Archaeological Recording at

BFI National Archive, Lighthorne Rough,

Compton Verney, Warwickshire

Catherine M. Coutts and Elizabeth Pratt

Report 1048

October 2010

Warwickshire County Council

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Summary

Archaeological building recording took place at BFI Archive at Lighthorne Rough, Compton Verney, prior to the demolition of two former remote weapons storage bunkers. The bunkers constitute a significant part of the national defence heritage of the Cold War era. Recording was in the form of photography, description and measured survey.

1. Introduction

1.1 Planning permission has been granted by Stratford-on-Avon District Council (Ref. S/10/00393/FUL) for the construction of a single-storey storage building at the British Film Institute (BFI) National Archive, Lighthorne Rough, Compton Verney, Warwickshire, which includes the demolition of two of the existing bunkers constructed in the 1950s as part of an atomic bomb store associated with RAF Gaydon. These are considered to be a significant part of the national defence heritage. It was therefore a condition of planning permission that the applicant should secure the implementation of a programme of archaeological building recording before the development commences, to ensure that the two store buildings are properly recorded prior to demolition.

1.2 A programme of fieldwork, consisting of photographic recording and archaeological observation, in accordance with a Brief prepared by the Planning Archaeologist on behalf of the Planning Authority, was commissioned from the Warwickshire Museum Field Archaeology Projects Group and carried out in September 2010. This report presents the results of that work.

2. Site location and topography

2.1 The site is centred on national grid reference SP 3183 5441, in the northern part of the parish of Compton Verney. The site is predominantly flat, with the artificially created mounds of the bunkers rising above grassland. The bunker mounds have rough grass and broadleaved tree cover.

2.2 The underlying geology of the area is Boulder Clay and Lower Lias Clay (British Geological Survey 1963).

3. Aims, objectives and methodology

3.1 The aim of the archaeological work was to gather sufficient data to preserve the buildings 'by record', and to produce an archive and report of the results. Work would be carried out in accordance with English Heritage's specification *Understanding Historic Buildings, a Guide to Good Recording Practice* (2006), the *Warwickshire Museum Field Services Procedures Manual* (2007), the IfA code of conduct and their *Standard and Guidance for the archaeological investigation and recording of standing buildings or structures* (2008). Information would be collected on the history and archaeology of the site and its immediate surroundings, using information from the Warwickshire Historic Environment Records, the County Record Office and relevant publications.

3.2 The work involved a photographic and descriptive survey of the bunkers to be demolished, along with a measured survey carried out using a Leica Total Station with supplementary scale drawing by hand. Photographs were taken using

standard SLR camera and black and white film, along with digital photos using a Nikon D40 DSLR camera. The BFI site is approximately 8.3 ha in size but the area surveyed covered 45000 sq m with Bunkers D2 and D4 being surveyed in detail. The plant rooms on the north-western sides of the bunkers were opened up by the Staff at BFI Archive in the presence of a licensed bat handler from Middlemarch Environmental and inspected by him to ascertain that no bats were present before survey began. The site archive will be stored at Warwickshire Museum under the site code CB10.

4. Archaeological and historical background

Roman

4.1 Less than 1km to the west of the site is the Fosse Way, a Roman road of 1st century origin running between Exeter and Lincoln (Warwickshire Historic Environment Record No. MWA 4759; Fig. 1).

Medieval

4.2 Part of an early medieval trackway known as the 'Saltway' (HER MWA 8666) runs east-west to the north of the proposed development site. It may have originated in the Roman period and is part of a major routeway across the county heading east from Stratford-upon-Avon. There is no additional evidence of note in the vicinity.

Cold War

4.3 Faced by the threat of nuclear attack with the onset of the Cold War in 1947, the British government established a network of defensive facilities across the country, codenamed ROTOR. This emergency response programme entailed the construction of 39 regional radar stations with underground military defence bunkers, with reports of detected nuclear weapons sent to one of four Sector Operations Centres (SOC)[1]. These bunkers were equipped with air-conditioning and filters to ensure that nuclear-contaminated air did not enter (Lowry 2006, 119).

