Wollaton Hall, Wollaton, Nottingham

An Archaeological Watching Brief

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Report Number: 129/2013

Code: WHR2

External view of the South-east corner tower

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SUMMARY

On 17th October and 6th November 2013, Trent & Peak Archaeology, on behalf of Nottingham City Council conducted an archaeological watching brief during a preliminary inspection of the roof voids within the four corner towers at Wollaton Hall, Wollaton, Nottingham centred on Ordnance Grid Reference SK 532 392. It is proposed to insert access hatches into each of the four roof top towers in response to the difficulty in accessing the roof to carry out routine maintenance.

Wollaton Hall was built between 1580 and 1588, replacing an earlier house situated to the north that was nearer the village of Wollaton. The new house was built by master-mason Robert Smythson for Sir Francis Willoughby. The house is of a basic square shape, indented on two sides, and with a projecting square tower at each corner and a rectangular section built over a rock core that rises above the rest of the building. The house was subsequently altered and enlarged, principally by architect Sir Jeffry Wyatt (who changed his name to Wyatville) between 1801-32, and this included the addition of a range of single-storey offices on the west side of the original building.

The key objective of the archaeological investigation was to establish the date and significance of any architectural features present within the roof voids and to produce a subsequent record.

The characteristics of the ceilings in each of the corner towers would be consistent with a Tudor date. The brickwork above the ceiling within the void in each of the towers has been partially, if not totally, rebuilt during the remodelling of the roofs when steel girders and reused timbers were used to support modern concrete planks. Additional support for each roof comprises metal ties extending from timbers embedded within the walls to the Tudor ceiling beam beneath.

The carpentry of the inserted floor in the South-west tower suggests a late date, possibly early 20th century. Further analysis of the wallpaper is likely to produce a more secure date for the alterations within this part of the tower.

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Approved by **Date** **Signed**	Dr. David Strange-Walker Project Manager
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1. INTRODUCTION

On 17th October and 6th November 2013, Trent & Peak Archaeology, on behalf of Nottingham City Council, conducted an archaeological watching brief during a preliminary inspection of the roof voids within the four corner towers at Wollaton Hall, Wollaton, Nottingham centred on Ordnance Grid Reference SK 532 392 (Figure 1). It is proposed to insert access hatches into each of the four roof top towers in response to the difficulty in accessing the roof to carry out routine maintenance, principally clearing the gulleys and drains (Figure 2).

2. SITE BACKGROUND

Wollaton Hall was built between 1580 and 1588, replacing an earlier house situated to the north that was nearer the village of Wollaton. The new house was built by master-mason Robert Smythson for Sir Francis Willoughby. The house is of a basic square shape, indented on two sides, and with a projecting square tower at each corner and a rectangular section built over a rock core that rises above the rest of the building. The house was subsequently altered and enlarged, principally by architect Sir Jeffry Wyatt (who changed his name to Wyatville) between 1801-32, and this included the addition of a range of single-storey offices on the west side of the original building.

Marshall's survey of Wollaton Hall (see references) identifies four main phases of the architectural history of Hall:

Phase 1 (1588-1687): The completion of the original building and a period of little alteration. After a fire in 1642 the house was not lived in again until 1687.

Phase 2 (1687-early 18th century): Minor changes to the Hall alterations mainly focused on the grounds and on building a subterranean Ale Cellar.

Phase 3 (1801-32): Three stages of major renovations by Wyatville to the Hall's interior and the building of additional offices.

Phase 4 (1926 onwards): Acquisition of the Hall and Park by the City of Nottingham and alterations to accommodate a natural history museum.

3. ARCHAEOLOGICAL OBJECTIVES AND METHODOLOGY

Objectives
The key objective of the archaeological investigation was to establish the date and significance of any architectural features present within the roof voids of the four corner towers and to produce a subsequent record.

Methodology
The roofs of each of the four towers, the North-west tower, the North-east tower, the South-west tower and the South-east tower have concrete bases beneath a lead covering with a void between it and the ceiling below. In order to examine the void between the ceiling and roof a small inspection hole *c*. 0.5m x 0.5m was inserted in each ceiling, with the exception of the South-west tower which already had an access hatch. The inserted inspection holes were reached via a ladder. The gap between the ceiling and the concrete bases of the roof was too small to gain entry and therefore an inspection was undertaken from the top of a ladder. As the height of the ladder exceeded 4m a detailed record of the architectural features in the void could not be produced without contravening York Archaeological Trust's Working at Height Health and Safety Regulations.

In the South-west tower the floor beneath the inspection hatch was much higher than in the other towers resulting in safe access into the void above. The room beneath the void was also inspected.

For ease of reference within the report the building has been described as being aligned on a north to south axis when in actual fact it is on a north-west to south-east axis. Thus site north is actually north-west.

