

**THE WATER TOWER
LOWER BURNHAM ROAD
LATCHINGDON
ESSEX**

HISTORIC BUILDING RECORDING



Essex County Council

Field Archaeology Unit

May 2008

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**THE WATER TOWER
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LATCHINGDON
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HISTORIC BUILDING RECORDING

Client: David Minnis (PowerNow Ltd)

FAU Project No.: 1694

NGR: TQ 889 987

OASIS No.: essexcou1- 41489

Planning Application: MAL/0768/06

Date of Fieldwork: 5th March 2008

1.0 INTRODUCTION

A programme of building recording was undertaken by Essex County Council Field Archaeology Unit (ECC FAU) on a former concrete water tower, prior to conversion to residential accommodation. The work was commissioned by the developer, PowerNow Ltd, and carried out in accordance with a brief issued by the Historic Environment Management team of Essex County Council (ECC HEM 2007), who also monitored the work.

Copies of the report will be supplied to ECC HEM and to the Essex Historic Environment Record (EHER) at County Hall, Chelmsford. The archive will be deposited with Colchester and Ipswich Museum. An online OASIS record has been created at <http://ads.ahds.ac.uk/oasis/index.cfm>.

The water tower appears to have been built in the 1930s as a response to the Rural Water Supplies Act of 1934 to improve the local water supply chain. Designed in the International Moderne style with a concrete frame and tank, the structure has changed very little since it was constructed.

2.0 BACKGROUND

2.1 Site location and description (fig.1)

Lower Burnham Road (the B1010) is located on high ground at the southern end of Latchingdon parish. The water tower is sited on the south side of the road, almost opposite Rectory Lane at TQ 889 987 (fig.1). The tower is situated inside a small square plot enclosed by chain link fencing, with views across farmland and the river Crouch to the south.

The structure has a circular plan form built from reinforced concrete in the utilitarian Modernist style, where form and function led the design and modern materials the fabric. It consists of a small control room at the core with a concrete water tank above, accessed by ladders through the core, onto the roof and down hatches. Any machinery or technical features such as water pumps and pressure dials have been removed from inside the building.

2.2 Planning background

Maldon District Council received a planning application for conversion to single residential use in 2006. The plans involved removing the tank and inserting windows into the existing concrete side panels and introducing a new second floor to create a family home. In view of the changes to the building, the ECC HEM team recommended a full archaeological condition to the planning permission 'to preserve the building by record'. The condition was based on advice given in Planning Policy Guidance Note 16: Archaeology and Planning (DOE 1990).

2.3 Historical background

As part of the survey, sources at the Essex Records Office, Chelmsford were consulted to provide details on the origins and development of the tower. A previous survey, *The Public Water Supply Industry in Essex* (Crosby 1999) was also consulted, although the Latchingdon tower is not included. However, it was useful in providing background information on the industry as a whole. From it, a short paragraph is included below on the chain of processes involved in the supply of water.

At the start of the process, pumping stations pump water from boreholes in the ground. Water is then carried by underground pipes to be stored in covered service reservoirs or water towers. Water towers were built on high ground to create the pressure necessary to provide gravity-fed water. Many early towers were built of brick, while later versions employed steel frames and, from the 1930s onwards, heavy concrete structures were built.

After storage, it is treated in the water works, where it is screened, filtered and chemicals added, before reaching the customer at the other end. Most Essex water originates from underground sources which need little treatment, river water requiring the most (Crosby 1999).

The OS map from 1924 (fig.2) shows the present site with a square water tower on one side of the existing plot and a pumping station situated to the west along the Burnham road. Both are owned and operated by Maldon Rural District Council (RDC). The tower would appear to be an earlier version, built in the first quarter of the 20th century, as it is not shown on the preceding 1897 OS map (Second Edition, sheet 62). Detailed later maps, such as the Provisional OS maps from the 1930s were not available for study.

By the beginning of the 20th century, larger settlements were supplied by local companies, but rural areas were still reliant on wells, springs, streams and rainwater. The companies were reluctant to service outlying areas because of the high capital costs and low returns, so in 1934 the government introduced the Rural Water Supplies Act. As a consequence, £1m worth of new schemes were set up before the outbreak of war (Crosby 1999). The existing water tower is believed to belong to this group of structures. Of the 18 or so built in Essex at the time, many were constructed from reinforced concrete in the Moderne style with a circular tank supported on concrete columns (ECC HEM 2008) like the Latchingdon example. Within the structure were a working area (core), pumps, tank access and in some cases accommodation for the engineman.

