# Anti-Aircraft Defence Tower, Mill Lane, Byfleet, Surrey

**Building Recording**

**For Rectory Homes Ltd**

by Clare Challis

Thames Valley Archaeological Services Ltd

Site Code MLB 05/100

**February 2006**

## Summary

**Site name:** Anti-aircraft defence tower, Mill Lane, Byfleet, Surrey

**Grid reference:** TQ 0675 6039

**Site activity:** Building Recording

**Date and duration of project:** 8th December 2005 and 14th February 2006

**Project manager:** Helen Moore

**Site code:** MLB 05/100

**Summary of results:** Tower constructed of concrete and brick dating to 1941–2.

**Location and reference of archive:** The archive is presently held at Thames Valley Archaeological Services, Reading and will be deposited at Weybridge Museum in due course.




| | |
|---|---|
| Report edited/checked by: | Helen Moore✓ 24.02.06 |
| | Steve Preston✓ 27.02.06 |

# Anti-Aircraft Defence Tower at Mill Lane, Byfleet, Surrey
# Building Recording

by Clare Challis

**Report 05/100**

## Introduction

This report documents the results of building recording at Mill Lane, Byfleet, Surrey (TQ 0695 6080) (Fig. 1). The work was commissioned by Mr Jason Tyrrell of Rectory Homes Ltd, Thame House, Thame Road, Haddenham, Aylesbury, Buckinghamshire, HP17 8DA.

Planning consent has been granted by Woking Borough Council to construct new dwellings on a parcel of land of *c*. 0.89 ha at Manor Farm, on the south side of Mill Lane, Byfleet, Surrey. The consent is subject to a condition which requires two components of work, a field evaluation by means of machine trenching, and a building recording of an anti-aircraft defence tower due to be demolished. This report documents the results of the building survey, and the evaluation is reported on separately (Oram 2005).

This is in accordance with the Department of the Environment's Planning Policy Guidance, *Planning and the Historic Environment* (PPG15 1994), and the Borough's policies on historic buildings. The fieldwork was undertaken by Clare Challis on 8th December 2005 and 14th February 2006 and the site code is MLB 05/100.

The archive is presently held at Thames Valley Archaeological Services, Reading and will be deposited at Weybridge Museum and a copy sent to the National Monuments Record in due course.

## Location, topography and geology

The site is located within the parish of Byfleet, on the east edge of the village and approximately 2km south of Brooklands Airfield and Museum. It lies to the north and west of the River Wey and is bounded to the north by Mill Lane and to the west by the rear gardens of domestic properties (Fig. 2). The site lies at approximately 20m above Ordnance Datum and the underlying geology is Lower Terrace Gravel (BGS 1976).

## Historical Background

The Brooklands Airfield to the north of Manor Farm was the site of aircraft factories which were badly bombed in 1940 during the Battle of Britain. A tower of reinforced concrete was erected on the Brooklands Airfield site between early 1941 and the start of 1942 and mounted a 40mm Bofors gun and predictor gear. This tower is now part of the scheduled area at Brooklands. The tower which is the subject of this report, a twin to the Brooklands

tower, was also constructed to protect the aircraft factories, however, extensive development at the Brooklands site and neighbouring Byfleet village have meant that the tower has now lost its landscape association, and so was deemed by English Heritage to not be worthy of scheduling (van Velzen 2004). This report was commissioned to record the tower prior to demolition.

## Methodology

The building survey was carried out in accordance with guidelines set out by the Royal Commission on Historic Monuments (England) for a level 2 record. The survey comprised a photographic survey, paying attention to the methods of construction, chronological development and alterations, and any features of special interest. The structure has been recorded photographically on 35mm format using colour print, colour slide and black and white media which are catalogued (Appendix 1).

## Description

The building on the site at Mill Lane is a two-storey structure of reinforced concrete and bricks (Pl. 1). The building was constructed in one phase with reinforced concrete forming the main frame and the bricks creating an infill. The roof is concrete and is at two levels, with a difference in thickness between the two sides.

The northern elevation of the building has a central wooden doorway at ground floor level with wooden frame and breeze block lintel and part surround. To the west of the doorway a pair of narrow glazed windows with timber frames and vents have a common concrete sill and individual concrete lintels.

