The National Trust
(Thames and Chilterns Region)

BOARSTALL TOWER, BOARSTALL, BUCKINGHAMSHIRE

ARCHAEOLOGICAL MONITORING DURING BUILDING WORK

NGR: SP 6225 1420

Oxford Archaeological Unit
February 2000

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SUMMARY

The Oxford Archaeological Unit (OAU) was commissioned by the National Trust (Thames and Chilterns Region) to undertake a programme of archaeological excavation and building recording at the Grade I Listed Boarstall Tower, Boarstall, Buckinghamshire (NGR: SP 6225 1420). The recording action was implemented in response to a programme of building refurbishment work and was undertaken between October 1998 and March 1999.

The survey was designed initially to monitor specific areas of intervention necessitated by the programme of building work. This brief was expanded to comprise a study of the building as a whole and the generation of a detailed room-by-room inventory of historic fixtures and fittings. Observations have allowed for detail to be added to the known historical development of the tower, the origins of which have now been dated positively to 1312 by a programme of dendrochronological analysis, a date formerly implied by surviving documentary sources. A substantial rebuilding event has been identified within the corner turrets of the tower which indicates a significant modification and gentrification of the tower in the early 17th century. Further dendrochronological analysis of samples taken from the principal roof of the upper floor of the tower, have provided a date of 1615 for this major phase of rebuilding which served to create the overall form of the building which survives to the present day.

A more detailed study of the single storey annexe to the north-east of the tower has added detail to a previously defined chronological development.

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1 INTRODUCTION

1.1 Background to the Project

The Oxford Archaeological Unit (OAU) was commissioned by the National Trust (Thames and Chilterns Region) to undertake a programme of archaeological monitoring and building recording at Boarstall Tower, Boarstall, Buckinghamshire (NGR: SP 6225 1420) during refurbishment work. An initial brief covered a programme of building work related principally to the refurbishment of the single storey annexe building to the NW of the tower, including the excavation of new service trenches.[1] A study of the main tower roof was also undertaken as a part of the original brief. During the course of work, however, the scope of the project was expanded and the opportunity was taken while scaffolding was in position to undertake an overall appraisal of the exterior fabric of the structure, and to generate an inventory of historic interior features and fittings. In addition, a watching brief was maintained on other elements of work internal to the tower; these are listed below (§.1.2).

1.2 Reasons for work

A programme of refurbishment work was undertaken by Latimers Contracting Limited of Thame, Oxon, under the direction of Mr J.C. Goom (consultant architect) and on behalf of the National Trust (Thames and Chilterns Region). The work was overseen on behalf of the National Trust by Mr R Fillimore.

The principal elements of work requiring archaeological monitoring were as follows:

- major refurbishment of the annexe
- re-roofing of the main tower and corner turrets (entailing the replacement of existing timber and leadwork)
- insertion of timber corbels to support main roof beams
- repair to stonework at parapet level
- major programme of internal re-wiring
- insertion of ceramic flue liners to NE stack

1.3 Presentation of this Report

Following a brief summary of topographic and geological background (§.2), an outline of the historical background is given in §.3. A general architectural description of the building is given in §.4 and a summary of recording methodology in §.5. The results of the present programme of work are presented in two sections; section §.6 provides a detailed floor-by-floor, room-by-room description of the gatehouse and includes details of interior fixtures and fittings. In section §.7, the specific observations made during intrusive works are presented.

Section §.8 presents a summary of the dendrochronological analysis undertaken by Mr Daniel Miles of the Oxford Dendrochronology Laboratory.

Finally, in section §.9, the results of the current work and their significance for our understanding of the history of the building are briefly discussed.

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[1] The annexe has been the subject of a previous archaeological study (Smith and Parkhouse, 1997).

2 TOPOGRAPHIC BACKGROUND AND SITE LOCATION

2.1 Geological and topographical background

The Vale of Aylesbury, in which Boarstall lies is a naturally defined clay vale between the oolite hills around Buckingham, the Chilterns scarp the lower greensand hills of Linslade to the Brickhills and the Corallian limestone of Wheatley. In the north-west, the vale opens onto the low expanse of Otmoor. The parish of Boarstall is located in the west of the county of Buckinghamshire on the border with Oxfordshire. It covers a total area of 3078 acres and the land rises from *c.*60m OD in the north and west to a maximum of *c.*183mOD in the east. The village of Boarstall is located at the centre of the parish, *c.*8 km south-east of Bicester and is at an elevation of *c.*100.5mOD.

The majority of the Parish of Boarstall is situated on the Ampthill clay, a grey to black clay distinguished by its rubbly base and fossilised oyster inclusions. The deposits formerly supplied the many local brick and pottery works which prospered throughout the Vale of Aylesbury in the medieval and post medieval periods.

2.2 Site Location

The moated site and related tower gatehouse at Boarstall are located at the south of the extant, dispersed village (Fig.1) and immediately north of the former medieval village core (DMV: Bucks SAM No.134). Three sides of the moat survive: the south side is *c.*95m in length, the west side *c.*130m and the north side *c.*85m. The extant sections of moat average *c.*10m in width and 2m in depth and enclose an area of *c.*1.2ha. The eastern arm of the moat was infilled during the 17th century when a brick built wall (100m long by 3m tall) was constructed along this side to enclose the newly laid out formal gardens. The wall is Grade II listed and retains a fine stone gateway leading from the garden to the adjacent churchyard.

Boarstall tower itself is located centrally on the northern arm of the moated enclosure: it is Grade I listed (see Appendix A) and is classified as of National Importance on the National Trust register of sites (Matthews, 1989, 8). It represents a remarkable survival in a county where the preservation of medieval defensive architecture is markedly poor (Reed 1979, 121).

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 Archaeological Background

A search of the Buckinghamshire Sites and Monuments Record (SMR) has revealed a number of isolated findspots of medieval pottery and kilns in the immediate vicinity of Boarstall Tower, in particular to the NW around Manor Farm (SMR nos. 1018, 2339, 2430, 2431, 2432 and 5330) and to the south (SMR No. 6224). Such finds attest to the importance of pottery production in the Brill/Boarstall area throughout the medieval period (Mellor 1994, 111-140).

Limited evidence of earlier archaeological activity in the wider vicinity is indicated by isolated finds of roman pottery (SMR No.0520 *c.*500m NE of tower) and a quern (SMR No. 0574) found *c.*1km to the east.

The only site recorded on the SMR within the boundary of the moated manor site itself is an early 18th-century bottle dump (excavated by Dr. S Hall in 1975).

3.2 The Early History[2]

Historically, Boarstall was included within the Royal Forest of Bernewood, which originally encompassed the Parishes of Brill, Boarstall and Oakley, from the 11th down to the 17th century.

Local tradition records that the manor of Boarstall originated with lands granted by Edward the Confessor to the Nigel family, a reward for removing a wild boar which had been causing disruption to hunting within the Royal Forest. After the conquest, the lands were granted to William de Lisures, but were subsequently returned to the Fitz-Nigels by Fulco de Lisures in 1170, a grant that was confirmed in 1190. The Fitz-Nigels held the lands until 1299, when they passed to John de Handlo. It was under de Handlo that, in 1312, a licence to crenellate was granted at which point, presumably, the moat was excavated and the gate tower erected.

Under the ownership of the Rede family, the Boarstall Cartulary was compiled (Salter, 1930) consisting essentially of copies of transactions dealing with Boarstall from 1170 down to 1459. This document includes an early map of the manor (Fig.2). Dated to 1444 this plan represents one of the earliest village plans in England and though interesting in this respect, it is of only limited use in ascertaining topographical details of the village at this date. The tower at Boarstall is, however, clearly indicated with central arched passage and flanking towers.

By 1552, the manor had passed into the possession of the Dynham Family, who would hold the title for the next 100 years.

Disafforestation of Bernewood was undertaken in the early part of the seventeenth century with the clearance of woodland and the enclosure of open fields. By the end of the seventeenth century, only Boarstall Wood (formerly Lee Coppice) in the south-east and a small area of Oriel Wood in the west survived within the Parish of Boartstall.

3.3 The Civil War

Boarstall was a place of considerable significance during the Civil War, and the period had a far reaching effect upon the buildings of the village and manor. For much of the period Boarstall served as a Royalist stronghold, a result of its proximity

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2 The following historical outline is based upon the account published in The Victoria County History of Buckinghamshire Vol. IV (1927), and upon the NT guidebook to the property (Hall 1989).

to the Royalist headquarters at Oxford, and although being taken briefly by the Parliamentarians, it finally surrendered to General Fairfax only on June 10th 1646. During its occupation by the Royalist Garrison, the village of Boarstall witnessed much destruction; the core of the nucleated medieval village, formerly located to the south of the manor (and visible today as a complex of earthworks in the fields south of the moated site; SAM Bucks: 134) was demolished in June 1645 as it was felt that the buildings posed a potential threat by their proximity to the house (Porter 1984, 87). The church and belltower were also destroyed in July 1645.[3] In this respect, the brick-built, 17th-century Tower Farm, immediately north-west of the gatehouse, represents an unusual survival, possibly as a result of its providing supplementary accommodation for the garrison during their occupation of the manor (ibid., 89).

These events had a cumulative, detrimental effect upon Boarstall, and by the 1690s the population of Boarstall was much diminished and the settlement pattern of the parish had become one of dispersed farms and cottages. Only the church, manor house and Tower Farm remained of the medieval core.

3.4 The later 17th and 18th Centuries

Following the end of the civil war, the site of the Manor House underwent extensive alteration; the eastern arm of the moat was infilled and an enclosing garden wall built. The Manor House was extensively rebuilt and the gatehouse modified;[4] an engraving of 1695 (Figs.3 and 4) depicts the Manor following this major phase of works (Kennett's '*Parochial Antiquities*', 1675). It was probably during the same phase of work that the road, formerly running between the church and the moat, was re-routed eastwards to it's present location. The effect of these modifications, along with the earlier removal of the village housing to the south, had the effect of increasing the privacy of the house and much improving (to contemporary tastes) the location of the Manor.

Soon after 1691 Boarstall passed to the Aubrey Family who held the lands throughout the 18th century. In 1778, however, the main house was demolished and thereafter, although still in the hands of the Aubrey Family, the site was either abandoned or leased to tenant farmers. The Aubrey line died out in 1901.

3.5 Recent Ownership

Sir Henry Fletcher succeeded to the estate in 1901 and, in 1903, took the additional name of Aubrey reflecting a family connection dating to the 18th century.

From 1925, the property was leased to Mrs Jennings-Bramley, who undertook considerable modernisation works, including the internal reorganisation of the tower and the installation of modern services. This phase of refurbishment also saw the creation of the present annexe building, using in part the masonry of pre-existing garden buildings.

In 1943, the Tower was given to the National Trust but leased back to the Aubrey-Fletcher family, who sub-let the property on the basis of short leases, most recently to Dr Stephen Hall.

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3 The church was rebuilt on a reduced scale and simpler design in 1663. The extant, Grade II* listed Church of St. James dates to 1818 with alterations of 1884 (Pevsner 1960, 68).

4 Observations during the current programme of work bring the traditional dating of the modification of the gatehouse into question: it would appear that the raising of the roof level of the main block and the reordering of the corner turrets were undertaken in the early 17th century i.e. before the upheavals of the civil war.

4 EXTENT OF WORK AND SURVEY METHODOLOGY

4.1 Extent of work

4.1.1 The Annexe

Works within the annexe comprised four principal elements. Firstly, the removal of the existing asphalt roofing served to expose structural details at the head of the exterior walls. These details were recorded graphically and photographically.

Secondly, the removal of a series of internal partition walls (dating to the 1920s refurbishment, see §.3.4 above) was monitored.

The third element of work within the annexe, comprised the monitoring of internal ground reduction in the southern part of the annexe, undertaken to facilitate the installation of a new floor slab. The ground reduction was undertaken by the contractors under archaeological supervision and the recording was thus at the level of a 'watching brief' rather than as a full archaeological excavation.

Finally, the excavation of new service trenches was undertaken by contractors and was monitored archaeologically. Subsequent service trench excavation has been the subject of a separate archaeological watching brief and has been previously reported (OAU, 1999).

4.1.2 The Main Building

Works within the main building again comprised four elements. The principal programme of work pertained to the re-roofing of the main tower and corner turrets. This work involved the stripping of leadwork and the replacement of timber boarding. During work on the roof, it became apparent that the terminals of the principal beams were in an advanced state of decay: it was decided to install a series of oak corbels internally to support the roof. Internally, the removal of a series of internal partition walls dating to the 1920's was monitored and exposed features recorded. A programme of dendrochronological sampling was independantly commissioned by The National Trust; the results of this study are summarised below in §.8.

4.2 Recording Methodology

4.2.1 Building Recording

All exposed areas/features were graphically recorded (elevation/sectional plan/cross-section as appropriate) at a scale of 1:10 and/or 1:20 on archivally stable polyester drafting film. Detailed graphic records have been used to augment a pre-existing digital base survey of the tower, undertaken by On-Line Surveys in 1996 which has served as the basis for the detail plans and cross sections reproduced at the end of this report.

A black and white negative and colour slide photographic record was made of all exposed areas/features.

4.2.2 Archaeological Monitoring

Within the annexe, ground level reduction within the southern half of the annexe building was necessary to enable the installation of a new floor slab. This work was undertaken by the contractors under archaeological supervision.

4.2.3 Inventory of fixtures and fittings

An inventory was made of significant interior fixtures and fittings. The study covered features including windows and fittings, doors, fireplaces etc.

5 ARCHITECTURAL DESCRIPTION: EXTERIOR

5.1 The structure of the extant tower building is of rectangular plan, aligned north-west to south-east with hexagonal, crenellated turrets attached at each corner. The overall dimensions of the main rectangular block are 12.4m NW/SE x 7.7m NE/SW x 11.7m to parapet level. The turrets to the north-east elevation, overlooking the moat (Fig.5), have maximum exterior dimensions (corner to corner) of 4.8m and stand to a maximum height of 11.75m above current ground level. Those to the south-west, overlooking the garden (Fig.6) are narrower (3.75m) and taller (at 13.25m). The latter turrets each contain a spiral stair providing access between the floor levels of the main block; the upper level of the western turret houses the mechanism for a single-handed clock, probably of *c.*1660. The walls (*c.*1.20m wide) are constructed in roughly coursed limestone with freestone detailing to openings (transoms, mullions, drip mouldings etc.) and quoins. The north-east elevation displays banding of ashlarwork and a decorated frieze at high level. The north-east, north-west and south-east elevations are furnished with an ornamental balustrade at roof level, an addition of the 17th century, while to the south-west the wall terminates in a plain brick and stone parapet. A series of four stone chimneys rise above parapet level, arranged symmetrically to each side of the central axis of the south-west and north-east elevations. They terminate slightly below the level of the upper limit of the south-western corner turrets.

5.2 The principal access to the tower is from the north-east via a fixed bridge of brick and stone construction dating to 1736. An earlier fixed bridge is indicated on the 1695 Burghers engraving (Fig.3) though the former existence of a drawbridge in this location is implied by wear patterns on the sill of the small central window at first floor level. The main entrance to the tower is via a segmental arch of two chamfered orders enclosed within a 17th-century, semi-circular, projecting archway. Two doorways with four-centred heads and limestone drip hoods are located on the garden (south-west) elevation, and formerly provided access to the northern and southern turrets respectively.

5.3 The original fenestration of the tower has been masked by extensive alterations dating to the 16th and 17th centuries. The corner turrets do, however, retain a series of primary cruciform loops with circular terminals at first and second floor level, while further original loops survive beneath the 17th-century crenellations of the north-west and south-west towers. Elsewhere, in particular the garden elevation of the main block (Fig.6), a series of square headed, ovolo-moulded cross and mullion windows have been inserted, many of which retain high quality iron fittings internally (see §.6). The north-west (Fig.7) and south-east (Fig.8) elevations display fine 17th-century oriel windows while to the north-east elevation, a central bay window is located above the projecting archway at ground floor level. The fenestration of the tower is described in more detail below (§.6), as recorded from within the structure.

5.4 A single-storey, 20th-century annexe (1926) is appended to the north-west elevation of the tower and is accessed by doorways cut through the original masonry of the north and west turrets. This annexe reuses in part, masonry of earlier garden structures. This building has been the subject of a previous archaeological assessment (Smith and Parkhouse, 1997) which identified a complex sequence of development comprising a possible maximum of six phases of construction. [5] The development of the annexe is discussed at further length in §.7.1.5 below.

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[5] It should be noted, however, that four of these phases of development post-date 1850.

6 ARCHITECTURAL DESCRIPTION: INTERIOR INVENTORY

Internally, a series of rooms are arranged over three principal floor levels. At ground and first floor levels, the building is divided into three principal spaces. The central bay of the building represents the former carriage entrance; the ceiling of the ground floor is raised correspondingly in this bay resulting in a split-level arrangement at first floor level. At second floor level, the main body of the tower constitutes a single open space (the 'Music Room'). Access between floors is via spiral stairs located within the south and west corner turrets.

6.1 Reference Terminology

For the purposes of the following description and discussion, a sequence of room numbers and names have been assigned. These can be summarised as follows:

Location	*Reference number*
Ground Floor	
South-eastern room	GF/01
South-eastern room; area within north-eastern passageway	GF/02
Central bay	GF/03
Central bay; area within north- eastern passageway	GF/04
North-western room	GF/05
North turret	GF/06
East turret	GF/07
South turret	GF/08
West turret	GF/09
First Floor	
South-eastern room	1F/01
Central bay	1F/02
North-western room	1F/03
North turret	1F/04
East turret	1F/05
South turret	1F/06
West turret	1F/07
Second Floor	
Main 'Music Room'	2F/01
North turret	2F/02
East turret	2F/03
South turret	2F/04
West turret	2F/05

Table 6.1: Room numbering system

This reference sequence is also illustrated in Figure 11.

6.2 The Ground Floor (see Fig.12)

Summary

At the time of survey, the ground floor of the main block was divided into a total of five separate spaces. This represents a recent subdivision of an original tripartite plan, with one room located to either side of a NE/SW aligned central entranceway. The north-western and central bays are divided by a substantial stone wall, a corresponding wall between the central and south-eastern bays was removed during the 1926 refurbishment. The centre bay and south-eastern are subdivided by a partition wall which forms a corridor along the north-eastern side of the building. The north-western room was subdivided by a NW/SE brick built partition wall (removed during the current works), again dating to the 1926 work. The ceiling height of the central bay, representing the original entranceway, is higher than the adjoining rooms. Polygonal turrets are located at each corner of the main block, accessed from the north-western and south-eastern rooms, and the north-eastern passageway.

6.2.1 The Main Block [GF/01-GF/05]

The ground floor of the tower, though substantially altered (predominantly in 1926), retains evidence of its original tripartite division. The primary layout would have comprised a central north-east/south-west aligned carriage entrance with single rooms to either side. The north-western part remains relatively unaltered; the dividing wall between carriage entrance and north-west room (GF/05) survives, while the removal of a 1926 brick partition wall during the current phase of work has served to restore GF/05 to the form illustrated by the 1911 RCHM survey plan (see Fig.13), which presumably reflects its original arrangement.

The corresponding south-eastern wall of the carriage entrance was, however, removed during the 1926 refurbishment to create a more open domestic living space (GF/01-03), and a passageway (GF/02-04) was formed along the north eastern side of the room by the insertion of a partition wall, 1.15m south-west of and running parallel to, the north-east exterior wall of the tower. The passageway provides access to a WC situated in the eastern turret (GF/07).

The ceiling level of the central bay is higher than the adjacent bays to the south-east and north-west by some 0,80m, reflecting its functional origins as the carriage entrance.

The former carriage entrance is represented today by the spaces GF/03 and GF/04. To south-west and north-east, access is provided by wide segmental archways of two chamfered orders and plain-chamfered jambs. The 17th-century panelled double-doors to the north-east have been reversed (in 1926) so that former external moulded framing is now visible internally, likewise the exterior now displays former internal chevron planking[6]. Principal pedestrian access is via a small wicket door within the north-west door. Access (from GF/03) to the gardens to the SW is via a modern doorway. To the north-west, the central bay is sealed by a substantial, 0.75m thick stone wall. Doorways at the south-west and north-east ends of the wall (the latter, 20th-century opening, within the area of the corridor previously described) provide access between the central bay and the north-west room (GF/05). A straight joint visible at the north-east limit of the north-west passage wall represents an infilled recess, probably originally functioning to accommodate the fully opened gates (this arrangement survived at least until the 1911 RCHM survey; see Figure 13).

Room GF/05 has overall dimensions of 3.00m (NW/SE) x 5.30m (NE/SW). It is lit by windows in the NE and SW walls and is heated by a fireplace with ovolo beaded jambs offset to the NE end of the NW wall. The north-eastern elevation displays an inserted two-light, ovolo moulded limestone window. The northern, opening light is furnished with an iron turn-buckle catch (Fig.14, type D) and quadrant stay with turned, leaf terminal; the southern light is fixed. In the south-west elevation is a fixed, single-light window with hollow-chamfered jambs set within an original splayed embrasure with two-centred, plain-chamfered rear-arch (mirroring a similar opening in GF/01). Slightly to the south-east of this window, the traces of a 16th/17th-century wall painting survive beneath later applications of render and paint. This painting has been the subject of an independent study commissioned by the National Trust and will not be described in detail here[7].

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6 A RCHM photograph of 1911 (Figure 9) shows the doors in their original arrangement.

7 A series of decorative wall paintings have been expose during the current works within room 1F03. These paintings have been the subject of an independent study and are not covered in detail here. However, it is worth noting that the frieze within room 1F03 runs across the extant window lintel and must thus post-date the refenestration of the tower.

With regard to the south-eastern part of the ground floor, the RCHM survey plan of 1911 is enlightening in its representation of the pre-1926 arrangements, which presumably reflect, to a large extent, the original layout. The whole of the area south-east of the central carriageway (GF/01-02) formed a single space closed to the north by a substantial stone wall defining the south-east side of the entrance passage (and mirroring that still extant to the north-west). Access was via a doorway at the south-west end of the central carriageway (opposite the existing door between GF/03 and GF/05). No doorway existed between the south-east room and the south turret (GF/08) at that time. The room was heated by a small fireplace at the north-east end of the south-east wall. This fireplace was blocked at the time of the creation of the north-eastern passageway (GF/02-04) when an angle fireplace, maintaining the original flue, was inserted. This fireplace is still intact and retains a carved wooden overmantle, stylistically 17th century, though obviously in a secondary context and of unknown provenance. Dendrochronological study of samples (see §.8) taken from the ceiling structure of GF/01 (which comprises a total of 10 substantial NW/SE aligned oak joists) have confirmed the original construction date of 1312 suggested by the surviving documentary sources (see §.3.2 above).

The south-west wall of GF/01 displays a fixed, single-light window with hollow-chamfered jambs (Fig.15) set within an original splayed embrasure with two-centred, plain-chamfered rear-arch. This opening is mirrored by the opening in GF/05 to the north-west of the central archway (previously described). The passageway to the north-east (GF/02) is lit by a square headed, two-light, ovolo moulded limestone window in the north-east elevation. The northern, opening light is furnished with an iron turn-buckle catch (Fig.14, type F) and quadrant stay with turned, leaf terminal. The southern light is fixed.

6.2.2 The north turret [GF/06]

The north turret is accessed from GF/05 via an arched doorway with two-centred head. A doorway has been forced through the masonry of the wall to the west to provide access to the single storey annexe extension; to the SE, overlooking the bridge, is a single-light ovolo moulded window.

6.2.3 The east turret [GF/07]

The eastern turret is accessed from the 1926 corridor GF/04-02 and currently accommodates a lavatory. This arrangement possibly reflects an ancient use, and it may be that this turret has always functioned as a garderobe.[8] The room is lit by a single, inserted window with panelled reveals and soffit to the south-east.

6.2.4 The south turret [GF/08]

The south turret contains a spiral stone stair providing access between floors. Formerly opening to the exterior via the 16th-century doorway with four-centred head (now blocked), it is now accessed internally from GF/01, a modification dating to the 1920s refurbishment (the RCHM plan of 1911, Fig.13, shows no doorway in this location). The stair is lit by a series of rectangular single light openings.

6.2.5 The west turret [GF/09]

The western turret houses a winding stone stair providing access between the principal floor levels of the main tower. Formerly opening to the exterior via the 16th-century doorway with four-centred head in the south-west wall, the turret would appear to have also been originally accessed from NW room (GF/05). The stair is lit by a series of rectangular single light openings.