The water supply network maintained by Maldon RDC was taken over by Essex Water in 1971 and the area is now maintained by Essex & Suffolk Water. It is not clear when the tower was decommissioned, but sometime between 1999 when all the 1930s towers were apparently still in use (Crosby 1999) and 2001 when conversion plans were first drawn up to support a previous application.

3.0 OBJECTIVES

The purpose of the historic building survey was, as outlined in the brief (ECC HEM 2007), to provide a detailed record of the pre-war structure to English Heritage level 3 standard. No other structures belong to the site.

As part of the record, the survey was required to consider the following: plan form of the site; materials and method of construction; dating, development, function and internal layout;

surviving fixtures and fittings; and the significance of the structure to its contemporary landscape and the water supply industry.

4.0 DESCRIPTION OF RECORDING WORKS

The water tower is shown on a block/location plan (fig.1) within its current landscape setting, which remains unaltered since the 1930s except for a new house built immediately to the west. Digital copies of the architect's drawings and a hand-drawn survey from the previous application were supplied by the client and used as part of the survey to produce annotated floor plans and a cross section. External and internal architectural descriptions were made and any evidence of later modifications noted.

A series of photographs (digital and 35mm black and white print) were taken of the tower externally and internally. Specific shots were taken of any areas of important architectural detail, fixtures or fittings. A representative selection of photographs taken during the survey is reproduced at the back of the report as plates 1-10. The remainder can be found in the archive.

Cartographic and documentary research was undertaken at the Essex Records Office.

5.0 THE WATER TOWER

5.1 General description

The water tower stands centrally on a concrete base within a square plot (fig.1). Sole access to the enclosure is by a metal gate off the roadside verge. The tower is made from reinforced concrete and laid out on a circular plan form around a central hub containing the engineer's room and ladder access to the flat roof (figs. 3 & 4). From the roof, hatches lead into the concrete encased water tank that is the dominant feature of the structure and which is supported on heavy square columns (fig.5). The exterior is not rendered or painted, unlike many other contemporary water towers.

Overall the structure is 9m high and 14.4m wide. Many water towers are considerably higher, but the tank size at Latchingdon is relatively large. The tank is 4m deep and 14m in diameter, providing a volume of c.176m³ and capacity of 176,000 litres or 38,700 gallons.

The structure remains basically unaltered externally and internally and the overall condition of the building appears to be good. Ivy and brambles have grown around the base of the building but do not intrude. During the survey, some of the client's tools were being stored inside and externally against the south wall of the building.

5.2 External description

The concrete drum is divided into 24 2m-wide oblong panels (plates 1 & 2). Alternate panels will be opened up in the conversion to light the building (David Minnis pers. comm.). The tank floor is supported on concrete ribs radiating outwards (linked by reinforcing lateral ribs) from the central core to eight heavy square columns (plate 3). The columns stand on stepped plinths and entablatures containing unsophisticated beaded mouldings (plate 2), relatively decorous for a Moderne design.

The central hub containing the engineer's room is entered from the north side through a narrow but elegant two-panel oak door within a plain concrete architrave (plate 4). All fixtures and fittings are original, including an attractive oval door knob. Steel framed 6-pane tilting windows allow light into the core of the building on the three other sides (fig.3).

Gravel covers the flat roof to keep the exterior dry. Three hatches are positioned here providing access from the central core onto the roof and into the drum to north and south (plate 5). The surrounds are original but the hatches themselves have been recently replaced. The most interesting stylistically is the central circular hatch that is semi-glazed with glazed tiles that light up the ladder shaft through the tank (plates 5 & 9).

5.3 Internal description

The interior is divided into two levels, the ground floor engineer's room (so called in the 1999 survey report) for maintenance purposes and the first floor where the central ladder shaft extends upwards through the centre of the tank. The internal relationship between the two areas is illustrated in the section in figure 5. All interiors are painted white to maximise light levels.

The engineer's room has an inner area of only 3.8m diameter but a full height of 4.5m (fig.5). The main features are the cast iron water pipes either side of the entrance (plate 6) that reach through the ceiling and into the tank above. The eastern pipe represents the inflow from the pumping station to fill the tank and the west the outflow (fig.5) to the water works, the location of which is unknown. Each had a second pipe leading off toward the base that in the first instance (inflow) led up to the roof, perhaps as a breather pipe. The extent of the

other is unknown, but it seems to finish within a brick base to one side of the core. The inflow pipe is equipped with a regulator to control the flow into the tank, while a tap is attached to the outflow pipe on the other side to check/test the flow of water leaving the tank (plates 7 & 8). The pipes are cast by 'Blakeborough'. No other fixtures exist apart from the original electric lighting switches. The only other feature, a hollow brick stand with concrete lid (formerly cemented on) has no evidence of fixtures associated with it but it would seem a metal plate or something similar has been removed from the wall behind (plate 6). No other features appear to have been removed from the walls or floor.

