

**HISTORIC BUILDING SURVEY REPORT:
LAND AT POTASH ROAD, MATCHING GREEN, ESSEX**

Planning Reference: EPF/2724/16
NGR: TL 54374 12013
AAL Site Code: MAPR 17
Museum Accession Number: pending
OASIS Reference Number: allenarc1-288499



Report prepared for RCT Construction Limited

By
Allen Archaeology Limited
Report Number AAL 2017093

June 2017



Allenarchaeology



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Document Control

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Executive Summary

- Allen Archaeology Limited was commissioned by RCT Construction Limited to undertake a programme of historic building recording on the site of a Second World War fuel store and pumping-station on land at Potash Road, Matching Green, Essex, as a condition of planning consent for a residential development.
- The Essex Historic Environment Record shows the proposed development is located on the site of a World War II fuel store and pumping-station associated with the former USAAF Airfield at Matching Green (EHER 16586).
- The Airfield was constructed late in the war, opening in January 1944, and was operational for just over a year. The site was closed in 1945 after a short period of usage for RAF paratrooping activities.
- The proposed development is also located immediately to the north of the medieval moated site of Stock Hall and its Listed 16th century timber-framed manor house (NHLE Ref: 1123910).
- The surveyed buildings comprised a single-storey, red brick, rendered 20th century pumping station and six subterranean fuel tanks collectively holding 72,000 gallons. Although very overgrown, the complex was relatively well preserved, with numerous above grounds pipes, vents and access shafts also visible.

1.0 Introduction

- 1.1 Allen Archaeology Limited was commissioned by RCT Construction to undertake a programme of historic building recording of a Second World War fuel store and pumping-station on land at Potash Road, Matching Green, Essex, as a condition of planning consent for a residential development.
- 1.2 The works adhere to national guidance as set out in the Historic England documents '*Understanding Historic Buildings: A guide to Good Recording Practice*' (2016) and the Chartered Institute for Archaeologists '*Standard and guidance for the archaeological investigation and recording of standing buildings or structures*' (CIfA 2014), a specification for the work prepared by this company (AAL 2017), and a historic building recording brief prepared by the local authority (Essex County Council 2017).
- 1.3 The documentary and photographic archive will be submitted to Epping Museum within 6 months of the completion of this report. A museum accession code has been requested and a response is awaited.

2.0 Site Location and Description

- 2.1 The site is situated within Matching Green, a village forming part of the civil parish of Matching, Essex, and is situated approximately 5km east of Hounslow. The site is located to the north of the village on Potash Road, centred on NGR TL 54374 12013, and is currently occupied by a pumping-station and six fuel storage tanks. The estimated volume of the pumping-station and storage tanks is 606m³ (502m³ of which are underground), with a total floor area of 203m².

3.0 Planning Background

- 3.1 Planning permission and Listed Building Consent has been granted for the '*erection of two dwelling houses*' (Ref: EPF/2724/16). As a condition of these consents, a programme of historic building recording was required prior to removal of the historic structures present on the site.
- 3.2 The approach adopted is consistent with the guidelines that are set out in the National Planning Policy Framework (NPPF) (Department for Communities and Local Government 2012).

4.0 Archaeological and Historical Background

- 4.1 The Essex Historic Environment Record shows that the proposed development is located on the site of a World War II fuel store and single-storey pumping station, associated with the USAAF Airfield at Matching Green (EHER 16586). In addition, the proposed development is located immediately to the north of the medieval moated site of Stock Hall and its Grade II Listed 16th century timber-framed manor house (EHER 4392-3). Prior to construction of the airfield, historic mapping shows the development area in open agricultural land north of Stock Hall.
- 4.2 The airfield, known as RAF Matching (Station 166), is reported to have been constructed late in the war, opening around January 1944, and was operational for just over a year. It consisted of three large concrete runways, 50 loop-style hardstands, two T2 hangars, a number of blister hangars, and a wide range of ancillary and support buildings – connected by approximately three miles of roadway. The fuel store is located at the western edge of the airbase, no doubt as a factor of the potential risk of explosion or fire (www.wartime-airfields.com) (Figure 3).