[8] The location of a garderobe in the eastern turret is perhaps supported by evidence recorded by Dr Hall (1989, 7).

6.3 The First Floor (Fig.16)

Summary

At first floor level, the tower more closely reflects its original tripartite plan. The central and south-eastern rooms have been subdivided (1926) by ephemeral timber stud partitions (removed during the current works) forming a 'passage' against the south-western wall. The major original divisions, however, remain intact. The floor level of the central bay is at a higher level than the end rooms, reflecting the raised ceiling of the entranceway at ground floor level. Polygonal turrets are located at each corner of the main block, accessed from the north-western and south-eastern rooms.

6.3.1 The Main block

The main block of the tower at first floor level closely reflects the original tri-partite division with chambers (1F/01 and 1F/03) arranged to the south-east and north-west of a raised central room (1F/02) above the central entrance passage. Two ephemeral stud partition walls (dating to the 1926 refurbishment), which formerly defined a corridor along the south-west side of the building, have been removed during the current phase of work.

The south-eastern chamber (1F/01) has overall dimensions of 6.15m (NE/SW) x 3.00m (NW/SE). It is generously lit to the SE by a fine, 16th-century ovolo-moulded oriel window, to the NE by a single light rectangular opening with hollow-chamfered jambs and to the SW by an inserted, two-light (both fixed) ovolo-moulded window. The room is furnished with a small, inserted fireplace in the NW wall (Fig.17a) which displays a four-centred head with ovolo mouldings and raised stops (0.40m above floor level).

The central room of the first floor (1F/02), located above the central passageway at GF level, is correspondingly raised (by 0.80m) in relation to the two side chambers. It is accessed from the NW and SE by small flights of stairs accommodated within the depth of doorway openings to the SW of the party walls with 1F/01 and 1F/03. The room is lit to the SW by a two light, ovolo-moulded window. The southern opening light is furnished with a turn buckle catch (Fig.14, type D) and turned quadrant stay. A further small, single fixed-light opening in the NE wall displays hollow chamfered jambs; the sill of this opening displays incised grooves, possibly created by the wear of lifting gear for a drawbridge. The removal of plaster from the SE wall during the current works has exposed an area of rebuild (in brick and stone) related to the insertion of the fireplace within 1F/01, previously described.

The north-western chamber (1F/03) is of similar proportions and layout to 1F/01 previously described. It has overall dimensions of 5.5m (NE/SW) x 3.00m (NW/SE). It is, again, generously lit by a series of inserted windows: a fine 17th-century ovolo-moulded oriel window to the NW, a single light rectangular opening with hollow-chamfered jambs and two centred rear-arch to the NE, and to the SW by a two-light ovolo moulded window. The southern, opening light of the SW window is furnished with a turn buckle catch (Fig.14, type G) and quadrant stay with leaf terminal. The room is furnished with a small, inserted fireplace in the SE wall which displays a four-centred head with ovolo mouldings and raised, decorated stops.

6.3.2 The north turret [1F/04]

The north turret is accessed via a primary 2-centred, plain-chamfered stone doorway. The door is of oak, with vertical planking and applied studded fillets to the tower side and horizontal planking to the turret side with plain, strap hinges. Modern, twisted iron drop-ring door handle. The turret retains one open, original loop which is glazed.

Two further loops have been partly blocked to form recesses but are still visible externally; both are of the variant type with lower circular terminal and central inverted stirrup opening (see Fig.19). Overlooking the entranceway of the main block is an inserted two-light ovolo-moulded window. The left hand, opening light is furnished with a turn-buckle catch (Fig.14, type D) and quadrant stay with leaf terminal.

6.3.3 The east turret [1F/05]
The east turret is accessed via a primary 2-centred, plain-chamfered stone doorway. The door (Fig.18c) is of oak, with vertical planking and applied studded fillets to the tower side, and horizontal planking with iron strap hinges to the turret side. Overlooking the entranceway of the main block is an inserted two-light ovolo moulded window. The left hand, opening light is furnished with a turn-buckle catch (Fig.14, type D) and quadrant stay with leaf terminal. No original loops are exposed internally.

6.3.4 The south turret [1F/06]
The southern turret houses a winding stone stair providing access between the principal floor levels of the main tower. The door is rectangular, is of oak and comprises three vertically set planks (0.23m thick) and studded battens forming a 4-centred head to the tower side room and horizontal planking with plain iron strap-hinges to the turret side. The stair is lit by a series of rectangular single light openings.

6.3.5 The west turret [1F/07]
The western turret houses a winding stone stair providing access between the principal floor levels of the main tower. It is accessed via an original 2-centred, plain chamfered stone doorway. The door is of oak, with vertical planking and studded fillets to the main tower side and horizontal planking with plain strap hinges to the turret side; modern, twisted iron drop-ring door handle. The stair is lit by a series of rectangular single-light openings.

6.4 **The Second Floor** (Fig.24)

Summary

At second floor level, the main block of the tower constitutes a single open space (the 'Music Room') and is open to the roof which is supported on four substantial oak beams running NE/SW across the building. The room is generously lit by windows in all four walls, all of which represent secondary insertions.

6.4.1 The Music Room [2F/01]

6.4.1.1 *The north-west elevation*
The north-west elevation is occupied by a large limestone, ovolo-moulded oriel cross-window with canted sides. The southern, lower opening light is of 15 panes and displays iron spring catch (Fig.14, type B) and quadrant stay, the original form of which has been masked by extensive corrosion, though it was probably of the spiral terminal type evidenced elsewhere in the building. The northern opening light is again of 15 panes though the catch has been renewed (turn-buckle with handle).

6.4.1.2 *The south-east elevation*
The south-east elevation is occupied by a large limestone, ovolo-moulded, oriel cross-window with canted sides. The lower, opening lights are of 10 panes. They display iron spring catches (Fig.14, type B) and quadrant stays, the original form of which has been masked by extensive corrosion, though probably of the spiral terminal type evidenced elsewhere in the building.

6.4.1.3 *The north-east elevation*

The north-east elevation is dominated by a large, inserted rectangular bay, located above the principal entrance at ground floor level. The limestone, ovolo-moulded window is of three lights with no transom (see Figure 20). The NW and SE lights contain paired, 10 pane centre-opening lights with fine quality, pierced iron spring-catches (Fig.14, type A) and quadrant stays with spiral terminals. The upper section of the windows retain four panels of late 17th-century heraldic glass, dated 1692. The original location of this glass within the building is unclear and some has clearly been moved since the RCHM survey of 1911 (the survey notes that at least one panel was located in the S tower in 1911). The flanking lights are of 30 panes and are fixed.

6.4.1.4 *The south-west elevation*

Two large limestone, ovolo-moulded cross-windows with splayed reveals and two centred rear-arches (see Fig.21) are located symmetrically to either side of a stone fireplace with moulded four-centred arch with spandrel decoration and stopped jambs (see Fig.17c). In each window, the lower light nearest to the fireplace represent opening casements. Each are of 15 panes, furnished with iron spring catches (Fig.14, type B) and quadrant stays (much corroded).

6.4.1.5 *The Roof* (Figs.22-23)

The roof structure of the main block is of shallow pitch (*c.*7° from horizontal) and is supported on four substantial (0.50m x 0.34 m) principal oak beams aligned NE/SW across the room at 2.25m – 2.50m centres. The soffits of the principal beams display plain chamfers. A series of 15 common purlins per bay, aligned NW/SE, are jointed to the principal beams or, in the case of the higher, central purlins, to secondary timbers (0.17m x 0.20m max.) which rest on top of the principal beams. The standard joint used in the roof structure is a central tenon with diminished haunch, though this is by no means universal and shouldered joints are utilised to take account of the waney edges of some timbers (in particular, the south-eastern faces of principals C and D: see Fig.22). Throughout, the carpentry of the roof (both principal beams and common purlins) retains a consistent original numbering scheme: the principal beams are numbered (I-VIII) at regular intervals, between every second pair of purlins, with long scratched marks (top and bottom); the upper marks are reflected by corresponding marks on paired, adjacent purlins (see Fig.23). Individual principals are distinguished through the use of single or doubled 'ticks'. A number of purlins represent obvious modern replacements, possibly dating to a phase of work undertaken in the 1930s.[9] The irregular arrangement of purlins reflects the original concealment of the roof structure by a ceiling, further evidenced by a series of sawn-off tenons observed in the lower edges of the principal beams. A series of paired grooves at the base of each principal represents a later ceiling arrangement (the grooves cut into the sawn-off tenons).

Dendrochronological analysis of cores taken from the common purlins of the roof structure indicate a felling date of *c.*1615 (see §.8 below).

6.4.1.6 *The floor* (Fig. 24)

The second floor comprises three independent framed structures delimited by and supported on the masonry partitions on a tripartite plan surviving at first floor level. To the NW and SE the floor frames appear to be identical. From the exposed elements it would appear that the structure is supported by longitudinal beams (0.24m x 0.24m scantling) which run parallel to, and immediately adjacent to, the long elevations of the tower and are supported by the masonry of the cross-walls and turret walls at first floor level. Further, substantial NW/SE aligned beams (0.32m x

[9] Pencilled graffiti visible on principal A: 'F Hayward 1934, Long Crendon Aylesbury, Bucks.'

0.32m scantling) run centrally to the tower and are again supported by the masonry of the first floor cross-walls and by the timber lintels of the first floor oriels at the NE and SW ends. In each frame, a total of ten transverse joists (0.23mx 0.09m scantling @ 0.36m centres) are located to each side of the central beam; jointing is by central tenon with diminished haunch. A system of original carpenter's marks closely resembles that of the roof structure described above: the principal central beams are marked (I-V) between every second pair of joists, which in turn display corresponding numbering.

In the central bay, the floor frame is essentially similar in construction, however the joists (here, 0.14m x 0.20m scantling @ 0.36m centres) extend into the bay window to the NE and are supported by first floor masonry as opposed to a longitudinal timber. To the SW, it is assumed that an integral trimmer supports the stone hearth slab located centrally within the elevation (this assumption has not been verified by observation). The system of carpenter's marks is as observed within the NW and SE bays.

The similarity in jointing and the systems of carpenter's marks suggests that the floor structure is contemporary with the carpentry of the main roof.

6.4.1.7 *The Stained Glass* (Figure 25)
The windows of the upper level retain a number of panels of stained glass dating to the late 17th century - the panels within the north-east bay window contain the motto 'SOLEM FERO' and the date '1692' (see Figure 25c). A full description of the stained glass panels is given in the Royal Commission field notes of 1911 included below as Appendix B.

6.4.2 The North Turret [2F/02]
The north turret is accessed via a primary 2-centred, plain-chamfered stone doorway. The door itself has vertical planking with replaced fillets to the main tower side, horizontal planking with plain strap hinges to the turret side. Internally, the turret retains four complete arrow loops with two centred rear-arches, all remain open (and are glazed). Three are of the standard, cruciform types with circular terminals while the fourth displays the alternative arrangement of a plain vertical slit with lower circular terminal and a central stirrup. In the face of the turret facing onto the entrance bay, an inserted, 2-light, ovolo moulded window. The southern light is of 15 panes and is furnished with an iron turn-buckle catch (Fig.14, type C) and quadrant stay (badly corroded). The northern light is fixed. Externally, the remains of a further loop survive beneath the inserted masonry of the stone window.

6.4.3 The East Turret [2F/03]
The eastern turret is accessed via a primary 2-centred, plain-chamfered stone doorway. The door itself is of two-centred head form but is narrow and of panelled construction and represents a secondary replacement of no great age. Internally, the east turret retains three original loops with 2 centred rear arches. Two of these examples are blocked. A further loop, visible to the exterior, has been blocked and adapted, internally to form a fireplace. The loops are again of the standard cruciform type with circular terminals, though that overlooking the SE bay window is a plain slit. In the southern wall of the turret, the original arrangement has been obscured by the insertion of an ovolo-moulded limestone cross-window. The western of the lower lights is of 20 panes and is furnished with an iron turn-buckle catch (Fig.14, type F) but no quadrant stay. The eastern lower light is fixed.

6.4.4 The South Turret [2F/04]
The southern turret houses a winding stone stair providing access between the principal floor levels of the main tower. It is accessed via an original 2-centred, plain chamfered stone doorway. The door is of a single depth of vertical planks , representing a secondary replacement. The stair is lit by two plain-chamfered rectangular openings.

6.4.5 The West Turret [2F/05]
The western turret houses a winding stone stair providing access between the principal floor levels of the main tower. It is accessed via an original 2-centred, plain chamfered stone doorway. The door itself is of two-centred head form but is narrow and of panelled construction and represents a secondary replacement of no great age. The west turret at 2F level blocked loops inserted fireplace

7 OBSERAVTIONS DURING WORK

7.1 The Annexe

The annexe is attached at the north-west side of the tower, is of irregular polgonal plan and has overall dimensions of 16m (NW-SE) x 10.5m max. (SW-NE).

An extensive programme of refurbishment of the annexe has been undertaken to improve the standard of residential accommodation and to better integrate the annexe accommodation with the refurbished tower. The building work has been the subject of an archaeological watching brief. The main areas of investigation were as follows:

- Removal of asphalt roof covering and exposure of wall head to whole structure of annexe.
- Ground level reduction to the south-eastern half of the annexe.
- Removal of a series of internal partition walls.

7.1.1 Removal of the roof covering

The removal of the asphalt roof covering of the entire annexe building served to expose the wall head. A number of features related to the development of the annexe structure were thus exposed.

7.1.1.1 *The roof structure*

The modern roof structure comprised softwood planking laid upon a series of SW-NE aligned softwood joists (225mm x 50mm (10" x 2") scantling) at 360mm centres. This structure relates to the documented 1920s adaptation of the annexe to form a residential building; two dated timber transit labels were recovered from the body of the roof structure, inscribed as follows:

W. Lacey, Builder and Contractor,
Staines Road, Hounslow.

To Brill Sta. Met. & G.C. Rly
M[r] Geo. Green
Cartage Contractor
Brill
Bucks

Carr. Paid 2.5.23

The roof covering had undergone repair evidenced by two clearly discernible phases of roofing felt (Fig.27), the second at a steeper incline than the first, and presumably added to alleviate problems of drainage. All modern roof coverings were removed and disposed of, the structural framework of the roof has been retained within the refurbished building.

7.1.1.2 *Features exposed at the wall head*

Following the removal of the modern roof coverings, a survey was made of the exposed wall head to record any features of interest relating to the development of the annexe. The upper courses of the wall proved to date from the 1920s refurbishment and re-roofing. Within the cavity of the northern western wall, a stub return was

noticed (Fig.28) which relates to the pre 1851 detached brick built structure indicated on historic plans (fig.31).

7.1.2 Ground level reduction

7.1.2.1 *Description*

Ground level reduction was required as part of the refurbishment within the south-eastern half of the building. The extent of ground reduction is shown in Fig.26; the level was reduced from 98.04m OD (modern floor) to a minimum of 97.255m OD.

The flooring of the annexe, prior to the commencement of work, comprised softwood planking (135mm wide x 20mm deep) supported on softwood joists (60mm wide x 50mm deep) resting upon a concrete slab. The concrete floor slab (1000) and associated crushed brick make up layer (1001) were broken out by the contractors under archaeological supervision. Following the removal of the modern floor layers, ground level reduction progressed by hand excavation (again undertaken by contractors under archaeological supervision).

The sequence of deposits can be summarised as follows:

Context Number	Context type and summary description	Depth
1000	*Layer*: Concrete floor slab	0.07m
1001	*Layer*: Crushed brick make-up layer for floor slab 1000	0.13m
1002	*Layer*: Stiff grey-brown silty-clay. Flecks of charcoal and small areas of green staining, occasional fragments of oyster shell. Redeposited natural?	0.31m
1003	*Deposit*: Limestone wall footing; aligned north-west/south-east (see text)	Max visible. 0.45m
1004	*Deposit*: Limestone wall footing; aligned north-east/south-west (see text)	Max visible. 0.45m
1005	*Layer*: Stiff, compacted grey silt with extensive iron staining	N/K
1006	*Deposit:* Return of wall 1004	

Table 7.1: context summary (reduced dig)

Immediately beneath the crushed brick make up layer (1001) for the concrete floor slab (1000), a deep deposit of stiff grey-brown silty clay (1002) was encountered. Within deposit 1002, a NW/SE aligned wall of limestone construction (1003) was exposed, maintaining a similar alignment to the north-eastern wall of the annexe building at a distance of 0.95m from it. The wall was 0.46m wide and a maximum 1.12m in length. After removal of deposit 1002 the wall was seen to survive to a maximum visible height of 0.45m high. No construction cut for 1003 was discernible and layer 1002 presumably represents a later deposit. The upper limit of 1003 was at a level of 97.49m OD. At its south-eastern end, wall 1003 was seen to abut a further wall (1004). Wall footing 1004, again of limestone rubble construction, was aligned NE/SW (ie. perpendicular to 1003) and was seen to extend as far as the north-eastern wall of the annexe. The south-western limit of the wall was exposed at a distance of 4.10m from the north-eastern wall of the annexe where it turned through 90° and returned towards the main block of the tower as 1006. Again, no construction cut was evident.

The corner of the structure represented by 1004/1006 was more fully exposed in a pit dug for the underpinning of the south-west wall of the annexe (Fig.26). Here, 1006 was seen to survive to a maximum of 5 courses of roughly coursed limestone rubble set within a pale orange sandy mortar.

At the base of excavations the upper limit of deposit 1005 (a stiff, compacted grey silt with extensive iron staining and oyster shell inclusions) was exposed. A total of five sherds of pottery including two sherds of Boarstall/Brill ware, probably late 14th-century in date, were recovered from the well defined interface between 1002 and 1005.

7.1.2.2 *Interpretation*

Given the location and alignment of the walls 1004 and 1006, it is tempting to relate them to the structure indicated on the 1695 Burghers engraving. However, in the absence of any conclusive evidence, any such interpretation must remain hypothetical. It is possible that the smaller length of footing 1003, aligned at right angles to 1004 may represent a later 'buttress' type feature.

7.1.3 Removal of partition walls

The removal of a series of internal partition walls within the annexe exposed little of archaeological interest. The walls were constructed of brick (220 x 105 x 70mm) set within a hard, fine grey mortar. The walls were single skin thickness and, unusually, the bricks were laid on edge throughout. The same manner of construction was noted elsewhere within the annexe; namely the inner brick skin of the north-western and south-western walls (Fig.26), extending into the jambs of the windows of the south-western (garden) elevation. Partition walls of similar construction were recorded within the main block of the tower.

All internal partition walls within the annexe date to the 1920s refurbishment under Mrs. Jennings-Bramley; the distinctive construction technique, where recorded elsewhere within the building, has thus proved to be a useful, diagnostic dating feature.

7.1.4 Other works

The insertion of a new RSC support to the ceiling structure necessitated the excavation of a small pit (0.60m x 0.60m in plan) to a maximum depth of 0.70m within the floor level of the north-western part of the annexe roof (within the cupboard of the newly created bathroom). A similar sequence of deposits was encountered within this pit to that described above (Table 2). Against the south-eastern edge of the pit, a maximum of one course of stone footings (2004) on a NE/SW alignment was exposed (Fig.26). This wall footing is clearly related to a straight joint visible externally in the north-eastern wall of the annexe, and can reasonably be interpreted as the north-western wall of the southern annexe structure indicated on the 1851 estate map (Fig.31).

Context Number	Context type and summary description	Depth
2000	*Layer*: concrete floor slab	0.07m
2001	*Layer*: crushed brick make up layer for slab 2000	0.13m
2002	*Layer*: Stiff grey-brown silty-clay. Flecks of charcoal and small areas of green staining, occasional fragments of oyster shell. Redeposited natural?	
2003	*Cut*: for wall 2004	
2004	*Deposit*: NE/SW aligned wall footing relating to southern 19th-century brick structure	

Table 7.2: context summary (RSC foundation)

7.1.5 The Development of the Annexe

Our understanding of the development of the annexe structure remains essentially as that outlined in the Buckinghamshire Museum Archaeological Service report of 1997. The present programme of works has allowed a certain amount of detail to be added

to the phases already identified, though the origins and early development of the structure remain obscure.

7.1.5.1 *Possible traces of the 17th-century structure*

The earliest remains exposed during work would appear to be the footings 1004/1006 which may possibly be interpreted as representing the remains of the attached rectangular structure illustrated on the Burghers engraving of 1695. If it be taken that the stone 'plinth', evident to the south-east end of the north-eastern annexe wall represents the north-eastern wall of this structure (a supposition supported by the similarity in nature and width of masonry to walls 1004/1006), then the original dimensions of the structure would have been *c.*4.5m (NE/SW) x 5.00m (NW/SE). The original function of this building and its relationship with the main tower block remain unclear.

7.1.5.2 *The 19th century*

The next clearly identifiable chronological phase of construction within the fabric of the annexe is represented by the early brickwork of the extant north-western and north-eastern walls, combined with the stone footing (2004) exposed internally (§.7.1.4) and the stub of return wall recorded within the cavity of the north-western annexe wall (§.7.1.1.2, Fig. 28). This masonry appears to correspond to the two independent structures indicated on mid-late 19th-century plans (Fig.31). The northern of the two buildings had overall dimensions of *c.*2.35m (NW/SE) x 3.75m (NE/SW); early 20th-century photographs (Fig.32) indicate that it was covered with a hipped, tiled roof and was furnished with two small (*c.*0.60m wide x 0.90m tall) windows in its north-western wall (still extant though blocked).

The nature of the southern structure is a little less clear. The 19th-century plans, though highly schematic and difficult to interpret with any degree of confidence, appear to indicate that the southern structure was of a similar width to the northern structure, extending as far as, and abutting, the main block of the tower at its south-eastern end (Fig.31). The north-western wall of the southern structure has been exposed as footing 2004, see §.7.1.4 and Figure 26. This implies a structure with overall dimensions of 10.65m (NW/SE) x 3.75m (NE/SW), it was separated from the northern structure by a narrow (1.25m wide) passageway.

The southern structure is not clearly represented by the photographic record or by structural evidence. The RCHM photograph of 1911 (Fig.10/32) clearly shows the north-eastern brick wall of the southern structure though it would appear, by this date, to terminate some distance from the main block, the continuation being a lower wall of stone construction (the extant 'plinth', possibly dating to the 17th century – see above). It should also be noted that the photographic evidence indicates that, at this date, the brickwork represents a free standing wall rather than part of a roofed structure. The termination of the brick wall, short of the main tower, is confirmed by structural evidence; a straight joint can be discerned in the brickwork of the north-east wall at a distance of 3.55m north-west of the main block. It must be assumed that, if the southern structure did originally extend as far as the main tower, any fabric related to its south-eastern end has been lost.

7.1.5.3 *The early 20th century*

By the early years of the present century, the southern structure had been partly demolished and converted, most probably to create some form of enclosed garden on a polygonal plan comprising the northern *c.*7.75m of the NE brick wall and the newly constructed (extant) stone walls to the west and south-west. These newly constructed walls, which included two plain chamfered archways with four centred heads, abutted the smaller, northern structure (which remained essentially unaltered) at its western

corner and was thus incorporated into the walled garden. The passageway between the two structures had been infilled with an angled brick wall.

7.1.5.4 *The 1920s refurbishment*

The last major phase of construction and alteration to the structure of the outbuildings was undertaken in the early-mid 1920s, under Mrs Jennings-Bramley, when the walled garden was converted into a residential annexe. This work involved the raising of the eaves level throughout, the roofing over of the structure and extention of the structure to the south-east to abut the main tower. Doorways were forced through the masonry of the northern and western turrets to provide access. The brick and stone walls of the enclosed garden were modified by the addition of an inner skin of brickwork and a series of internal partition walls were constructed. The two stone doorways of the walled garden were retained but altered to form windows.

7.1.5.5 *Recent Alterations*

A series of small scale alterations and additions have been undertaken since the major 1920s refurbishment work. This has included the construction of two small outbuildings to the east of the annexe (demolished as a part of the current programme of work) and alterations to fenestration and access, resulting in the patchwork of masonry to the north-eastern elevation.