4. RESULTS

The South-west tower *Figures 3-5 and Plates 1-7*
The roof comprises 15 concrete planks extending north to south. They are retained by two west to east orientated metal girders and a central west to east orientated oak timber beam located adjacent to the north wall. The empty mortices for a barefaced soffit tenon with diminished shoulder indicate that it is a reused former ceiling beam. Timber beams embedded in the west and east wall support the girders. A further timber is also present between the two girders to add structural integrity. Metal ties extend from the timbers to the ceiling beam and joists below for additional support. The height of the void measures 630mm from base of the joists to the concrete planks.

The brickwork within the void includes bricks measuring over 2½ inches thick and over 9 inches long, rather than ones measuring 2⅜ thick and 9¼ long which date to the Tudor or early 17th century, indicating that the walls in the void have been replaced or re-laid.

The oak ceiling appears to be original comprising a central ceiling beam which extends west to east measuring 13¾ inches (350mm) across and 13 inches (330mm) deep with 13 joists either side measuring 8¼ inches (210mm) across and 2¾ inches (70mm) deep. The joist joint used is a central tenon with spurred soffit.

Unlike the other three corner towers, the South-west tower has an additional upper room beneath the ceiling created by an inserted floor, the level of which interrupts the windows in the south and west walls, which have been blocked, presumably when the floor was constructed. The floor is made of machine sawn softwood timber cut to a smaller size than that used in the ceiling above. The room itself has been decorated with wall paper indicating that it had a domestic function. Two phases of wall paper are present, the later extending to the ceiling above. However, the earlier terminates 750mm (29½ inches) lower, suggesting the presence of a former false ceiling. Such a reduction in height would render the room too low for habitation. Therefore, it is likely that the earlier wallpaper is that which adorned the walls of the South-west tower prior to its refurbishment which included the insertion of the floor.

The North-west tower *Figures 6 and 7*
The void between the base of the ceiling joists and the concrete planks above is 620mm. As in the South-west tower bricks exceeding 2½ inches thick were encountered in the upper three courses of the walls indicating that they have been rebuilt. Metal girders were used to support the concrete planks. The oak joists are west to east aligned. The lath ceiling is 5mm thick and covered with 20mm of plaster.

The South-east tower *Figures 6 and 8 and Plate 8*
The void between the base of the ceiling joists and the concrete planks above is 600mm. As in the other towers bricks exceeding 2½ inches thick were encountered within the void indicating that the walls had been rebuilt. Metal ties like those present in the South-west tower were present extending between a modern machine sawn timber embedded in the west wall and the earlier oak ceiling beam beneath. The ceiling beam was orientated west to east and the joists viewed were all contemporary with it. The lath ceiling is again 5mm thick and covered with 20mm of plaster.

The North-east tower *Figures 6 and 9 and Plate 9*
The void between the base of the ceiling joists and the concrete planks above is 610mm. The roof and ceiling structure is identical as in the other towers with the concrete planks being supported by steel girders, in this case encased in concrete, and as in the South-west tower a reused timber, possibly a ceiling beam. It is orientated west to east and runs south of the main ceiling beam. The brick walling, as in the other towers, has been partially rebuilt. Metal ties have been used for added structural stability. The original timber ceiling is oak with the

main ceiling beam being orientated west to east. The laths beneath were again 5mm thick though covered with two phases of plaster.

5. DISCUSSION

The characteristics of the ceilings beneath the void in each of the corner towers would be consistent with a Tudor date. There was no evidence for any of the ceiling timbers being later insertions. The brickwork above the ceiling within the void in each of the towers has been partially, if not totally, rebuilt during the remodelling of the roofs when steel girders and reused timbers were used to support modern concrete planks. Additional support for each roof comprises metal ties extending from timbers embedded within the walls to the Tudor ceiling beam beneath.

The carpentry of the inserted floor in the South-west tower appears to be later than the renovations undertaken between 1801-32 by Wyatville, possibly of early 20th century date. Further analysis of the wallpaper is likely to produce a more secure date for the alterations within this part of the tower.

