



THE
ENVIRONMENT
PARTNERSHIP



LEIGH ON SEA, ESSEX

PROGRESS ROAD GASHOLDER STATION

HISTORIC BUILDING SURVEY

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OASIS Report Form

The Environment Partnership (TEP)

Job Number:	7805
Project Name:	Progress Road, Leigh on Sea
OASIS Number:	theenvir1-436459

PROJECT DETAILS:		
Short description	TEP carried out archaeological recording of gasholders at the Progress Road Gasholder Station, Leigh on Sea ahead of planned demolition works. The two gasholders, designated 1 and 2 were constructed in 1959 and 1966 and were both spirally-guided gasholders with below-ground tanks and each with four lifts. Gasholder 1 was built by R and J Dempster and Gasholder 2 by Henry Balfour and Co	
Project type	Historic building recording	
Previous work	Historic building recording	
Current lane use	Industrial, derelict	
Future work	Unknown	
Monument type and period	Modern gasholders	
Significant finds	None	
PROJECT LOCATION:		
County	Essex	
Site address	Progress Road, Leigh on Sea, Southend on Sea, SS9 5LQ	
Easting Northing	TQ 1769 9152	
Area (sq ,/ha)	-	
Height aOD	-	
PROJECT CREATORS:		
Organisation	The Environment Partnership (TEP) Ltd	
Project brief originator	Atkins Ltd	
Project design originator	TEP	
Director/Supervisor	Amir Bassir	
Project manager	Jason Clarke	
Sponsor or funding body	National Grid	
PROJECT DATE:		
Start date	21-08-2019	
End date	10-09-2019	
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Executive Summary

1. The Environment Partnership (TEP) Ltd was instructed by Atkins Ltd on behalf of National Grid to undertake archaeological recording of gasholders at the Progress Road Gasholder Station, Leigh on Sea, Essex (TQ 8317 8898), ahead of planned demolition works. The gasholders had previously been assessed as having low heritage value and the recording was undertaken as a basic Level 2 survey in-line with Historic England guidelines. Recording encompassed the two gasholders as well as associated pipework, infrastructure and structures.
2. The two gasholders, designated as 1 and 2, were constructed in 1959 and 1966 respectively, and were both low-pressure and water-sealed, spirally-guided gasholders with below-ground tanks and four lifts. Gasholder 1 was constructed by R & J Dempster and had a nominal capacity of 1.9 million cubic feet (cu. ft.) and Gasholder 2 was constructed by Henry Balfour and Co with a capacity of 3.5 million cu. ft.
3. The gasholders were found to be in generally good condition and were of a typical form for their type and period of construction, incorporating a standard range of fittings.

1.0 Introduction

- 1.1 The Environment Partnership (TEP) Ltd was commissioned by Atkins Ltd, acting on behalf of National Grid, to undertake a programme of archaeological recording at the Progress Road Gasholder Station, Leigh on Sea (TQ 8317 8898). The site included a two gasholders as well as associated pipework. This survey was a voluntary exercise commissioned by National Grid as part of their commitment to the heritage of their broader estate. This report has been produced in accordance with current best archaeological practice as defined in the Chartered Institute for Archaeologists' *Standard and Guidance for the Archaeological Investigation of Standing Buildings or Structures* (ClfA 2019) and the Historic England document *Management of Research Projects in the Historic Environment* (HE 2015a).
- 1.2 A Heritage Appraisal document (Montagu Evans, Undated), assessing the heritage significance of the site and gasholders, considered the gasholders to be of limited heritage significance and recommended a Basic Level 2 recording as set out in the document *Understanding Historic Buildings, A Guide to Good Recording Practice* (HE 2015a) and the draft document *Guidelines for Evaluating and Recording England's Former Gasworks and Redundant Gasholders* (HE 2019). This report follows an approved Written Scheme of Investigation (TEP 2019). This report was produced by TEP and reviewed by Atkins Ltd.
- 1.3 The gasholder station was to the north-west of Southend-on Sea c2km to the west of London Southend Airport. The site was between Rayleigh Road (A1015) and Southend Arterial Road (A127) which are joined by Progress Road, passing to the immediate east of the site. The gasholder station was in a modern industrial and retail estate with modern residential housing forming the surrounding environs.
- 1.4 The gasholders had been decommissioned and purged and an active Pressure Reduction Station compound was located on the site.
- 1.5 The gasholders, designated 1 and 2, dated to 1959 and 1966 respectively and were spirally-guided with below-ground tanks.
- 1.6 The local planning authority is Southend-on-Sea Borough Council and the historic environment record is held by the Essex Historic Environment Record (HER).