Phase	Date	Description	Evidence
Phase 1	before 1695	Possible 2 storey, rectangular structure c.4.5m (NE/SW) x 5.00m (NW/SE) attached to NW elevation of main tower. Function unknown.	(i) Burghers engraving. (ii) Walls 1004, 1006 exposed in reduced dig. (iii) Stone 'plinth' of NE elevation.
Phase 2	before 1851	Two rectangular, brick-built structures located to NW of tower (a) 10.65m (NW/SE) x 3.75m (NE/SW) (b) 2.35m (NW/SE) x 3.75m (NE/SW): hipped roof.	(i) Tithe map. (ii) Early brickwork of NE and NW elevations of extant structure. (iii) Wall footing 2004 exposed in RSC pit.
Phase 3	1851 - 1911	Enclosed garden reusing the northern c.7.75m of the NE elevation of structure (a) and retaining complete structure (b) from Phase 2. Enclosed to west by newly constructed stone walls. Not attached to main tower.	(i) Photographic evidence. (ii) Structural evidence of extant masonry (iii) Wall footing 2004 exposed in RSC pit.
Phase 4	1920s	Conversion of walled garden into residential annexe undertaken by Mrs Jennings-Bramley. Raising of eaves throughout, roofing of structure and construction of internal partition walls. Connection to main tower, forcing through of doorways to north and west turrets.	(i) Documentary sources (ii) Photographic evidence. (iii) Structural evidence of extant masonry.
Phase 5	after 1920s	Construction of outbuildings to east of annexe. Alteration to access/fenestration of NE elevation.	(i) Photographic evidence. (ii) Structural evidence of extant masonry

Table 7.3: Phase summary of annexe development

7.2 Observations within the corner turrets (see Figures 34-36)

The removal of the lead roof covering and underlying planking to the corner turrets of the north-east elevation revealed interesting evidence for the development of the upper part of the tower. The upper surface of the second floor ceiling was exposed at a level of 106.7m OD. The lower sections of exposed wall were of roughly squared coursed rubble blocks. At a level of 107.08m OD, a projecting string course (see Figure 35) was noted to run around the full circumference of the tower presumably representing a flashing for a former roof level. Above the string, primary walling continued for a further 0.82m and within this height of wall a series of former embrasures with dressed stone jambs were recorded. The timber joists for the current roof structure were noted to be lodged within the infilled former embrasures (see

Figure 35), the base of the crenels being at a level of 107.625m OD . Externally, the form of the former loops was noted to be of standard cruciform type with circular terminals confirming a primary origin. The maximum level of primary stonework masonry was at a level of 107.90m OD, above this level the masonry was of mixed stone and brick construction, brick being extensively used as an internal facing.[10]

The implication of these observations is that, at the time of the heightening of the second floor roof (*c.*1612), a programme of alterations was undertaken on the corner turrets, heightening the roof level by 0.70m and maintaining the origninal crenellated appearance.

7.3 Excavation of the external service trench (see Figure 37)

The excavation of an exterior service trench was undertaken by contractors and the open trench was inspected by OAU upon completion of work. The location of the excavated trench is shown on Figure 37. The relatively shallow depth of the trench (for most of its length it was under 0.30m deep) meant that for the most part it was excavated through garden soil. For this reason any finds retrieved were obviously redeposited. Finds retrieved from the excavated spoil comprised, for the most part, modern pottery and ceramic building materials: these finds were not retained. However, in the section of the trench adjacent to the annexe, a fragment of medieval glazed ridge-tile and two fragments of decorated floor tile. One of the fragments is ¾ complete; it measures 137mm across and is 19mm thick. The design, (Hohler design XXXI), intended to be completed in a four tile panel, is a floriated pattern with a central quatrefoil and shows very little sign of wear. It is likely to date from the late 13th century or the first half of the 14th century. The second fragment is a pelletted quatrafoil design, (Hohler XXIV), common in the late 13th-century in the Oxford region. It is 24mm thick and retains part of its glaze in patches. Both tiles have stabbed keying on their undersides and are of a high-fired sandy fabric with few other inclusions.

Only one positive feature was exposed along the length of the excavated trench: the corner of a stone built structure was partly exposed immediately adjacent to the north-western corner of the annexe. The structure would appear to represent the south-east corner of a rectangular structure built on a similar alignment to the gatehouse itself. Reference to Burghers engraving of 1695 clearly shows a rectangular structure in this location, most probably representing some form of garden structure; the location of the footing exposed within the service trench would appear to correlate well with this feature.

[10] The use of brick as an internal facing to exterior stonework was also noted in the south-eastern oriel window

8 DENDROCHRONOLOGICAL STUDY by Daniel Miles*

8.1 Methodology

In situ timbers were sampled through coring, using a 16mm hollow auger. Details and locations of the samples are detailed in table 8.1. The dry samples were sanded on a linisher using 60 to 1200 grit abrasive paper, and were cleaned with compressed air to allow the ring boundaries to be clearly distinguished. They were then measured under a x10/x30 microscope using a travelling stage electronically displaying displacement to a precision of 0.01mm. Thus each ring or year is represented by its measurement which is arranged as a series of ring-width indices within a data set, with the earliest ring being placed at the beginning of the series, and the latest or outermost ring concluding the data set.

A total of 9 cores were taken for analysis, three samples from the ground floor joists in the south-eastern chamber (GF/01) and six samples from the roof of the main tower at second floor level (2F/01). All sampled timbers sampled were of oak (*Quercus* spp.) from what appeared to be primary first-use timbers, or any timbers which might have been re-used from an early phase. Those timbers which looked most suitable for dendrochronological purposes with complete sapwood or reasonably long ring sequences were selected.

8.2 Presentation of Results

The results are summarised in Table 8.1 on page 23, which includes most of the salient results of the dendrochronological process. From left to right, the first column gives the sample number which comprises a four letter identifying prefix, after which each timber is given an individual number. The next column shows whether the sample was from a core 'c', or a section or slice from a timber 's'. Next the timber sampled is detailed long with a location reference.

The next three columns give the first measured ring and last measured ring dates of the sequence (if dated), and the date of the heartwood/sapwood transition or boundary (if present). This date is critical in determining an estimated felling date range if the sapwood is not complete to the bark edge. The column headed 'Sapwood' gives the number of sapwood rings. If the sapwood is complete to bark edge, with a full ring with complete spring and summer growth, then a 'C' is shown indicating felling during the winter months. Spring felling is indicated by a '¼C', and summer or autumn felled is indicated by a '½C'. The next column gives the total number of rings in the individual sample analysed. The following three columns give the mean ring width, the standard deviation, and the mean sensitivity of the sequence.

The final column of the summary table indicate the actual felling seasons and dates for each dated sample (if complete sapwood is present), or an estimated felling date range based on the last heartwood ring date and taking into account any surviving sapwood. Sometimes it will be noted that earlier end of the range will be before some other samples within the group with precise felling dates. This is nothing to be overly concerned about so long as the outer limit of the range is *after* the precise dates. It must be remembered however, that estimated felling date ranges are based on a 95% probability, therefore statistically one sample in 20 will actually fall *outside* this range.

It will also be noticed that often the precise felling dates will vary within several years of each other. Unless there is supporting archaeological evidence suggesting different

* Oxford Dendrochronology Laboratory

phases, all this would indicate is either stockpiling of timber, or of trees which have been felled or died at varying times but not cut up until the commencement of the particular building operations in question. When presented with varying precise felling dates, one should always take the *latest* date for the structure under study, and it is likely that construction will have been completed for ordinary vernacular buildings within twelve or eighteen months from this latest felling date (Miles 1997).

8.3 Results

8.3.1 The First Floor structure: GF/01

Three samples were taken from the ground floor joists in the eastern chamber off the central gateway (GF/01). Two matched together to form a site master ***BOARSTL1*** of 112 rings and spanning 1201-1312. One of the samples had complete sapwood, giving a felling date of winter 1312/13, whilst the other finished in 1299, from which a detached section of complete sapwood of eleven rings give a reduced felling date range of 1311-13.

8.3.2 The Tower Roof: 2F/01

Of the six samples from the roof of the main second floor chamber (2F/01), all dated two samples having derived from the same tree. Six precise felling dates were produced, one from the winter of 1612/13, one from the spring of 1613, two from the winter of 1613/14, and one from the winter of 1614/15. Given the clustering of felling dates, construction of the roof during 1615 or immediately afterwards is strongly suggested. The timbers used in the common joists and smaller members of the roof appeared to be cut from large slow grown oaks, whereas the tiebeams were cut from faster grown timbers which were less suitable for dendrochronology.

Sample number		Timber and position	Dates AD spanning	H/S bdry	Sapwood compliment	No of rings	Mean width mm	Std devn mm	Mean sens mm	Felling seasons and dates/date ranges
Main Roof										
* ***brst1***	c	1st joist from N, bay C-D, roof	1509-1614	1583	31C	106	1.46	0.56	0.164	Winter 1614/15
* ***brst2***	c	2nd joist from N, bay C-D, roof	1455-1613	1588	25C	159	1.22	0.40	0.223	Winter 1613/14
* ***brst3***	c	3rd joist from N, bay C-D, roof	1496-1613	1581	32C	118	1.04	0.23	0.225	Winter 1613/14
* ***brst4***	c	9th joist from N, bay C-D, roof	1450-1612	1574	38C	163	0.87	0.24	0.241	Winter 1612/13
* ***brst5***	c	12th joist from N, bay C-D, roof	1539-1613	1594	19½C	75	1.20	0.30	0.259	Summer 1614
* ***brst6***	c	13th joist from N, bay A-B, roof	1470-1612	1596	16¼ C	143	1.16	0.45	0.262	Spring 1613
Ground floor ceiling joists east of gateway										
† ***brst7***	c	5th joist from N, E bay ground floor	1240-1299	1299	H/S+11C NM	60	3.19	1.14	0.215	1311-13
brst8	c	4th joist from N, E bay ground floor	-		H/S	54	2.33	1.19	0.249	
† ***brst9***	c	3rd joist from N, E bay ground floor	1201-1312	1282	30C	112	1.70	0.64	0.381	Winter 1312/13
* ***brst23***		Mean of ***brst2*** + ***brst3***	1455-1613			159	1.14	0.29	0.211	
† = *BOARSTL1* Site master			**1201-1312**			**112**	**2.11**	**0.78**	**0.305**	
*** = *BOARSTL2* Site master**			**1450-1614**			**165**	**1.12**	**0.26**	**0.184**	

Key:
*,†, = sample included in site-master; c,s = core, slice; ¼C,½C,C = bark edge present, partial or complete ring: ¼C = spring (ring not measured), ½C = summer/autumn, or C = winter felling (ring measured); H/S bdry = heartwood/sapwood boundary - last heartwood ring date; std devn = standard deviation; mean sens = mean sensitivity

Table 8.1: Results of Dendrochronological Analysis

9 DISCUSSION AND CONCLUSION

9.1 The Primary Structure

9.1.1 *The date of the primary structure*

The arrangement of the primary gatehouse structure accorded essentially with the plan form surviving today, comprising a main rectangular block arranged over three levels with attached hexagonal turrets at each corner. The appending of polygonal corner turrets represents a development of the simple gatehouse, first appearing towards the end of the 13th century but becoming a common feature during the course of the 14th and early 15th centuries (Wood 1965, 157). The accepted date for the construction of the original tower at Boarstall has traditionally been based upon the evidence of the licence to crenellate issued to John de Handlo by King Edward II in 1312. The assignation of a construction date purely on the evidence of such documentary reference is often problematic. However, we are fortunate in this instance that the date has been precisely corroborated by dendrochronological analysis (see §.8) of samples taken from the ceiling of the ground floor south-eastern room (GF/01).

9.1.2 *Access and circulation* (see Figure 38)

It is perhaps unfortunate that the major works of the 16th-17th centuries and, to a lesser extent the refurbishment work of the 1920s, though improving the residential arrangements of the building, has masked the original arrangement of the gatehouse. In respect of the 1920s re-ordering, particularly of the ground floor, the series of RCHM survey plans from before this phase of work (1911) represent an interesting record. Firstly, if the pre-1926 layout can be taken to reflect the original (or at least the 16th-17th century) configuration of the gatehouse, then the pattern of internal and exterior access and circulation may be used to draw broad conclusions regarding hierarchical divisions within the building. The fact that the southern stair turret was accessible only from the exterior giving direct access to (?)first and second floor apartments may indicate an original private function. In this respect, the fact that the first floor door giving access to the southern stair turret varies from the two-centred doorways recorded elsewhere within the tower is interesting, raising the question as to whether the southern stair originally gave access directly, and solely, to the second floor apartments. The stair in the western turret, by contrast, being accessible at ground floor from both the north-west room (GF05) and the exterior may have served more as a service stair. The relative isolation of the south-eastern room (GF01/02) from the upper apartments may possibly be taken to infer an original function purely as a guardroom with a garderobe located within the eastern tower (GF07). The circulation pattern implied by access from ground floor level of the north-western room (GF05) may imply an original function as a service room to the apartments above. Further, any lifting machinery for a drawbridge would only have been directly accessible from the north-western room (1F03). This would seem to imply that the south-eastern room (1F01) would have functioned, at least in part, as a gatekeeper's or porter's lodging. The upper room (2F01) which, though altered, has presumably always constituted a single space, would have originally functioned as lodgings accessed directly from the exterior via the southern stair or from the service rooms below via the western stair.

A significant aspect of the tower at Boarstall, evident not only from historic depictions but even from a cursory inspection of the site today, is the monumental scale of the gatehouse in relation to the size of the moated enclosure itself and the apparent scale of the former manor house (see fig.3).

A geophysical survey of the moated enclosure, undertaken by the National Trust during the course of the current refurbishment (Marshall 1999) has provided

interesting results. The plan of the reconstructed 17th-century house as depicted by Burghers is clearly visible and features such as the bay windows and porch are easily discernible. However, little or no evidence of the manor's medieval predecessor was noted. It is hoped that results from this geophysical survey, in conjunction with possible future limited excavation of the building footprint itself may enhance our understanding of the contemporary manor for which the massive gatehouse was constructed.

9.2 **Alterations to the Primary Structure**

Observations made at high level, particularly during the re-roofing of the corner turrets, have made it apparent that the extent of reworking to the upper level of both the turrets and the main block of the tower was extensive. The insertion of the large oriel window above the central gateway entrance reflects a fashion popular from the 16th century on, representing a 'gentrification' of the essentially military medieval structure, and perhaps reflecting a change in status of the manor. The RCHME study of 1912 suggests the inserted bay windows to the NW and SE elevations date to the 16th century (see Fig.13); however, no evidence has been recorded during the current study to suggest that these features represent a separate campaign of work to the raising of the second floor roof and creation of the main NE bay over the gateway and it would appear reasonable to argue that these works together represent a single, extensive rebuilding programme dating to the early 17th century.

It is apparent that the former defensive role of the gatehouse was reflected in the new structure by the creation of a new series of crenellations to the angle turrets. The aim of this major refurbishment was, in all likelihood, to provide some form of combined banqueting house / viewing platform, being closely linked with the newly formed formal gardens (it is intersting to note in this respect that it was probably from the newly formed 'viewing platform' that Burghers undertook the survey upon which his engraving of the manor house and gardens was based).

Of particular significance in respect of this major refurbishment are the results of dendrochronological samples taken from the Music Room roof which indicate that this major campaign of work was undertaken before, as opposed to after, the ravages of the Civil War.

9.3 **Conclusion**

9.3.1 The watching brief has provided interesting new structural evidence for the development of the gatehouse at Boarstall, and as such confirms that the re-examination of the structure has been a worthwhile exercise. The dendrochronological study has proved extremely useful in more closely defining the origins and chronological development of the structure.

9.3.2 No extensive archival study has been undertaken as part of the present works; such a programme of research in the future may serve to more fully understand the major programme of works identified within the structure of the tower and dated by dendrochronological analysis of the music room timbers. It appears reasonable to assume that such a major campaign of building works would be related to an historical change of stewardship or significant event in the history of the Dynham family in whose ownership the tower remained during the late 16th and early 17th centuries.

9.3.3 External excavation works have, by contrast to the internal structural works, been relatively disappointing. The retreival of unstratified sherds of Boarstall ware ceramic and fragments of medieval tile is of no great surprise, the absence of related

features being the result of the extensive landscaping of the gardens within the moated enclosure in the 17th century and at various occasions since. The results of the independantly commissioned geophysical study do however, show that the site retains significant archaeological potential in respect of the 17th-century manor house and potentially its medieval precursor.

Ric Tyler
Oxford Archaeological Unit
20.03.2000

Bibliography

Hall S	1989	Boarstall Tower. *National Trust Guidebook.*
Hohler C	1942	Medieval paving tiles in Buckinghamshire, *Records of Buckinghamshire*, **14**, parts 1 and 2, 1-49 and 99-131
Kennet W	1675	*Parochial Antiquities: attempted in the history of Ambroseden, Burcester, and other adjacent villages in the counties of Oxford and Bucks.*
Matthews WL	1989	'The National Trust Archaeological Survey: Boarstall Tower'
Mellor M	1994	'A Synthesis of Middle and Late Saxon, Medieval and Early Post-Medieval Pottery in the Oxford Region'. *Oxoniensia* **LIX** ,17-218.
Miles D	1997	'The interpretation, presentation and use of tree-ring dates' in *Vernacular Architecture* **28**
Pevsner N	1960	*The Buildings of England: Buckinghamshire.* Penguin Books, Harmondsworth, Middlesex.
Porter S	1984	'The Civil War Destruction of Boarstall'. *Records of Buckinghamshire*, **26**, pp.86-91. Buckinghamshire Archaeological Society. Aylesbury.
RCHME	1912	*An Inventory of the Historical Monuments in Buckinghamshire Vol.I (South).* HMSO. London
Reed M	1979	*The Buckinghamshire Landscape.* Hodder and Stoughton, London.
Salter Rev HE	1930	The Boarstall Cartulary. Oxford Historical Society Vol. **LXXXVIII**. Clarendon Press, Oxford.
Smith N and Parkhouse J	1997	'The Annexe, Boarstall Tower, Boarstall: Building Recording and Photographic Study'. Buckinghamshire County Museum, Archaeological Service Report No.501.
Wood M	1965	*The English Medieval House.*

Appendix A: DoE List Entry

SP 61 SW BOARSTALL
Boarstall Tower
5/3

25.10.51

GV **I**

House, once the fortified gatehouse to a house that was demolished late C18. Early C14 for John de Handle who was given licence to crenellate in 1312. Altered late C16-C17. C20 repairs and internal modifications. Coursed rubble stone with ashlar dressings, the N front with bands of ashlar. Lead roof. Rectangular building with hexagonal corner towers, the rear towers a little taller and containing stone spiral staircases. 3 storeys, the tall top storey with single large room, the lower storeys with one bay to either side of central archway. Towers have carved stone gargoyles, battlemented parapets with C17 copings, and C14 slit windows, those to N towers cross-shaped, 2 in SE tower with trefoil heads. Other irregular C16-C17 windows as in centre block. S. towers have C16-C17 doorways with chamfered depressed arches and Tudor mouldings. Centre block, except on S front, has C17 balustraded stone parapets, that to N with carved frieze below, those to sides canted out over bay windows. Single octagonal stone chimney shafts flanking centre bay are also C17. C16-C17 moulded stone mullion windows, all with leaded lights. N front has 2-light windows to ground floor and single lights to first floor, the small central light with sill grooved, possibly by a portcullis chain; central C14 depressed archway of 2 chamfered orders with C17 doors, the doors reversed with moulded panels to inner face. This archway has flanking C17 stone buttresses which rise in a semi-circular arch to support a second floor rectangular bay window of 3 lights. Rear also has C14 arch with flanking single lights, 2 light windows to first floor and 2 cross windows to upper storey. Canted bay windows to sides have moulded corbel bases and transomed upper windows. Single storey range attached to right, of rubble stone and brick, has been much altered C20 but incorporates older building with angled rear corners and chamfered ashlar jambs. Interior: central through passage has been incorporated into a room with the removal of the left side wall. Ground floor room to right has altered fireplace with shallow late C17 stone arch. Upper floors retain C14 2-centered chamfered arches to towers, that from large room to SE tower being of oak. First floor rooms still have old doors. Fine upper room has late C16 stone fireplace with moulded 4-centered arch and stopped jambs, and heraldic glass of 1692 in N window. Some traces of medieval drawing on rear wall of ground floor. Consecration cross and C17 clock in SW tower. In front of the tower and attached to it is a bridge of 1736, with 2 brick arches over the moat. House is now owned by the National Trust.

RCHM I p.57-59 Mon. 4
National Trust Guide by Dr S Hall, 1979

B.

RECORD CARD FOR SECULAR MONUMENTS.

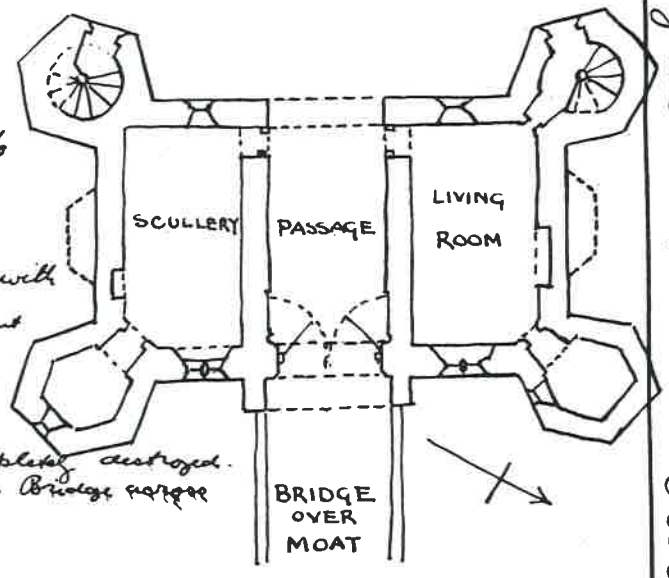
(N.B.—Detail of special interest is to be entered here, but described fully on a separate card.)

1. **Name and situation of Monument** (with owner's Name and Address). The Gatehouse, of Boarstall House now destroyed.

2. **General appearance:** (*a*) No. of storeys. Three
   (*b*) Building materials. Stone
   (*c*) Roofs. Leaded.

3. **Historical development** (with dates and small sketch plan).

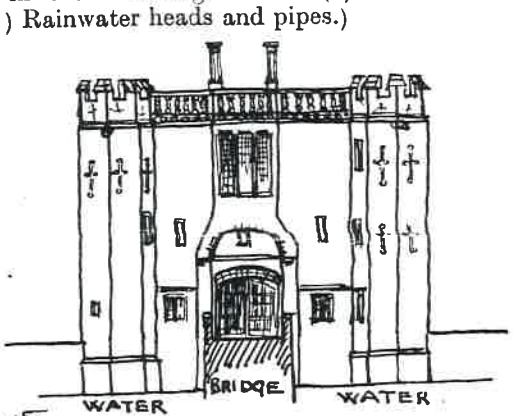
In 1312 Sir John de Handlo was licensed to fortify & embattle a building at Boarstall. ? Existing Gatehouse is of [late 15th or early 16th century date. Arch over main entrance with bay above & cornice & balustrades to NE front & the two ends, early 17th cent. Mansion for Charles I converted into garrison 1644 & was surrendered in 1646. House since completely destroyed. only gate house remaining. Bridge carries moat built 1735.



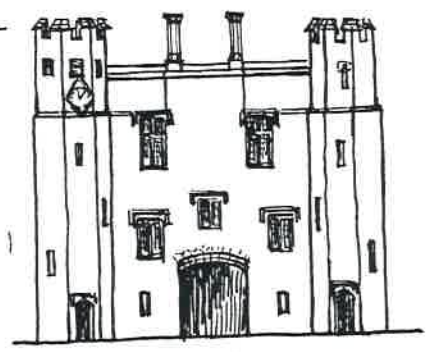
4. **Special features** (if any):

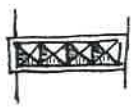
5. **Elevations:** (Beginning with the main front, and mentioning, in the following order:—(*a*) Walls; (*b*) Gables; (*c*) Doors; (*d*) Windows; (*e*) Chimneys; (*f*) Rainwater heads and pipes.)

The NE front has an entrance with plain chamfered jambs (partly modern) and a segmental arch of three chamfered orders. Just inside the jamb are grooves in the stonework for a port cullis to slide down. The large double doors are of 17th century date with moulded framing & modern battens at the back. The two doors are not alike one having framing thus and the other, with a wicket door — Over the doorway is a small window, the sill of which has grooves worn in it, probably by chains in connection with a former drawbridge. Around the doorway is a later addition in the form of a semicircular arch, resting on two projecting buttresses with moulded abaci, supporting a bay above. The arch has a beaded edge & the soffit of the key stone has a small projecting pyramids.

