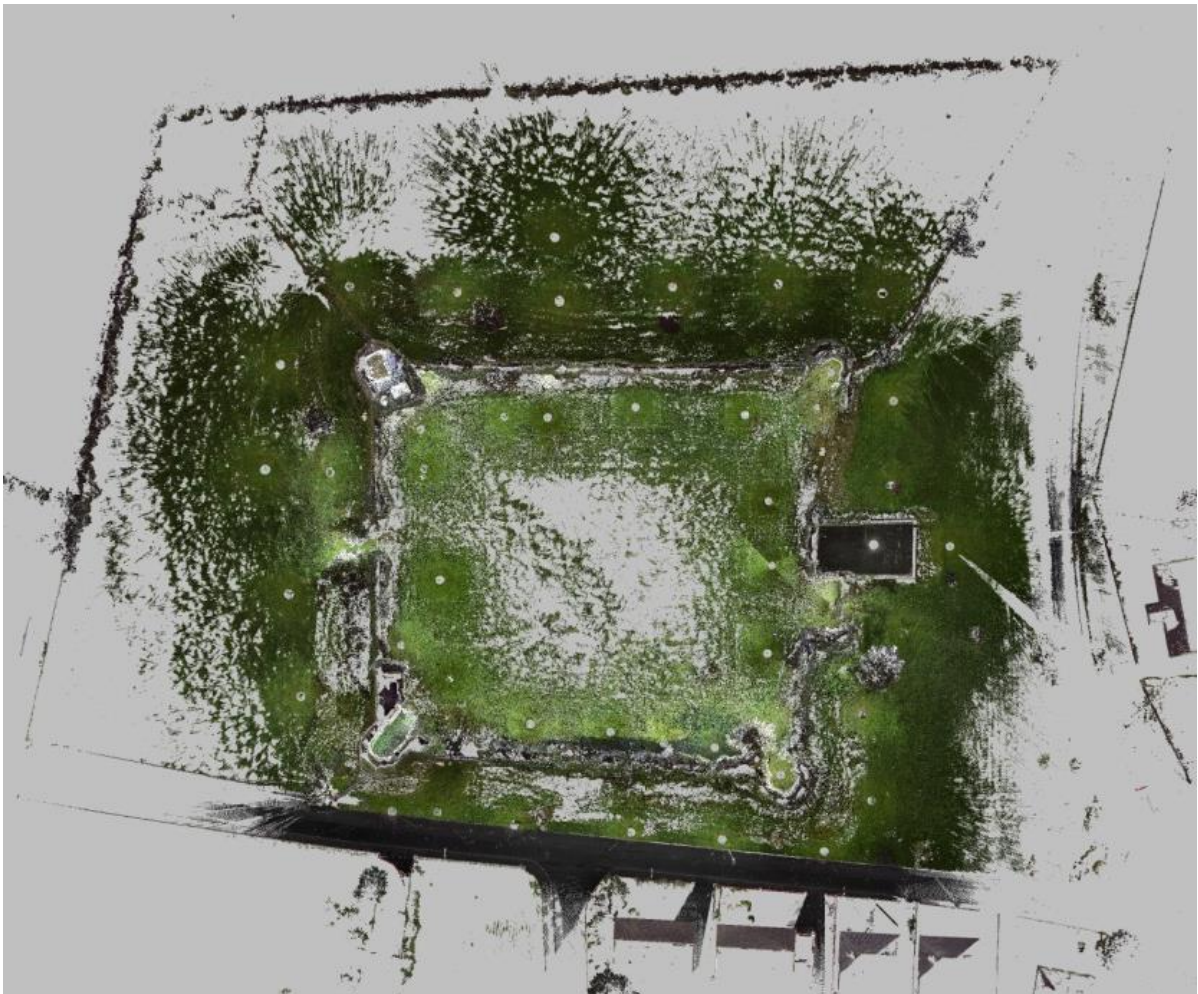


Figure 3 – Plan view of the pointcloud data for the complete Balintobber Castle survey

