

**THE FORMER WATER TOWER
CHURCH ROAD, BRIGHTLINGSEA
ESSEX**

HISTORIC BUILDING RECORD



Essex County Council

Field Archaeology Unit

December 2010

**THE FORMER WATER TOWER
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ESSEX**

HISTORIC BUILDING RECORD

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Document Ref.	2327rep
Report Issue Date	December 2010
Circulation	Roundwood Restorations Ltd
	ECC Historic Environment Management
	Essex Historic Environment Record

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**THE FORMER WATER TOWER
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ESSEX**

HISTORIC BUILDING RECORD

Client: Roundwood Restorations Ltd

FAU Project No.: 2327

NGR: TM 0841 1758

OASIS No.: 88283

Planning Application: 10/00743/FUL

Date of Fieldwork: October 2010

1.0 INTRODUCTION

A programme of building recording was undertaken by Essex County Council Field Archaeology Unit (ECC FAU) on a former water tower prior to demolition and redevelopment of the site for housing. The work was commissioned by the architects, Wincer Kievenaar, on behalf of Roundwood Restorations Ltd, and carried out in accordance with a Written Scheme of Investigation produced by ECC FAU and approved by the Historic Environment Management team of Essex County Council, 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 Museum. An online OASIS record has been created at <http://ads.ahds.ac.uk/oasis/index.cfm>.

A concrete water tower, built in the industrial modern style, was constructed in 1952 to replace an earlier brick-built Victorian tower. Two other buildings that stand on the site, a pump house and washroom/toilet, are contemporary with the earlier tower and were included in the building survey.

2.0 BACKGROUND

2.1 Site location and description (fig.1)

The site lies on the north-western side Brightlingsea, on high ground along Church Road and opposite Love Lane (fig. 1). The water tower stands in the north-eastern corner of a rectangular plot, with sole access through a metal gate on Church Road.

The structure has a circular plan form built from reinforced concrete, with the water tank supported on tall concrete columns (plate 1). The interior is laid out on five levels accessed by steel ladders, including the tank itself and a small roof turret. Machinery and technical features have been removed from inside the building and mobile phone masts have been added to the roof, connected to relay stations built to the west (fig. 1). The toilet block stands close to the site of the Victorian water tower (fig. 1) and the pump house further to the west, in an area of overgrown lawn surrounded by mature trees (plate 1).

2.2 Planning background

Tendring District Council received a planning application in June 2010 for the demolition of a 1950s water tower and two Victorian structures prior to the construction of eleven new houses 10/00743/FUL). In view of the impact of the proposals on the standing buildings, ECC HEM team recommended a full archaeological condition to the planning permission to record the water tower to English Heritage Level II standard in order to 'preserve by record'. The condition was based on advice given in Planning Policy Statement 5: Planning for the Historic Environment and the requirements of the condition were outlined in an ECC FAU method statement (written scheme of investigation), which was approved by ECC HEM prior to carrying out the works.

2.3 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, the water was treated in the water works, where it is screened, filtered and chemicals added, before reaching the customer at the other end (Crosby 1999).

2.4 Historical background

As part of the survey, sources at the Essex Records Office, Chelmsford were consulted to provide details on the water tower. Mr Richard Smith, from the garage opposite, provided useful information on the site. A previous survey, *The Public Water Supply Industry in Essex 1850-1939* (Crosby 1999) was also consulted for background information. Although concrete water towers are featured as a recognised and important type in the report, the Brightlingsea example is a later example and is therefore not included.

The site was formerly occupied by a Victorian brick-built water tower that according to local sources (R. Smith pers. comm.) stood to the south of the present one (fig. 1) Documents in the Essex Records Office mention a water tower on Upper and Lower Park Roads in 1898 (D/UbrPb2/16), which is more likely to refer to former Church Road tower.

Ordnance Survey maps up to 1896 show a vacant site bordered by trees. An early 20th-century map, drawn between 1914 and 1924 (fig. 2), shows the pumping station, toilet/washroom and two oblong structures, the largest of which is likely to be the water tower.

The brick water tower was reportedly replaced by the concrete one in the early 1950s after a fire (R Smith pers. comm.). The Essex Records Office holds the original building plans produced between 1951 and 1952 (ERO D/UBr Pb6/5-12 & Pb5/20) which formed the basis for this survey. The new tower was built in the 'modern' style to an established form with modern materials just to the north of the former tower.

The tower was decommissioned 6-7 years ago (R. Smith pers. comm.), i.e. 2003-04. Since then the buildings have been redundant. Mobile phone companies currently use the high roof for their phone masts.

2.4 Objectives

The purpose of the historic building survey was, as outlined in the WSI (ECC FAU 2010), to provide a detailed record of the water tower and any machinery to English Heritage Level 2 standard. The two extant Victorian structures also formed part of the record.

As part of the work, the survey considered the following as part of the record: plan form, materials and method of construction, dating and development, function and internal layout and the extent of surviving fixtures and fittings.