At first floor level to the east of the doorway in the north elevation, there is a pair of narrow windows similar ot those at ground floor level. A further single, central, narrow window opening has been in-filled with bricks leaving a concrete lintel *in situ*. Modern drainage pipes penetrate this now in-filled opening and extend to a down pipe. The lower western portion of this elevation has been painted white, and various cables penetrate the wall in this region. A number of cables also enter the building at the upper level, and the mountings remain for telephone cables at the north western upper corner. The remnants of hooks for guttering around the concrete slab roof are evident on the eastern elevation.

The southern elevation is a reverse image of the northern elevation. The breeze blocks surrounding the central doorway in this case are rendered. The central single window at first floor level is again in-filled, and an vent has been inserted in the wall adjacent to it. There are additional cables exiting the building here, which connect to a phone mast located in close proximity to the south wall of the building. It sits on a concrete plinth.

At ground floor level, a breeze block wall 5½ blocks high, butts the south wall along the entire face of the building, respecting the central doorway. It also extends 2.45m long at a 90 degree angle at each end of the elevation, (Pl. 2). There are scars for two further walls which would have extended from the building at each side of the central doorway which would have created two enclosed bays. The wall obscures the concrete sills of the windows at ground floor level suggesting it was not part of the original build.

On the western elevation, nine courses down from the roofline is situated a metal bracket which supports a hoist reaching to the roof top.

Internally the building has a simple layout (Fig. 3). The two central doorways connect by a cross-passage, with a single room to the west and staircase to the east. This room has a concrete floor approximately one inch higher than the cross-passage, and a concrete roof. The walls have wood and plasterboard panelling, the door has a flat brick head and is painted black with green frame, and the ceiling is whitewashed. There are single metal vertical bars in the window openings, and an RSJ in the ceiling, aligned east-west with the south wall.

The staircase is constructed in concrete. It first rises to the east, then turns to rise southwards, and then turns west to reach the first floor landing, on the same orientation as the ground floor cross-passage. An iron banister follows the path of the staircase, and creates a railing on the first floor.

A second room is present on the first floor and was previously occupied by a communications company. This has resulted in an abundance of electrical sockets and mountings on the walls. The floor has a covering of vinyl tiles. The entrance to this room has been moved from its original central position , and is now further north along this wall. The original door opening has been bricked up (Pl. 3). At the western end of the room a concrete flight of stairs rises to the west, turns to the south, then rises to a second floor landing. Above these stairs at the roof line on the south and west walls, are the numbers 3 to 10 painted in red, with the remainder of a nail inserted below several of them. The landing forms an L-shape running along the south wall, and then at right angles over the room below. The eastern end wall of this floor has an opening which overlooks the room below, and to either side rectangular alcoves. An iron ladder in front of this wall leads to a wooden hatch and out onto the roof space (Pl. 4).

The roof is surfaced in both green felt and gravel. The roof hatch is located just to the western side of the centre of the roof, adjacent to a brick wall with a concrete cap which divides the roof into two separate spaces (Pl. 5). The brick wall is approximately 0.60m high, its top level with a felt covered concrete retaining wall approximately 1.10m high around the lower (eastern) portion of the roof. The roof hatch has a metal safety railing. A second railing is situated around the edge of the roof on three sides of the western portion, and a hoist

is situated on the western wall of the tower. A possible water pipe is located on the western side of the wall, and rises from the roof, up and over the middle wall where it terminates with a valve.

In the centre of the eastern roof space was a concrete hexagonal platform, with a square platform centrally placed on top of it, covered in roof felt. A grid of metal bars is positioned across it and fastened into the surrounding concrete walls (Pl. 6).

## Interpretation

The tower is located approximately 2km to the south of Brooklands airfield and along with the anti-aircraft tower on the airfield itself, the tower at Manor Farm would have provided additional defences for the aircraft factories situated at Brooklands during the Second World War.

The tower at Manor Farm is of a simple structure that would enable its construction within a short space of time. The main frame of the building was constructed in concrete with brick infill (Pl. 1). The windows are narrow both which provides an ideal defensive position and also reduces the amount of light emitted during times of blackout. Gun positions often began as field stations with simple huts or tents to accommodate operators, later replaced by more permanent concrete structures, although these were more usually sunken into the ground. It is probable that this tower was constructed around the same time as that at Brooklands and in a similar style.