6. REFERENCES

Marshall, P., 1999 *Wollaton Hall and the Willoughby Family*. Nottingham Civic Society

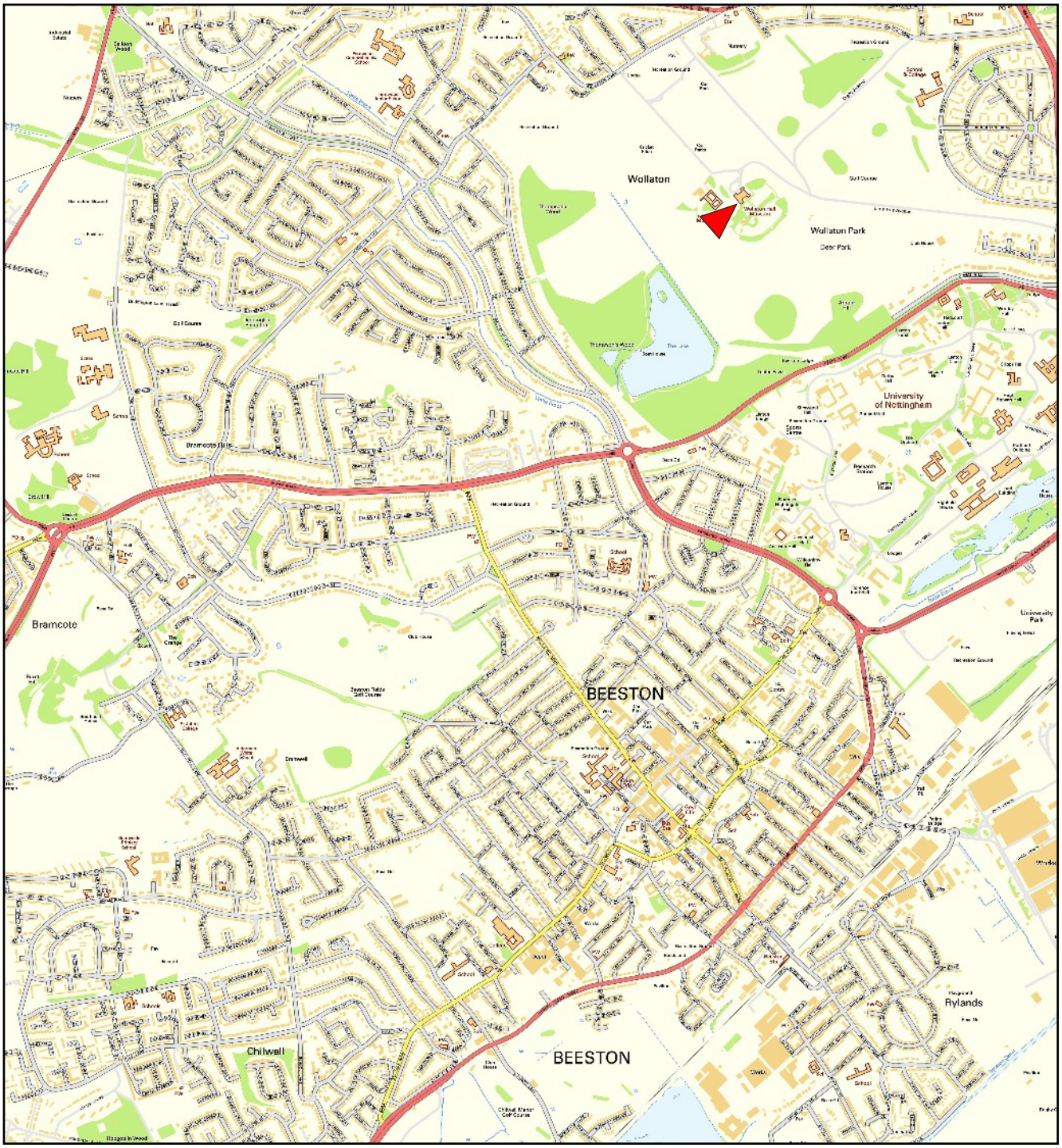
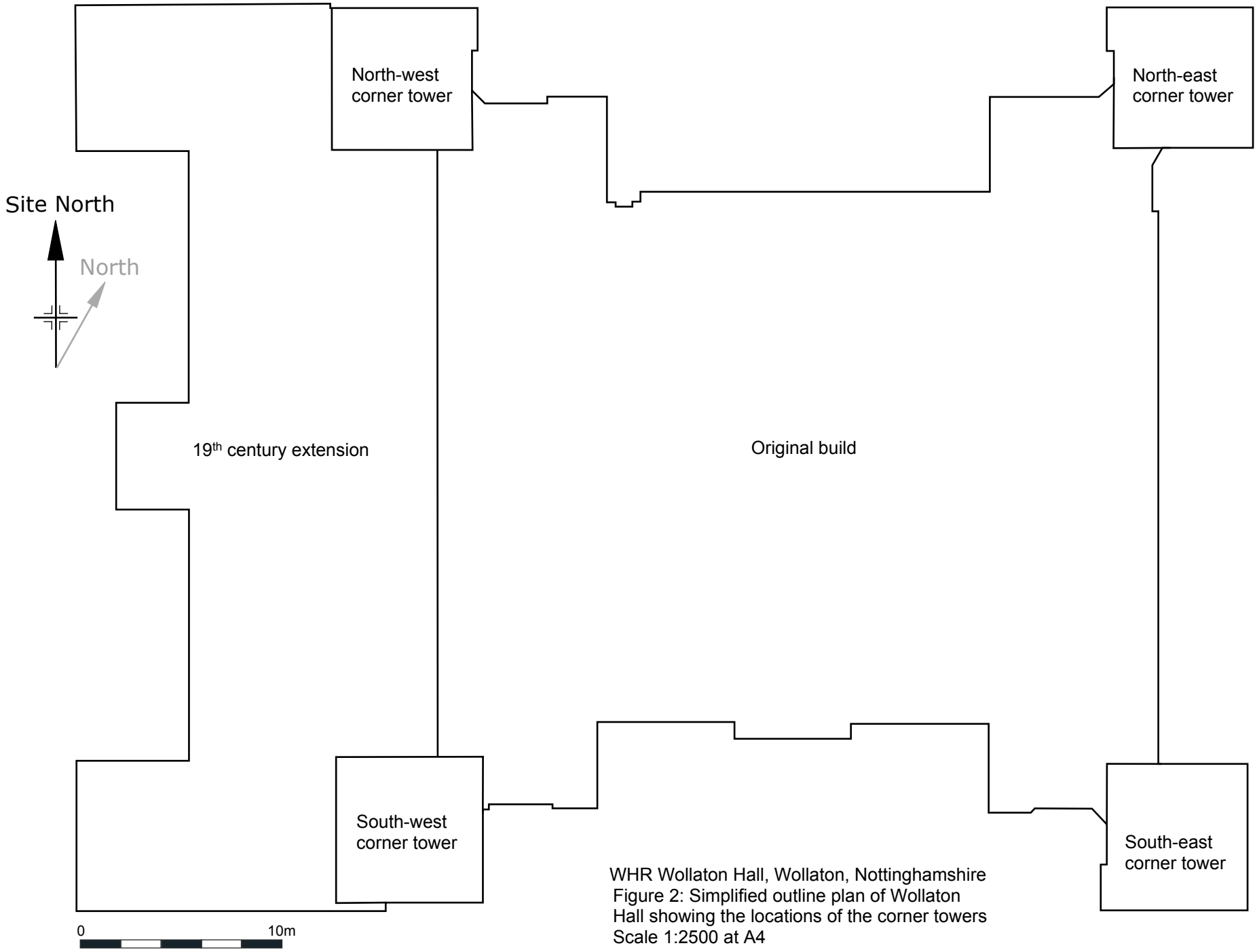
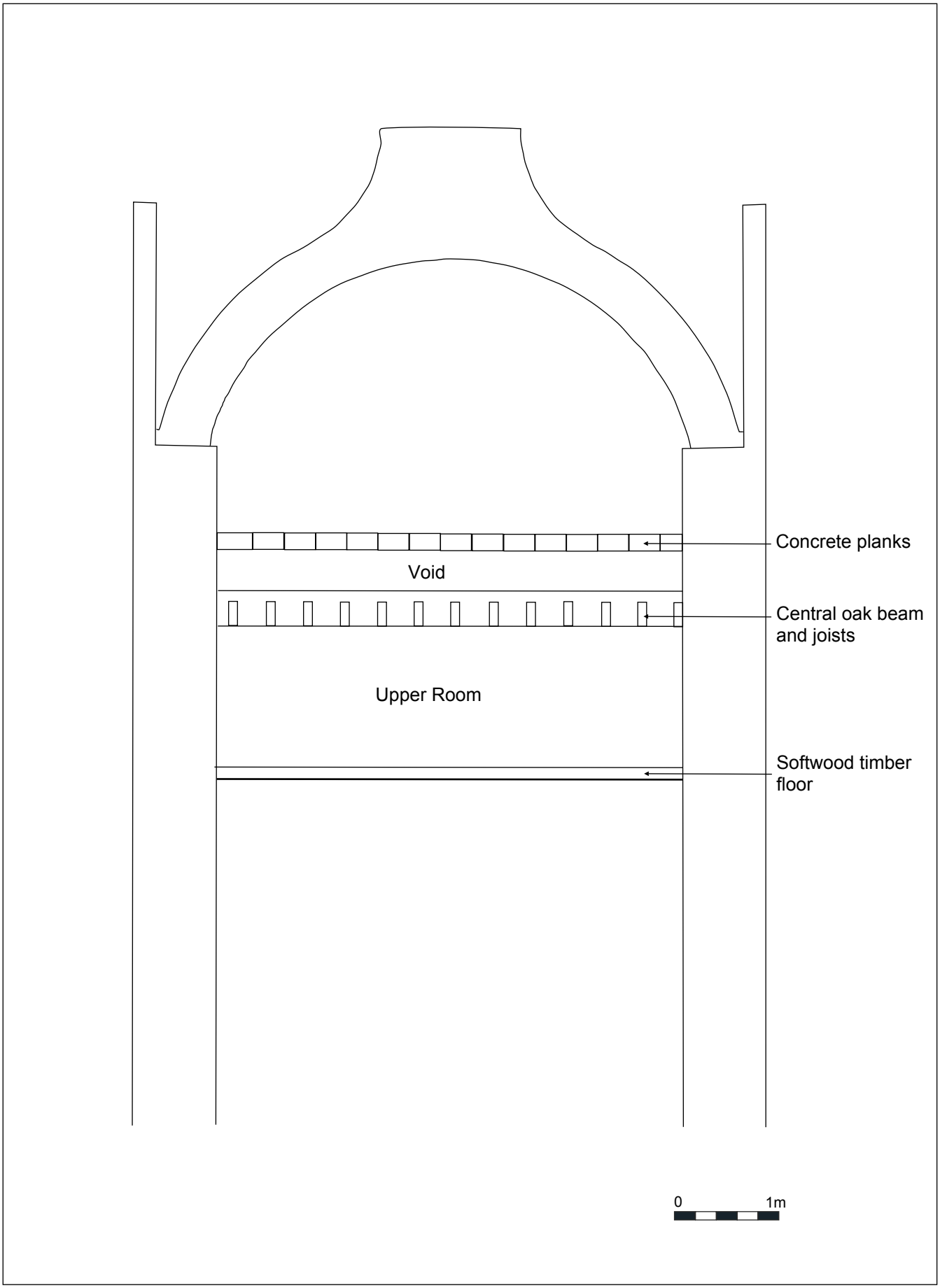