3.0 DESCRIPTION OF RECORDING WORKS

External and internal descriptions were made of the water tower to English Heritage level 2 standards. The survey was based on 1950s architectural drawings obtained from the Essex Records Office. Building descriptions to a lower level 1 standard were made of the Victorian pump house and toilet/washroom building and plans at scale 1:200 drawn to complete the record, which may be found with the site archive.

A series of digital photographs were taken externally and internally of the structures and 35mm black and white print was used for general external shots. Due to the confined spaces, a wide-angled lens was used for much of the internal work.

A representative selection of photographs taken during the survey is reproduced at the back of the report as plates 1-18. The remainder can be found in the archive.

4.0 THE WATER TOWER

4.1 General description

The water tower is 19.4m high and stands on a twelve-sided concrete foundation with the large circular tank on top supported on tall concrete columns around a central core (plate 2). The core contains an engineer's room at the base and pipework up to the tank and also a small turret that provides access to the tank and roof.

Apart from the mobile phone masts and steel rails around the outside of the roof, the exterior remains unaltered. Internally the pipework and steel ladders remain, but all other equipment has been removed. Pigeons have moved in since closure and made a mess on all floors, but have not penetrated the tank.

4.2 External description

Twelve tapering square columns support a large concrete drum containing the tank, whose base sits on concrete ribs radiating outwards from the central core (fig. 4). Horizontal ribs between the tall columns prevent the legs spreading from the weight above (plate 2).

The columns form a circle around the central core, which provides the only access into the building. Entry is by a doorway on the south side set below a concrete lintel (plate 2) within

one of the six tall recessed panel that extend up to the tank (fig. 4). Each panel is fitted with narrow 10-pane partly-tilting steel windows on each floor level (plate 2).

The tank has recessed square panels around its outer wall and steel rails around the edge of the roof to hold the mobile phone masts. The roof itself is convex for rain run-off and featureless apart from a circular turret that protrudes from the centre, three regularly-spaced curved breather pipes and two inspection covers into the tank below (plate 3).

The turret (plate 4) is fenestrated with three-pane steel windows, on all but the eastern side where a small hatch provides access onto the roof. Although locked during the survey, access onto the roof was possible through one of the windows.

4.3 Internal description

The interior is essentially divided into five levels, the ground floor engineer's room, two ladder levels accessed by ceiling hatches (one of which leads through the tank by a central ladder shaft), the tank and the roof turret (fig. 3). Access through the building is by caged steel ladders and square ceiling apertures lined with steel safety railings. Interiors are painted white to maximise light levels. No technical fixtures or fittings remain.

The ground floor **engineer's room** (fig. 4, plate 5) has an inner area of only 3.7m (4 feet) diameter and a height of 4.2m (fig. 3). The main features are three cast iron pipes that controlled delivery (from the pump house), washout and overflow and inlet/outlet (to the treatment works) (ERO D/UBr Pb6/11). The washout and overflow pipe leads away through a steel-covered void under the floor (fig. 3). There are some empty information boards attached to the walls and modern electrical fixtures and fittings.

A steel ladder leads up through the concrete ceiling onto the floor above (**level 1**, plate 6) which acts as a staging post between the engineer's room and valve room (level 2) and has the same proportions as the former.

The **valve room** above (**level 2**) is situated immediately below the tank and it is from here that water flow was regulated. The valves (manufactured by 'Glenfield') regulated the inlet/outlet pipe which forks on this level (plate 7) connecting to two drains in the tank floor (figs. 3 & 5). On the other side of the room are smaller valves that control water from the washout/overflow pipe through 4-inch horizontal pipes that connect to the inflow/outflow pipe (plate 8).

A vertical ladder offers access via a narrow shaft through the centre of the tank (plate 9) and into the roof turret.

Access into the **tank (level 3)** is down a steel ladder that leads from the roof turret onto a small inspection/maintenance platform set on top of a concrete dividing wall (plate 12). Separate steel ladders lead down on either side onto the tank floor. The tank (plate 13) is large, with a c.15m diameter and 6m depth, providing a volume of c.106m³ and a capacity of 106,000 litres, approximately 23,000 gallons. It is split in two by a dividing wall that enabled one side to be drained at a time for periodic cleaning and inspection. Emptying the tanks was controlled by a valve on a long pipe operated from the platform (plate 12) which let the water pass through either of two drains each side of the wall, close to the core (fig. 5, plate 14) and down the inlet/outlet pipes below in the valve room. The roof is supported on twelve square concrete columns whose tapered heads are painted white to indicate the maximum fill level. There are no features apart from the delivery and washout/overflow pipes that finish where the ladder shaft joins the turret (fig. 3, plate 13) and ventilation panels in the ceiling.

The **roof turret on level 4** (plate 10) provides access both onto the roof and into the tank. The simple clean circular lines of the ladder railings have a somewhat geometric 'modern' form that matches the style of the building (plate 11). A short ladder on the north side leads to an external hatch out onto the roof, which was locked during the survey. A modern fly-killing machine situated beside the door (plate 10) is the only other feature. At floor level on the opposite side are the doors into the tank (plate 11, right).