4.4 However, with the continued development of missiles, bomber aircraft and improved radar throughout the 1950s, these detection measures became obsolete[2] (Civil Defence Today 2009). This realisation led to a shift in focus; the creation of regional administrative centres within a system of underground civil defence bunkers for use by government officials in the instance of nuclear attack (Lowry 1996, 136). Existing military bunkers, such as those at Skendleby, Crowborough and Swynnerton[3], were converted and specially strengthened to withstand attack. Equipped with food, medicinal supplies, life support, and telecommunications apparatus, these were bases prepared for the coordination of operations by governmental authorities. Between 1953 and 1991, Cold War government bunkers were known as Regional War Rooms (RWR); Regional Seats of Government (RSG); Sub Regional Headquarters (SRHQ); Sub Regional Controls (S-RC); Regional Government Headquarters (RGHQ); and county and local authority bunkers (Carvell 2007, 112).

4.5 In addition to serving as command and control centres, bunkers were also employed as weapons storage facilities. Some of these can still be seen on sites

[1] http://www.ringbell.co.uk/ukwmo/Page223.htm
[2] http://civildefence.co.uk/bunkers.php
[3] http://www.ringbell.co.uk/ukwmo/Page223.htm

today. Early examples, known as 'clutches', contained weapons such as the Blue Danube freefall bomb; the next generation, known as 'igloos' and constructed to American design, contained Mk6 nuclear weapons[4].

RAF Gaydon

4.6 Established in World War Two as a night-bomber training base, RAF Gaydon was used again throughout the Cold War years. With the construction of a new runway, new hangars and technical buildings, the site was transformed into the first V-Force base (flying Valiants, Victors and Vulcans) in the country, opening in 1954 (Carvell 2007, 101-102). The first Valiant B.1s entered service with 232 Operational Conversion Unit at RAF Gaydon in June 1954.

4.7 Approximately 2km west of the airfield, at Lighthorne Rough, a remote weapons 'clutch' store for V-bombers[5] was constructed in 1955 (Carvell 2007, 132). Protected by high security fencing, it comprised a guardroom, bomb storerooms, an assembly building, and an external ancillary building (Carvell 2007, 104). The final stages of atomic bomb assembly took place here, with ensuing storage (ibid). The purpose-built bunker storerooms were lined with lead and covered by earth banks[6]. The site was known as a Supplementary Storage Area (SSA) and originally housed Blue Danube bombs, which would have been carried singly in Valiant and Victor aircraft. The main bomb storage facilities required a drive through because of the size of the early weapons. The bunkers in question have been referred to as mounded 'D' stores and in the late 50s and early 60s were used for both maintenance and storage[7]. Out of the ten main V-bomber bases in this country, similar style 'D'-form storage bunkers are found at RAF Coningsby (Lincolnshire) and RAF Cottesmore (Rutland), although both of these appear to have a rather more complicated group of bunkers and are better preserved than those at Lighthorne Rough, whereas the remaining seven bases have different designs of storage.

4.8 Operational flying ceased in 1970 and RAF Gaydon was finally closed in 1974 and acquired by British Leyland for vehicle testing and development. It is currently the site of the Heritage Motor Centre (Carvell 2007, 102). The remote atomic bomb store at Lighthorne Rough was taken over by the British Film Institute for the storage of National Film Archives in 1978 (Carvell 2007, 104). Although additional buildings have since been constructed across this site in association with its more recent use, many of the original buildings and features survive. The BFI National Archive holds the largest and most significant collection of film and television, with the former remote weapons store housing over 46 million metres of highly flammable nitrate film.

5. The buildings survey

5.1 The buildings were surveyed on September 21st 2010 under good weather conditions. Bunkers D2 and D4 are two of a group of six bunkers (D2-D7), each with a protected vault below a high, earth-covered bank, in the northern part of the site (Figs. 2-5). The bunkers are in pairs, either side of the road and are identical in plan. Bunker D1 is in the south-west part of the site and is of a different design. Both bunkers surveyed were empty at the time of the survey, although Bunker D2 had

[4] http://www.century20war.co.uk/page9.html
[5] http://www.subbrit.org.uk/rsg/sites/g/gaydon/
[6] http://www.subbrit.org.uk/rsg/sites/g/gaydon/
[7] http://www.airfieldinformationexchange.org/community/archive/index.php/t-2936.html

some builders' materials stored in it. Other bunkers on the site were examined externally only.