2.0 Objectives and Methodology

- 2.1 The objectives of the archaeological work were as follows:
- Produce a drawn, photographic, and written record of the gasholders and associated infrastructure;
 - Provide a written account of the site, analysing any features of archaeological, historic or architectural interest, and to disseminate these findings in the form of a report and orderly archive.
- 2.2 The objective of Level 2 historic building recording is to provide a descriptive record of an extant structure, before and during demolition or conversion, where the building is known or suspected to retain limited historic significance. This provides a basic record in accordance with the Historic England document *Understanding Historic Buildings: A guide to good recording practice* (HE 2015a). Draft guidelines for evaluating and recording former gasworks and gasholders recommend Level 1 or Level 2 recording for spiral guided gasholders or those of which there are numerous examples (HE 2019).
- 2.3 The survey was undertaken on the 21st August 2019 and included a photographic survey comprising general views of the site and gasholders, as well as detailed views of features of structural, historic or architectural interest such as the spiral guidance system and operating elements. Measured sketches were produced of an example roller carriage of each gasholder. Access was possible around all sides of both of the gasholders.
- 2.4 Photography was carried out using a Nikon D90 camera equipped with a Nikon 18-70mm lens. Photographic scales were included in shots where practical.
- 2.5 This report also includes an overview of documents held at the National Gas Archive. A visit was made to the Essex Record Office to view any relevant documents, maps, and photographs.

3.0 Historic Background

- 3.1 Very little relevant historic background information was found during research for this site. No information was held at the National Gas Archive or at the Essex Record Office. Both Gasholders were of relatively late construction and the site was undeveloped until the 1950s when the gasholder station was built.
- 3.2 As evidenced by late 19th century Ordnance Survey mapping, the settlements of Southend and Leigh were very small communities set c4km distant from each other on the banks of the Thames Estuary. The 1848 Topographical Dictionary of England (BHO 2019) describes Southend as formerly having been an inconsiderable hamlet consisting of a few fishermen's huts, which had in the last century grown due to its reputation for sea-bathing and being the "*nearest watering place to London*". Leigh is described in the same work as a sea-port containing 1271 inhabitants. The growth of the two settlements and their popularity as visitor destinations was also enabled by the introduction of railway lines which crossed through Leigh, and followed the coast line, terminating in Southend.
- 3.3 A private gasworks had been established in Leigh in the 1870s, at the western end of the settlement, between the railway lines and the tidal flats. A works had also been established at Southend in c1855 at the eastern distal end of the settlement between Prospect Terrace and Victoria terrace. The Southend Gas Light and Coke Company had been formed in c1854 and the land for the works was provided by Daniel Scratton, the Lord of the Manor, and upon commencement of production enabled the use of 120 public gas lights. The growth of the customer base is evident by an increase from 340 in 1856 to 5,000 consumers in 1901.
- 3.4 The National Gas Archive website notes the following about the history of the Southend on Sea Gas Company:
- "The Southend Gas Light and Coke Co. was formed in 1854. In 1877 it was incorporated as the Southend Gas Company. The 1892 and 1898 Southend Gas Acts allowed for the expansion of works and the building of a pier jetty (1898). In 1919 it took over the Rochford Undertaking and closed the works, however they were not dismantled until 1936, supply was provided from Southend works. In 1919 it changed its name, by AoP, to the Southend-on-Sea District Gas Company. From 1911 Southend provided Leigh-on-Sea with a bulk supply, finally taking over the undertaking from Leigh UDC in 1923. The Southend-on-Sea DGC was taken over by the Gas Light and Coke Company by the GLCCo.s [sic] Act of 1931."*
- 3.5 The area of the present gasholder station, in the 19th century, comprised relatively remote agricultural land and remained as such until the early 20th century when the area began to be urbanised following the rapid growth of Leigh and Southend. By the 1920s these formerly distant and fairly small settlements had been amalgamated by a wide corridor of development. Other new development also spread between Rayleigh and Eastwood, with the recording area being located in this zone of growth.