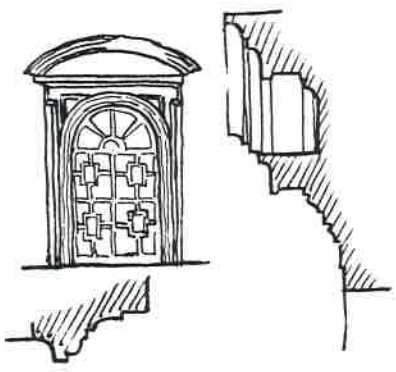


N.E. FRONT.


S.W. FRONT



6. **Grounds:** (*a*) Gardens; (*b*) Outbuildings; (*c*) Statuary, sundials, etc.



High brick boundary wall of 17th century date between Churchyard & grounds of Boarstall House with coping of thick bricks thus → 
Contemporary stone doorway in wall with moulded jambs semicircular arch, architrave and segmental pediment & ornamental panelled door original.
Bricks of wall 8½ × 4¼ × 2½.
For Moat see separate account.
S.W. of the Gatehouse are remains of a stone semicircular arch, apparently remains of a tunnel connecting the cellars of the former house with the moat.

P.T.O.

(25,171). Wt.2909—21. 1000. 5/10. A.&E.W.
(34,945). „ 32,157—3. 1000. 1/11. „

County. Buckingham Parish. Boarstall Sub-Commission. Secular. No. of Monument. 4 (a)

7. Interior : (Disposition of rooms, if original, giving fittings as they occur (see list), beginning with the ground floor, following with the basement, and working up to the attics ; staircases in the same manner.)

Fittings : (Reminder list).

(1) Ceilings.

(2) Cupboards (fixed).

(3) Doors and Overdoors.

(4) Fireplaces and Mantelpieces.

(5) Glass.

(6) Paintings.

(7) Panelling.

(8) Parquetry and floors.

(9) Plasterwork on internal walls.

(10) Roofs and beams (internal).

(11) Screens.

(12) Tapestries.

(13) Miscellanea (*e.g.*, carving, ironwork, locks, &c.).

The plan consists of a rectangular block with a hexagonal Tower at each angle - those at the S & W corners containing winding stone stairs. The ground floor consists of a wide central passage between two rooms. The first floor has three rooms (apart from Tower closets) the central one being over the passage. On the second floor one room occupies the whole extent of the gatehouse.

Ground floor. Ceiling of central passage has old flat joists. Room on NW side has a wide fireplace with beaded jambs & depressed head, partly original. a small cupboard near it has a 17th century panelled door. The doors leading from this room to the N & W towers are original.

Room on SE side has large exposed ceiling joists rather decayed & a small stone fireplace with beaded jambs & depressed head.

The inside jambs & head of the small window in the E Tower are panelled with 17th cent. oak.

First Floor. Several old batten doors with strap hinges & original stone chamfered doorways with two centred heads. One original stone fireplace in the NW room has moulded jambs & head.

Second floor. All four doorways into the angle towers have original chamfered jambs & two centred heads, three of stone but the S. one is of two large pieces of oak with stone hollow chamfered rear jambs & 4 centred arch. In the SW. wall is a large open fireplace with moulded stone jambs, the inner member of the arch being four centred & the outer one square with sunk spandrels. Modern wood architrave & shelf.

17th cent. glass - in each side light of the NE bay window a pane with the arms - azure a cheveron or between three eagles heads erased or, a badge of Ulster, for Aubrey impaling sable a lion argent for Handlo, mantled helm & crest; motto "Solem Fero" and date 1692.

In centre light of bay shield in a wreath, party per pale azure and gules three lions argent, for Ap Gwyllym. In dexter light :- quarterly ① ~~azure~~ Aubrey ② argent a cheveron sable between three sleeves sable, for Mansel, ③ argent a cheveron sable between three horns sable, crescent for difference, for Basset, ④ argent two bars gules a molet sable in chief, an inescutcheon sable a lion argent for . motto "Solem fero" at bottom.

In 2nd floor window of E. Tower :- ① quarterly 1 & 4 Basset 2 & 3 azure a bend or cotised argent between six martlets or for ? De la Bere, crescent for difference.

8. **Condition :** Good

9. **Visited by** (with dates) : C. C. Durston 15 June 1911

10. **Bibliography :**

11. **No. of Ordnance Sheet** (6-in.) :

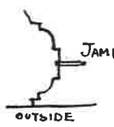
12. **Signature of Investigator.** C. C. Durston.

The Gate House

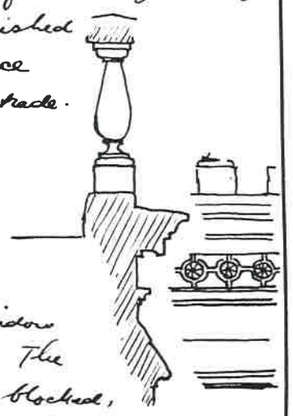
County. Buckingham Parish. Boarshall Sub-Commission. Scular No. of Monument. 4 (4).

Elevations contd.

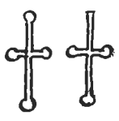
The bay window over the arch has ~~four~~ three lights in front & one each side with moulded mullions jambs & heads but no transoms. It may be in part an original window reused but is more likely copied from the original windows. The casements have elaborate pierced iron fasteners.



There are four other windows in the main wall of this side - two on the ground floor, each of two lights with ~~one~~ moulded jambs mullion & head & over each is a moulded string. Two first floor windows over these are each of one light & of similar detail. The top of the wall is finished with a set back & a carved & moulded cornice surmounted by a parapet with a stone balustrade. The two chimney shafts over the bay window are modern.



The N. and E. hexagonal angle towers are carried up above the roof & have embattled parapets. The N. tower has a one light window on the ground floor & a two light window with moulded jambs etc. and in each of the upper floors, all facing S.E. The other sides has cross shaped loop holes, now blocked, on the first & second floors. The E. tower has a plain small ground floor window & a two light window with moulded jambs etc. in each of the upper floors. The top floor has also four cross shaped loop holes 3 of which are blocked. All these loop holes have wide inside splays & chamfered rear arches. Each of these towers has a much damaged carved gargoyle below the parapet.



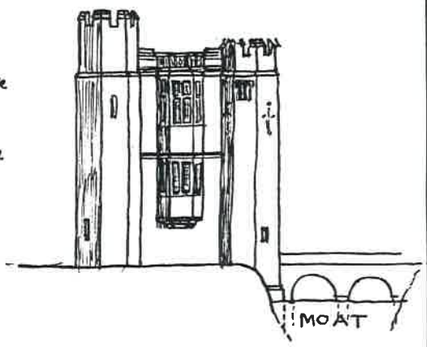
The S.W. front has a central entrance with a segmental arch similar to that opposite it on the NE & on either side of it is a small original window with moulded jambs & head. The first floor has three original window ~~as~~ two lights each with moulded labels - jambs etc. as on NE front. The second floor has two similar windows but higher & with transoms. The top of the wall is finished with a plain parapet ~~with~~ & near the centre are two octagonal stone chimney shafts of 17th century date with moulded caps & broach stops to the bases.

The S. & W. hexagonal angle towers contains the stairs are carried up above the roof higher than those at the NE angles & have embattled parapets. In the S.W. face of each of these towers on the ground floor is an original doorway with chamfered jambs & four centred heads & moulded square labels (part of label in S. doorway broken away). The stairs are lighted at intervals by small loop lights, the top one in the S. tower having a trefoiled head. The top of the W. tower contains the clock bell & in each face is a plain rectangular ~~hole~~ opening with louvre boards. The S. tower has a grotesque winged gargoyle in fairly good preservation.

P.T.O.

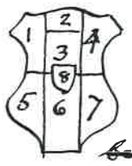
County. Buckingham Parish. Boarstall

The N.~~E~~W. and S.E. elevations are alike & have, between the Towers a projecting oriel window to both of the upper storeys, resting on a large moulding & finishing with a balustrade parapet as on the NE front. The detail of the windows is as on the other elevations with transoms to those of the second floor but not to those of the first floor.



Interior contd.

Glass contd. (6)



shield in a wreath (2) part of mantle (1) coat. modern or field a fesse or (3) ermine a chief gules with three crosses or therein. ~~(4) argent a chief fesse sable between three crescents gules~~ (4) party per fesse or & gules six sprigs of roses counterchanged. (5) argent a fesse sable between three crescents gules. (6) argent a chevron sable between three roundels gules (7) azure powdered with boars heads gules & crosslets ~~gu~~ fitchy gules. (8)

Flat pitched ceiling of second floor room, of five bays with massive cambered beams & rough joists partly restored.

Winding stone stairs in S. Tower from ground to roof (finished at top with oak newel & rail) & in W. Tower from ground to second floor these being ~~covered~~ cased with wood. Desmond clock in top of W. Tower with a bell over it inscribed "Richard Keene made me 1661".

Sub-Commission. Secular No. of Monument.

(34,946). Wt.32,157—3. 1000. 1/11. A.&E.W.

P.T.O.

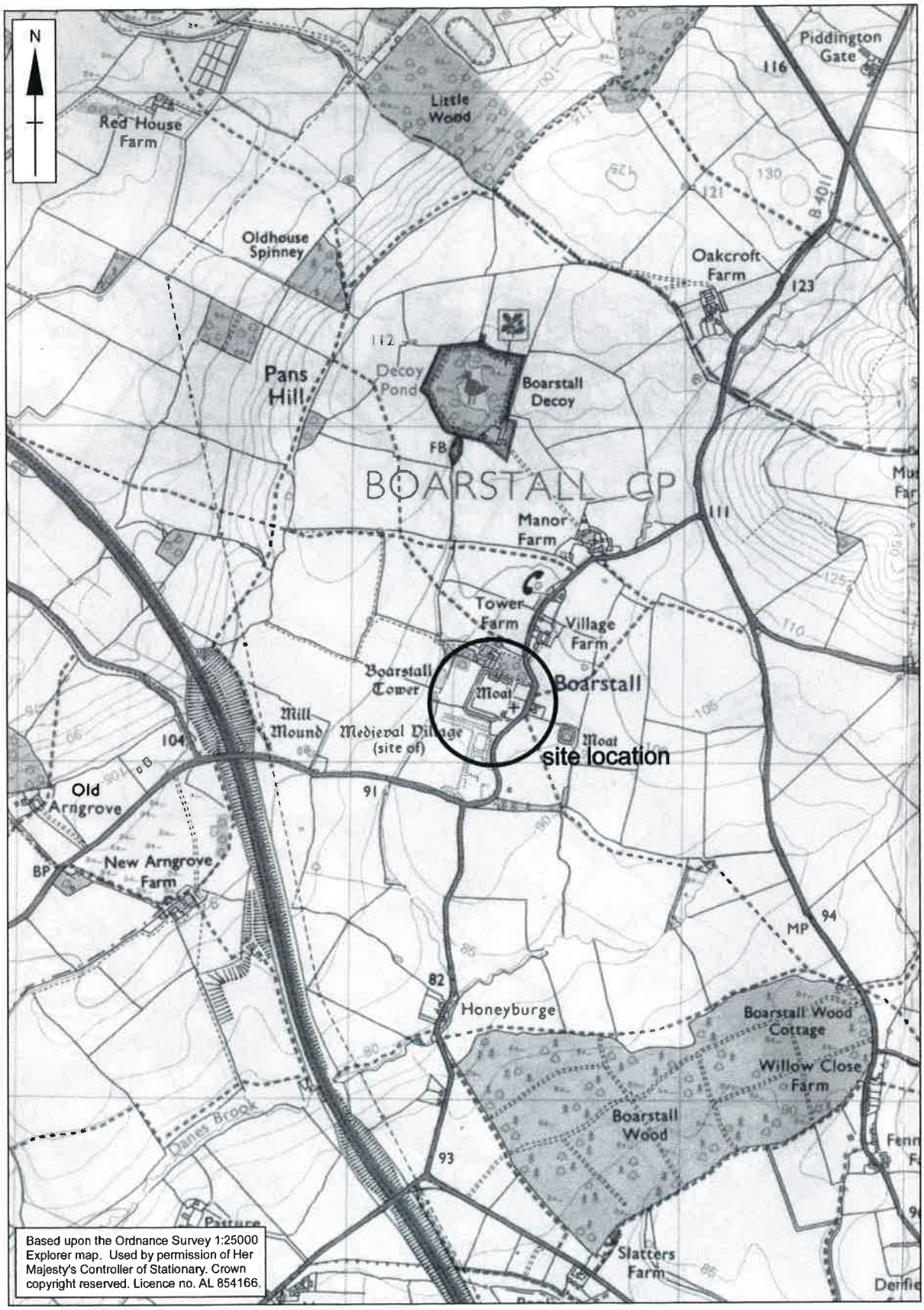


Figure 1: Boarstall Tower, site location plan

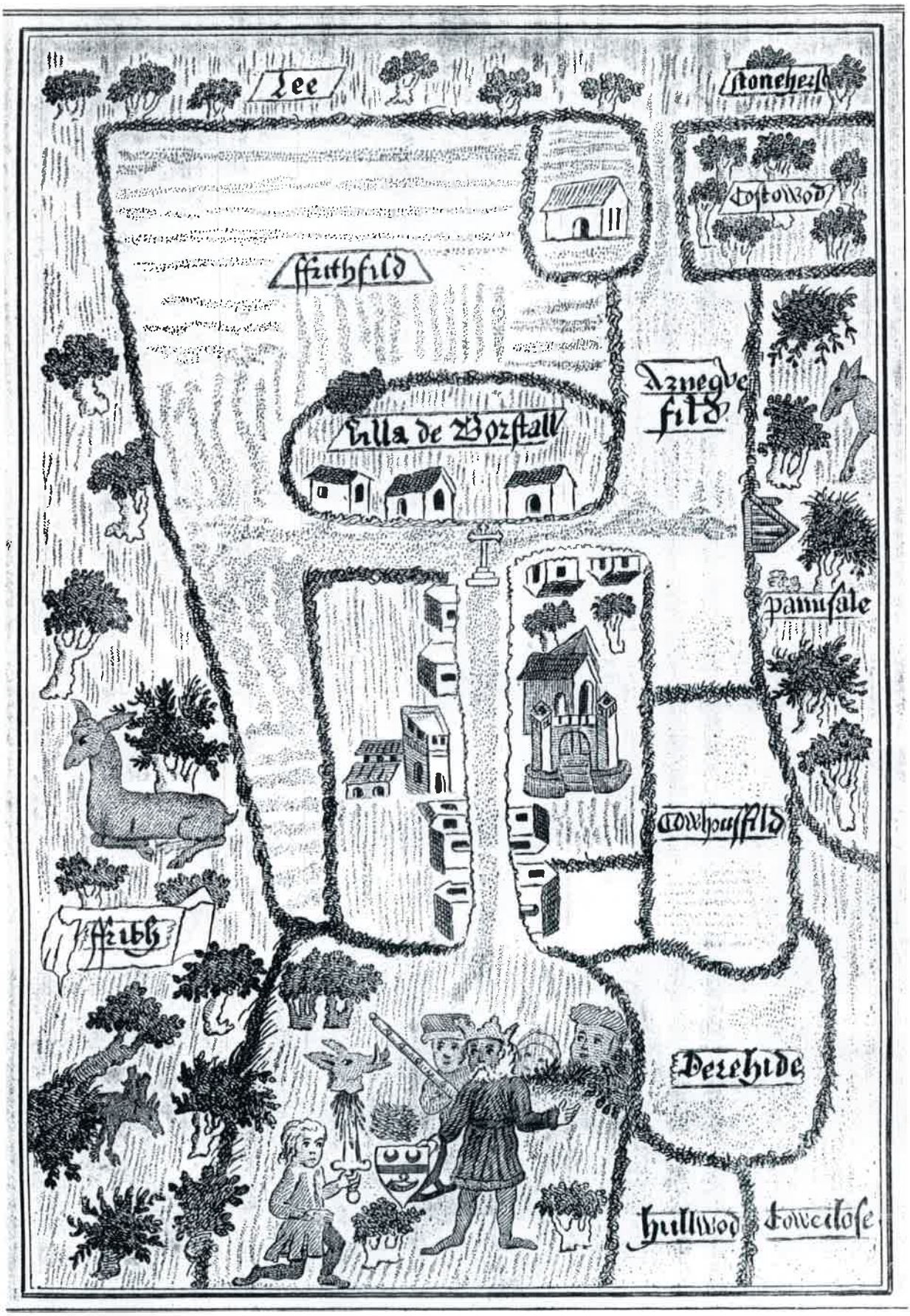


Figure 2 : Map of Boarstall village in *c.*1440, view from the north (NB: Boarstall Tower, centre-right)

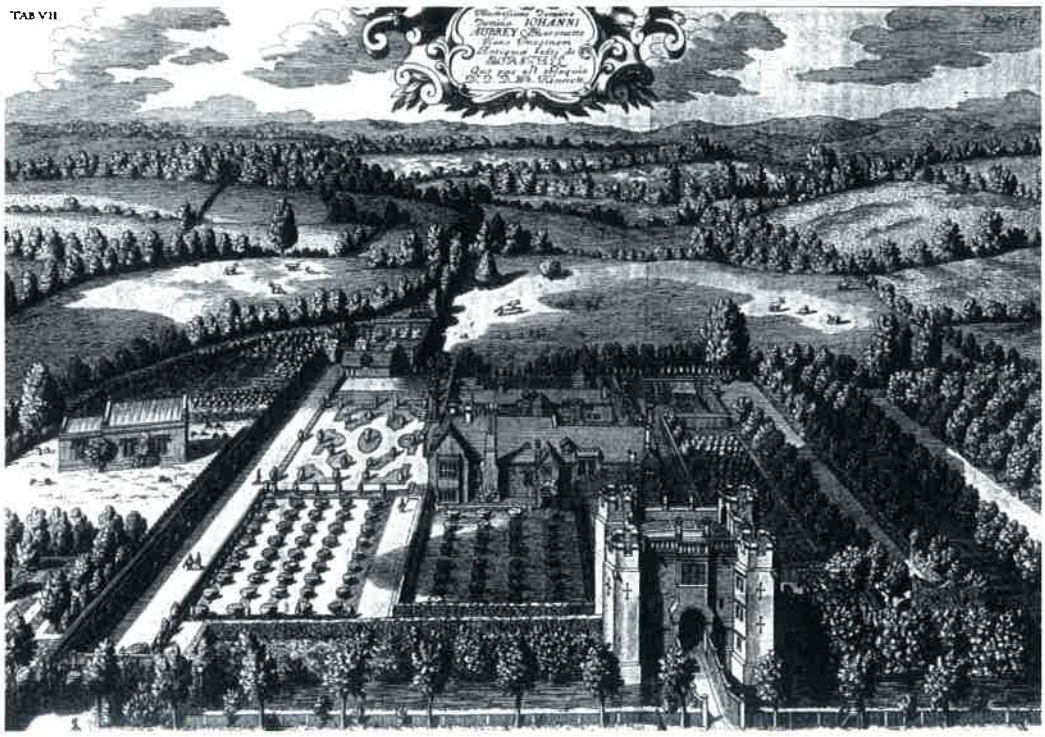


Figure 3: Michael Burghers engraving of Boarstall moat and tower from the north-east prepared for Kennett's *Parochial Antiquities,* 1695.

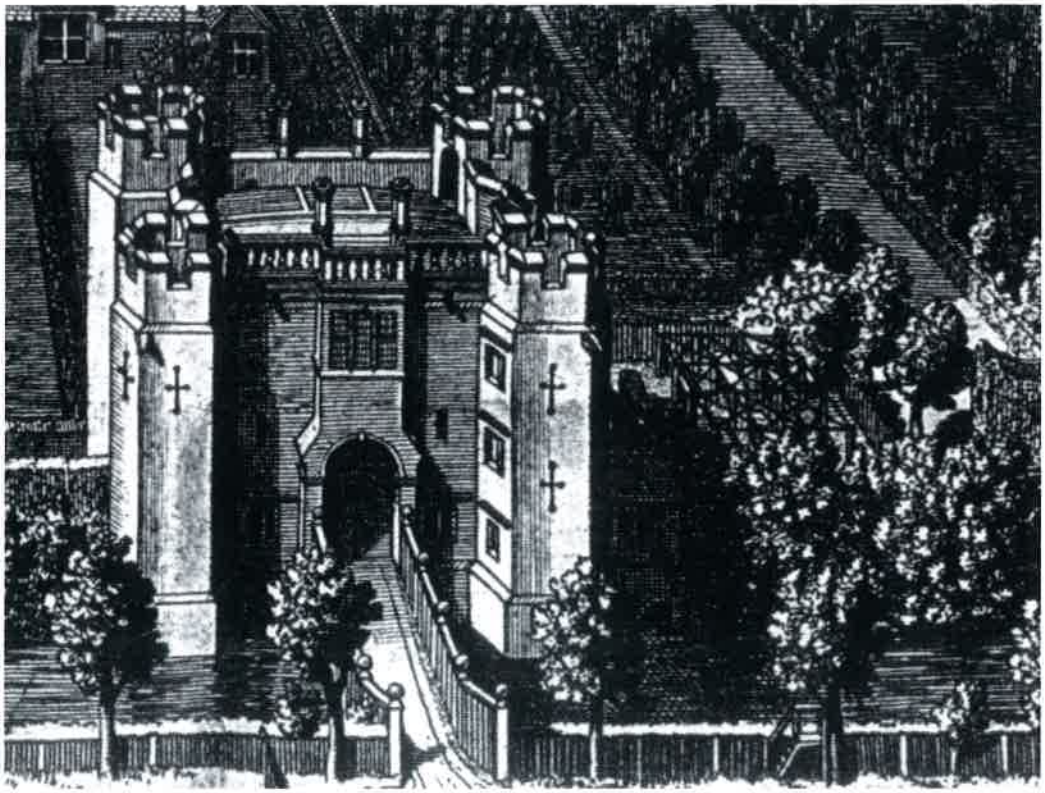


Figure 4: Detail of Burghers engraving showing Boarstall Tower, note structure to the north-east (right)

SE

NW

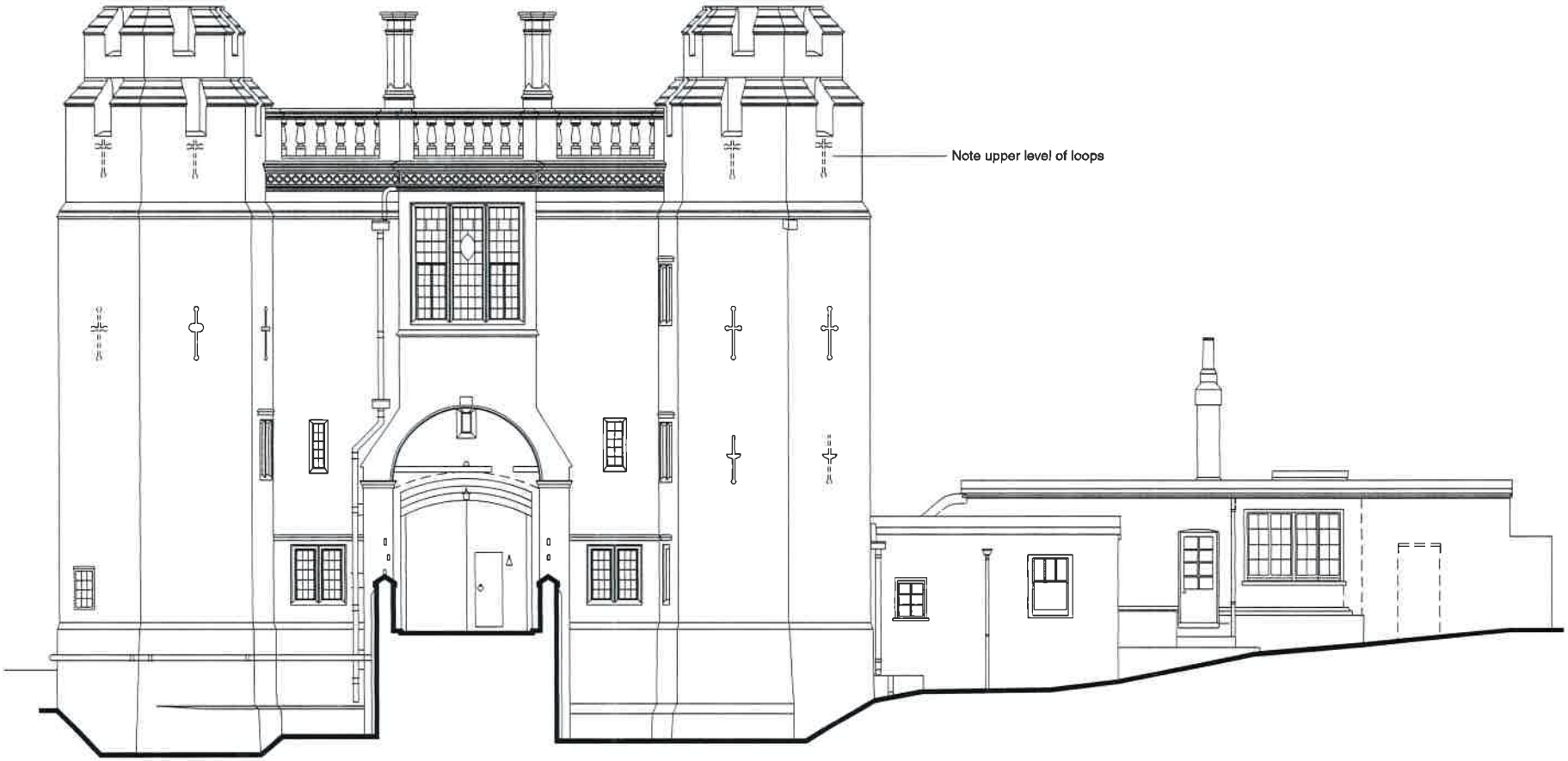


Figure 5: North-east elevation

0 5 10 m

Based upon survey of Boarstall Tower undertaken for the NT by ON CENTRE SURVEYS LTD. (May 1997)