5.2 All of the bunkers in the northern part of the site are approached via curving, open-roofed concrete approach 'tunnels' (Figs. 6-8). The concrete making up these abutment walls is reinforced with steel and the walls are 0.23m thick. In some instances vertical cracks have appeared in the corners of the entranceway walls (Figs. 9-10). The walls are 4.10-4.18m high at their maximum height (Figs. 11-13), at the entrance to the bunkers and were painted a dull reddish brown (Fig. 14), although much of the paint has now faded. The walls are constructed in four rises of concrete, the first being 0.94m above the 0.10m high kerb. The second rise is 1.26m high, the third 1.22m high and the upper one 0.60m high. The bunkers are covered with a mound of soil that also rises to the top of the entrance walls. This soil is *c.*0.45m deep on the top of the bunkers and is host to rough grassland and a number of cherry, hawthorn and other trees of varying ages.

5.3 The bunkers themselves are *c.*14.60m long, *c.*6.64m wide and 2.84-2.92m high (Figs. 3, 15-17). The floor plan is of a six-sided lozenge shape, with the long walls 10.12m in length and the angled walls 2.42m long. The floors are painted with black gloss and the walls with peeling yellow gloss. There is a fake skirting board painted around each bunker, which has a concave edging with the floor. The floors themselves bear the impression of wheels and other heavy objects (Fig. 18). The outer walling appears to be thicker than the walling of the tunnel approach; survey suggests these walls are 0.32m thick rather than 0.23m thick. The walls are plastered internally, over concrete. There are five 0.46m wide 'beams' running widthways across the bunkers (Fig. 19), supporting a 1.26m thick concrete roof, itself overlaid by 0.40-0.50m of soil bank. The beams are 0.40m deep and 2.03m apart.

5.4 The 2.41m high metal doors to the bunkers are now thrown open against the walls of the lobbies (Figs. 20-21) and are difficult to move, formerly running on wheels over metal runners on the floors (Fig. 22). The doors are 80mm thick and in each bunker the south-west set of doors has within it a pedestrian door, 1.59m high and 0.65m wide set within it. There are drip traps above these doors and grilled drains in front of the main metal doors (Fig. 23).

5.5 Few original internal fittings remain. Some of the non-functioning lights are *in situ* (Fig. 24). In D4 there are 40 brass fittings attached to the wall at 0.88m above floor level (Fig. 25). These are marked FURSE NOTTM (Fig. 26) and are the brackets for an earthing strip that formerly ran along the walls and earthed at the entrance doors. The majority of this has been removed, traces exist only at the doors (Fig. 27). In Bunker D2 only two of the brackets remain on the walls.

5.6 On the north-west side of bunkers D2 and D4 are covered entrances to small plant rooms (Fig. 28). The plant rooms house the ventilation/filtration tubes connecting into the walls of the bunkers themselves and disused fuse boxes (Figs 29-32). It was common for bomb stores such as these to have controlled atmospheres. The doors of these plant rooms had been replaced by boarding, screwed into place which was removed to allow recording. Adjacent to the doorway, low on the wall, were ventilation panels with sloping wooden louvres. The two plant rooms were of similar, but not identical dimensions, with the north-east wall of D2 being 90mm longer than that of D4. The entrance tunnels to the plant rooms were *c.*1.15m wide (Fig. 33) and the concrete walls themselves were 0.23m thick. The grilles on the inside wall of the bunkers, leading from the plant rooms, are still in place.

5.7 After being taken over by the British Film Institute the entrance and exit areas of the bunkers were infilled, creating extra storage space (Figs. 34-35). The walls of these new storage areas were built of 12 rows of breeze blocks. Two 0.23m square air bricks were inserted at approximately door lintel level either side of the doors. In

each bunker the entrance is through an up and over metal garage door on the north-west end, with a green-painted wooden fire-escape door on the south-west end; the latter has no entry from outside. In these 'lobby' areas it appears columns of film canisters were stacked up against the wall and the walls are labelled C5, C6 etc (Figs 36-37). Debris on the bunker floor, such as old film acquisition slips, remind us of their more recent use (Figs. 38-9)

6. Conclusions

6.1 The two bunkers which are to be demolished have been subject to photographic, descriptive and measured survey in order to preserve them by record. The rest of the bunkers in the northern part of the site are to remain standing, and others exist on RAF sites elsewhere in the country, thus ensuring these examples of Cold War structures endure as examples of 20th-century functionalist architecture and stark reminders of the perceived nuclear threat in the 1950s.