- 3.6 The gasholder station was established in 1959 with the construction of Gasholder 1 which was joined by the second gasholder in 1966. The area around the gasholder station appears to have been primarily residential with light industrial units including a Spring Works, Glass Works and Engineering Works being located in the immediate area to either side of Progress Road.

4.0 Historic Building Recording

Gasholder 1

- 4.1 Gasholder 1 was the smaller of the two gasholders and occupied the north-western part of the site. The gasholder tank had a diameter of 46.6m (153") and covered a footprint of c1705 sq. m. The gasholder was constructed in 1959 by R & J Dempster of Oldham Road, Manchester, and was spirally-guided with a below-ground tank and four lifts. The gasholder had a maximum storage capacity of 1.9 million cubic feet (cu. ft.).
- 4.2 The gasholder operational data sheet provides the following information regarding the gasholder dimensions

Table 1, Gasholder 1

Lifts	1st (inner)	2nd	3rd	4th (outer)	Tank
Diameter	42.7m	43.7m	44.7m	45.7m	46.6m
	140' 3"	143' 6"	146' 9"	150' 0"	153' 0"
Depth	10.2m	9.5m	9.5m	9.5m	9.7m
	33' 6"	31' 2"	31' 2"	31' 2"	32' 0"

- 4.3 The concrete edge of the tank was elevated c0.5m above the ground level and this kerb was 0.46m in width. The kerb was occasionally extended outward to form projecting squares; these had removable steel covers and appeared to cover buried tanks or interceptors for the overflow system. The tank kerb also had projections on the inner face corresponding with each of the outer roller carriages. The 'lute' between the kerb edge and the first lift was measured as 460mm.
- 4.4 The crown rise is given by the operational data sheet as 3.1m (10' 3") and comprised four intermediate concentric rings of riveted steel plates, a centre plate, and the outer ring which joined the top curb. The rings showed a variable arrangement with the intermediate rings comprising narrow linear sheets, wide and shorter sheets at the top curb. Riveted overlap sheets over the top curb sheets marked the positions of the underlying crown frame. A description of the crown frame arrangement is not given on the gasholder data sheet.
- 4.5 At the centre of the crown were two 8" gas and air vents. At the south side of the crown were one circular and one raised square access lids corresponding with the position of inlet/outlet mains pipes. A circular lid was located at the north-west side of the gasholder with two square raised lids at the south-west and north-east sides of the crown. A designated walkway to the centre plate crossed the crown from north to south. Also noted on the crown were hydrostatic tanks and a number of smaller valves.