Figure 1: Location of Wollaton Hall, Wollaton, Nottinghamshire highlighted by the arrow. Scale 1:25,000



WHR Wollaton Hall, Wollaton, Nottinghamshire
Figure 2: Simplified outline plan of Wollaton Hall showing the locations of the corner towers
Scale 1:2500 at A4



WHR Wollaton Hall, Wollaton, Nottinghamshire
Figure 3: Section A-A through the South-west corner tower
Scale 1:50 at A4

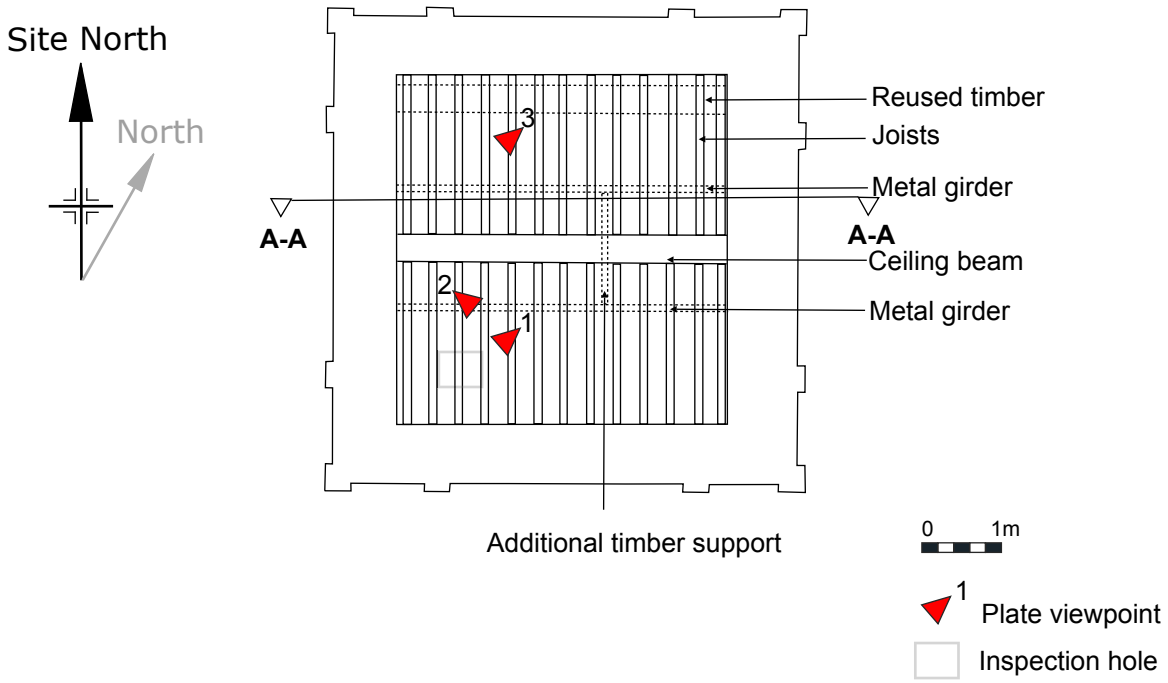


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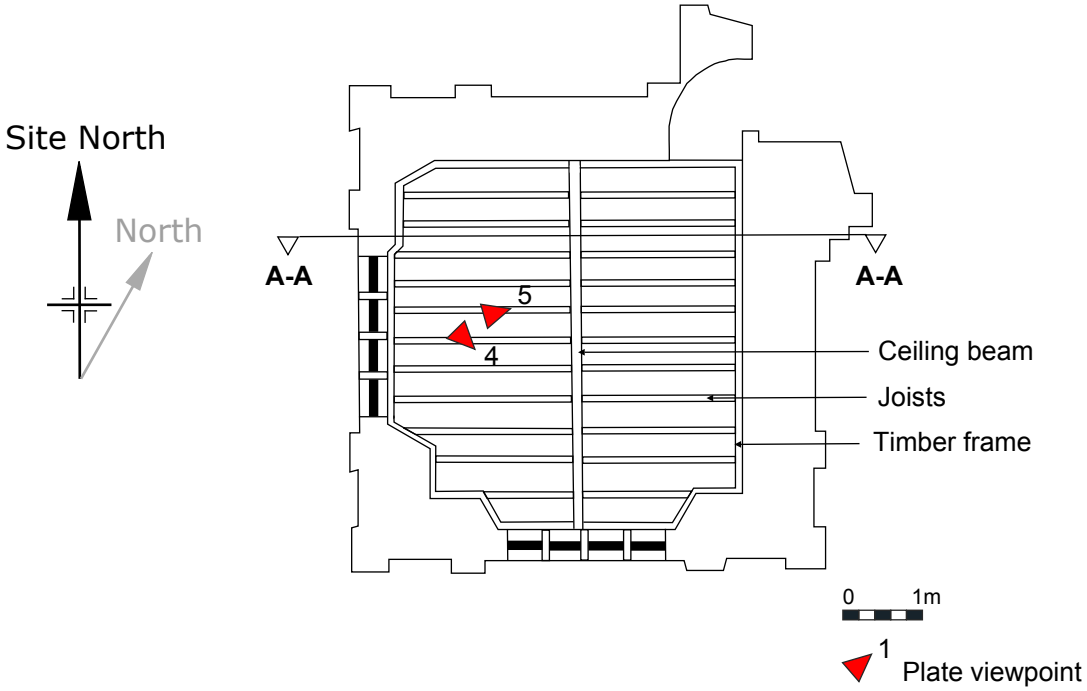
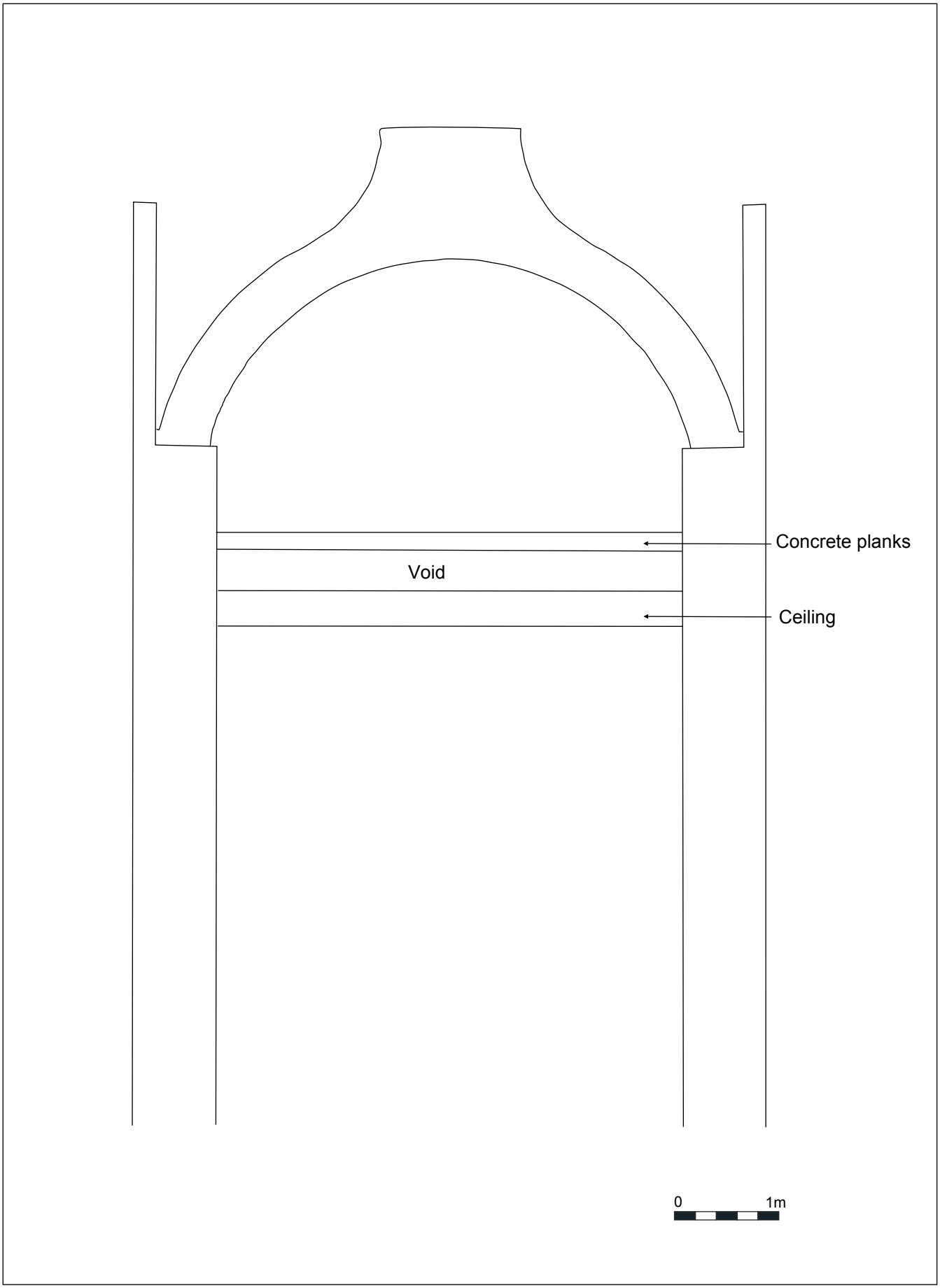
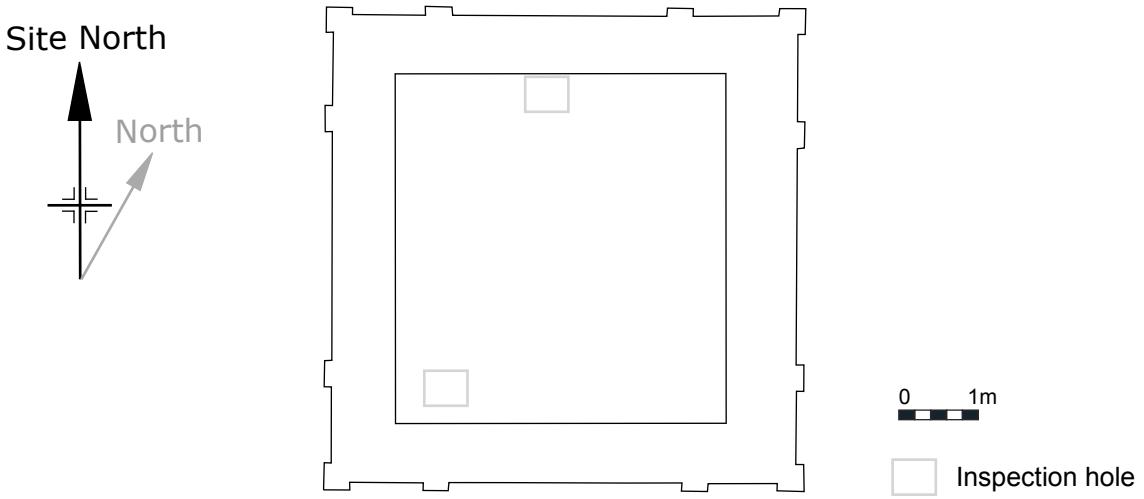
Figure 4: Plan of the void within the South-west corner tower based on drawings provided by the client
Scale 1:100 at A4