Acknowledgements

The Warwickshire Museum would like to thank Jonathan Pascall of Buro Four for commissioning the work. Work on site was carried out by Catherine Coutts, Rob Jones and Kevin Wright. This report was written by Catherine Coutts and Elizabeth Pratt with illustrations by Andy Isham. Thanks to Bryn Gethin for his comments on the text and helpful suggestions for comparable bunkers. The report was checked by Ian Greig.

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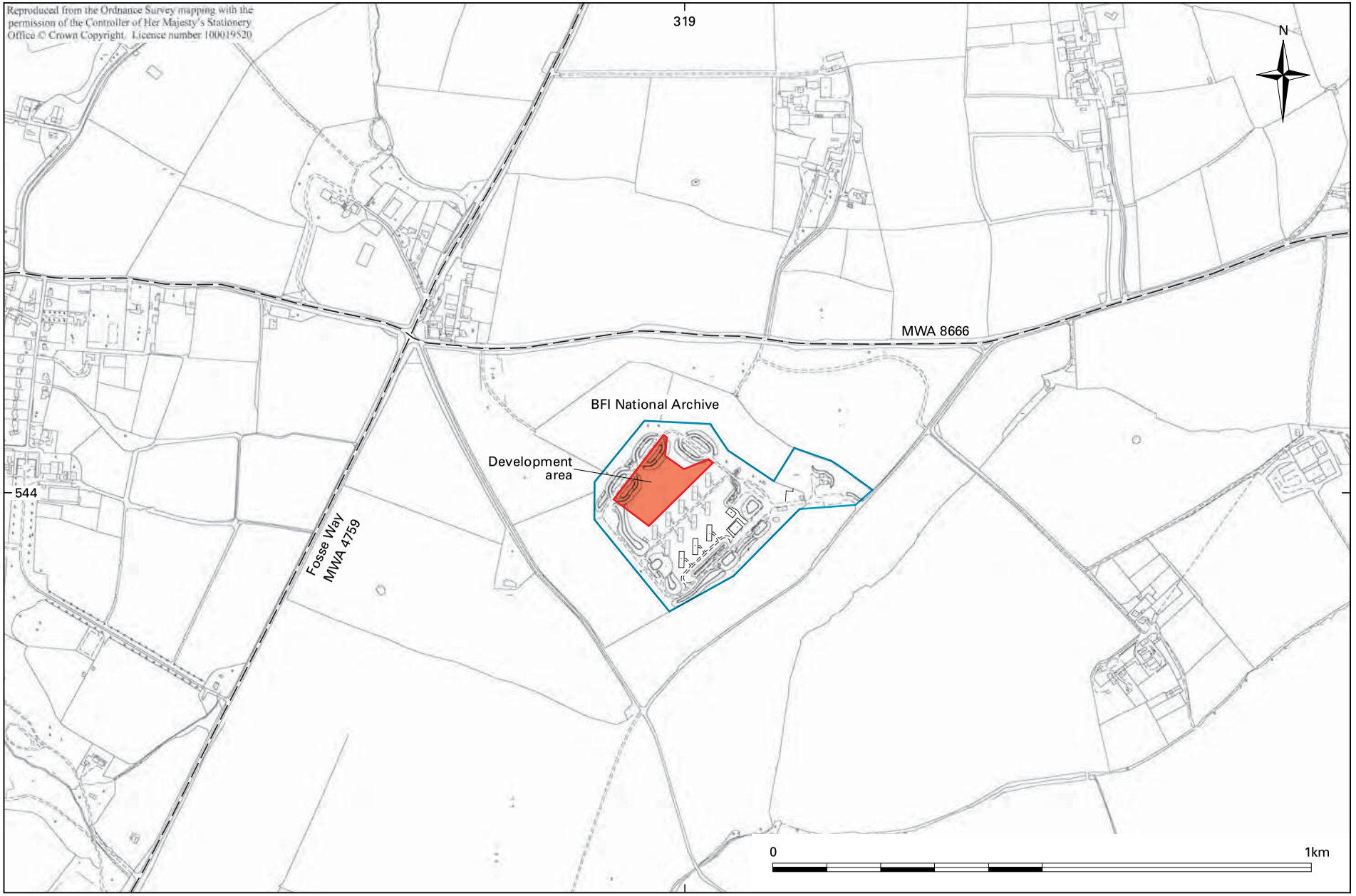