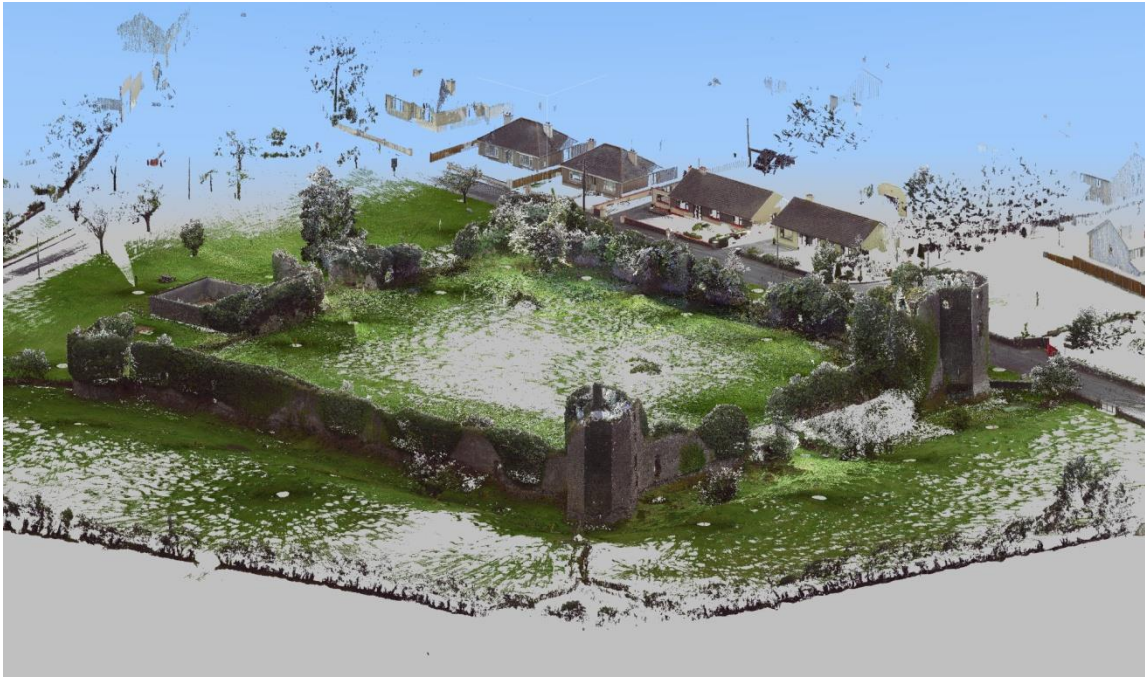


Figure 3– Isometric view (from the Northwest) of the pointcloud data for the Ballintober Castle survey

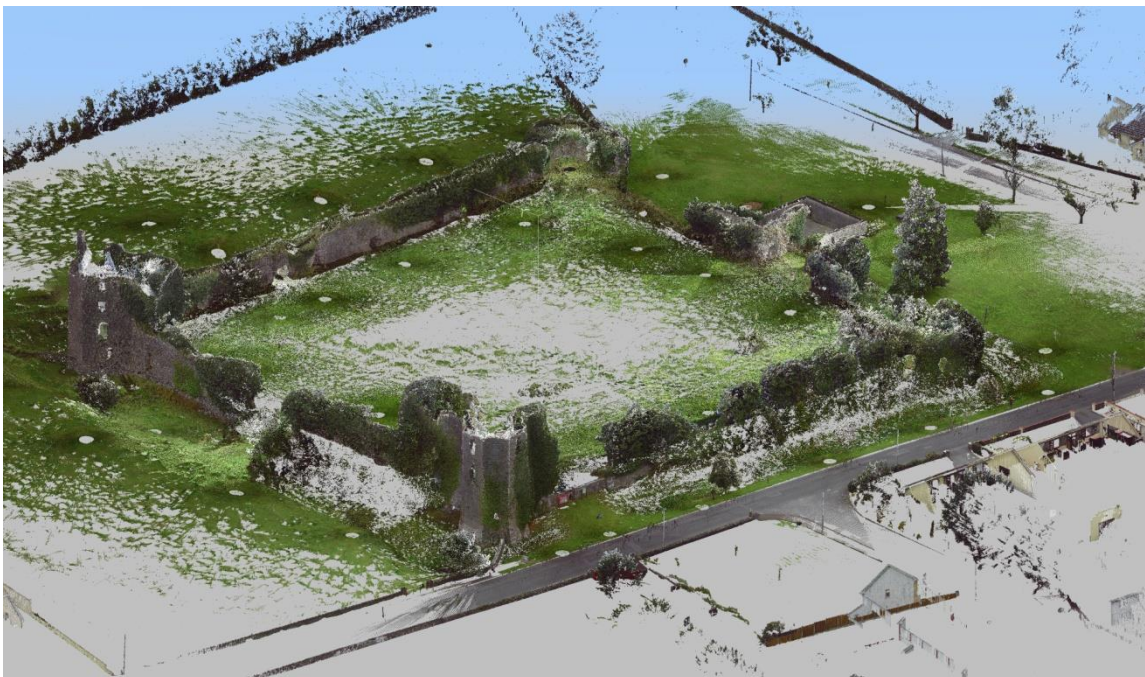


Figure 4 – Isometric view (from the Southwest) of the pointcloud data for the Ballintober Castle survey

Quality control

Survey data is processed in Faro Scene, registering scans using the common sphere targets. Quality control is assured by examining in detail each scan fit, and if the residuals are above a pre-defined threshold, in this case 3mm, then action is taken. Figure 5 shows a typical Scanfit report, indicating a fit well within tolerance.