5.0 VICTORIAN ANCILLARY STRUCTURES

Short descriptions are provided of the pump house and washroom/toilet associated with the previously demolished 19th-century water tower in order to complete the record. Both were used and maintained up until closure of the facility and have not been altered to any great extent apart from the removal of machinery and office furniture in the pump room, though both were boarded-up and had graffiti on the outer walls. Plans of each are included in the archive, though that for the toilet/washroom is external only, since no internal access was available.

5.1 Pump house

The pump house is a three-bay linear structure to the west of the water tower that contains two pump rooms and a small office. It is built of red brick arranged in Flemish bond beneath a pitched slate roof. The only entry point is on the south elevation (plate 15) where a pair of double doors lead into the first of two pump rooms that contain the wells. The windows are boarded but were seen from the inside as moulded nine-pane vented types (plate 16). They are arranged at regular intervals on both sides and the western end (office). In addition, the gables have tilting windows also.

Inside are the two pump rooms and an office. Décor in the pump rooms is basic and functional, with a concrete floor and grey/white-painted brickwork. Steel covers have been placed over the wells for safety purposes. The eastern room (plate 16) contains a 'Lister' pump that was used in the later period after the much larger pumps were removed (R. Smith pers. comm.). The simple nailed collar roof frame is made from machine-sawn planks and is typical of the period.

No fixtures or fittings remain in the office apart from a four-panel door and an internal window that overlooks the second (western) pump room.

5.2 Washroom/toilet

A small outside toilet is situated a short distance to the west side of the water tower. It is an attractive building with neat, well-pointed red brick laid in stretcher bond, and a plain red tile roof. The sole entrance, on the eastern side, has an arched gauged-brickwork doorway and a semi-glazed door (plate 17). The interior (plate 18) remains largely unaltered, with wash area at the front and toilet to the rear.

6.0 DISCUSSION AND CONCLUSION

Though of limited architectural importance in itself, the Church Road water tower forms part of a nationally-important generic group of concrete-built water tower of a type that first appeared in the 1930s. Concrete was a cheap low-maintenance material in vogue during the 1920s and 30s as part of the modernist movement and ideal for industrial structures and concrete water tanks could be easily formed as part of the structure. In addition, a circular tank limited the risk of leakage (Crosby 1999). Such designs were practical, fusing form and function and continued into the 1950s, with the circular plan form being the most common. Although later in date, the Church Road has many of the features developed in the 1930s:

the square columns, circular tank and a central core with rectangular metal windows and internal steel ladders, all constructed from modern materials like steel and concrete in basic geometric forms. The surviving structures from the late Victorian Pumping Station retain their historic character and are fairly typical of their time in terms of materials and construction, though the washhouse has a higher level of architectural detail which may be a reflection of the architectural character of the earlier water tower.