- 4.3 It was initially utilised by heavy bombers of the USAAF Eighth Air Force as a Class A heavy bomber station; acting as a deployment point for attacks targeting airfields, bridges, marshalling yards, and V-weapons sites across France. It was later transferred to the USAAF Ninth Air Force and used by medium bombers of the 391st Bomb Group, who supported the allied advance into Germany, and was occasionally used by returning aircraft as a safe haven (Freeman 1996).
- 4.4 The airfield was returned to RAF control for paratrooping activities as the war drew to a close, and was utilised by Douglas C-47 Skytrains of IX Troop Carrier Command. The site closed in 1945, and returned to agricultural activity shortly after. The majority of concrete laid down for the extensive runways and hardstanding was removed for nearby infrastructure developments (Freeman 1994).
- 4.5 There are surviving structures on the site, both above and below ground, which relate to its wartime use, including six buried fuel tanks, each of 12,000 gallons capacity, a small single-storey pumping-station, and a concrete hardstanding. In the wider area there are surviving examples of an extant control tower, water tower and refurbished T2 hangar. The fuel tanks followed a uniform design across all Class A bomber airfields built for the USAAF, following British Air Ministry plans (www.wartime-airfields.com).
- 4.6 The land has not been used since the late 1980s, when it was utilised by Harcourt-Harlow Chemical Company as a storage depot.

5.0 Methodology

- 5.1 The works described below are based on the guidance set out in the Historic England document '*Understanding Historic Buildings: A Guide to Good Recording Practice*' (2016) for a Level 3 survey of the 20th century pumping station and subterranean fuel tanks. The building survey has been undertaken by an experienced archaeologist who recorded all aspects of the relevant buildings prior to any demolition works, acting strictly in accordance with the approved specification (AAL 2017).
- 5.2 Photographs were taken of:
 - All external elevations
 - All internal elevations, including internal walls and subdivisions
 - The roof structure of the buildings, internally and externally, where visible
 - The relationship of the structure to their surroundings
 - Architectural details, i.e. windows, doors, decorative brickwork, and other significant features, fixtures or fittings. Generally a single representative shot was taken of particular features such as windows or openings of a single type that occur more than once within the structure
 - Photographs were taken of each room/discrete internal space from sufficient points to show the form, general appearance and methods of construction.
- 5.3 Metric scales of appropriate length were used when required, with all photos annotated and linked to a floor plan.
- 5.4 The survey was carried out by the author on Wednesday 31st May 2017.

6.0 Results

6.1 The location of the development site is shown on Figure 2. An account of the exterior of the building will be given before commenting on the interior. The location of each photograph is shown on Figure 4 and can be cross referenced by shot number with the photographic archive list (**Error! Reference source not found.**). Elevation drawings are shown on Figure 5.

Exterior – Pumping Station

6.2 The site comprises a broadly rectangular block of land with a central area enclosed by steel mesh fencing on concrete uprights. The surrounding area is covered with concrete hardstandings, which appear to be constructed of pre-cast concrete slabs (see cover).

6.3 The central area of the site is occupied by a single-storey, red-brick, rendered building with a double-pitched, gabled roof of corrugated steel. A portion of the render is missing on the north elevation adjacent to a 'No Smoking' banner, exposing an area of stretcher bonded red-brick (Plate 1).



Plate 1 (Shot 27): North elevation of pumping station, looking southwest

6.4 Attached to the east elevation is an L-shaped, red-brick, rendered wall with rendered saddle-back coping which extends east and returns southwards to partially enclose the doorway on this elevation (Plate 2). The door itself is of green painted steel sheeting, riveted to an internal steel frame (Plate 3). This pattern is repeated on the west elevation (Plate 4). There is a green painted, wooden electrical cabinet with double doors attached to the elevation (Plate 5).



Plate 2 (Shot 2): Boundary wall and eastern doorway, looking north (0.5m scale)



Plate 3 (Shot 5): Steel door on east elevation, looking northwest (0.5m scale)



Plate 4 (Shot 28): West and north elevations, looking southeast



Plate 5 (Shot 30): West elevation, looking east

- 6.5 An array of metal pipework is evident along the southern elevation, generally rising vertically and turning 90⁰ to enter the building around eye level. The source of the pipework is not evident due to dense vegetation in this area (Plate 6).