An original steel ladder leads up to the concrete core that rises above the high tapered ceiling to house a short concrete ledge and second ladder up to the roof. Looking up from the landing, the grimy walls and exposed concrete reinforcing rods around the roof hatch are visible as well as the glazed roof light (plate 9), a feature that complements the overall design. The interior of the tank is reached by either one of two inspection hatches, only one of which, on the north side has a ladder, rusty but still usable. Presumably the tank was cleaned-out periodically as the water was not purified at this stage. Architecturally the reinforced concrete form continues at this level, with ribs radiating from the central hub supported midway by narrow square concrete columns (fig.5, plate 10). The concrete ribs between are tapered at the head for increased strength.

6.0 DISCUSSION

Sources suggest that the present water tower replaced an early 20th-century square-built structure, though it does seem unlikely that two towers were built on the site within a twenty year period. However, in style and fabric the standing building is typical of 1930s reinforced concrete water towers; the first still-standing Essex example, according to the Crosby survey (1999), is believed to be at Cherry Garden Road in Maldon. It was built in 1934, the same year as the Rural Water Supplies Act (EHER 15607), which injected investment into the rural water infrastructure. Although slightly more ornate, befitting perhaps a public building in an urban environment, it has the common characteristics of 1930s water tower architecture: a raised circular tank on square columns and central core with rectangular metal windows and a wooden door (EHER 15607). The circular plan form is a common one for water towers as a circular tank limits the risk of leakage. Concrete was a cheap low-maintenance material in vogue during the 1920s and 30s and ideal for industrial structures. The tanks were raised to maximise water pressure and concrete tanks could be easily formed as part of the structure.

A pumping station to the west supplied the pre-1924 water tower and probably supplied the existing one too. Together they formed important elements of the water supply chain from its underground source via the water works to the consumer. The pumping station is no longer standing and, like the tower, was not included as part of the Crosby survey in 1999. The lack of pumping equipment inside the water tower suggests the system worked purely on water pressure.

7.0 CONCLUSION

Concrete water towers are a relatively conspicuous but overlooked feature of the Essex countryside by virtue of their locations on high ground. As larger more centralised reservoirs were built and existing ones expanded by water companies to greater capacity, these structures, which originally catered for a small local demand, became obsolete. In the 1999 survey all of the 1930s concrete water towers investigated were still in use, but few pre-dating the 1930s. Now these are under threat from redevelopment and conversion. The scale and boldness of these structures limits the options for conversion to other uses. Many redundant towers are used by mobile phone companies to carry masts, but few are converted to houses as the style is inevitably very much led by their remarkable character and fabric.

Latchingdon water tower is a good example of a concrete water tower built in the International Moderne style, prevalent to such buildings in the 1930s under the Rural Water Supplies Act of 1934. The Maldon water tower, believed to be the first standing example of the type and built in the same year as the Act (EHER 15607), was recommended by the 1999 survey for Grade II listing because of its importance. Although the Maldon example is slightly more ornate, befitting an urban public building, the Latchingdon example shares many of its basic design facets and contemporary build date. Both form part of a recognised nationally-important generic group.