NW SE

Figure 6 : South-west elevation

0 5 10 m

Based upon survey of Boarstall Tower undertaken for the NT by ON CENTRE SURVEYS LTD. (May 1997)

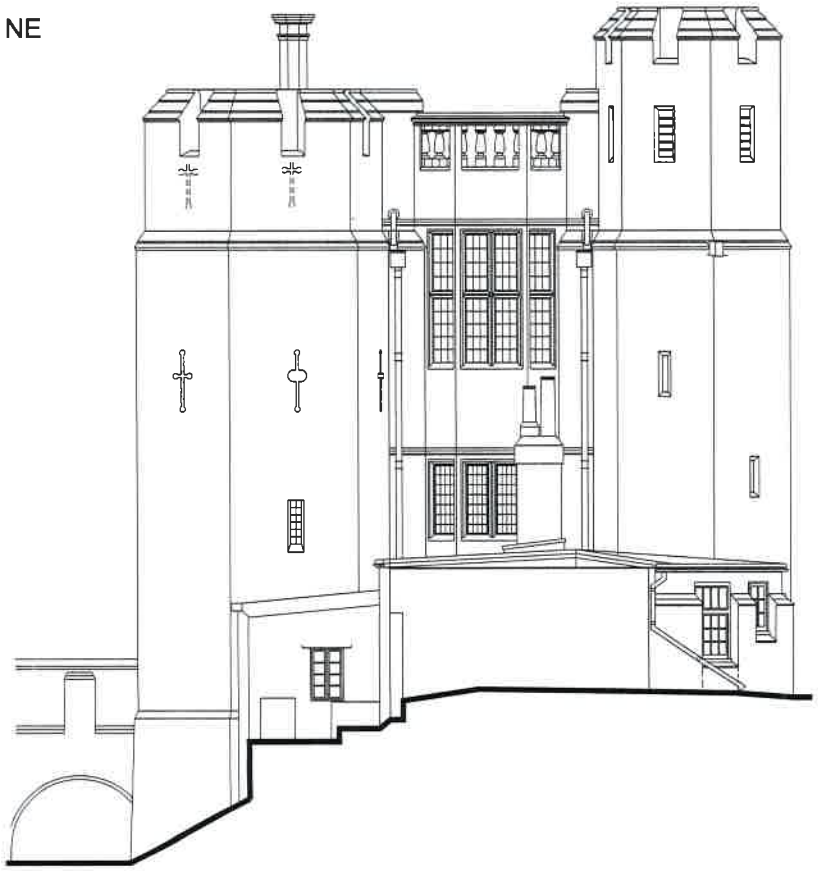


Figure 7 : North-west elevation

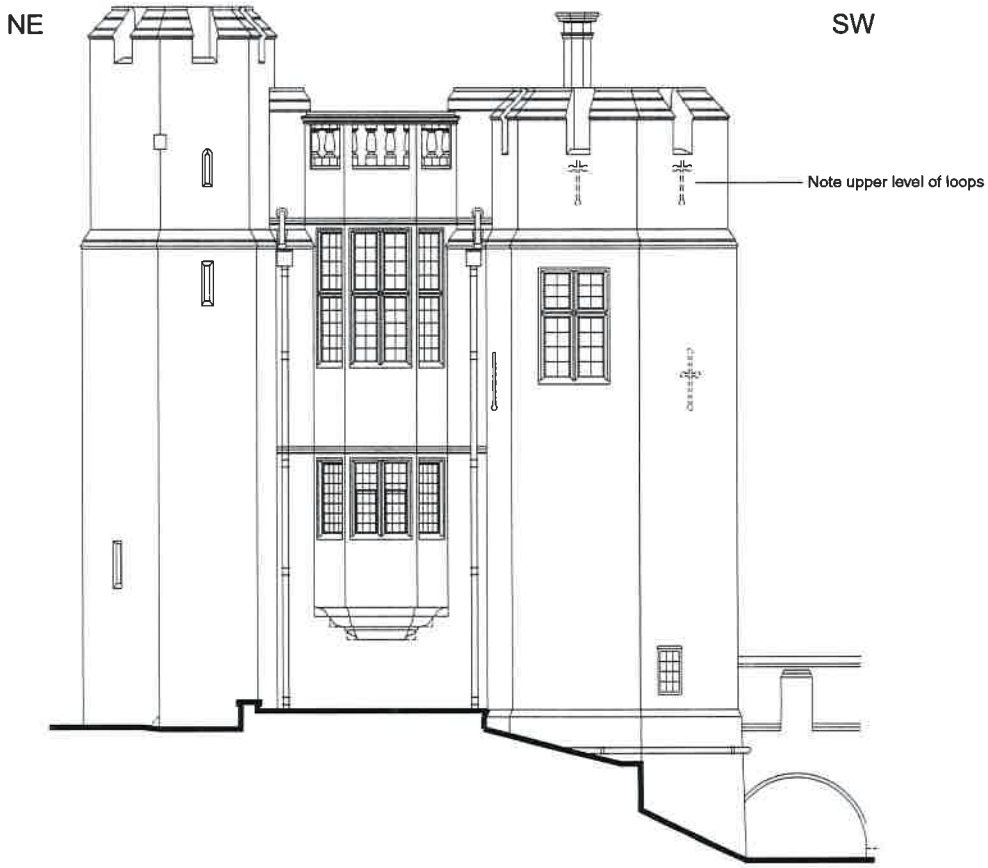
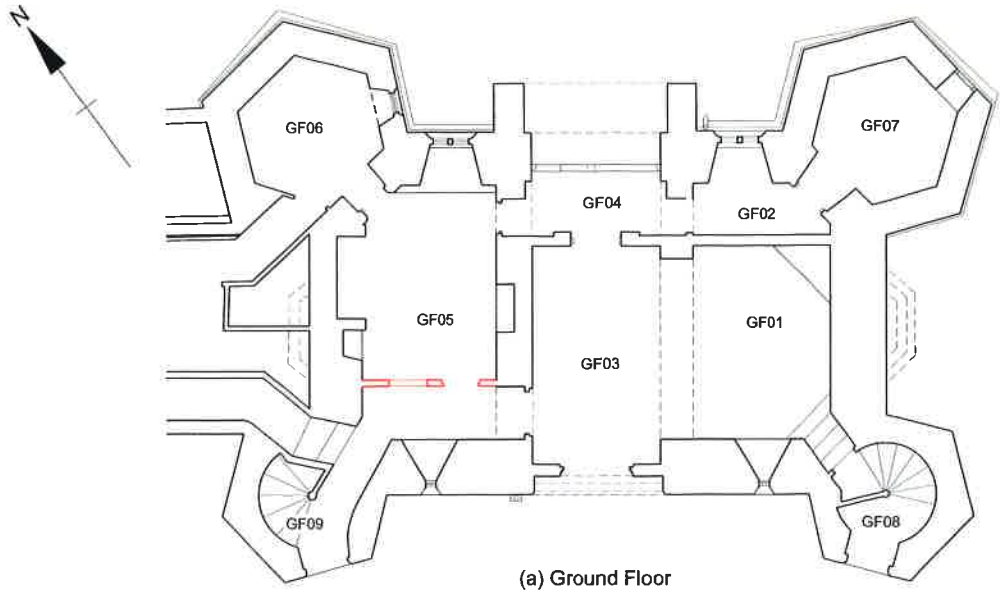


Figure 8 : South-east elevation

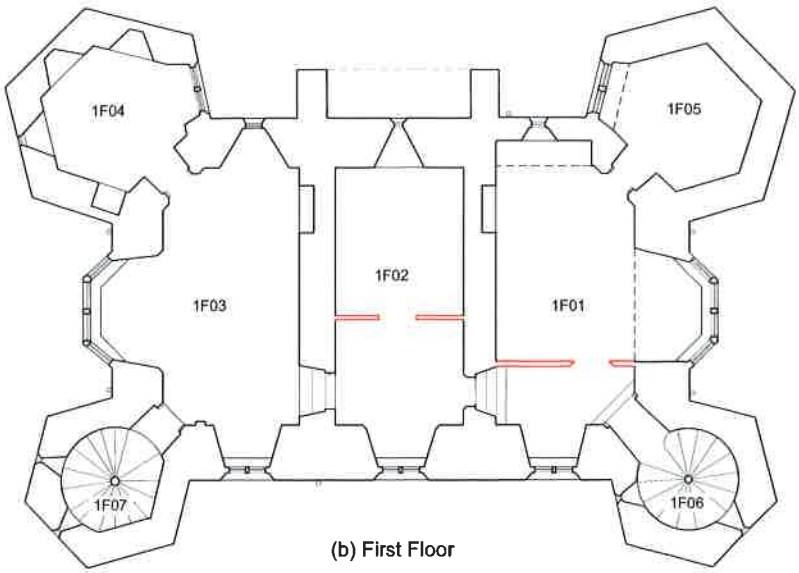
Based upon survey of Boarstall Tower undertaken for the NT by ON CENTRE SURVEYS LTD. (May 1997)

Figure 9: North-west elevation, photographed in 1911 (photo: RCHM Crown copyright reserved)

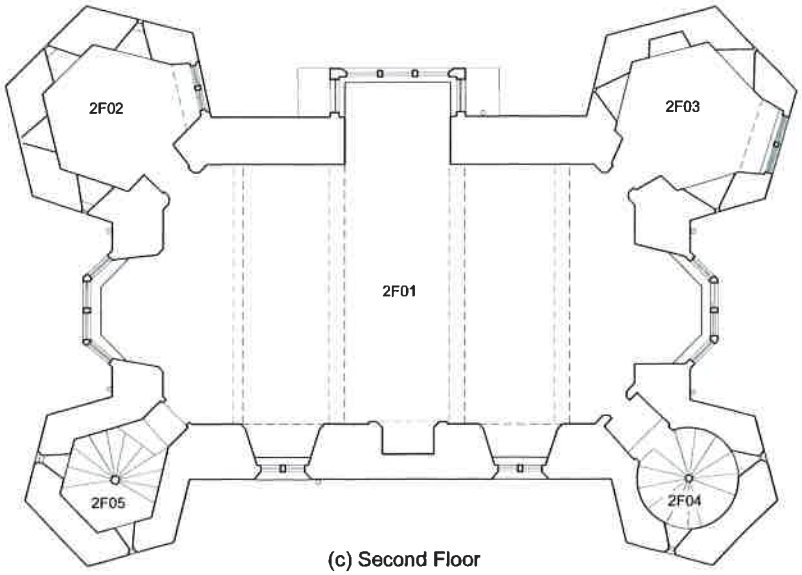
Figure 10: north-east elevation, photographed in 1911 (photo: RCHM Crown copyright reserved)



(a) Ground Floor



(b) First Floor



(c) Second Floor

NB: walls marked in red removed during this phase of work

Figure 11: Floor plans and room numbering system

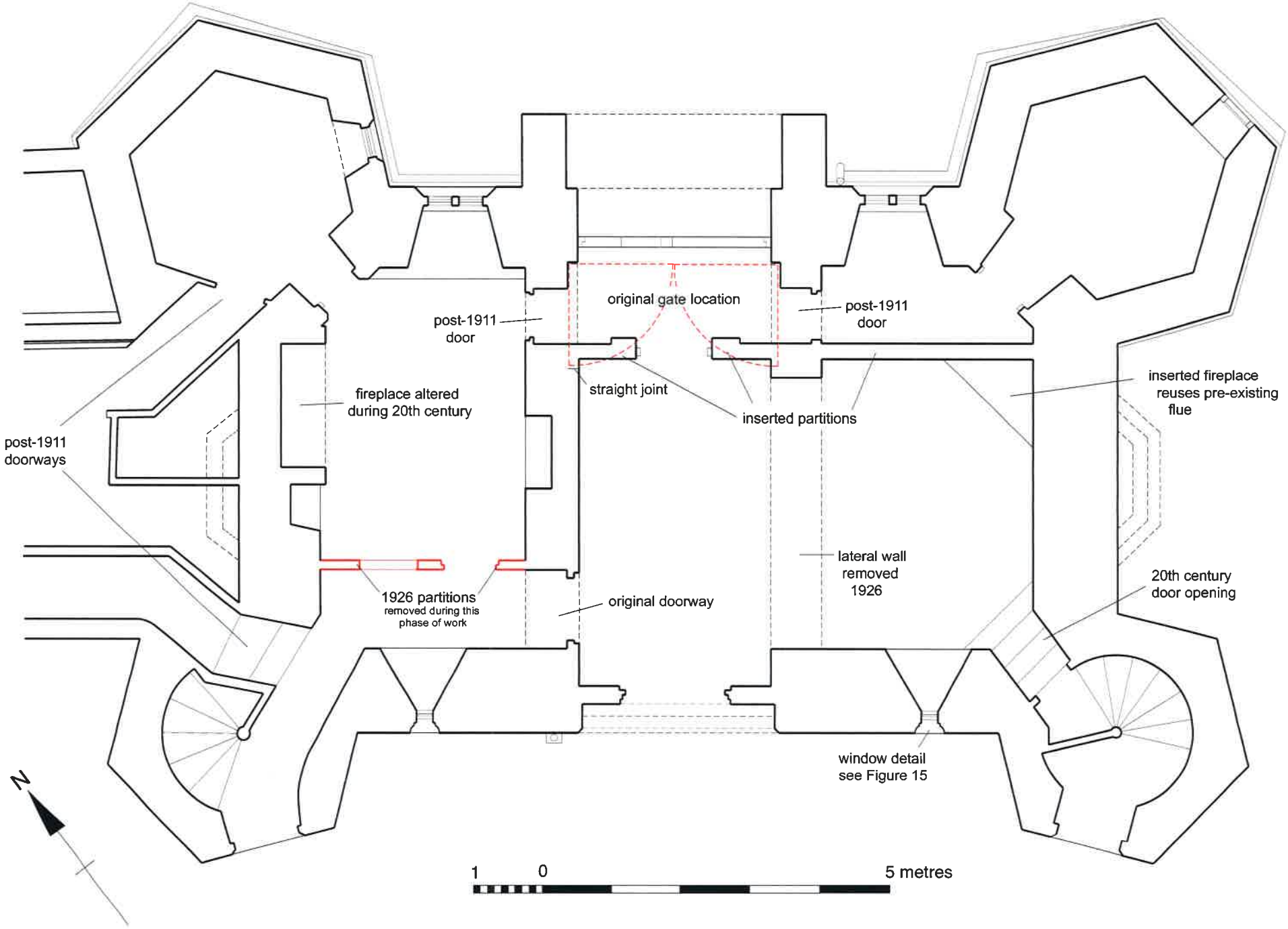


Figure 12: Ground floor plan

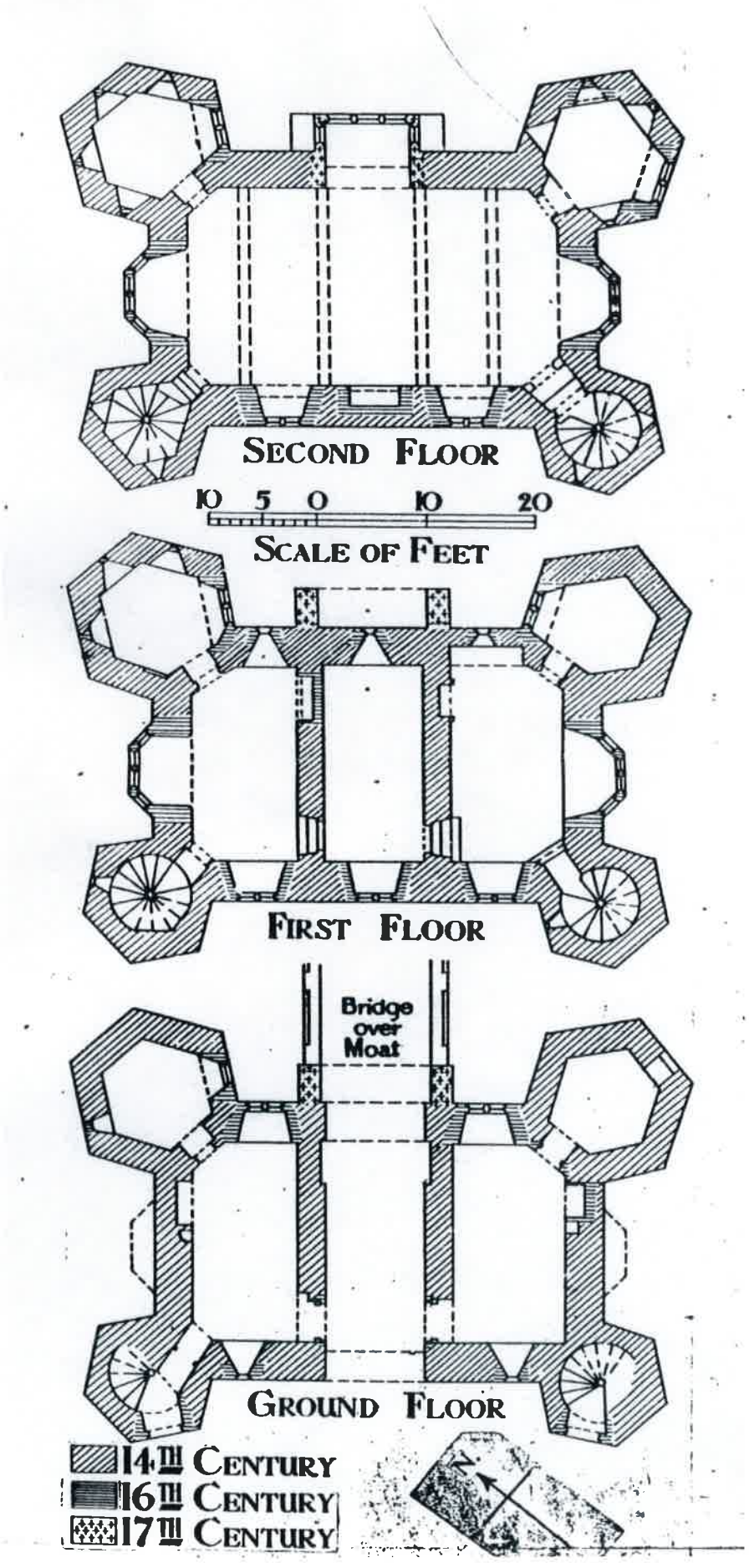


Figure 13: copy of RCHM survey plans (1911)

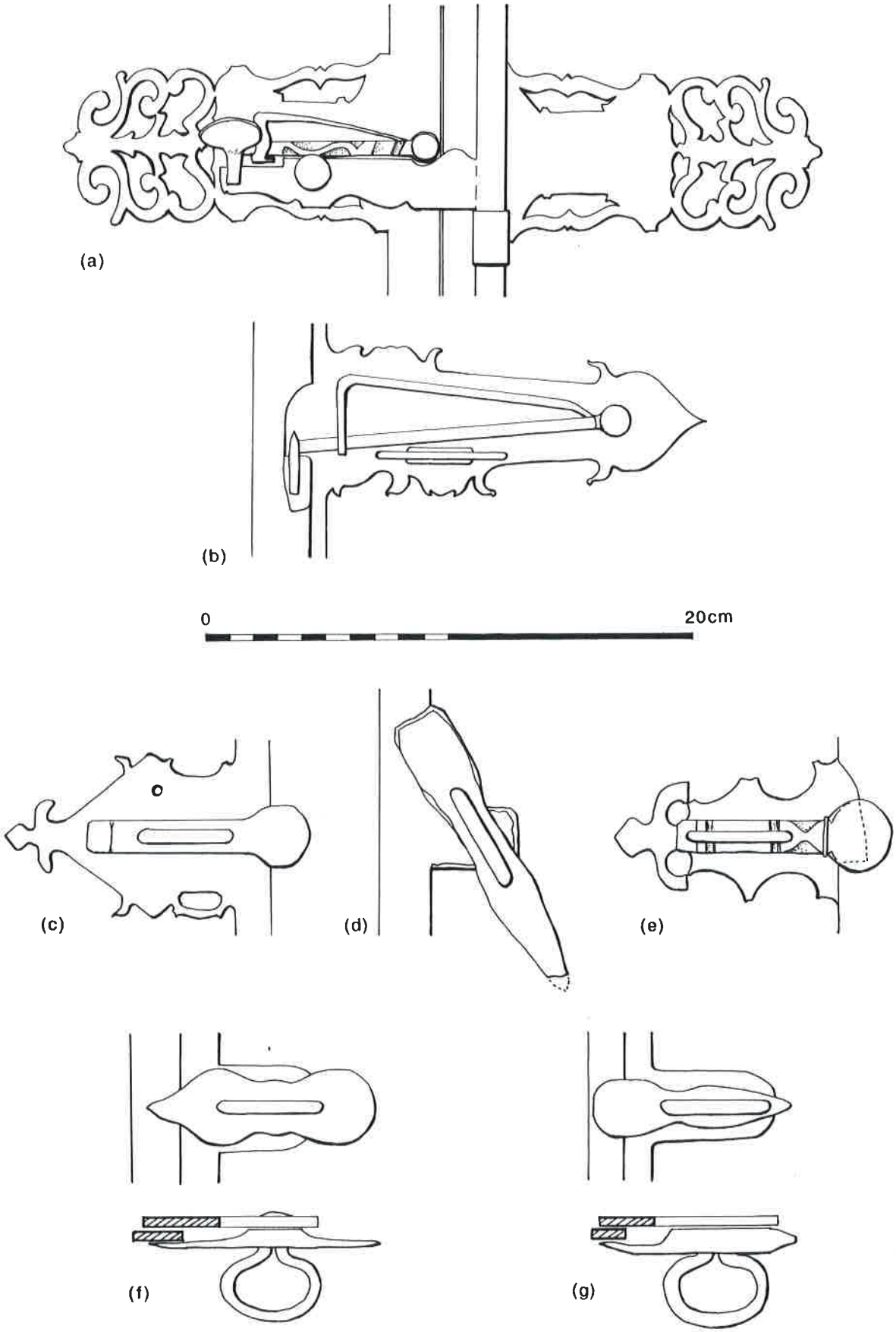


Figure 14: **Spring and turn-buckle window catches**
(a) *spring-catch type A*, (b) *spring-catch type B*,
(c) *turn buckle type C*, (d) *turn-buckle type D*, (e) *turn-buckle type E*
(f) turn-buckle type F, *(g) turn-buckle type G*