Plate 6 (Shot 3): External pipework on south elevation, looking west (0.5m scale)

Interior – Pumping Station



Plate 7: (Shot 23): General internal view showing corrugated metal stored within building, looking northwest

- 6.6 The pumping station is currently in use for the storage of corrugated metal, and other assorted building materials (Plate 7). The interior walls are whitewashed brickwork.
- 6.7 The roof structure is entirely in metal, with corrugated steel roofing and a single truss comprising a tie beam, with king bolt and diagonal bracing struts, supporting the purlins (Plate 8). An electric light fitting is attached to the tie beam.



Plate 8 (Shot 13): Metal roof truss and pipework, looking northwest

- 6.8 Several elements that relate to the former utilisation of the pumping station are visible, including a phone, metal electrical switch and large metal electrical fuse box with associated cabling (Plate 9 and Plate 10).



Plate 9 (Shot 11): Southern wall with fixtures, looking southwest (0.5m scale)

- 6.9 Steel discs on the south wall relate to the position of two external pipes, probably having been capped off at a later date. The third pipe extends through the south wall, turning east and then north and ending with a valve and tap (Plate 11). This pipe has also been capped off in a similar fashion to the pipes on the south wall.



Plate 10 (Shot 14): Metal electrical switch panel on eastern wall, looking northeast



Plate 11 (Shot 18): Pipe extending from southern elevation, looking south (0.5m scale)



Plate 12 (Shot 17): Pipe extending from eastern elevation, looking northeast (0.5m scale)

Fuel Tanks

- 6.10 To the north of the pumping station there are six subterranean fuel storage tanks, connected by an above-ground network of pipes. The four westernmost tanks appear to be connected by pipes orientated east-west across the site (Plate 13), whilst the two remaining tanks to the east are connected by pipes running south towards the pumping station. The pipes run roughly 300mm above the ground, with each tank attached by a curving connector.



Plate 13 (Shot 35): Network of above-ground pipes associated with fuel tanks, looking northeast

- 6.11 At the northern end of each fuel tank there are a series of tall, thin ventilation shafts extending to a height of approximately 2.2m, situated immediately to the south of the east – west aligned pipes and connectors (Plate 14).



Plate 14 (Shot 41): Vertical above-ground vents and ground-level valves at north end of fuel tanks, looking northeast

- 6.12 At the southern end of each fuel tank there are large, circular access shafts covered with a steel plate, situated immediately north of the east-west pipeline and connectors (Plate 15).



Plate 15: (Shot 37): Circular access vent and connecting pipework, looking east

- 6.13 These circular vents allow access directly into the fuel tanks, probably for rapid disposal or maintenance purposes (Plate 16). Views into the fuel tanks were obscured due to lack of light.



Plate 16: (Shot 47): Circular access shaft into subterranean fuel tank, looking northwest

- 6.14 A concrete pillar with attached metal electrical box is present at the northwest corner of the site (Plate 17). This is possibly an emergency shut off system related to the pumping of fuel.



Plate 17: (Shot 44): Metal electrical box at northwest of site, looking south

7.0 Discussion and Conclusions

- 7.1 The airbase at Matching Green was constructed very late in the war effort, opening in January 1944, and was consistent with the design and layout of other airfields in the region built by the USAAF during the Second World War, and in line with the British Air Ministry plans.
- 7.2 They do not appear to have been altered significantly during the post-war period, although they are noted to have been utilised by a chemicals company during the 1980s, and construction materials were being stored within the pumping station at the time of the site visit. The fuel tanks did not appear to have been in recent use, and the presence of liquid inside most likely represents the ingress of rain/groundwater within the tanks.
- 7.3 A recent survey of temporary military airfields has assessed the extent of survival of this resource (Francis et. al. 2015). At the end of the war, there were a total of 720 operational airfields in the UK, including 100 airfields newly built prior to 1939, 110 civil airfields which were requisitioned, and another 450 built during the war. Of these, 24 were located in Essex, the sixth highest number by county. As the need for so many airfields subsided after the war, many airfields were abandoned or returned to agriculture, with runways and buildings being broken up and used as hardcore for the expanding motorway network.
- 7.4 The base at Matching Green is recorded as having a survival rating of 2/10, relating to the survival of hangars, control towers, runways and associated dispersal features. Of the nineteen bases assessed in Essex, six were rated as 2/10, with two rated zero, eight with a score of 1, and

a single example each rated 3, 4 and 6. As such, RAF Matching is of an average level of preservation.