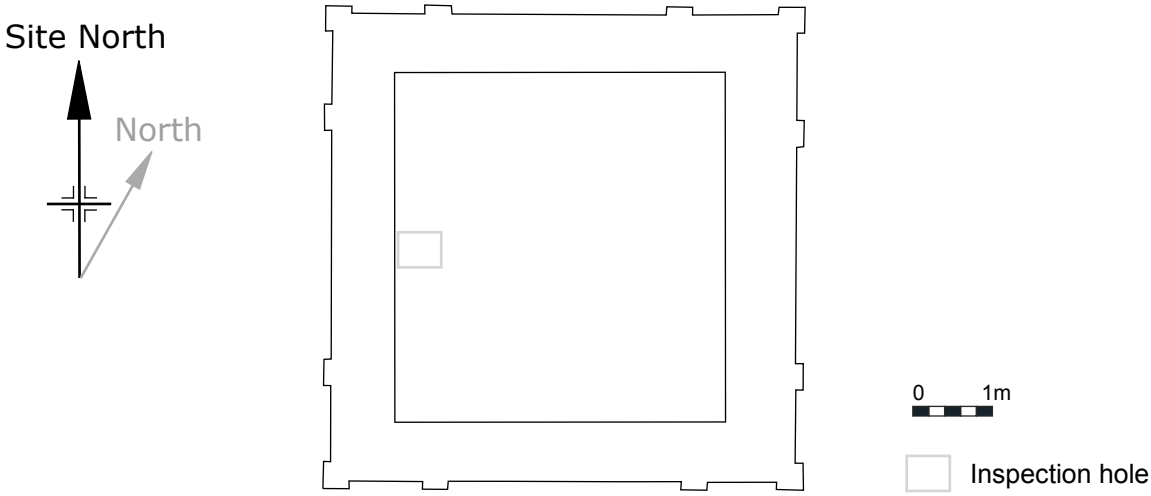
WHR Wollaton Hall, Wollaton, Nottinghamshire
Figure 5: Plan of the Upper Room in the South-west corner tower
Scale 1:100 at A4