Fig. 1: Site location

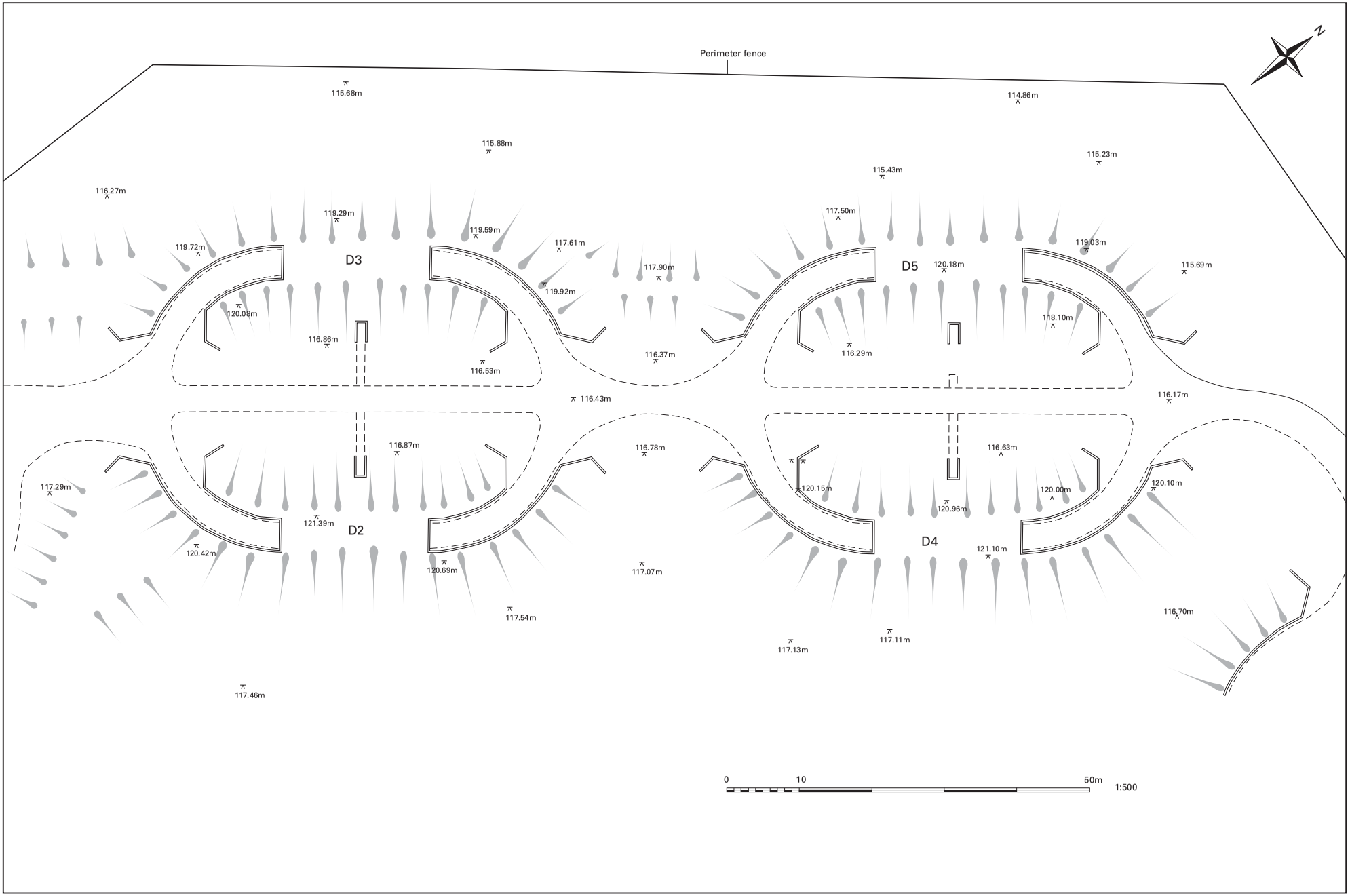

Fig. 2: Bunkers D2 - D5