- 7.5 There is very little available data on the survival of fuel stores specifically; beyond the number of hangars and a few other key features the Historic England assessment does not detail the specifics of exactly what buildings survive. Likewise, all the National Monuments Record data for Essex airfields was checked and none (including RAF Matching) make mention of surviving fuel tanks. However, as the airfields were generally built to a standard design (with many in Essex being the Class A bomber bases), and a fuel supply would have been an essential component at every operational airfield, it is reasonable to assume that each of these sites originally had some form of fuel storage capacity. It is clear however, that further research, beyond the scope of this survey is needed to assess the survival of these features at airbases in Essex and further afield.

8.0 Effectiveness of Methodology

- 8.1 The methodology was appropriate for the project and has allowed for a permanent record of the structure to be made prior to their demolition.

9.0 Acknowledgements

- 9.1 Allen Archaeology Limited would like to thank RCT Construction Limited for this commission and the staff on site for the help that they provided regarding access to the building.

10.0 References

AAL, 2017, *Specification for an historic building survey: Land at Potash Road, Matching Green, Essex*, Allen Archaeology Limited

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Historic England, 2016, *Understanding Historic Buildings: A guide to good recording practice*, London: Historic England

www.wartime-airfields.com [accessed 16th June 2017]

Appendix 1: Photographic archive

Photo No.	Direction	Interior/ Exterior	Building	Description
1	Northeast	Ext	Pumping Station	External wall to east of pumping station.
2	Northeast	Ext	Pumping Station	External wall and entrance door.
3	West	Ext	Pumping Station	South-facing elevation.
4	North	Ext	Pumping Station	Metal entrance door.
5	Northwest	Ext	Pumping Station	Metal entrance door and east-facing elevation.
6	Northwest	Ext	Pumping Station	Metal entrance door.
7	North	Ext	Pumping Station	South-facing elevation of exterior wall.
8	East	Int	Pumping Station	Metal entrance door and west-facing wall.
9	South	Int	Pumping Station	Phone and metal attached to north-facing wall.
10	Southwest	Int	Pumping Station	Phone and metal attached to north-facing wall.
11	Southwest	Int	Pumping Station	North-facing wall.
12	West	Int	Pumping Station	Metal roof trusses.
13	Northwest	Int	Pumping Station	Metal roof trusses and inlet pipe with valve.
14	Northeast	Int	Pumping Station	Electrical control box on west-facing wall.
15	East	Int	Pumping Station	Electrical control box on west-facing wall.
16	East	Int	Pumping Station	West-facing wall.
17	Northeast	Int	Pumping Station	Metal inlet pipe attached to west-facing wall.
18	South	Int	Pumping Station	Metal inlet pipe attached to north-facing wall.
19	South	Int	Pumping Station	Metal inlet pipe attached to north-facing wall.
20	West	Int	Pumping Station	East-facing wall.
21	Northwest	Int	Pumping Station	Light attached to metal roof truss.
22	North	Int	Pumping Station	Metal electrical control box attached to south-facing wall.
23	Northwest	Int	Pumping Station	South-facing wall.
24	West	Int	Pumping Station	Metal door and east-facing wall.