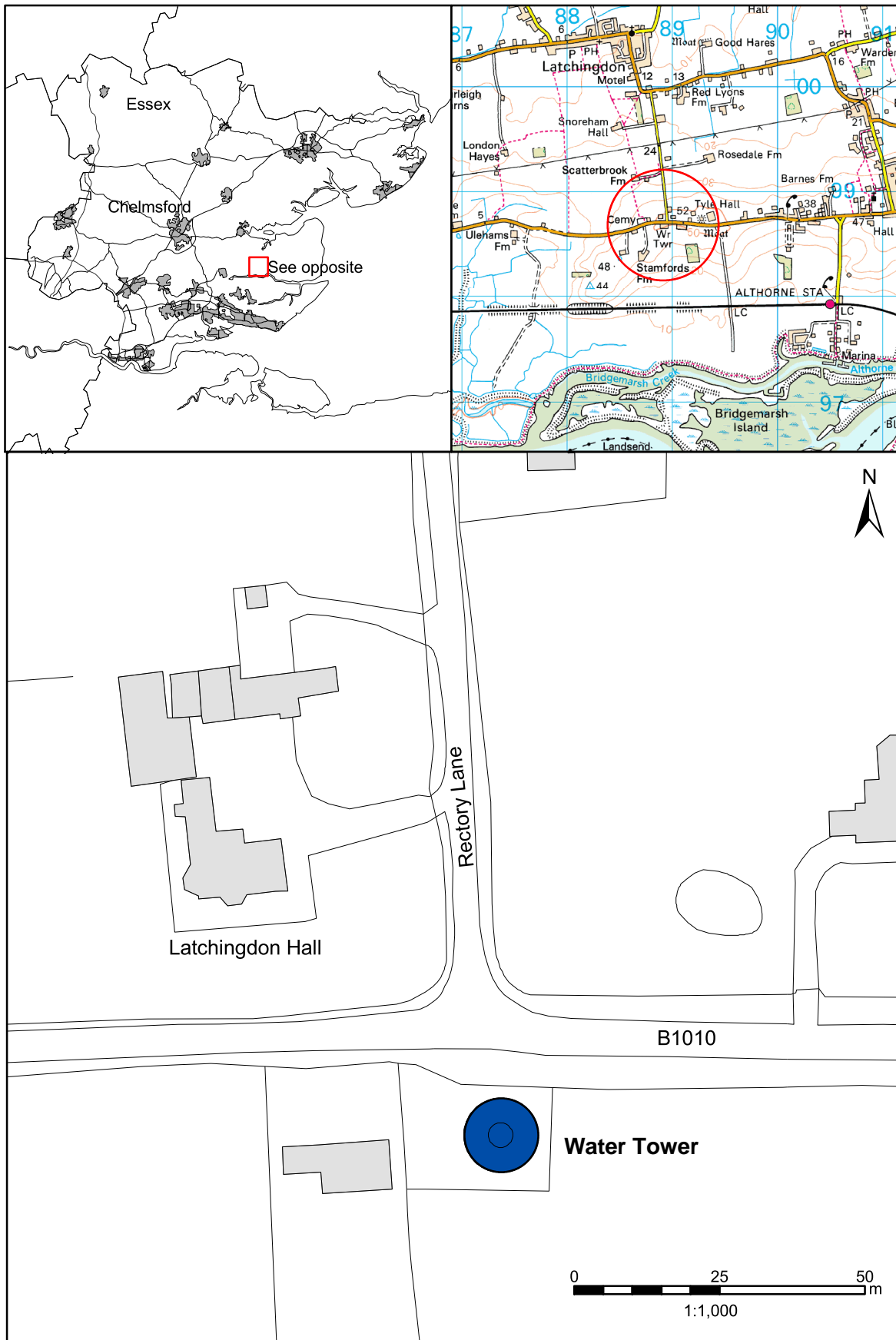
Although these 1930s towers adopted a similar plan form, the architects who built them gave each its own style and proportion, and therefore uniqueness. Each is important in its own right, yet part of an easily-recognisable, interesting and dynamic architectural group; a rare thing amongst the often bland pre- and post-war industrial buildings. As such each can be considered as a valuable industrial and architectural heritage resource.

ACKNOWLEDGEMENTS

Thanks are due to the clients, David and Susanna Minnis of PowerNow Ltd, for commissioning the works and supplying drawings for use in the survey. The assistance of staff at the Essex Records Office is also acknowledged. Fieldwork, recording and photography were undertaken by the author. Illustrations were prepared by the author and produced by Andrew Lewsey. The site was monitored by Pat Connell of ECC HEM on behalf of the LPA.