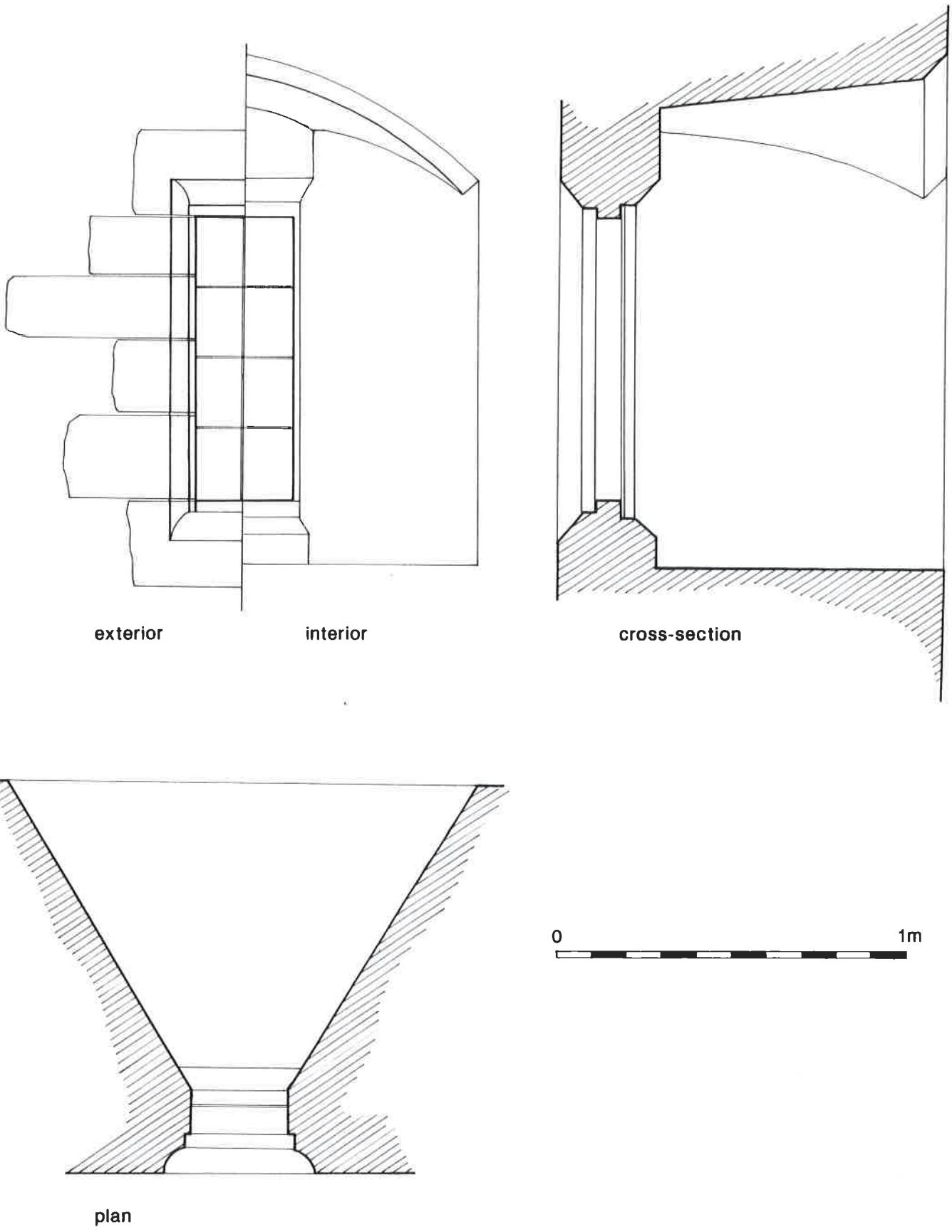


Figure 15: Window detail ; GF/01, south-west wall

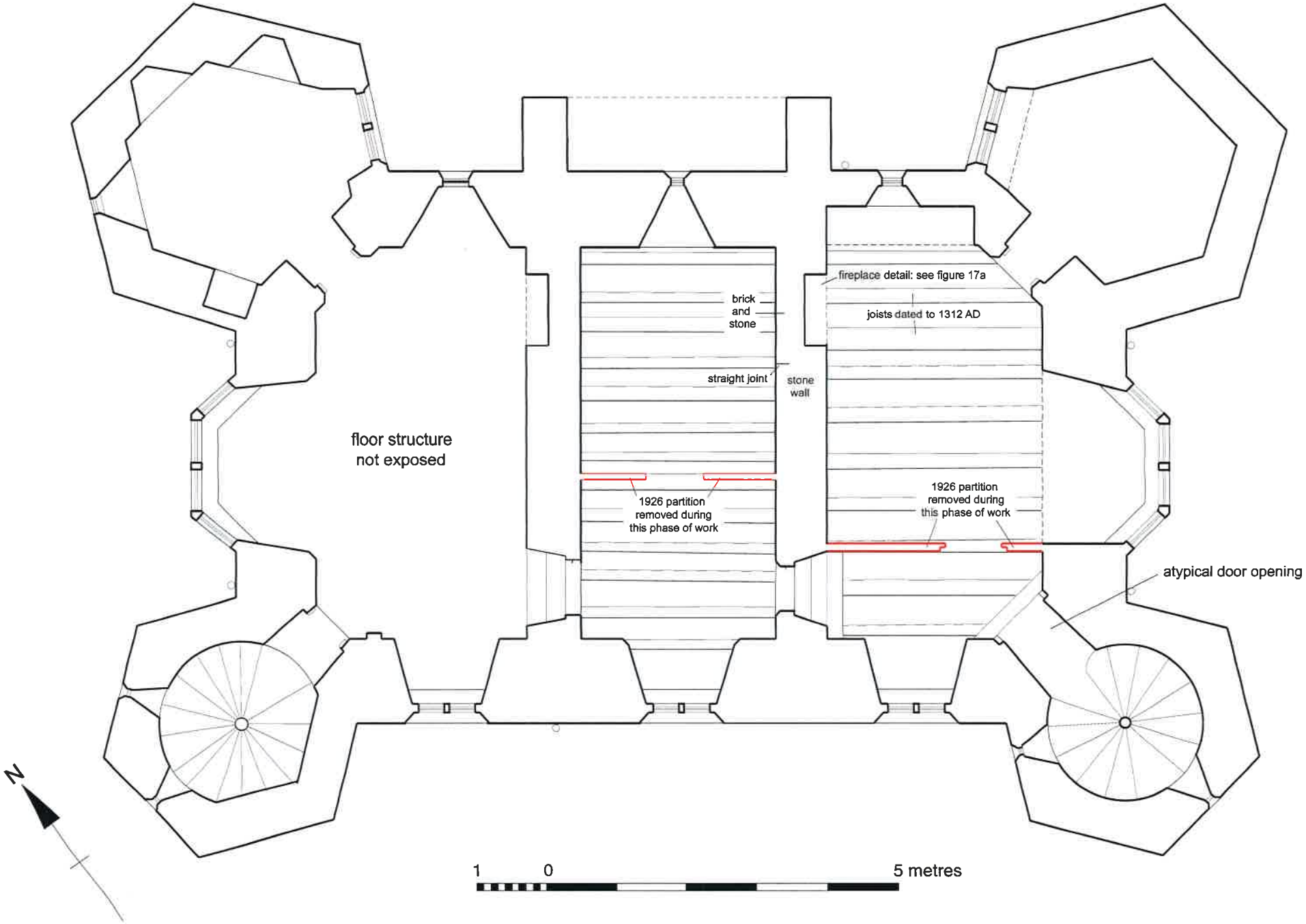


Figure 16: First floor plan (indicating ground floor ceiling joists)

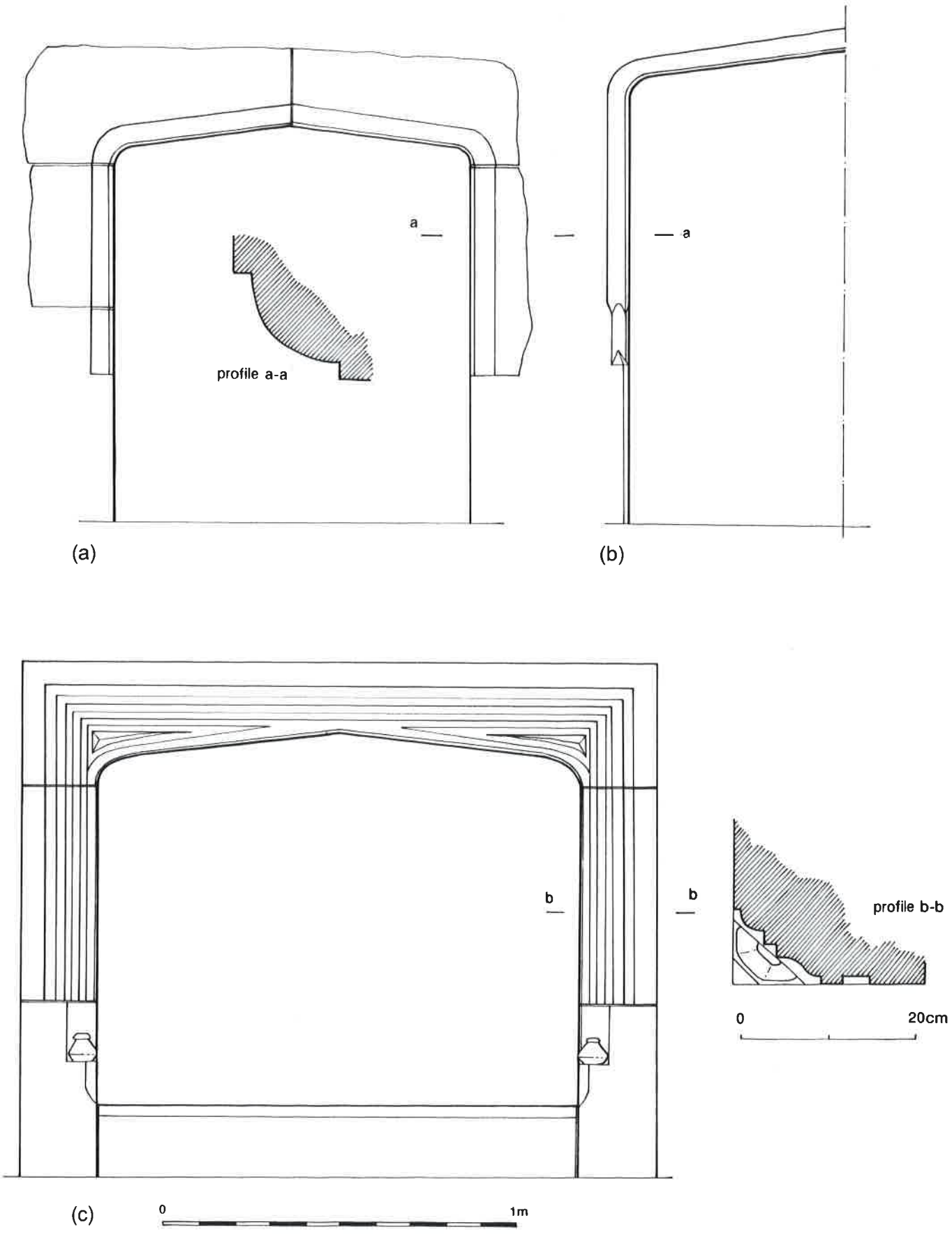


Figure 17: **Inventory Details; Fireplaces**
(a) Room 1F01, north-west wall (b) Room 1F03, south-east wall (detail)
(c) Room 2F01, south-west wall

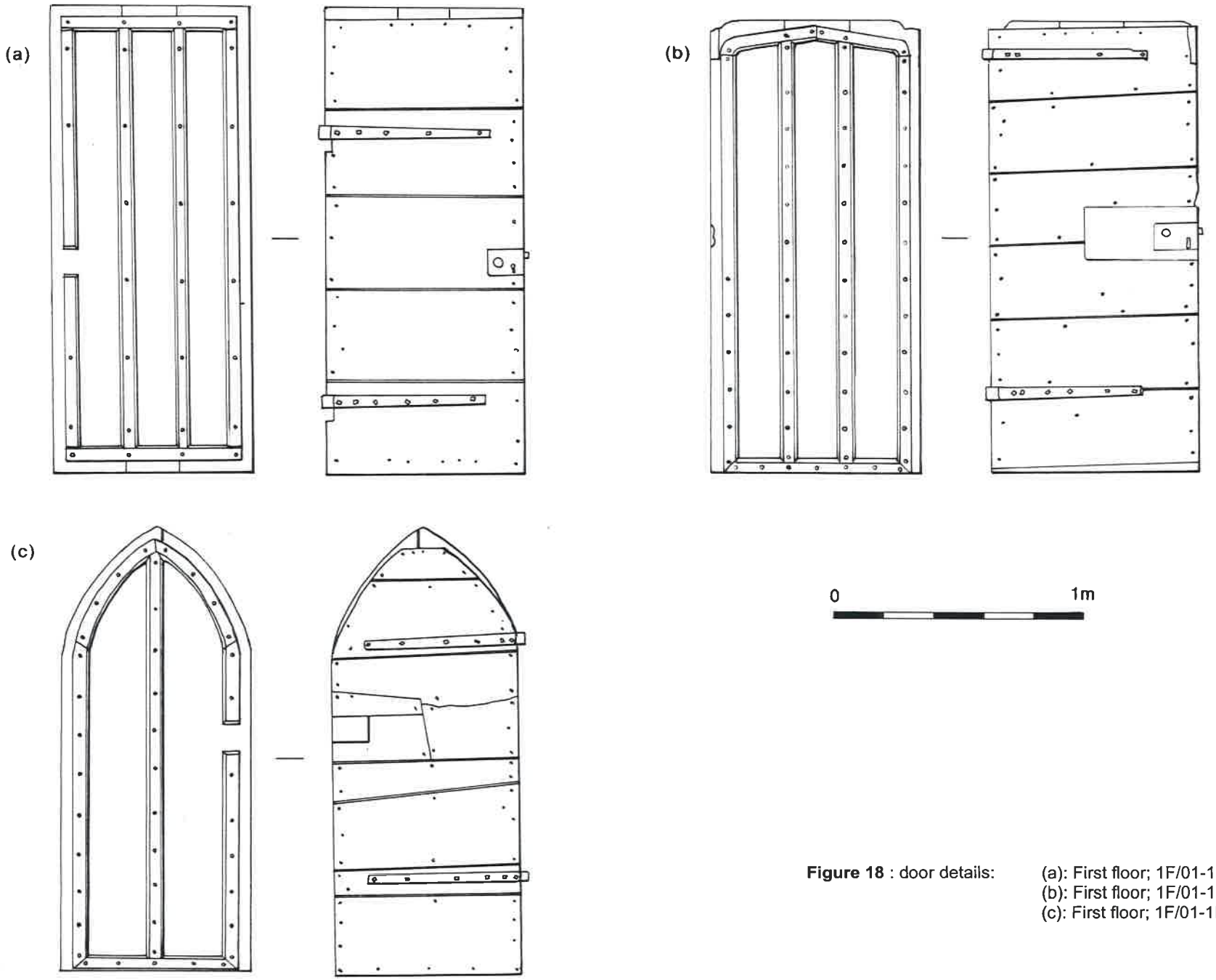


Figure 18 : door details:
(a): First floor; 1F/01-1F/02
(b): First floor; 1F/01-1F/06
(c): First floor; 1F/01-1F/05

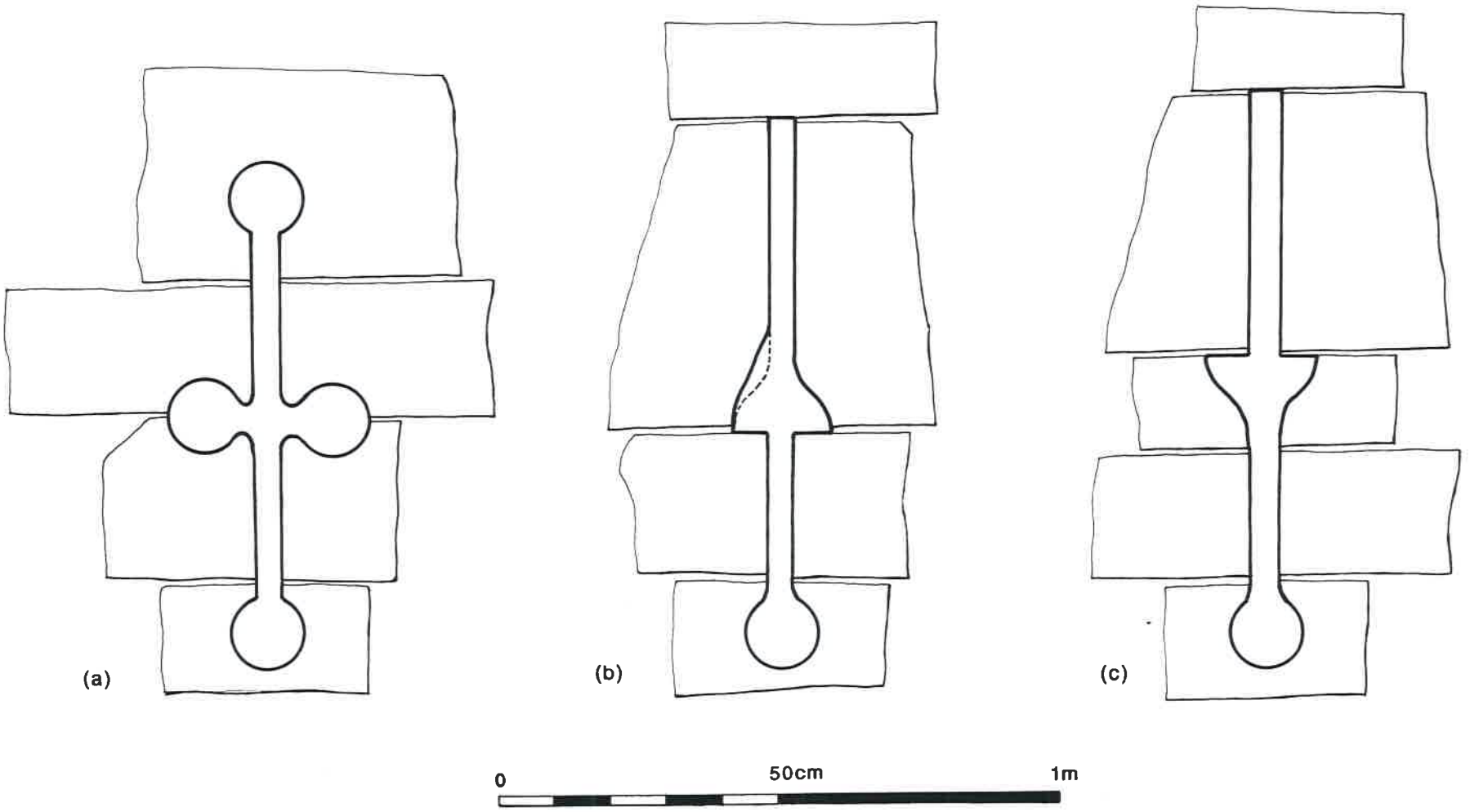
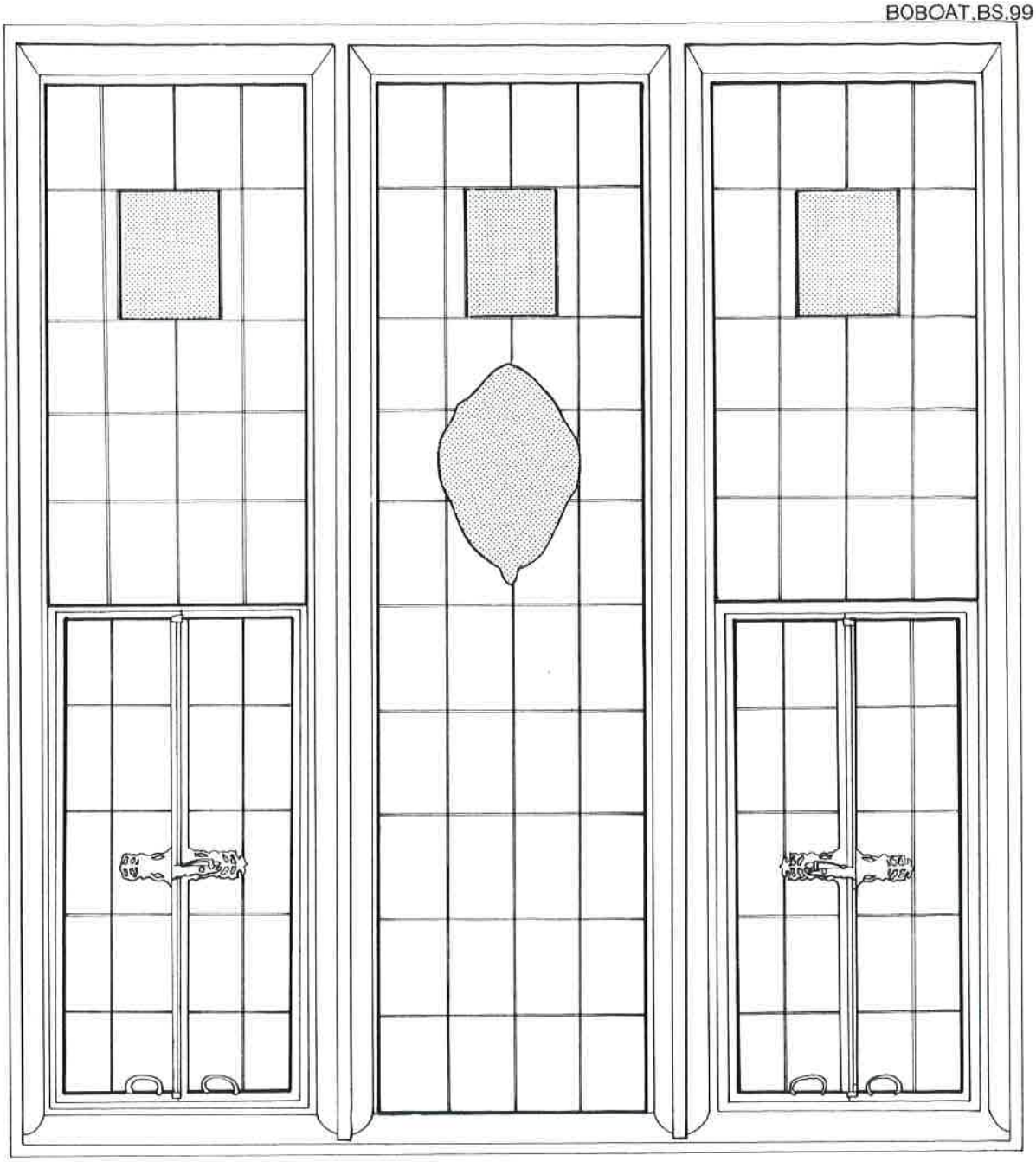
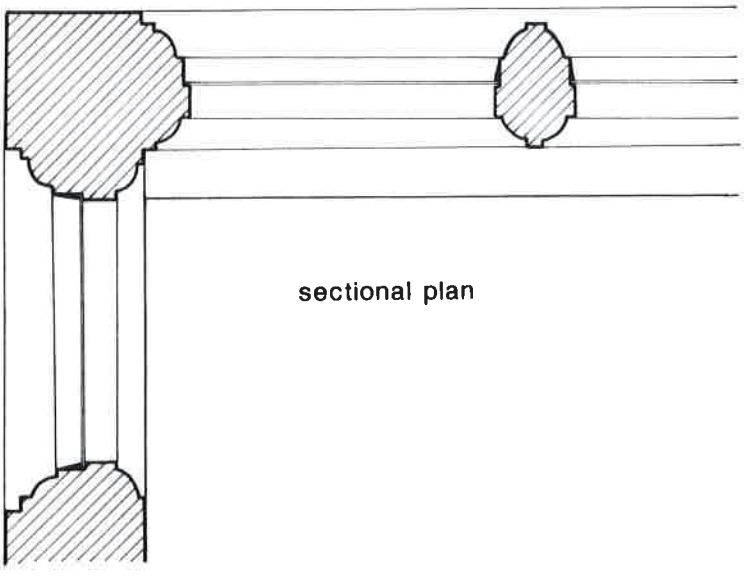