Photo No.	Direction	Interior/ Exterior	Building	Description
25	Southwest	Ext	Pumping Station	East-facing elevation.
26	South	Ext	Pumping Station	East-facing elevation and north-facing external wall.
27	Southwest	Ext	Pumping Station	North-facing elevation.
28	Southeast	Ext	Pumping Station	North-facing and west-facing elevations, with external wall.
29	South	Ext	Pumping Station	Metal door and external wall attached to west-facing elevation.
30	East	Ext	Pumping Station	West-facing elevation.
31	East	Ext	Pumping Station	Electrical box attached to west-facing elevation.
32	East	Ext	Pumping Station	South-facing elevation and overgrown area.
33	East	Ext	Pumping Station	External wall and electrical box at west-facing elevation.
34	Northwest	Ext	Fuel Tanks	Pipes and inlets for fuel tanks to west of site.
35	Northeast	Ext	Fuel Tanks	Pipes and inlets for fuel tanks to west of site.
36	West	Ext	Fuel Tanks	Inlet for fuel tanks to west of site.
37	East	Ext	Fuel Tanks	Inlet for fuel tanks to west of site.
38	East	Ext	Fuel Tanks	Inlet for fuel tanks to west of site.
39	East	Ext	Fuel Tanks	Inlet for fuel tanks to west of site.
40	Northeast	Ext	Fuel Tanks	Inlet for fuel tanks to west of site.
41	Northeast	Ext	Fuel Tanks	Inlet for fuel tanks to west of site.
42	Southwest	Ext	Site	External phone.
43	South	Ext	Site	External phone.
44	Southwest	Ext	Fuel Tanks	Valve and pipes at west of site.
45	Southeast	Ext	Fuel Tanks	Inlet for fuel tank at east of site.
46	Northwest	Ext	Fuel Tanks	Fuel tank to east of site.
47	Northwest	Int	Fuel Tanks	Interior view of fuel tank to east of site.

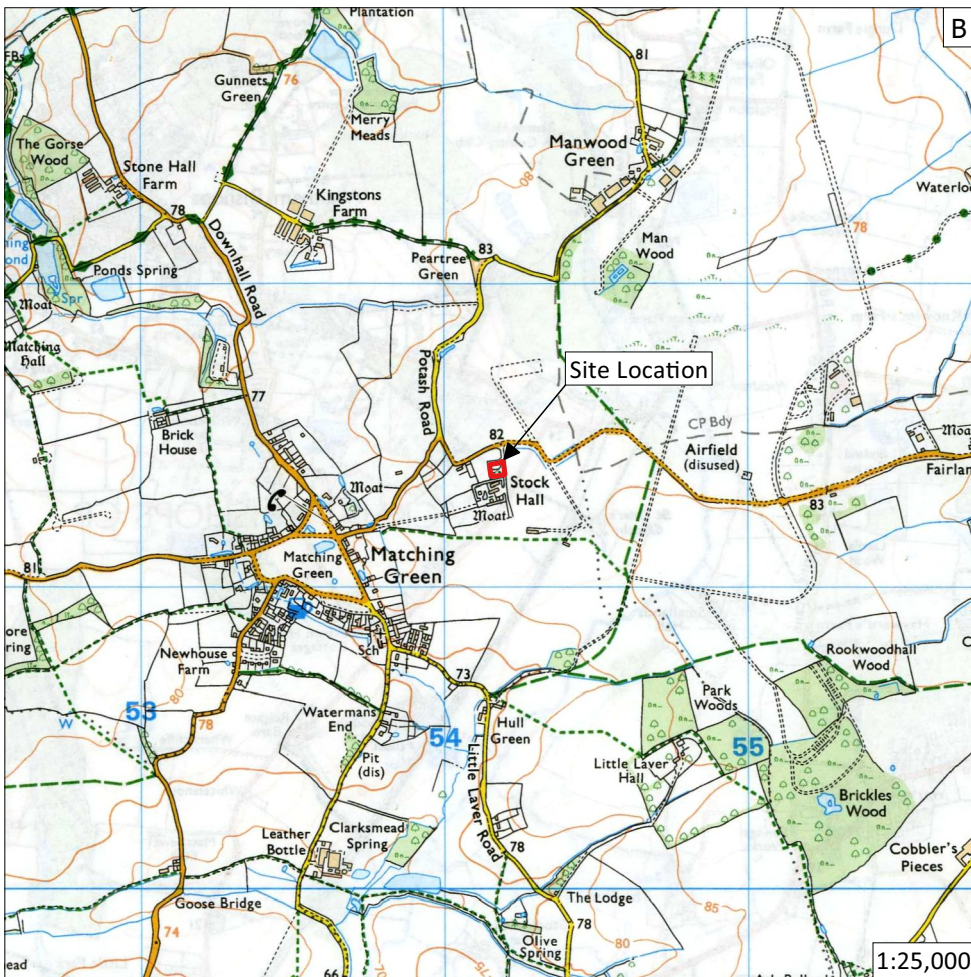


Figure 1: Site location outlined in red

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Site Code	MAPR 17
Scale	1:10,000,000 1:1,000,000 1:25,000 @ A4
Drawn by	H Tesseyman
Date	02/06/17