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Fig.1. Site location

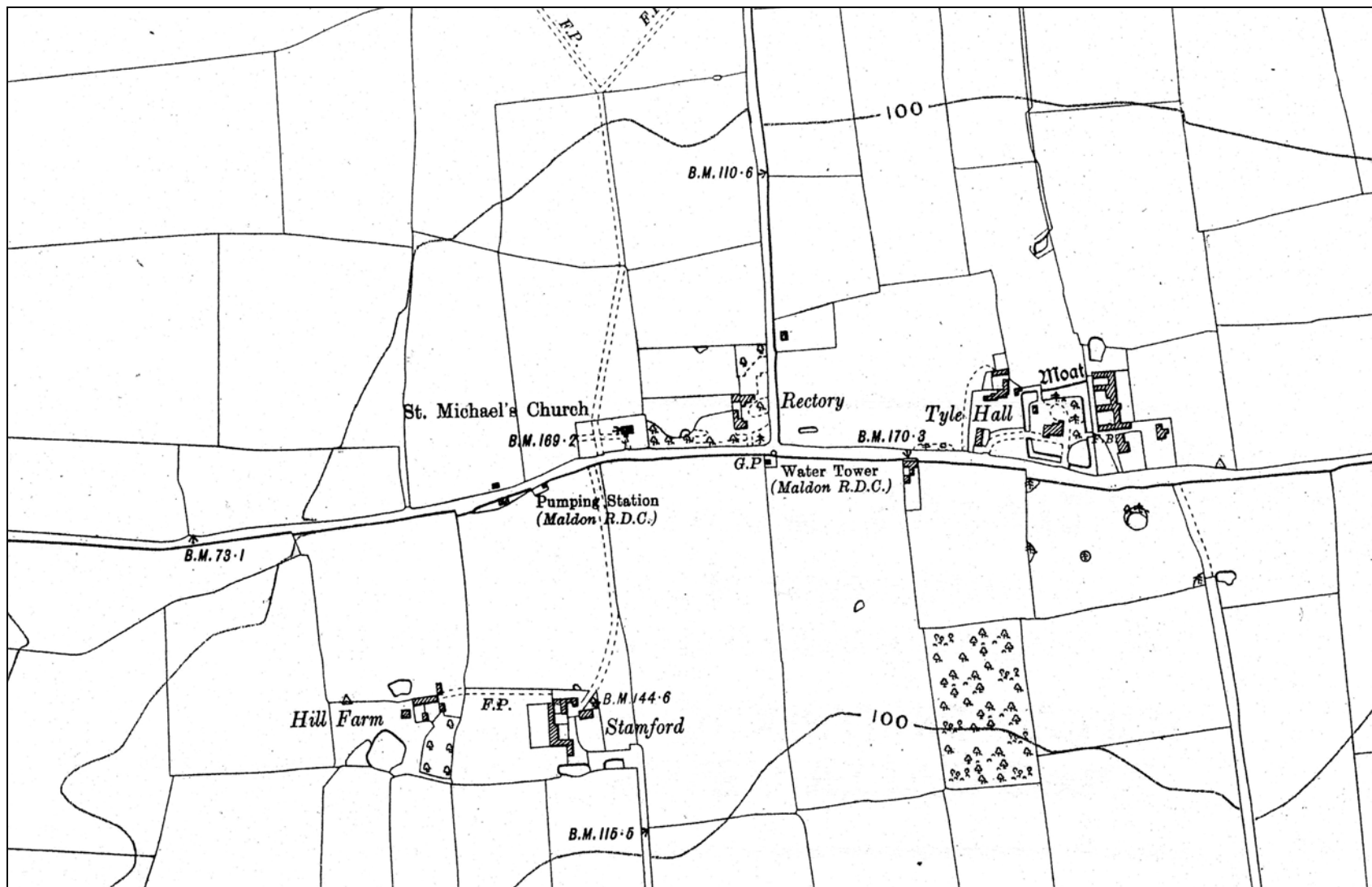


Fig.2 Enlarged extract from 1924 OS map (sheet 72)