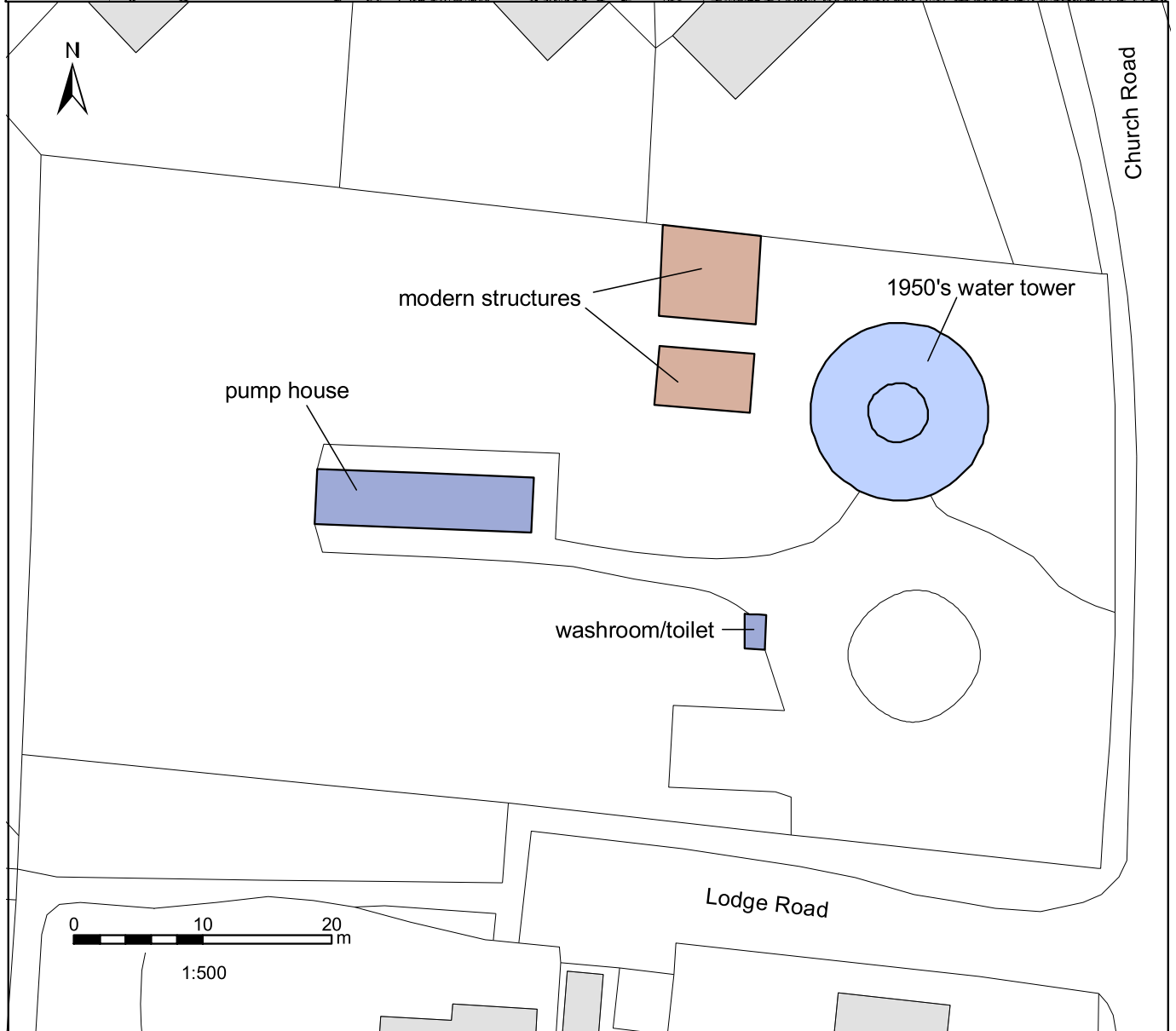
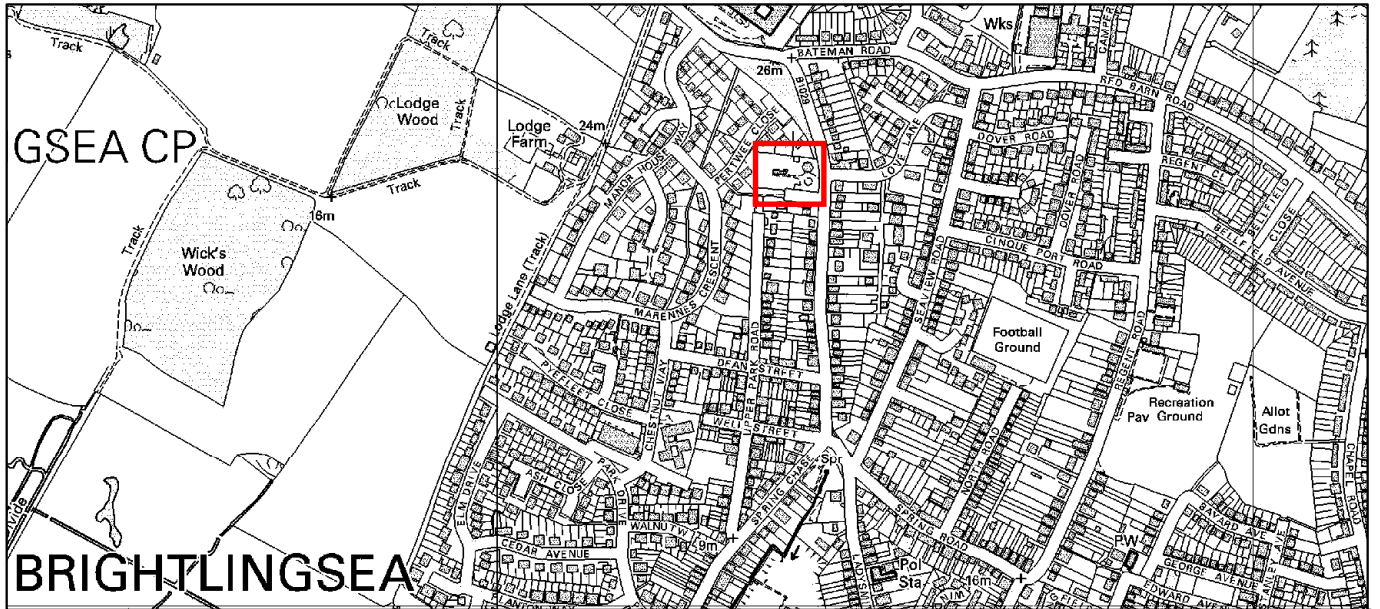
Concrete water towers are a relatively conspicuous but overlooked feature of the landscape by virtue of their locations on high ground and none appear to have been built the same, as their architects produced variations on a theme rather than carbon copies. As such they are part of an easily-recognisable and dynamic architectural group amongst post-war industrial buildings. However, as larger more centralised reservoirs were built and existing ones expanded by water companies to greater capacity, they became obsolete and have become under threat from redevelopment and conversion. The scale and boldness of such structures limits the options for conversion to other uses and often demolition is the preferred option. It is therefore useful to have had the opportunity to record this example and to appreciate that many such sites often have an earlier origin and development as an installation associated with the supply of water to towns and villages.