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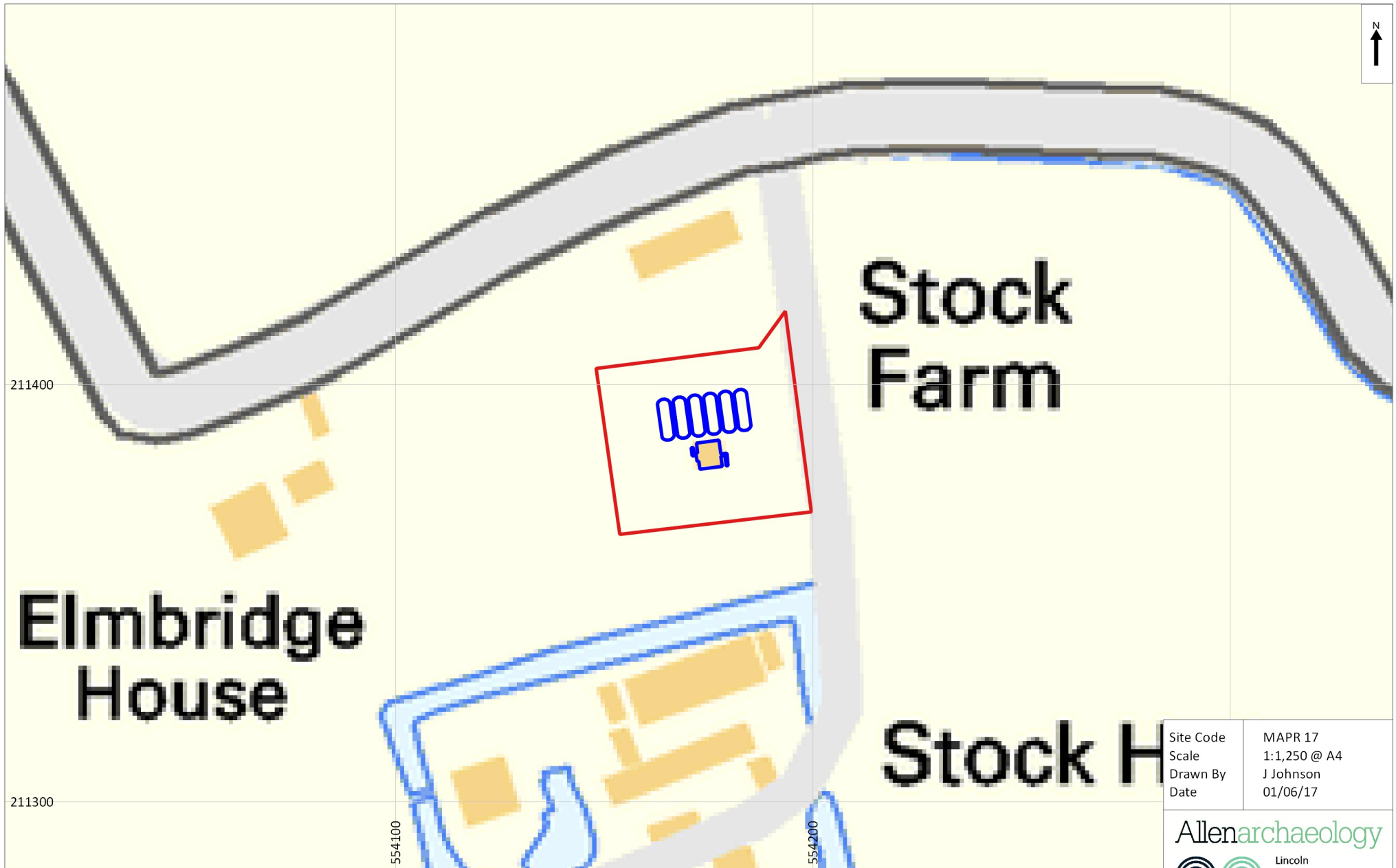


Figure 3: Location of development site in red, with surveyed buildings in blue

Site Code	MAPR 17
Scale	1:1,250 @ A4
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Date	01/06/17

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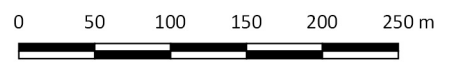