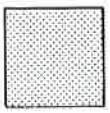
Figure 19 : Primary loops: (a) standard cruciform loop with circular terminals (northern and eastern turrets; 1F, 2F, and roof level)
(b) variant loop with central stirrup (northern turret; 2F level)
(c) variant loop with central inverted stirrup (northern turret; 1F level)



interior elevation



sectional plan



= stained glass panel

0 1m

Figure 20: Window detail ; 2F/01, north-east wall, central bay window

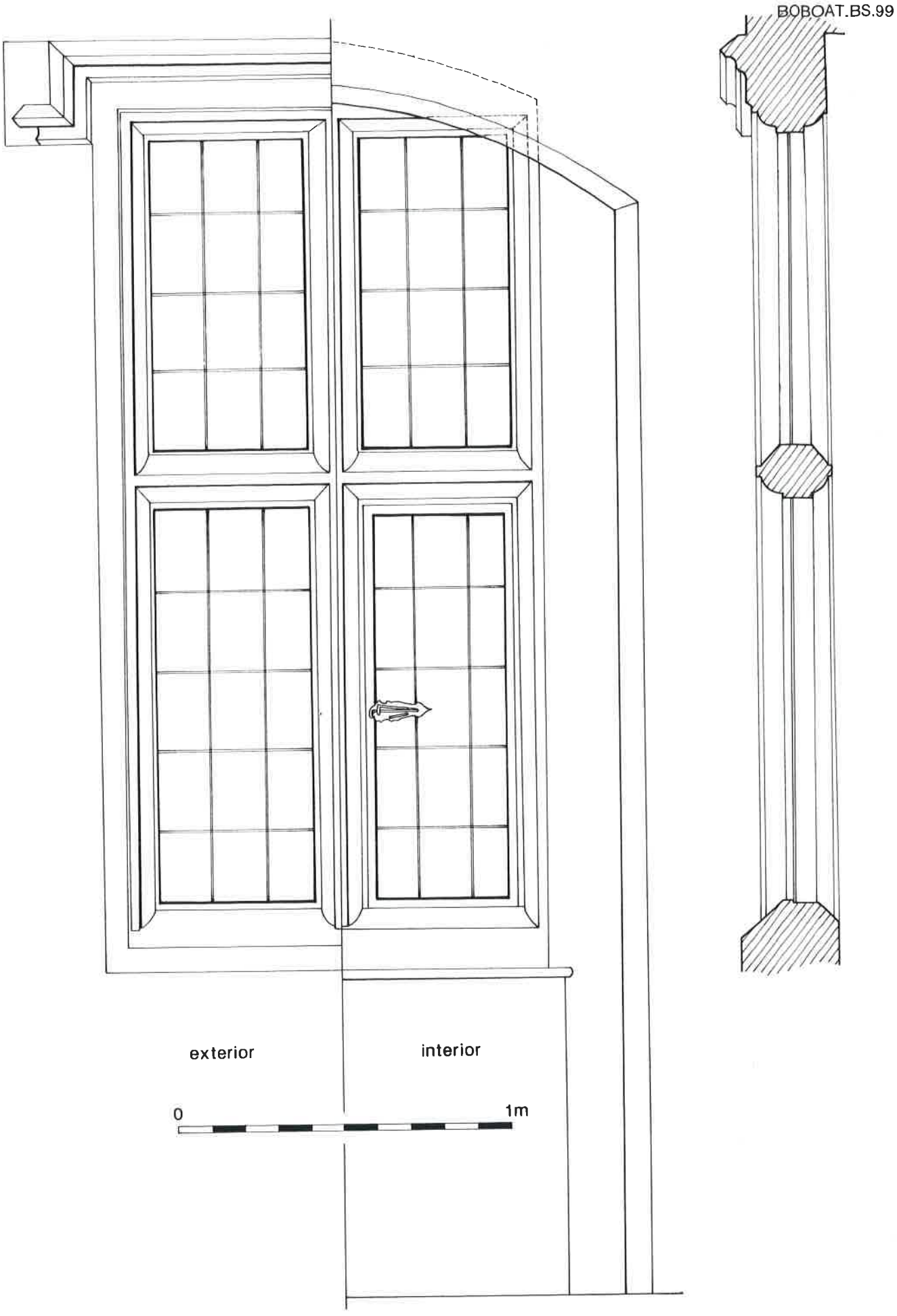


Figure 21: Window detail ; 2F/01, south-west wall

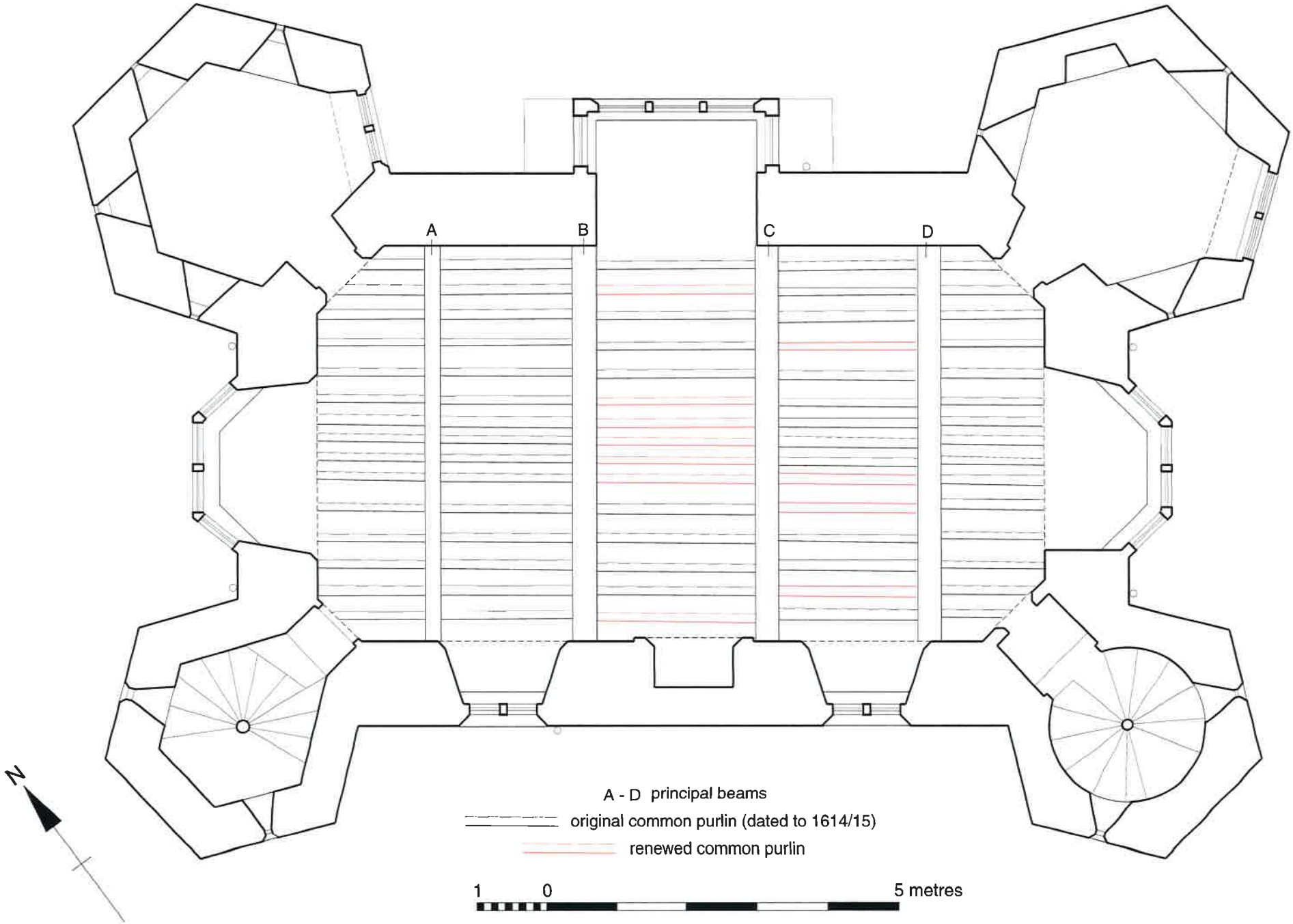


Figure 22: Second floor: reflected ceiling plan

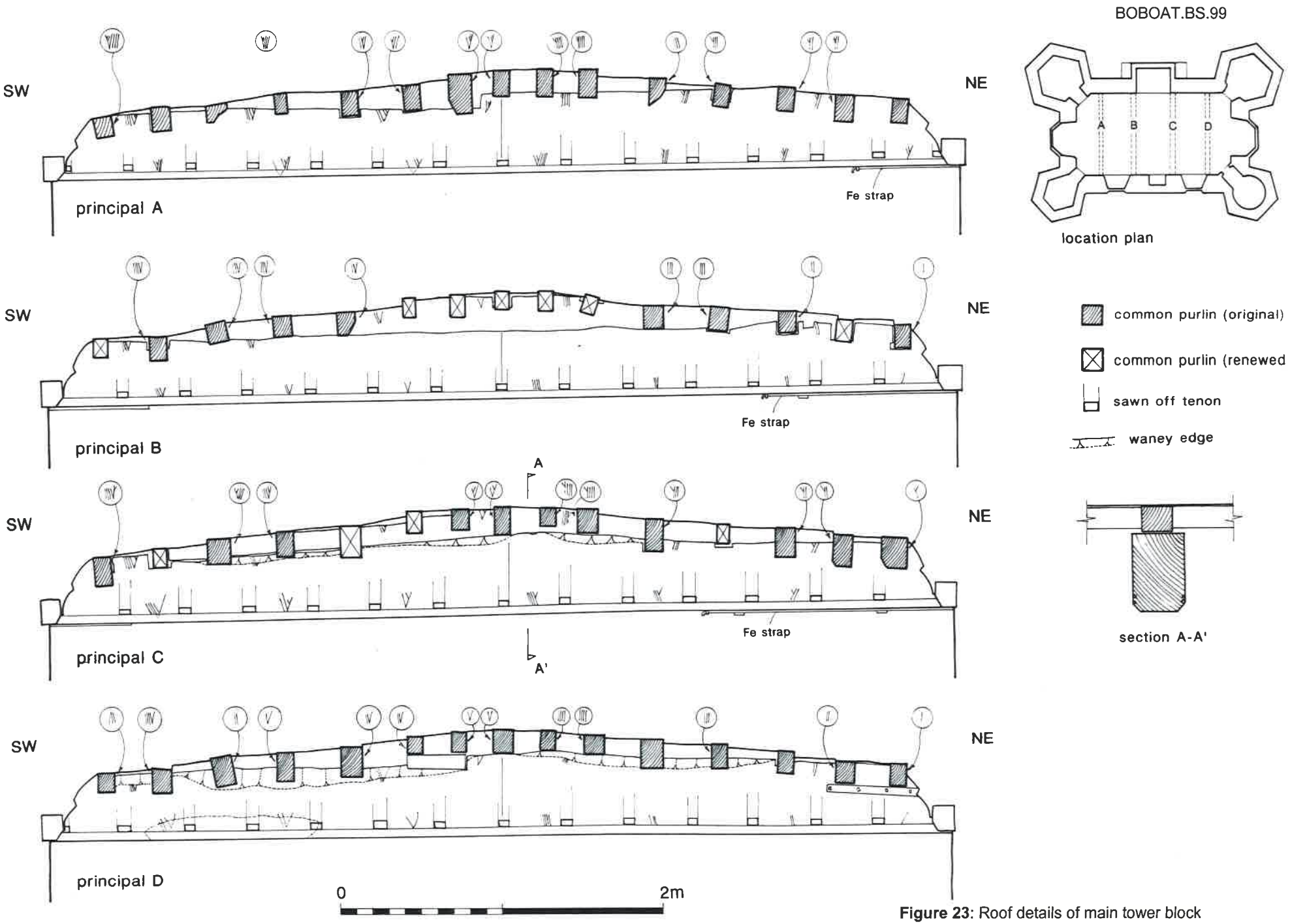


Figure 23: Roof details of main tower block

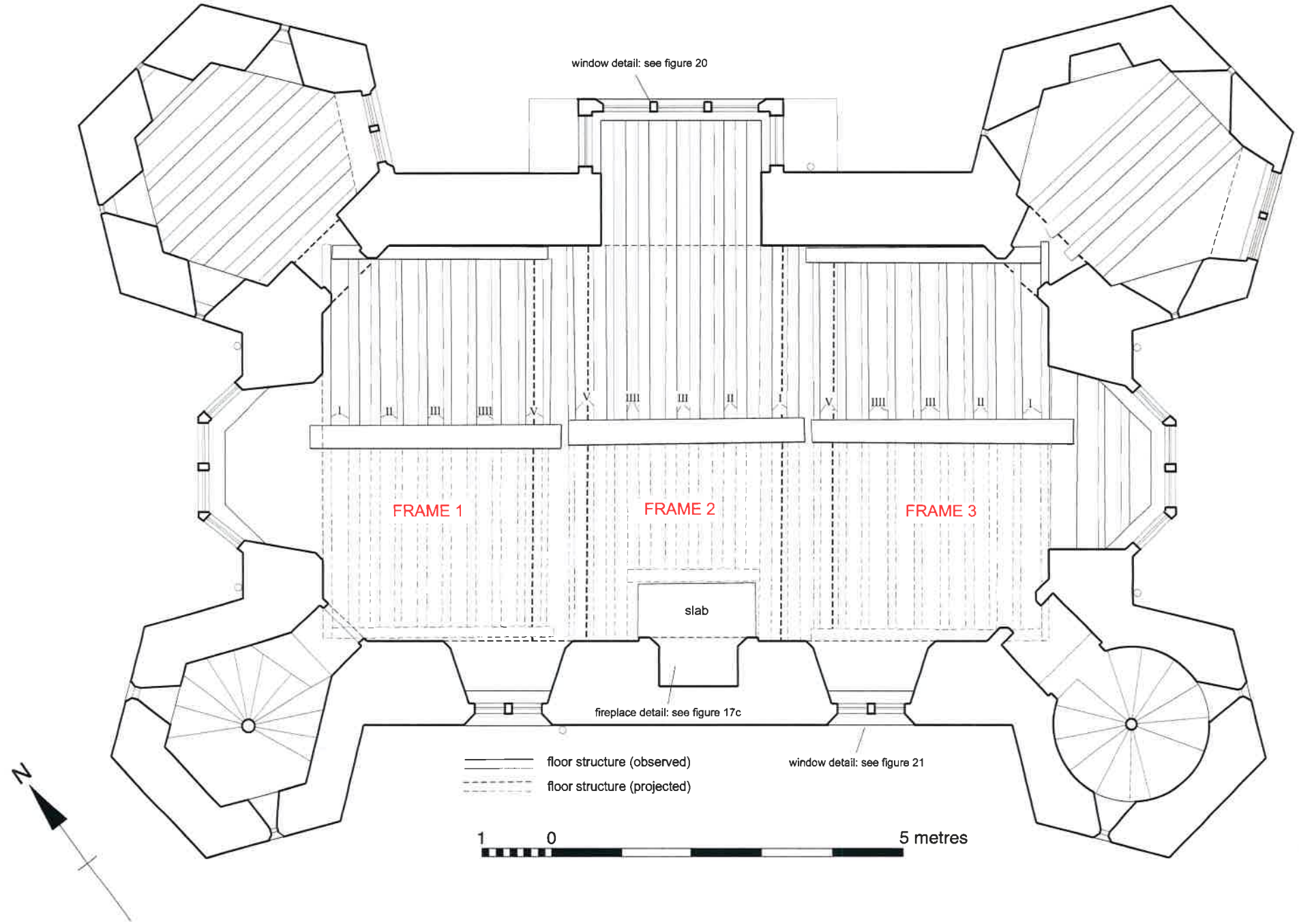


Figure 24: Second floor plan: floor structure

(a)

(b)

(c)

(d)

Figure 25: Stained glass (a) + (b): Music Room, north oriel, (c) + (d): Music Room, east oriel

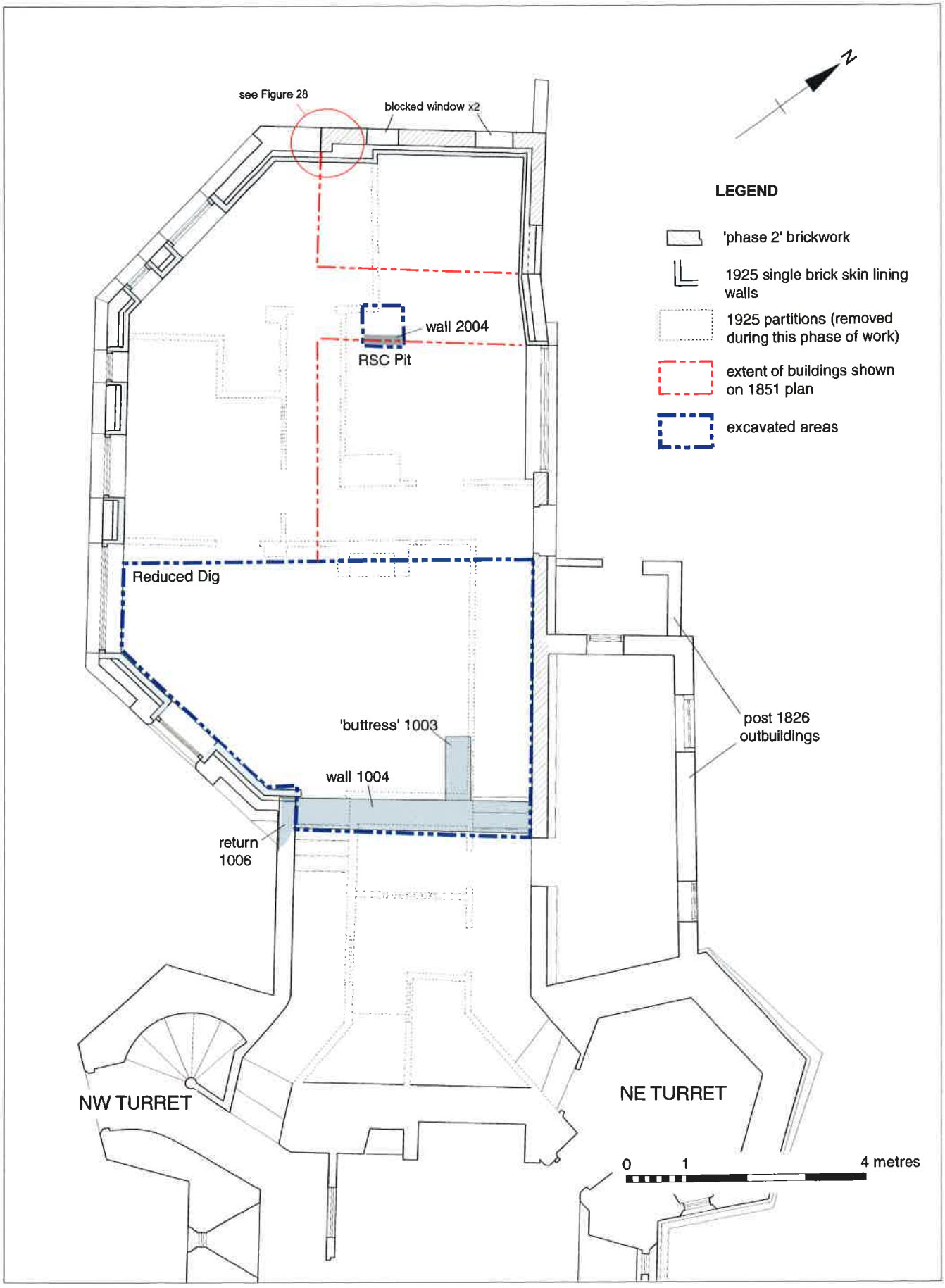


Figure 26: excavations and observations within the annexe

Figure 27: annexe roof during dismantling showing successive layers of boards and roofing felt

Figure 28: stub wall indicating western return of pre-1851 brick structure

Figure 29: Annexe, reduced dig; detail of wall 1004 (centre-right) and perpendicular 'buttress' 1003 (left) (photo: OAU)

Figure 30: Annexe, reduced dig; detail of corner of wall 1004 and 1006 (photo: OAU)

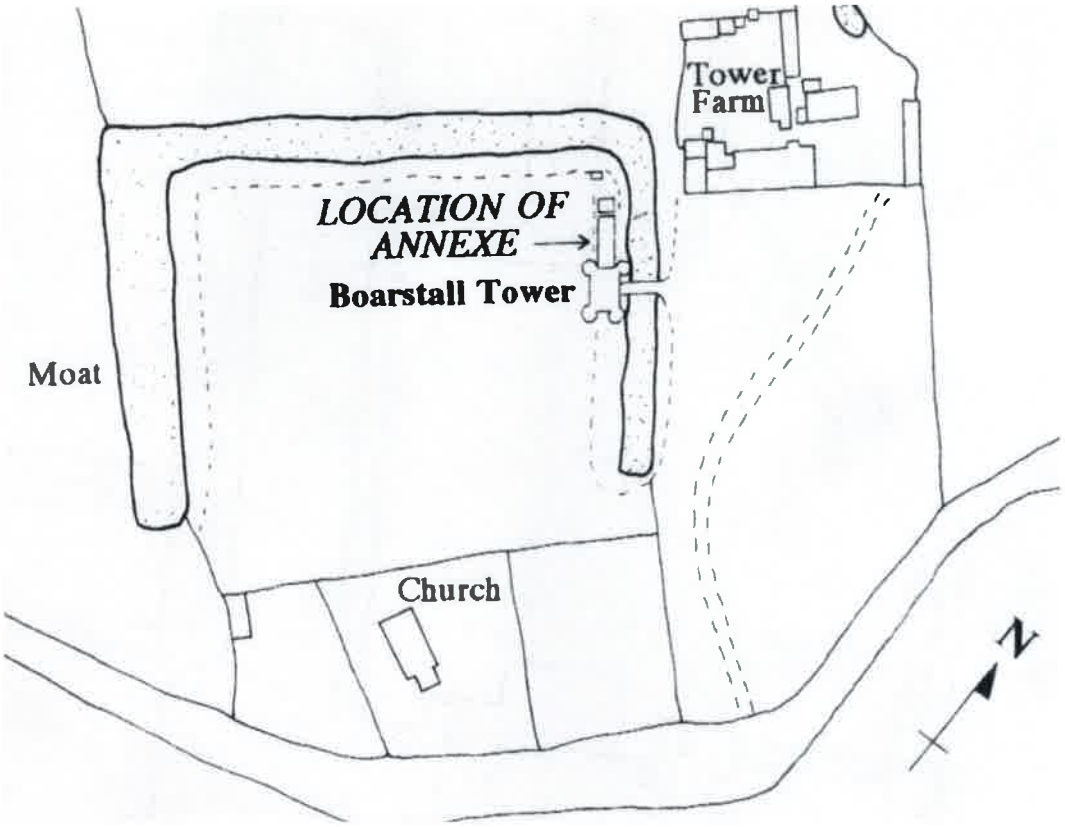


Figure 31: Tracing of Boarstall Tower and grounds taken from a late 19th century estate map (from Smith and Parkhouse 1997, Figure 12).

Note the form of the annexe buildings, NW of the main tower building, which would appear to correlate with the remnants of 'phase 2' brick constructed structures exposed during the current programme of work.