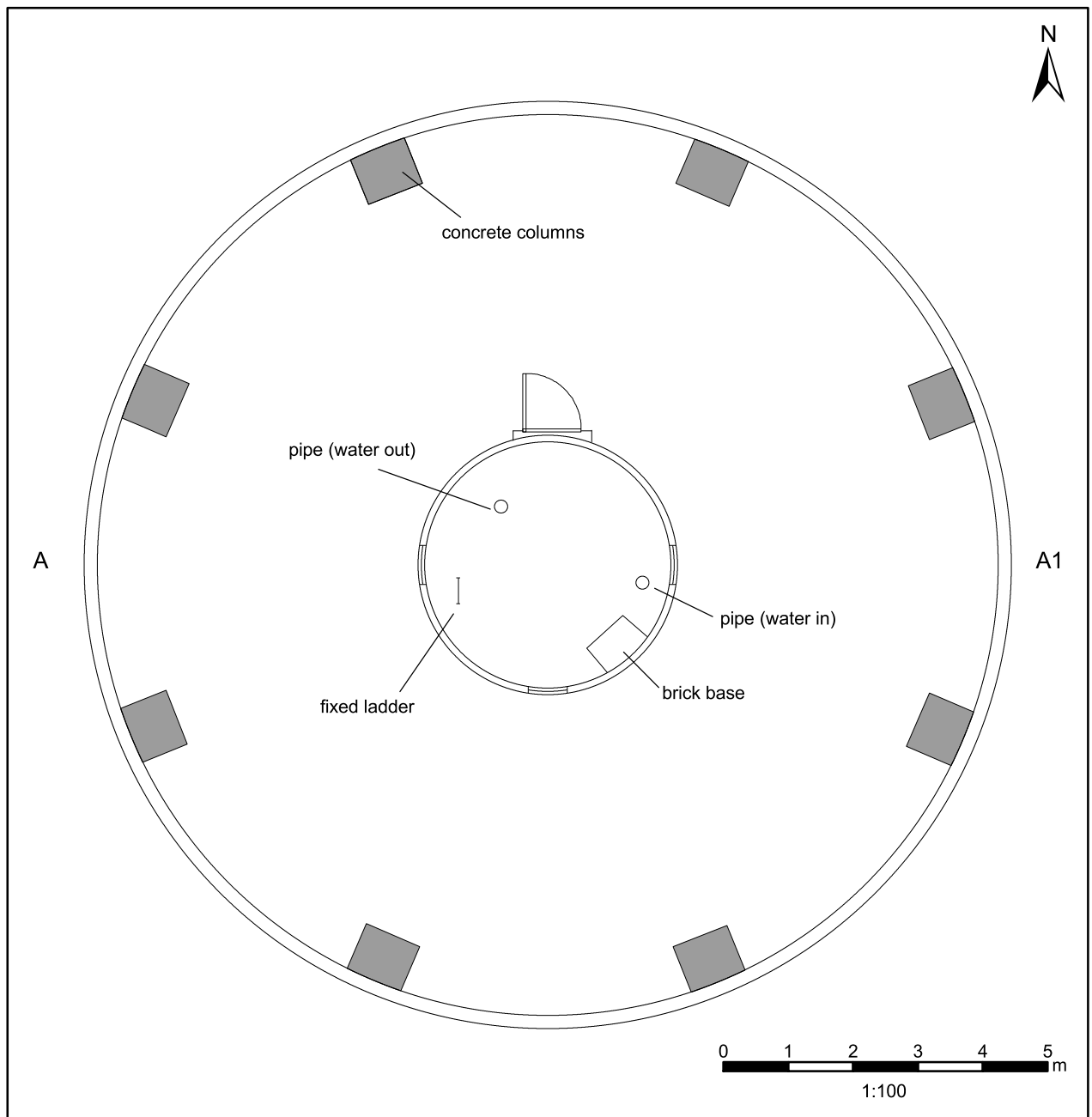


Fig.3. Ground floor plan (engineer's room)