The first floor room is likely to have accommodated an operations room where enemy flight movements would have been tracked and communications held with neighbouring defensive posts via telephone, the mountings for which are still visible on the northern elevation. The stairs within this room rose to a landing from where operators could reach the roof space via an iron ladder. The ladder rises in front of an opening in the east wall which overlooks the room and its entrance below, enabling defence of the upper levels of the tower against intruders. The entrance of the room has now been moved due to the later utilization of the space. The ground floor room was possibly used for living accommodation or more likely for stores along with the bays created on the outside south elevation (Pl. 2). The hoist on the western wall is likely to have raised ammunition and other heavy objects to the roof where the gun would have been mounted on the hexagonal platform on the lower portion (Pl. 6). It is likely that the gun was of a similar type to the tower at Brooklands, a Bofors 40mm anti-aircraft gun. No other evidence exists on the roof for additional equipment although the gun would have required predictor gear transmitting the bearing and height required for the targetting of enemy aircraft.

The principal purpose of the anti-aircraft gun is to prevent accurate bombing by enemy aircraft. In some cases the aircraft can be shot down but this usually entails either hitting the pilot or fuel tank directly, to bring the plane to the ground. In most instances anti-aircraft gun fire was intended to prevent enemy bombers retaining a straight line for their bombing run and flying low enough to hit their targets accurately. Lighting the sky with gun fire (tracer bullets) would also have drawn attention to the enemy aircraft and alerted Allied fighters to their presence

The metal pipe that appears at the roof surface and is directed over the mid wall could not be traced within the interior of the tower but it is possible that this pipe brought water to the roof (Pl. 5). It may be not be contemporary with the original use of the tower.

The metal grid placed at mid height on the lower portion of the tower would have restricted movement within this space and around the gun platform itself and is therefore also thought to be a secondary feature (Pl. 6). The metalwork does however appear contemporary with the railings and other fixtures on the roof and it can therefore not be ruled out that it may be contemporary with the structure although its function is unknown.

## Conclusion

The two-storey tower at Manor Farm is of reinforced concrete construction and provided a roof mounting for an anti-aircraft gun. It is situated in close proximity to the airfield and museum at Brooklands which housed aircraft factories during WWII and would have formed part of the defensive network of this establishment along with the anti-aircraft tower located on the Brooklands site itself. The tower Brooklands was constructed between early 1941 and the start of 1942 after the factories were bombed during the Battle of Britain in 1940 and it is probable that the tower at Manor Farm was constructed within the same period.

The tower at Manor Farm retains its original structure however it has been altered to accommodate the equipment of the communications company on the first floor with the repositioning of the first floor room doorway and the addition of electrical fixtures and mountings. Two of the original narrow window openings have been in-filled and a vent inserted in the south wall for ventilation of the room. The roof has been re-covered with felt, a possible weatherproofing for the insertion of the electrical equipment.

The remainder of the building has deteriorated in condition consistent with the neglect of the building once it was no longer required at the end of the war. A number of the windows have been broken and the two downstairs entrance doors have been torn from their hinges. The iron ladder has a number of rungs missing and the railing around the roof periphery no longer appears safe.

## References

BGS, 1976, *British Geological Survey*, 1:50000, Sheet 283, Solid and Drift Edition, Keyworth

Oram, R, 2005, *Mill Lane, Byfleet, Surrey, An Archaeological Evaluation, Phase 1*, TVAS report MLB05/100

PPG 15, 1994, *Planning and the Historic Environment*, Dept of the Environment Planning Policy Guidance 15, HMSO

RCHME, 1996, *Recording Historic Buildings: A descriptive Specification (Third Edition)* (Royal Commission on the Historical Monuments of England)