ACKNOWLEDGEMENTS

Thanks are due to Graham Cutter of Wincer Kievenaar Chartered Architects for commissioning the works on behalf of Roundwood Restorations Ltd and to Keith Last and Richard Smith for their help during the survey. The assistance of staff at the Essex Records Office is also acknowledged. Recording and photography were undertaken by the author and illustrations prepared by the author and produced by Andrew Lewsey. The project was managed by Mark Atkinson of ECC FAU and monitored by Adrian Gascoyne of ECC HEM on behalf of the LPA.

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| ECC FAU | 2010 | <i>Written Scheme of Investigation for Historic Building Recording at the Former Water Tower, Church Road, Brightlingsea</i> ECC FAU (unpub.) |
| Letch, A. | 2008 | <i>The Water Tower, Lower Burnham Road, Latchingdon: Historic Building Record</i> ECC FAU (unpub.) |



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Fig.1. Site location and block plan

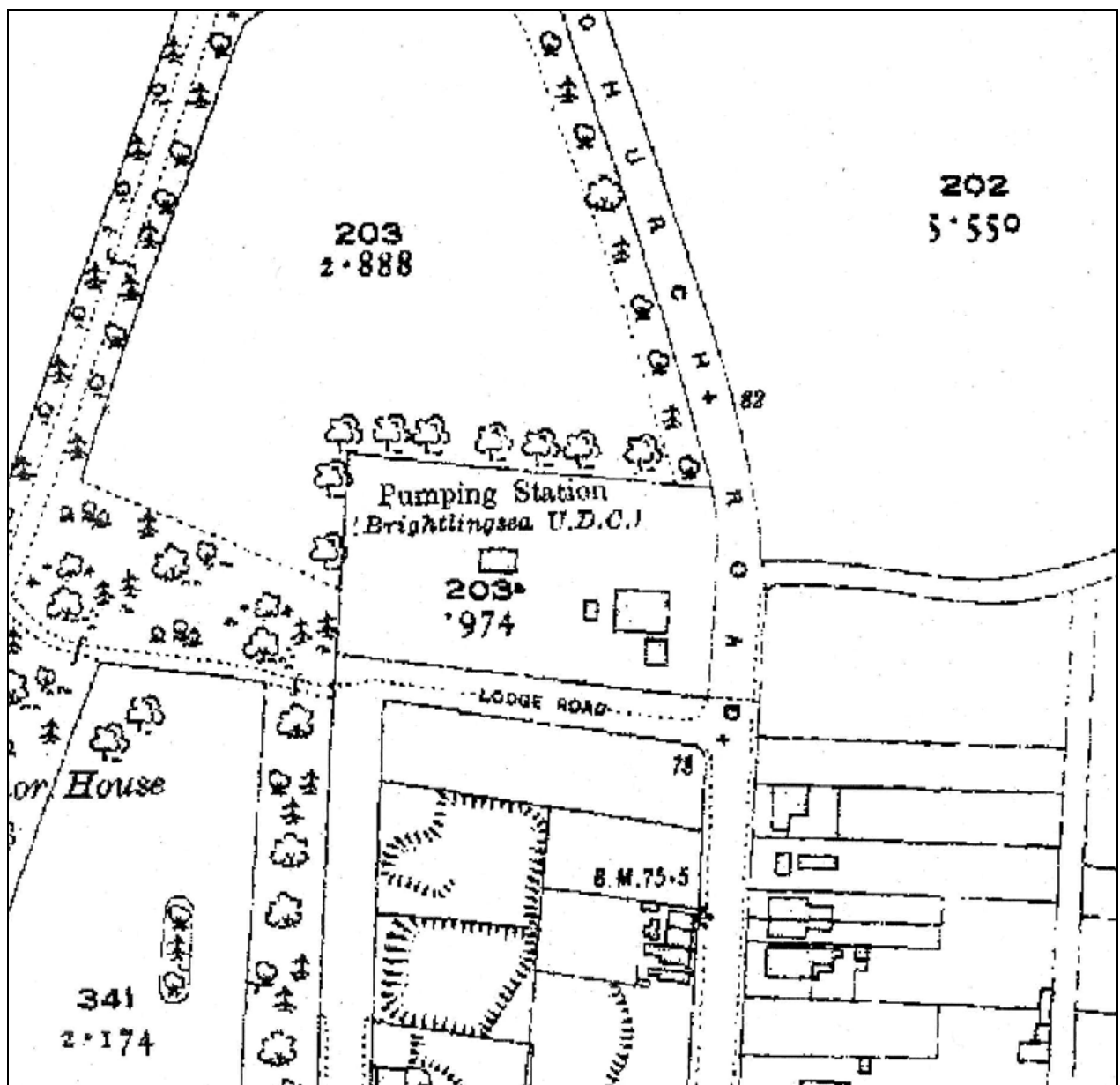


Fig. 2 Old water tower site from new series Ordnance Survey map (1914-24)