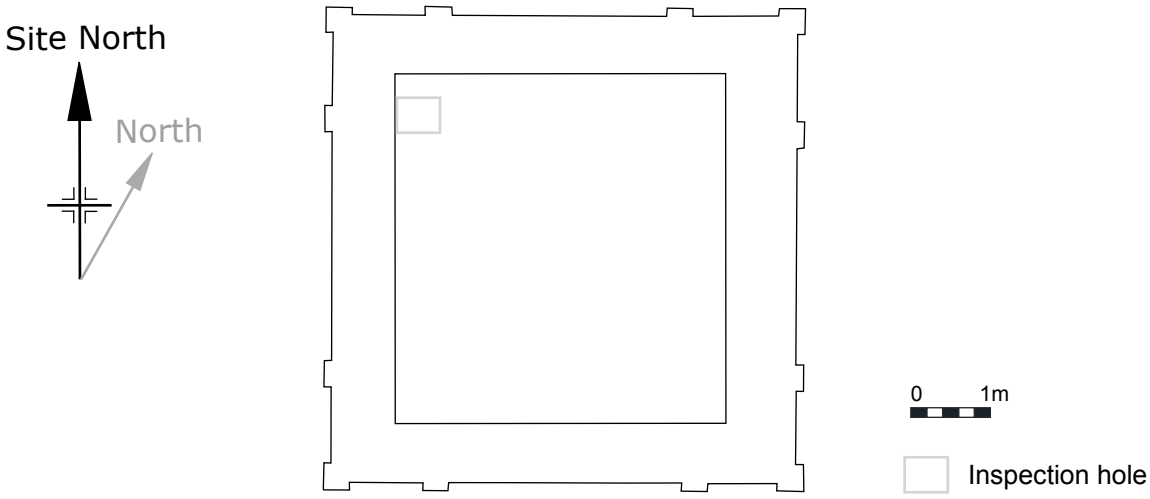
WHR Wollaton Hall, Wollaton, Nottinghamshire
Figure 6: Representative section through the North-west, North-east and South-east towers
Scale 1:50 at A4



WHR Wollaton Hall, Wollaton, Nottinghamshire
Figure 7: Location of the inspection holes in the North-west tower
Scale 1:100 at A4



WHR Wollaton Hall, Wollaton, Nottinghamshire
Figure 8: Location of the inspection hole in the South-east tower
Scale 1:100 at A4



WHR Wollaton Hall, Wollaton, Nottinghamshire
Figure 9: Location of the inspection hole in the North-east tower
Scale 1:100 at A4

Plate 1: View of the void within the South-west corner tower showing the timber and metal girder supports for the concrete plank floor and the additional metal ties between the later timber and the original ceiling beam below. Viewed looking north-east.

Plate 2: Northern metal girder supported by a timber embedded in the west wall in the void of the South-west corner tower. Note the metal ties between the wall timber and joists below. Viewed looking north-west.

Plate 3: Detail of the re-used ceiling beam supporting the concrete roof in the void of the South-west corner tower. Viewed looking north-east.

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Plate 7: Detail of the latest phase of wall paper from the Upper Room in the South-west corner tower.

Plate 8: Metal tie in the South-east tower extending from a modern machine sawn timber in the west wall down to the original oak ceiling beam below. Viewed looking north.

Plate 9: The reused timber beam in the North-east tower supporting the concrete planks, viewed looking south. Note the metal tie extending from the timber embedded in the brickwork of the west wall to the main ceiling beam.