Van Velzen, D T, 2004, *Alternative Action Report*, English Heritage

**APPENDIX 1**: Photographic Catalogue

A .Colour prints

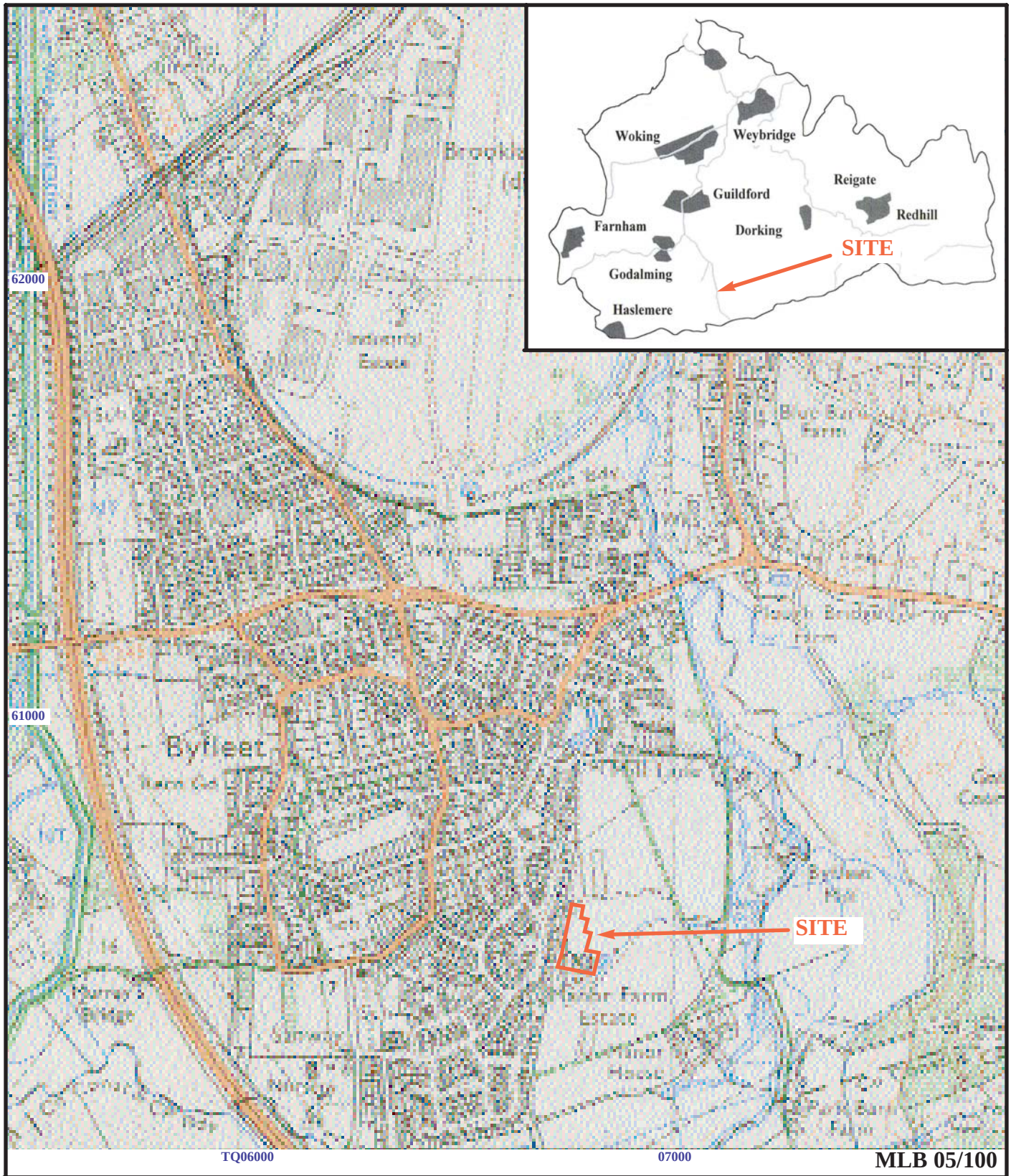
| *No.* | *Description* |
|---|---|
| 1 | Exterior, North Elevation, 1x2.0m |
| 2 | Exterior, North and East Elevation, 1x2.0m |
| 3 | Exterior, West Elevation and hoist |
| 4 | Exterior, North Elevation, Door, 1x2.0m |
| 5 | Exterior, South and East Elevation, Walls creating bays |
| 6 | Interior, Looking West, Ground floor stairwell, 1x1.0m |
| 7 | Interior, Looking West, Ground floor stairwell, 1x1.0m |
| 8 | Interior, Looking East, Entrance to ground floor room, 1x1.0m |
| 9 | Interior, Looking East, First Floor landing, blocked doorway, 1x1.0m |
| 10 | Interior, Looking East, From stairwell to ground floor walk through |
| 11 | Site Shot, Looking North West |
| 12 | Site Shot, Looking North West |
| 13 | Site Shot, Looking North West |
| 14 | Exterior, Roof, Looking East, Gun mount and metalwork |
| 15 | Exterior, Roof, Looking East, Gun mount and metalwork and pipe |
| 16 | Exterior, Roof, Looking South East, Roof hatch |
| 17 | Exterior, Roof, Looking North West, Hoist |
| 18 | View from tower, Looking East |
| 19 | View from tower, Looking North |
| 20 | View from tower, Looking West |
| 21 | View from tower, Looking South |
| 22 | Interior, Looking West, Ladder to roof, alcoves and hatch |