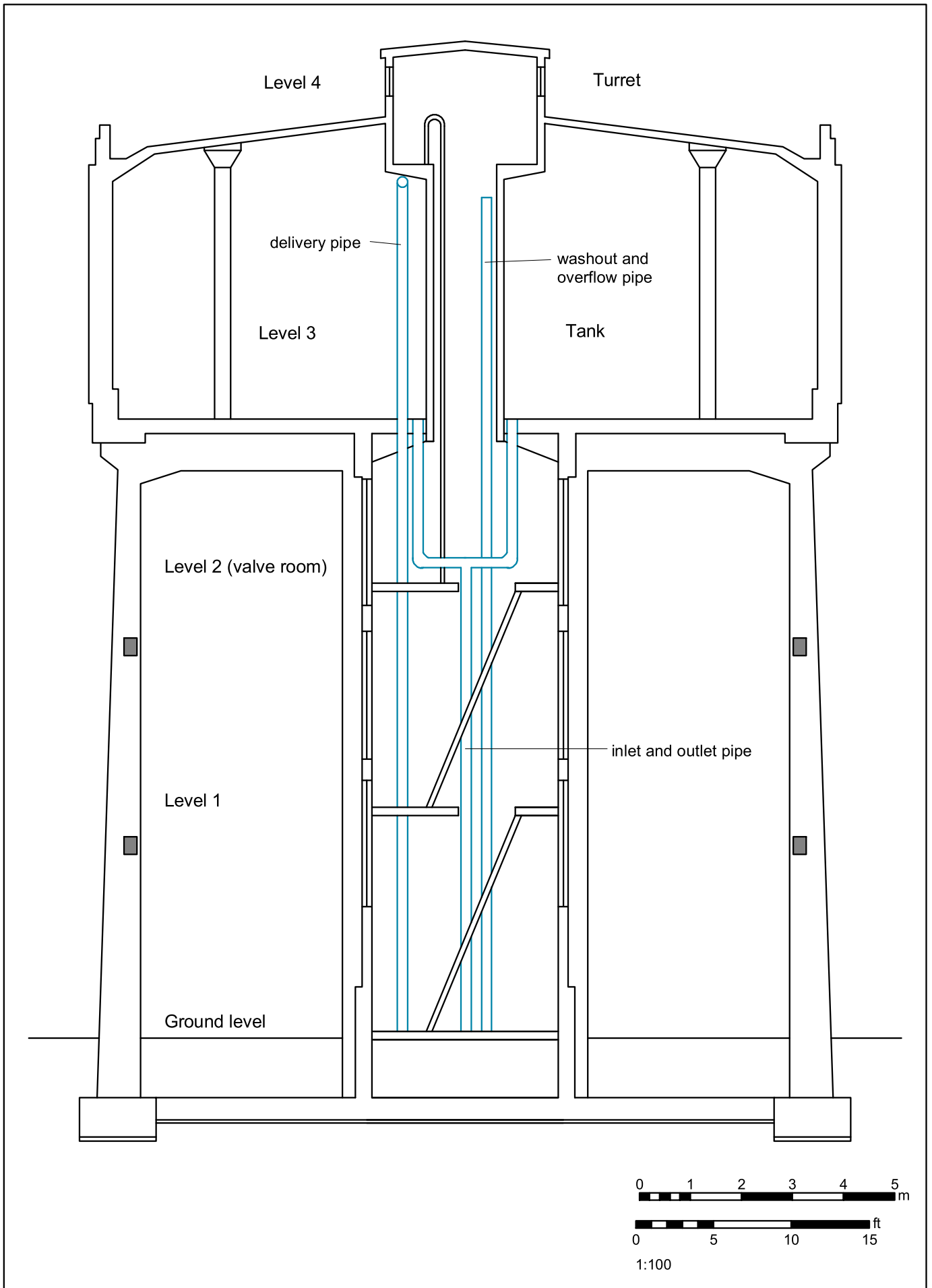


Fig. 3. Section through water tower