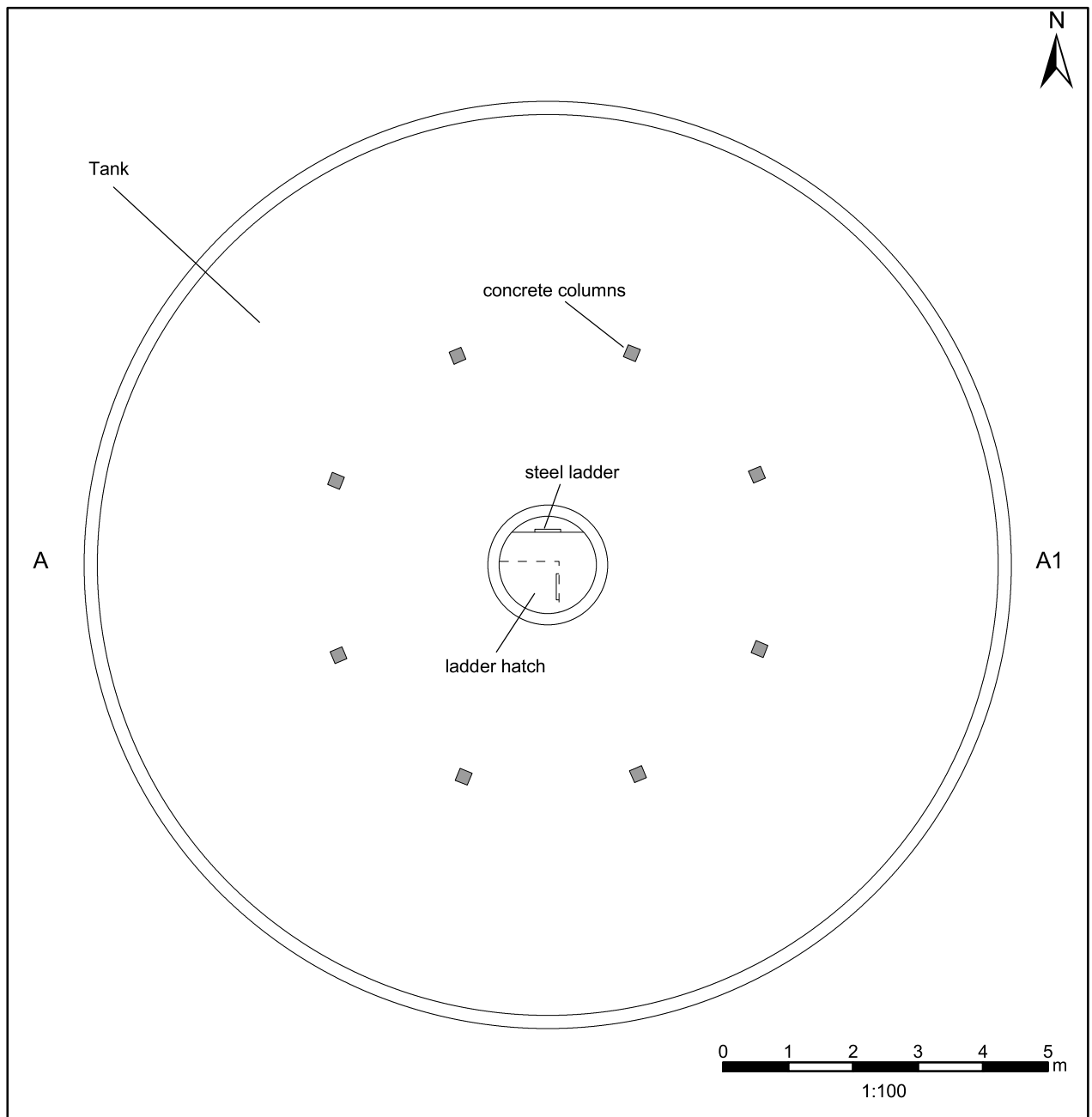


Fig.4. First floor plan (inside the tank)