B. Colour Slides

| *No.* | *Description* |
|---|---|
| 1 | Exterior, North Elevation, 1x2.0m |
| 2 | Exterior, North and East Elevation, 1x2.0m |
| 3 | Exterior, West Elevation and hoist |
| 4 | Exterior, North Elevation, Door, 1x2.0m |
| 5 | Exterior, South and East Elevation, Walls creating bays |
| 6 | Interior, Looking West, Ground floor stairwell, 1x1.0m |
| 7 | Interior, Looking West, Ground floor stairwell, 1x1.0m |
| 8 | Interior, Looking East, Entrance to ground floor room, 1x1.0m |
| 9 | Interior, Looking East, First Floor landing, blocked doorway, 1x1.0m |
| 10 | Interior, Looking East, From stairwell to ground floor walk through |
| 11 | Site Shot, Looking North West |
| 12 | Site Shot, Looking North West |
| 13 | Site Shot, Looking North West |
| 14 | Exterior, Roof, Looking East, Gun mount and metalwork |
| 15 | Exterior, Roof, Looking East, Gun mount and metalwork and pipe |
| 16 | Exterior, Roof, Looking South East, Roof hatch |
| 17 | Exterior, Roof, Looking North West, Hoist |
| 18 | View from tower, Looking East |
| 19 | View from tower, Looking North |
| 20 | View from tower, Looking West |
| 21 | View from tower, Looking South |
| 22 | Interior, Looking West, Ladder to roof, alcoves and hatch |

**APPENDIX 1**: Photographic Catalogue (cont'd)
C. Monochrome Images

| *No.* | *Description* |
|---|---|
| 1 | Exterior, North Elevation, 1x2.0m |
| 2 | Exterior, North and East Elevation, 1x2.0m |
| 3 | Exterior, West Elevation and hoist |
| 4 | Exterior, North Elevation, Door, 1x2.0m |
| 5 | Exterior, South and East Elevation, Walls creating bays |
| 6 | Interior, Looking West, Ground floor stairwell, 1x1.0m |
| 7 | Interior, Looking West, Ground floor stairwell, 1x1.0m |
| 8 | Interior, Looking East, Entrance to ground floor room, 1x1.0m |
| 9 | Interior, Looking East, First Floor landing, blocked doorway, 1x1.0m |
| 10 | Interior, Looking East, From stairwell to ground floor walk through |
| 11 | Site Shot, Looking North West |
| 12 | Site Shot, Looking North West |
| 13 | Site Shot, Looking North West |
| 14 | Exterior, Roof, Looking East, Gun mount and metalwork |
| 15 | Exterior, Roof, Looking East, Gun mount and metalwork and pipe |
| 16 | Exterior, Roof, Looking South East, Roof hatch |
| 17 | Exterior, Roof, Looking North West, Hoist |
| 18 | View from tower, Looking East |
| 19 | View from tower, Looking North |
| 20 | View from tower, Looking West |
| 21 | View from tower, Looking South |
| 22 | Interior, Looking West, Ladder to roof, alcoves and hatch |




MLB 05/100

**Mill Lane, Byfleet, Surrey, 2006**
**Building Recording**

Figure 1. Location of site within Byfleet and Surrey.