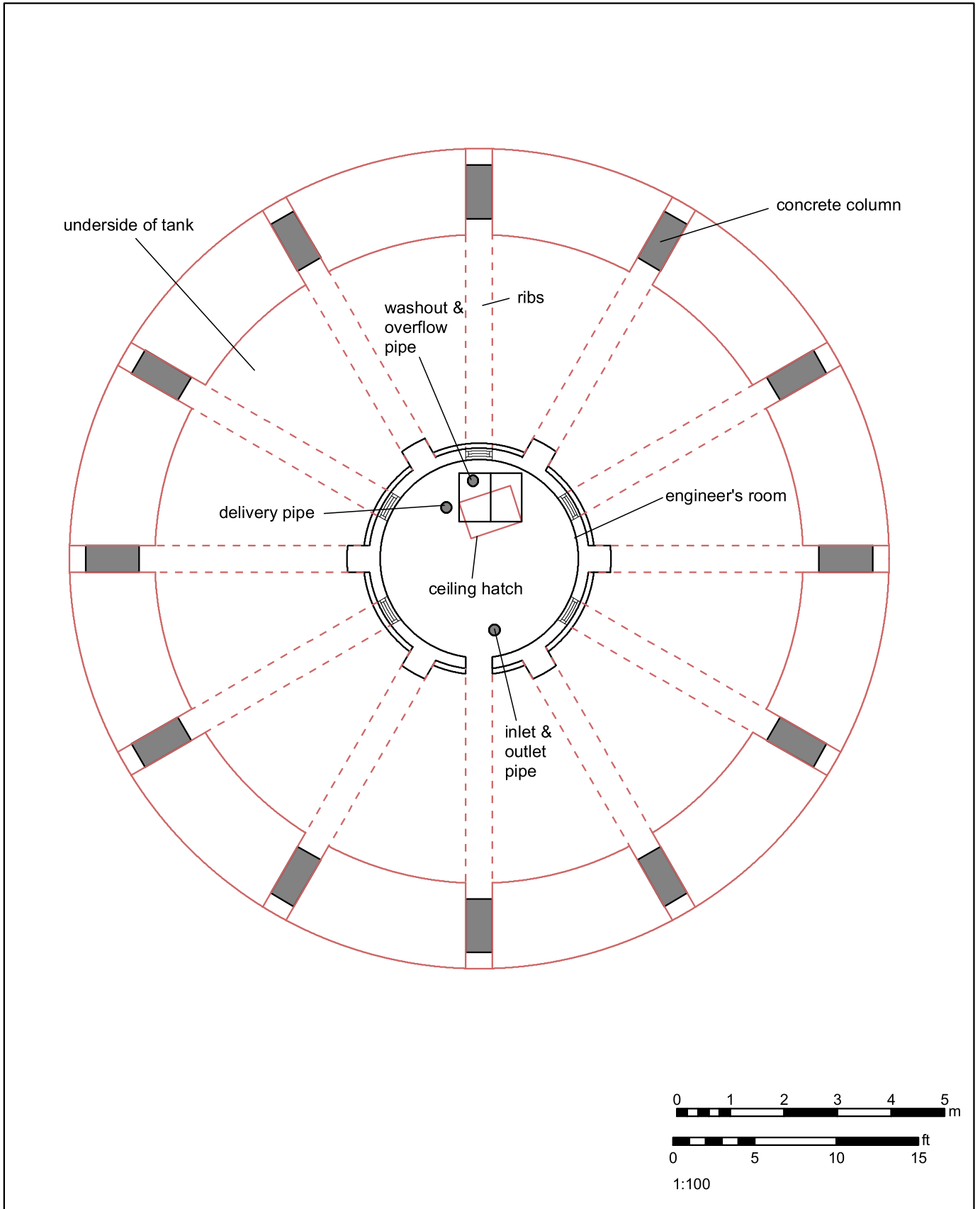


Fig. 4. Ground floor plan (elevated features in red)