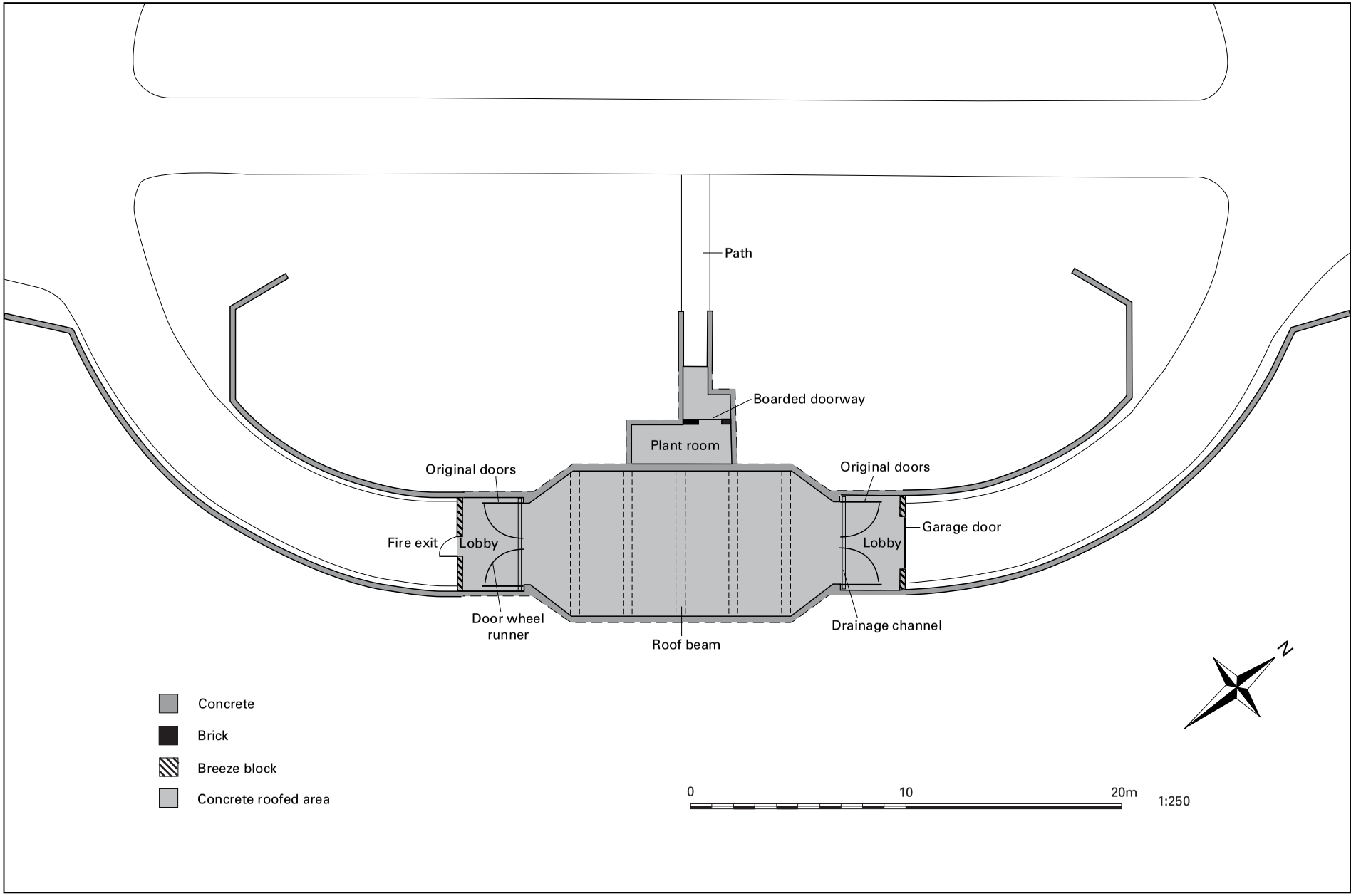

Fig. 3: Detail of bunker (D2)