Figure 3: Extract of RAF Matching Green layout map with site in red



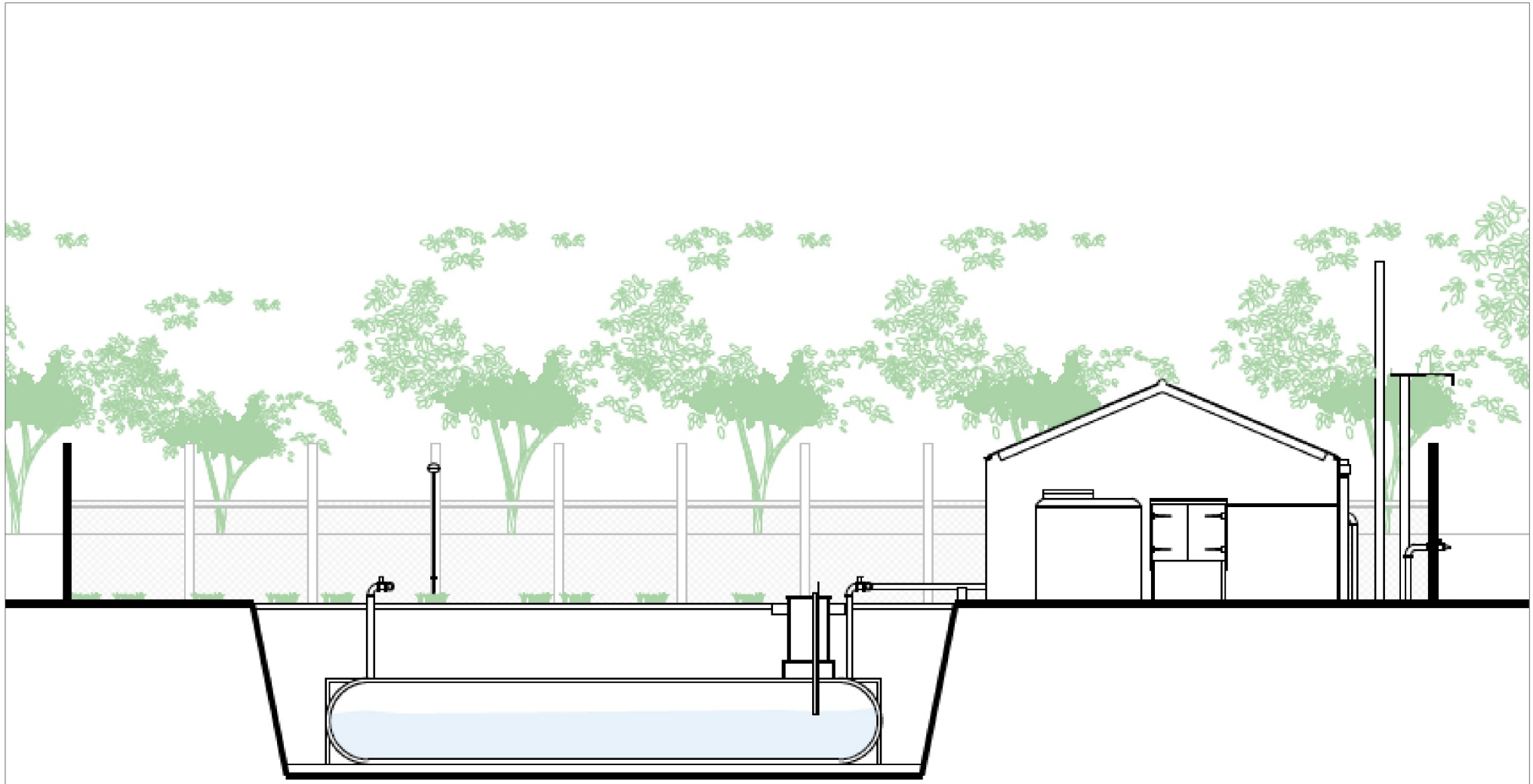
Figure 4: Location and direction of photographs, base plan provided by client

Site Code	MAPR 17
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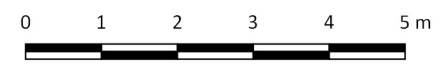


Figure 5: West-facing elevation of pumping station and west-facing section of fuel tank, drawing provided by client



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