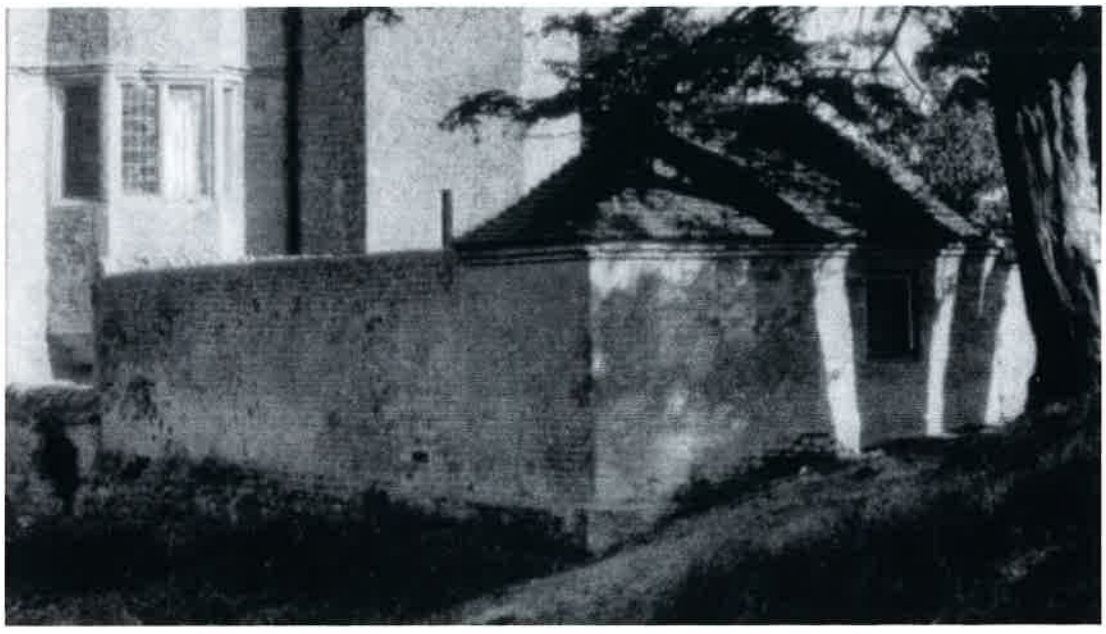
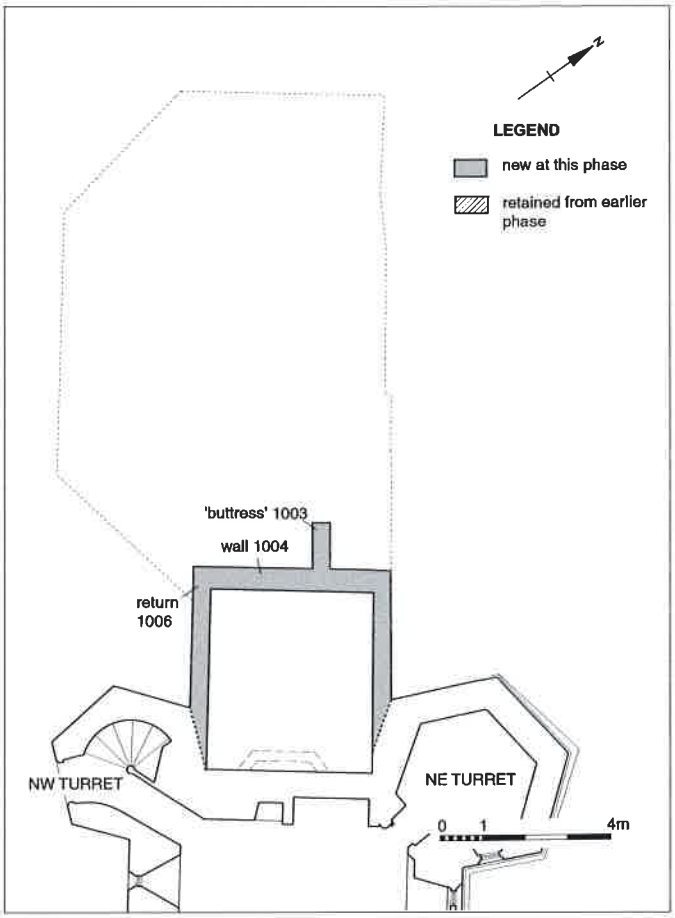
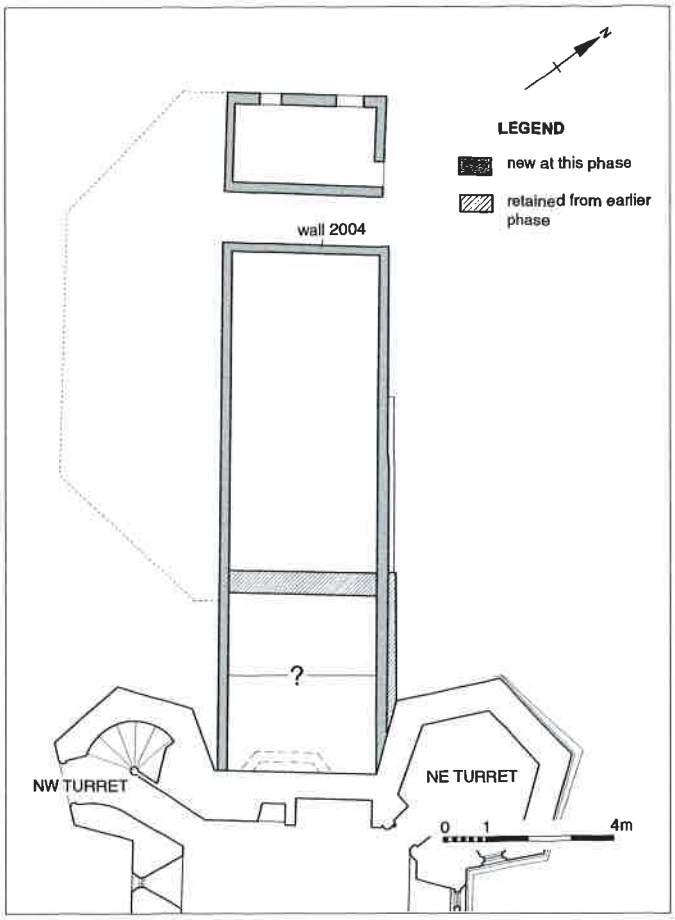


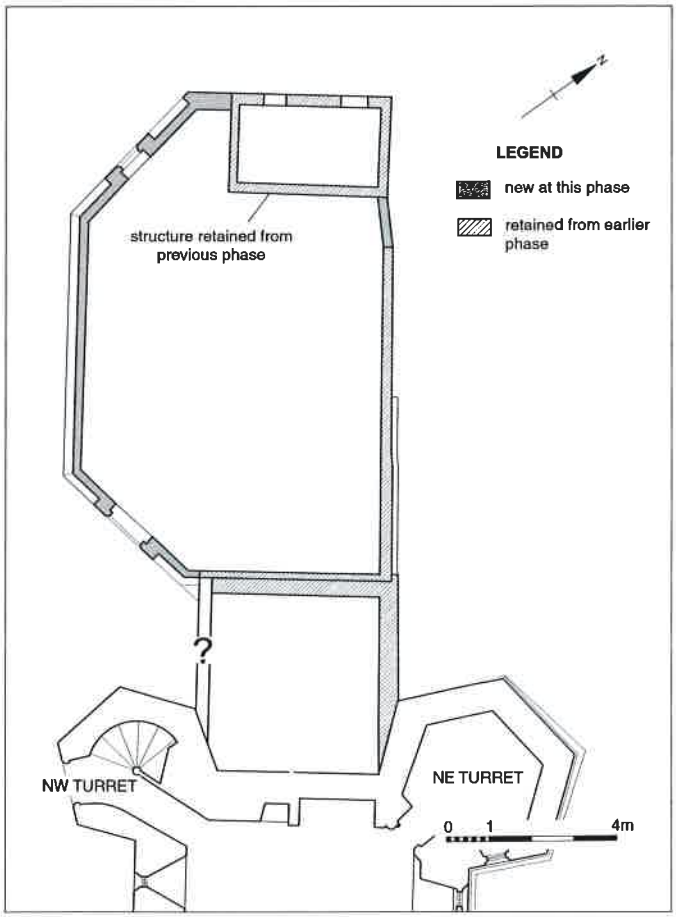
Figure 32: Detail of Figure 10 showing form of the NW annexe in 1911. Note that NE wall does not extend as far as the main tower building at this date.
(Photo: RCHM, Crown copyright reserved)



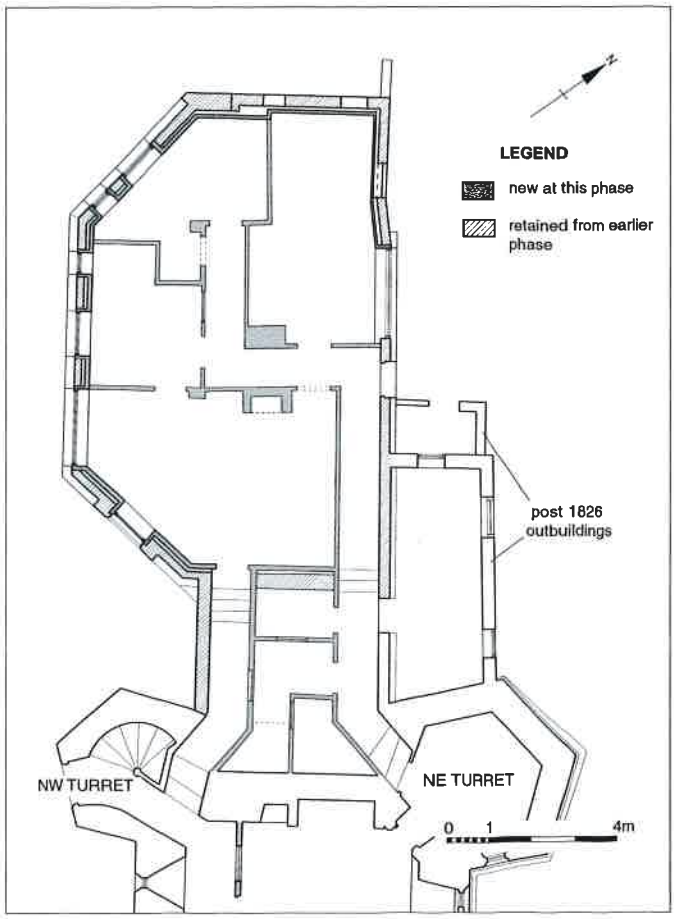
(a) Phase 1: outbuilding as shown on Burgher's engraving 1695



(b) Phase 2: brick built structures as shown on 19th-century estate map

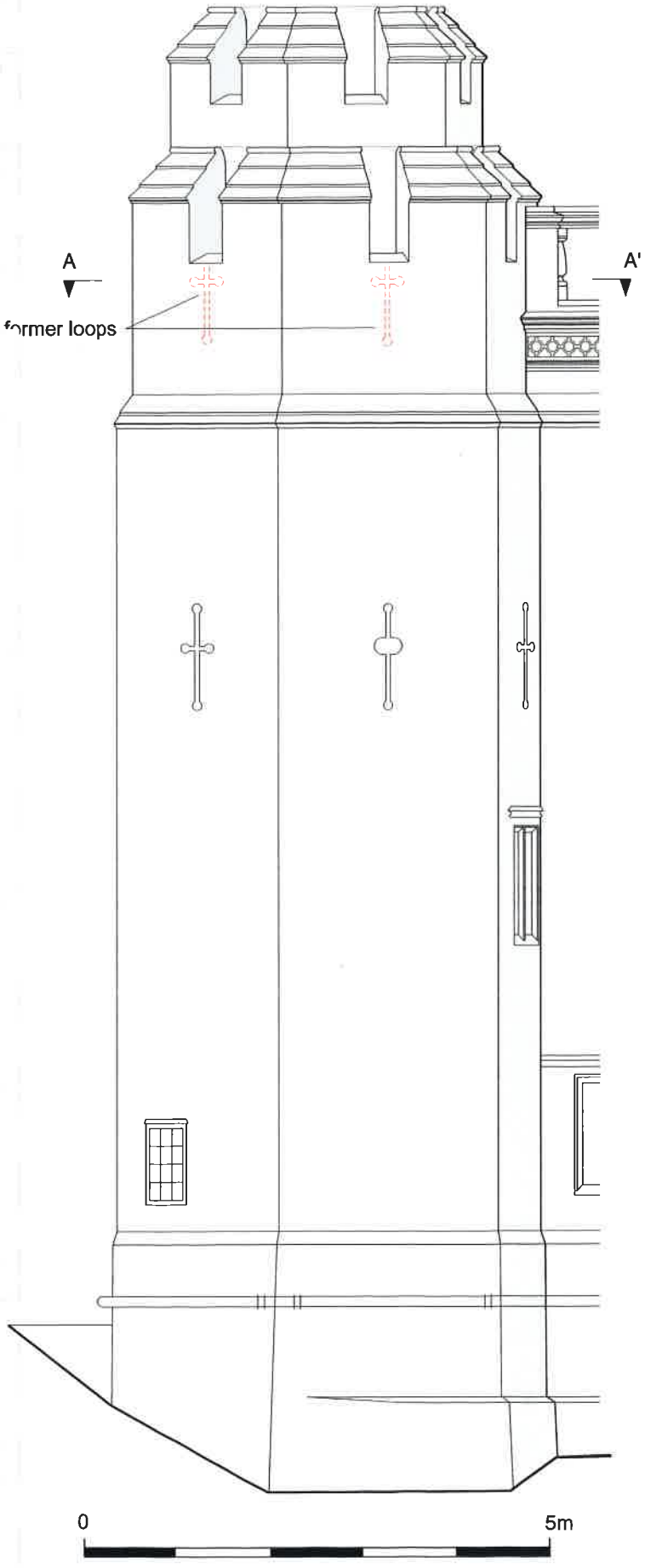


(c) Phase 3: enclosed garden as shown on 1912 photographs

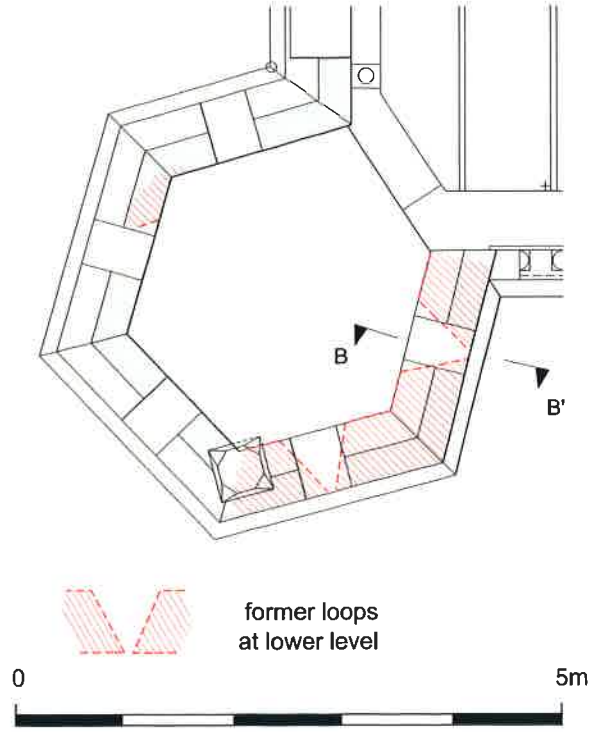


(d) Phase 4: 1925 refurbishment

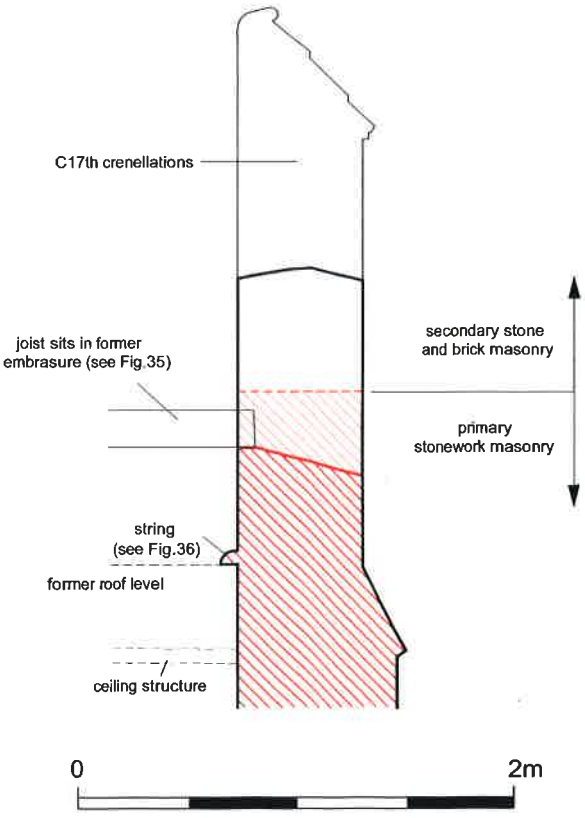
Figure 33: Development of the annexe



(a) elevation of south-east angle turret



(b) Sectional Plan A-A'

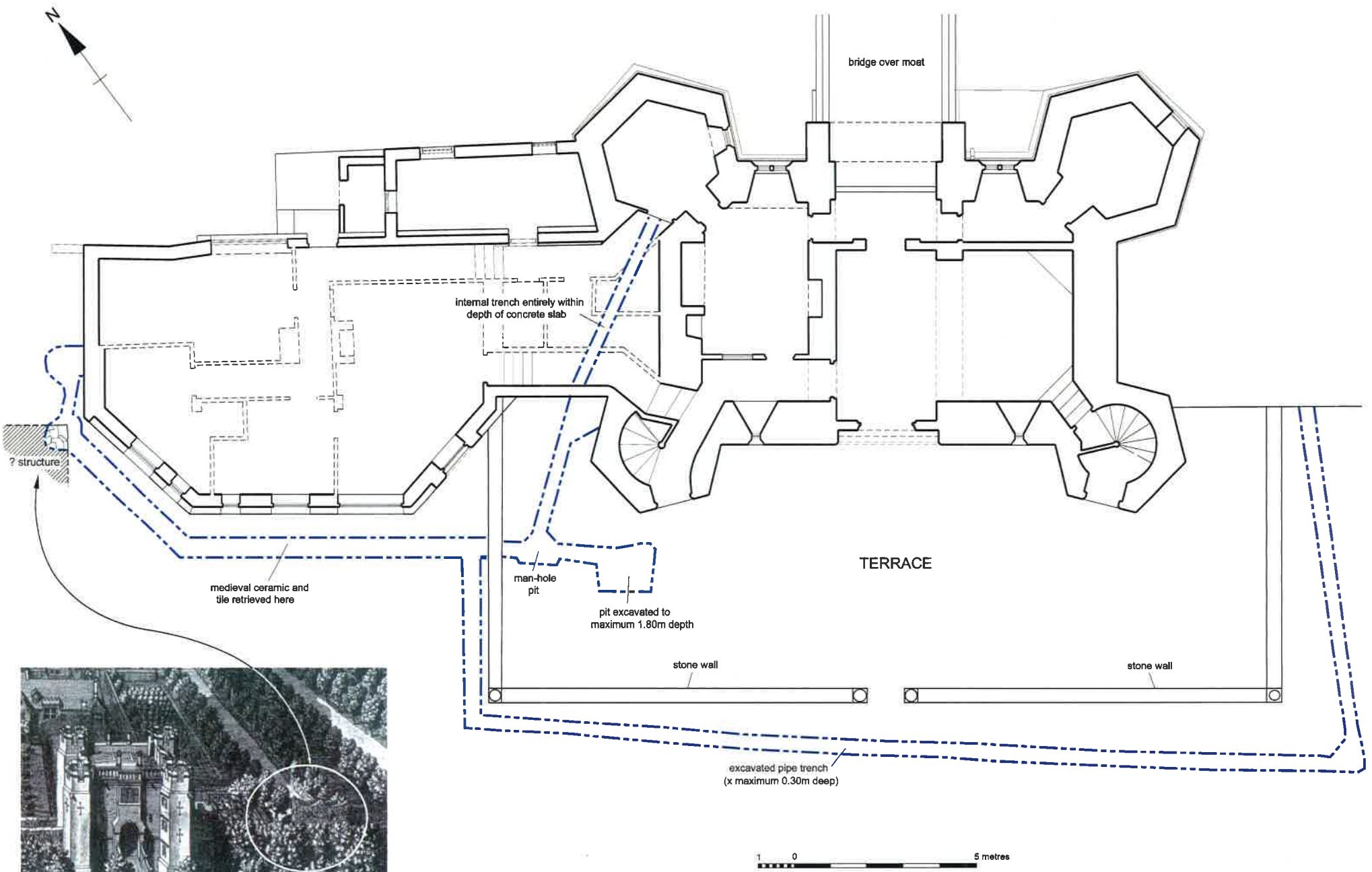


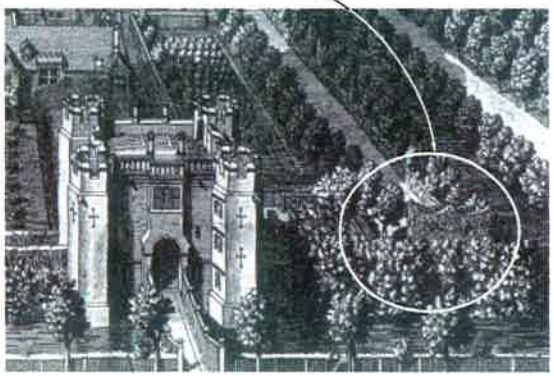
(c) cross section of turret wall B-B'

Figure 34: evidence for former loops

Figure 35: Ceiling joist of south-east corner turret housed within splay of former loop.

Figure 36: South-east corner turret: projecting stone string course below current roof level denotes former roof line; note ceiling joist (left) housed within splay of former loop.





Extract from Burgher's engraving of 1695 indicating 'gazebo' structure to NW of gatehouse

Figure 37: ground floor plan (main tower and annexe) indicating location of pipe trench

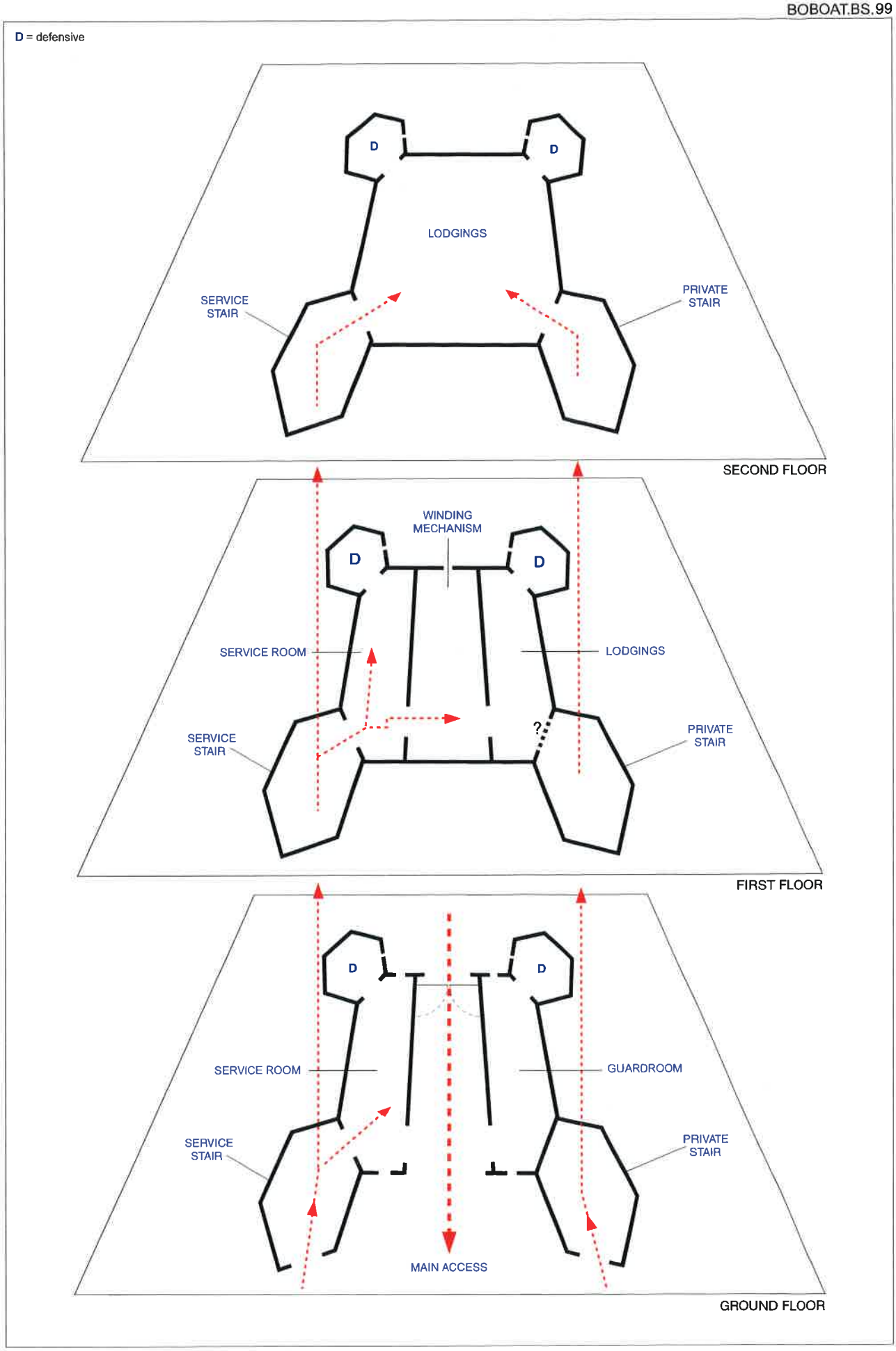


Figure 38: Boarstall Tower: schematic planning diagram

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email: postmaster@oau-oxford.demon.co.uk

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