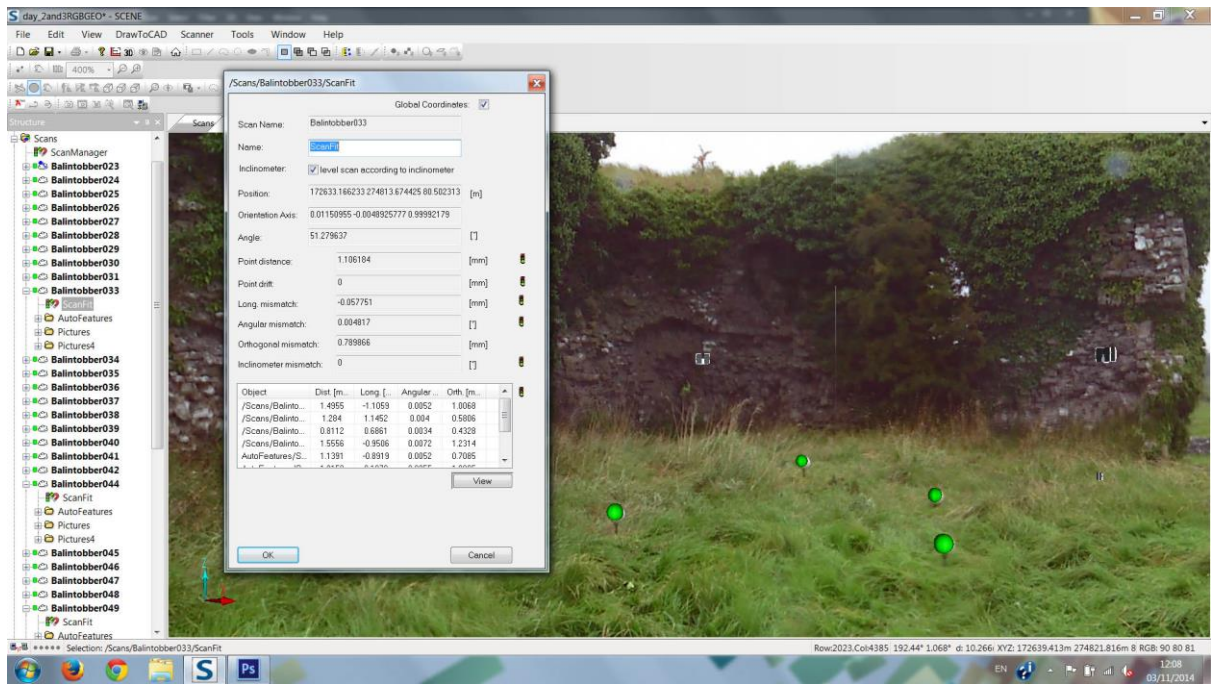


Figure 5 – ScanFit report from Faro Scene software.

For this survey the residuals were excellent and no high residuals encountered. The consequence of this is a reduced level of ‘noise’ in the final pointcloud – good clean data.

When all the scans in the survey have been registered the residuals are distributed through a function, ‘Place Scans Auto’ running standard survey adjustment processes. This gives a quality check on two important aspects of the survey,

1. The overall internal strength of the survey. Figure 6 indicates the strength of the survey after distributing the individual referencing errors.

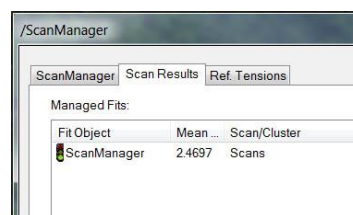


Figure 6 – Scan results of the Place Scan Auto function from Faro Scene processing

2. The georeferencing quality. Figure 7 shows that the maximum error from the GPS coordinate georeferencing is of an order well within the acceptable tolerance of the VRS Now correction service.