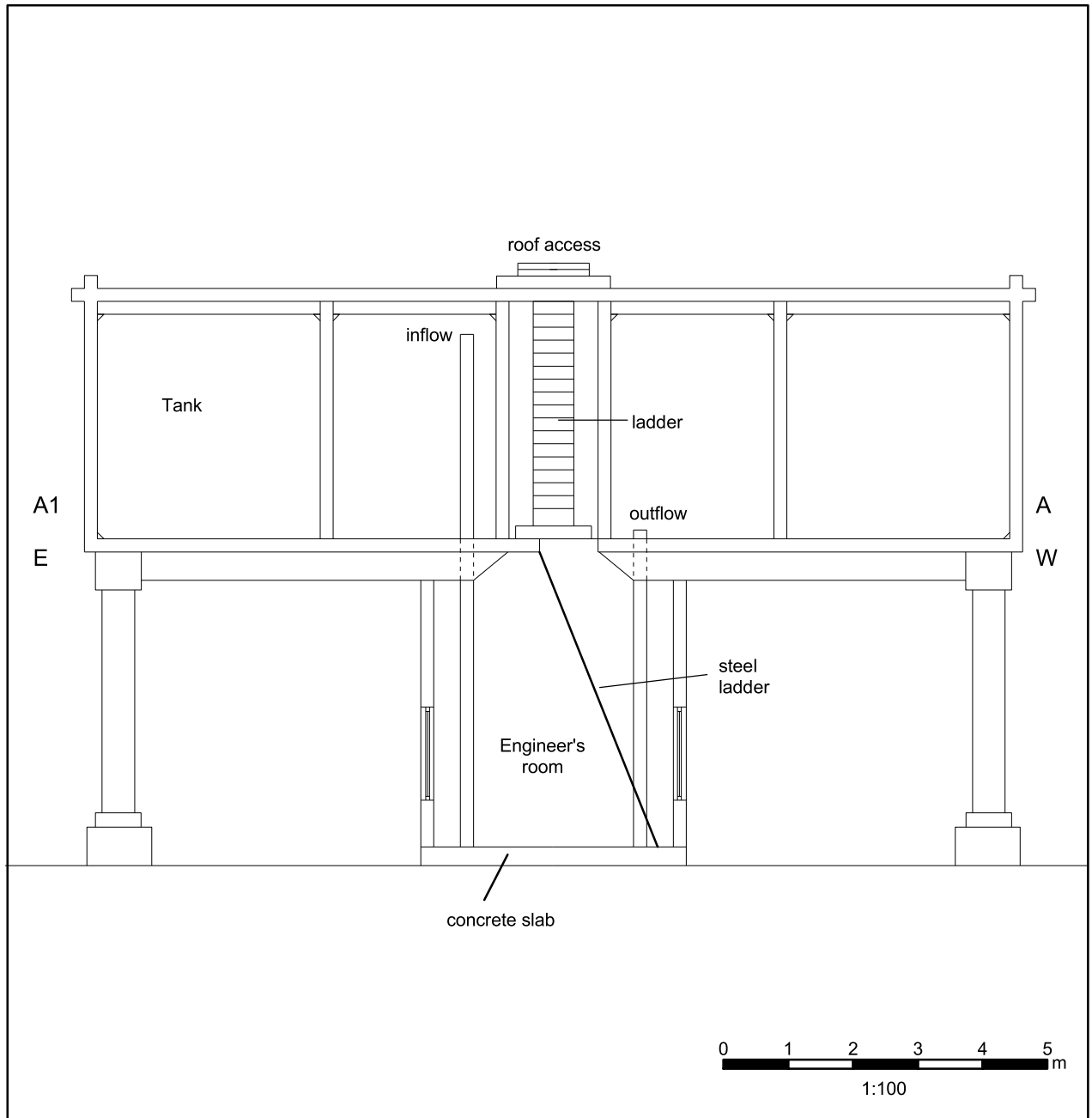


Fig.5. Section through water tower (facing south)



Plate 1 Main view of water tower and environs from road (north)



Plate 2 Water tower viewed from the south



Plate 3 Entrance into tower and structural detailing to underside of tank



Plate 4 Entrance to engineer's room



Plate 5 View across roof showing access hatches and Victorian rectory to north-west



Plate 6 Interior of engineer's room from entrance viewed to south



Plate 7 Inflow pipe on east side of room



Plate 8 Outflow pipe on west side of room



Plate 9 View up access shaft to roof



Plate 10 Tank interior viewed towards south-west

Appendix 1: Contents of Archive

Site name: Former Water Tower, Lower Burnham Road, Latchingdon, Essex

Project no. 1694

Index to the Archive

Document wallet containing:

1. Research Archive

- 1.1 ECC HEM design brief
- 1.2 ECC FAU written scheme of investigation
- 1.3 Two copies of client report (one unbound)
- 1.4 CD containing digital images, architects drawings & copy of report (pdf-formatted)

2. Site Archive

- 2.1 Photographic register
- 2.2 Photographic record (digital & 35mm monochrome prints & negatives)
- 2.3 Site notes & annotated survey plans

Appendix 2: EHER Summary Sheet

Site Name/Address: Former Water Tower, Lower Burnham Road, Latchingdon, Essex	
Parish: Latchingdon	District: Maldon
NGR: TQ 889 987	OASIS Record No.: essexcou1-41489
Type of Work: Building recording	Site Director/Team: Andrew Letch ECC FAU
Dates of Work: 5th March 2008	Size of Area Investigated: N/A
Curating Museum: Colchester & Essex Museum	Funding Source: PowerNow Ltd
Further Work Anticipated? None	Related EHER No.: None
Final Report: Summary in EAH	
Periods Represented: Modern (1930s)	
<p>SUMMARY OF FIELDWORK RESULTS:</p> <p>A redundant reinforced concrete water tower was recorded by ECC FAU in advance of its conversion to residential use. It was built in the 1930s after the Rural Supplies Act 1834, which channelled Government money into the under-invested rural water supply network. Map evidence suggests a pre-1920s square water tower stood on the same plot, probably built at the turn of the century and associated with a pumping station to the west of the site. The water tower was replaced by the present one and the pumping station has since been demolished.</p> <p>The water tower is typical of the Modernist style towers mass-built in the 1930s, the earliest surviving one in Essex being the Maldon one, built in 1934. They have a raised circular tank supported on concrete columns and a central core, used for pipes, machinery and access to the roof, where inspection hatches were located into the tank. Many of these features survive at the Latchingdon tower, though there are few internal features.</p> <p>Although part of an established form, concrete water towers of the 1930s were given individual designs and proportions, creating an interesting and important architectural group, a rare feature of pre- and post-war industrial building types.</p>	
Other Reports: None	
Author of Summary: A.R. Letch	Date of Summary: 13th May 2008