THAMES VALLEY
ARCHAEOLOGICAL
SERVICES

# Mill Lane, Byfleet, Surrey, 2006


Figure 2. Location of building within site

MLB05/100

# Mill Lane, Byfleet, Surrey, Building Recording, 2006

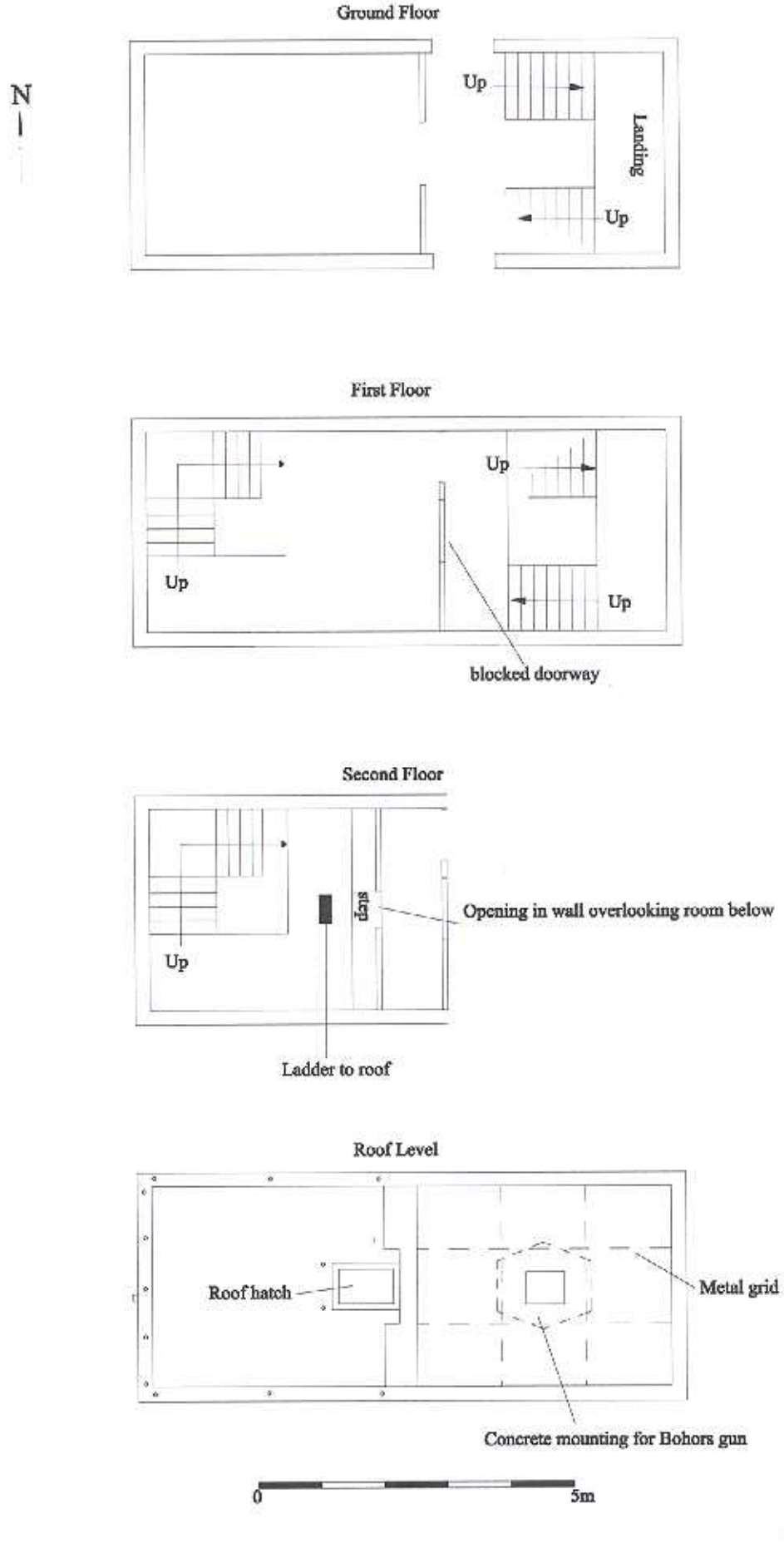



Figure 3. Floor Plans

MLB05/100

Plate 1. North elevation of tower, scale 2m.

Plate 2. South elevation of tower, scale 2m.

THAMES VALLEY ARCHAEOLOGICAL SERVICES

Plate 3. First floor landing with blocked original opening, scale 1m.

Plate 4. Second floor landing, ladder to hatch in roof, wall opening and alcoves.

Plate 5. Roof of tower; hatch opening with railing and pipe.

Plate 6. Roof of tower; hexagonal mount with central raised square and metal grid.