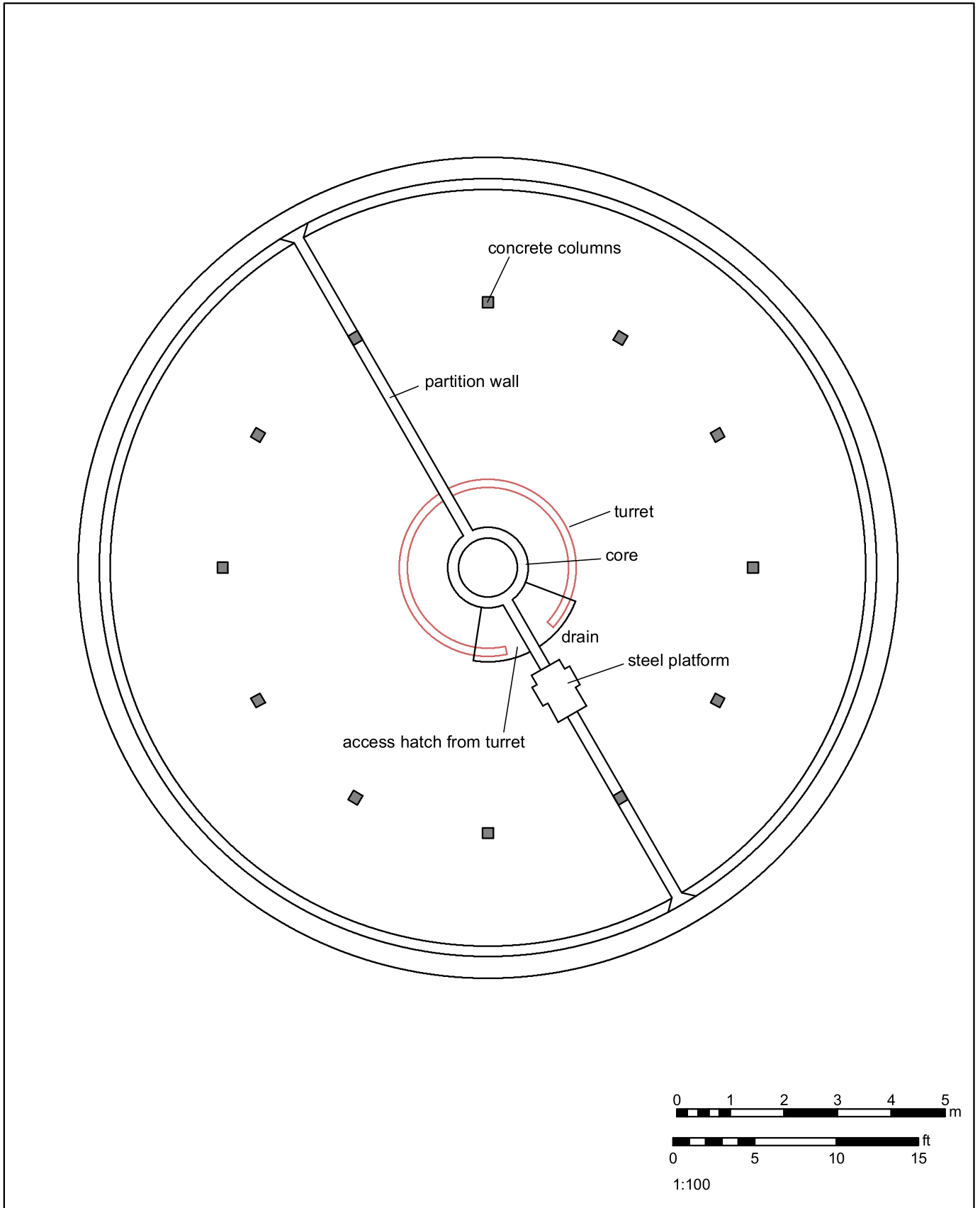


Fig. 5. Plan of tank (elevated features in red)



Plate 1 Water tower and Victorian ancillary buildings viewed to north-west



Plate 2 Water tower viewed to north



Plate 3 Roof of water tower



Plate 4 Roof turret



Plate 5 Engineer's room viewed to north



Plate 6 Level 1 viewed to north



Plate 7 Inlet and outlet pipes in valve room (level 2)



Plate 8 Delivery and washout/overflow pipes in valve room (level 2)



Plate 9 Access shaft through tank from level 2



Plate 10 Turret room viewed to north



Plate 11 View down access shaft from turret room



Plate 12 View of doorway into tank and platform



Plate 13 General interior of tank



Plate 14 Drain to inlet/outlet pipe (0.25m scale)



Plate 15 Pump house viewed to north-east



Plate 16 Interior of eastern well room, viewed to north-east



Plate 17 Washroom/toilet viewed to south-west



Plate 18 Interior of washroom/toilet

Appendix 1: Contents of Archive

Site name: Former Water Tower, Church Road, Brightlingsea, Essex

Project no. 2327

Index to the Archive

Document wallet containing:

1. Research Archive

- 1.1 ECC FAU written scheme of investigation
- 1.2 Two copies of client report (one unbound)
- 1.3 CD containing digital images & 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 1952 survey drawings

Appendix 2: EHER Summary Sheet

Site Name/Address: Former Water Tower, Church Road, Brightlingsea, Essex	
Parish: Brightlingsea	District: Tendring
NGR: TM 0841 1758	OASIS Record No.: 88283
Type of Work: Building recording	Site Director/Team: Andrew Letch ECC FAU
Dates of Work: 26th October 2010	Size of Area Investigated: N/A
Curating Museum: Colchester & Essex Museum	Funding Source: Client
Further Work Anticipated? None	Related EHER No.: None
Final Report: Summary in EAH	
Periods Represented: Modern (1950s) water tower & late Victorian ancillary buildings	
<p>SUMMARY OF FIELDWORK RESULTS:</p> <p>A redundant reinforced concrete water tower was recorded to level 2 standard by ECC FAU in advance of its demolition for housing. It was built to replace a late Victorian brick tower in c.1952. Two brick-built structures associated with the previous tower, the pump house and a small washroom/toilet building, remain on the site and were also recorded prior to demolition.</p> <p>The form of the water tower is typical of the modernist-style concrete towers built from the 1930s onwards, the earliest surviving one in Essex being at Maldon, 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 tank and roof. Fittings include steel-framed windows and ladders that complement the modernist style. The Brightlingsea tower has five levels including the tank and roof turret and three pipes for different purposes. The interior of the tank is divided in two parts and supported on square concrete columns.</p> <p>The Victorian pump house contains two wells and an office, but the original pumps have been stripped-out. The washroom/toilet has some interesting architectural detailing that may have complimented that of the earlier tower.</p> <p>Although part of an established form, concrete water towers were given individual designs and proportions, creating an interesting and important architectural group, which is a rare feature of pre- and post-war industrial building types. Like many such installations concerned with the supply of water, its origins date back to the Victorian period.</p>	
Other Reports: None	
Author of Summary: Andrew Letch	Date of Summary: 3rd December 2010