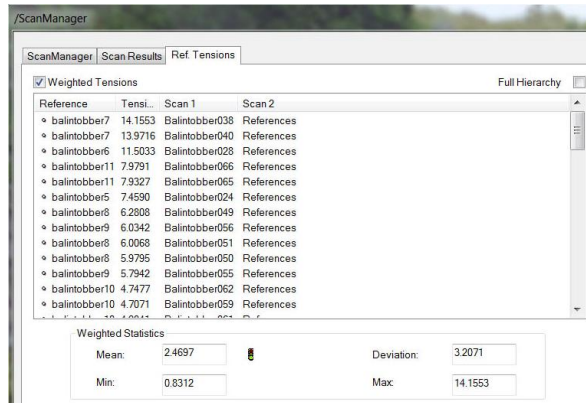


Figure 7 – Reference Tensions results of the Place Scan Auto function from Faro Scene processing

Survey Constraints

Laser scanning is an excellent method of capturing precise and detailed 3D data for historic monuments and buildings but there are a number of issues and constraints which need to be recognized before analyzing the data.

Data gaps

Laser scanners can only scan the parts of the building visible to the scanner from its set-up location and this inevitably leads to parts of buildings missing from the pointcloud. The surveyor's experience will be used to limit these data gaps, but in the case of Ballintober the level of thick vegetation growth presented a serious problem. The vegetation was removed at the lower levels to reveal as much of the surface stone as possible, but the higher towers remained obscured from the scans. It is hoped that some returns will have penetrated the vegetation, but it is doubtful as to how effectively the shape and detail would be recorded.



Figure 7 – Overgrown vegetation of the exterior of the Southwest tower

High towers

The survey was undertaken from ground level with no provision for raised access. This did not present any real issues on the exterior of the castle (except perhaps the loss of data from window sills), but has created issues of missing data in the interiors of the two enclosed towers. The scanner was placed at more than one ground location inside the towers but it was inevitable that the acute angle and increased distance from the walls has compromised the quality of survey.

Time

Field survey was limited to three days, ambitious given the scale and complexity of the site. The decision was made to concentrate efforts of the upstanding remains, retaining a high scanning resolution. The consequence of this was that the internal and external earthworks were not given the same level of survey, with a less dense point coverage in the overall pointcloud.

Deliverables

The project agreement sets out the deliverables from the 3D survey of the castle, namely a registered, georeferenced pointcloud data set in both Faro Scene and Pointools formats. These have been provided on the attached DVD.

The deliverables provide the basis for further investigation, enabling the extraction of scaled dimensions, formal views such as elevations and plans, and user-defined cross sections.

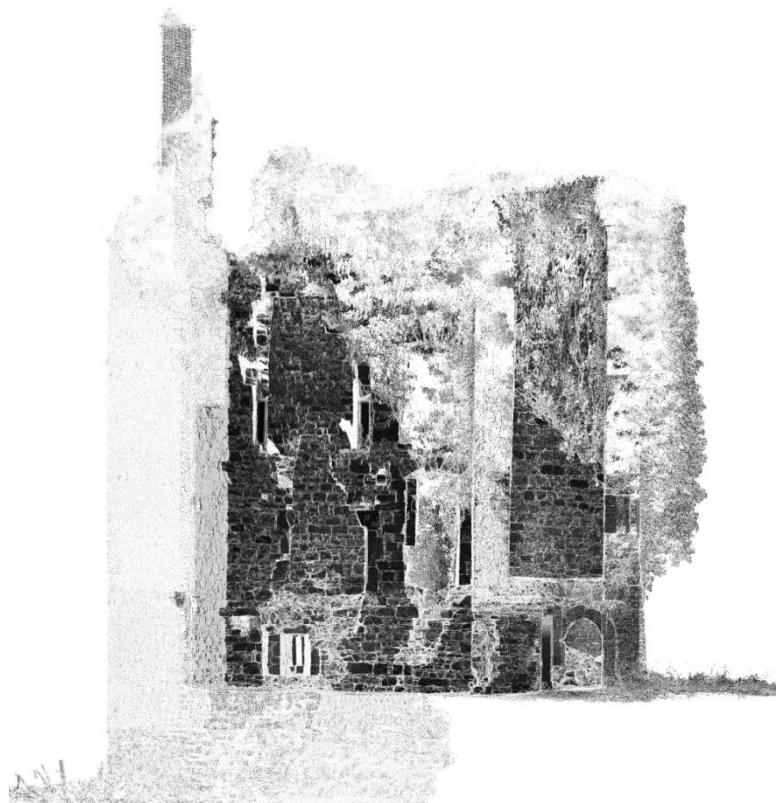


Figure 10 – Cross section through the Northwest tower (looking Southwest) displaying the level of architectural detail recorded in the pointcloud.

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3rd November 2014



**The Discovery
Programme**

Centre for Irish
Archaeological Research