- 4.6 Gas mains pipes with associated flow valves, controls and an adjacent pit with syphon and pump were close to the south side of the holder. Plans of the site were not available and therefore the arrangement of pipes around the site and gasholders was not determined.
- 4.7 The roller carriages comprised paired rollers with axle (spindle) housings bolted through to a single piece footing and with larger anchor bolts passing down into the concrete kerb. The spiral guide rails appeared to be of a standard form and were fitted with run-out caps. The lift roller carriages were fitted onto the lift grips, presumably supported by vertical stays. The lift spiral rails were fitted with larger shaped terminus plates to prevent accidental run-out. The roller wheels were measured as 300mm diameter. The design of the roller carriages was similar to those seen on Gasholder 2.
- 4.8 Information about the lift sheeting is not given on the gasholder data sheet. The cup and grips were square section, measuring 300mm x 300mm (1' 0" x 1' 0"). The lift kerbs were riveted and were likely formed of 6" x 6" angles.
- 4.9 The spiral stairs had been truncated prior to this survey with only the lowest extent of each remaining in place. These elements appeared to be of a standard form with spiral rails mounted on the inner side of the stair frame.
- 4.10 The gasholder had been fitted with an electrical anti-freeze system and modular circulation pump units (manufacturer Almar Services Ltd) were fitted onto the lift grips. At the north-east side of the gasholder were pivoting cable trays which supported the electrical cables to the anti-freeze and other equipment as the gasholder rose and to keep them secure when the lifts descended. Electrical control units and switching were located on the tank edge adjacent to these trays.
- 4.11 Circular section handrails carried by stanchions were installed along the tank edge and each of the lifts. Various electrical equipment such as alarms, switches, monitoring and telemetry units were installed on the each of the lift hand rails. Electrical cable trays encircled the gasholder also mounted on the hand rails.
- 4.12 A gasholder numeric designation plaque comprising a plain square wooden plank with '1' painted on was fixed to the tank handrails at the east side of the gasholder. The East compass cardinal point was denoted as a painted 'E' on the concrete path encircling the tank.
- 4.13 Elevated hammer switches and maglocks installed on stanchions at the south side of the tank, were designed to engage with projecting bars (knock-off arms) extending out from each lift as the gasholder was operated.

Gasholder 2

- 4.15 Gasholder 2 was a four-lift, spirally-guided gasholder with below-ground tank. Construction was completed in 1966; the manufacturer of the tank is provided by the gasholder data sheet as Henry Balfour and Co of Leven, Fifeshire, a company founded in 1810 and described as iron-founders and engineers. Henry Balfour produced a range of gas works plant but are less commonly encountered as manufacturers of gasholders. The internal diameter of the tank was 61.9m (203') covering a footprint of c3005 sq. m. The depth of the tank was 9.5 (31'). The maximum working capacity of the gasholder was 3.5 million cu. ft.

Table 2, Gasholder 2

Lifts	1st (inner)	2nd	3rd	4th (outer)	Tank
Diameter	58.21m	59.13m	60.04m	60.96m	61.87m
	191' 0"	194' 0"	197' 0"	200' 0"	203' 0"
Depth	9.98m	9.29m	9.29m	9.29m	9.44m
	32' 9"	30' 6"	30' 6"	30' 6"	31' 0"

- 4.16 The tank was encircled by a raised concrete kerb 0.6m high and 0.45m in width. The tank was extended outward in small square projections with removable steel covers. The tank roller carriage footings were mounted on concrete projections on the inner side of the tank. Freestanding hand rails were placed around the tank with gaps corresponding with the roller carriages. Electrical cable trays were mounted onto the tank kerb. A simple designation plaque, a wooden board with '2' stencil painted on was installed on the tank handrails at the north side of the gasholder adjacent to the inlet pipe/dry well.
- 4.17 The gasholder data sheet does not provide detailed information about the lift construction; the cup and grips were square section, measuring 300mm x 300mm (1' 0" x 1' 0"). The edges of the grips were raised as a form of toe guard and continuous circular profile handrails mounted on stanchions spanned each lift. The cup and grips appeared to be welded rather than riveted.
- 4.18 The crown rise was fairly substantial at 4.6m (15' 02). In contrast to the radial arrangement of Gasholder 1 the crown sheeting of Gasholder 2 was set out in a linear arrangement with three rings of concentric sheeting only at the outer edge or top curb. The crown sheets were welded and set out as long linear bands aligned north-west to south-east and extending from the south to the north sides of the crown. A designated crown walkway led to the crown apex from north to south.
- 4.19 Details of the crown framing are not provided in the gasholder data sheet.

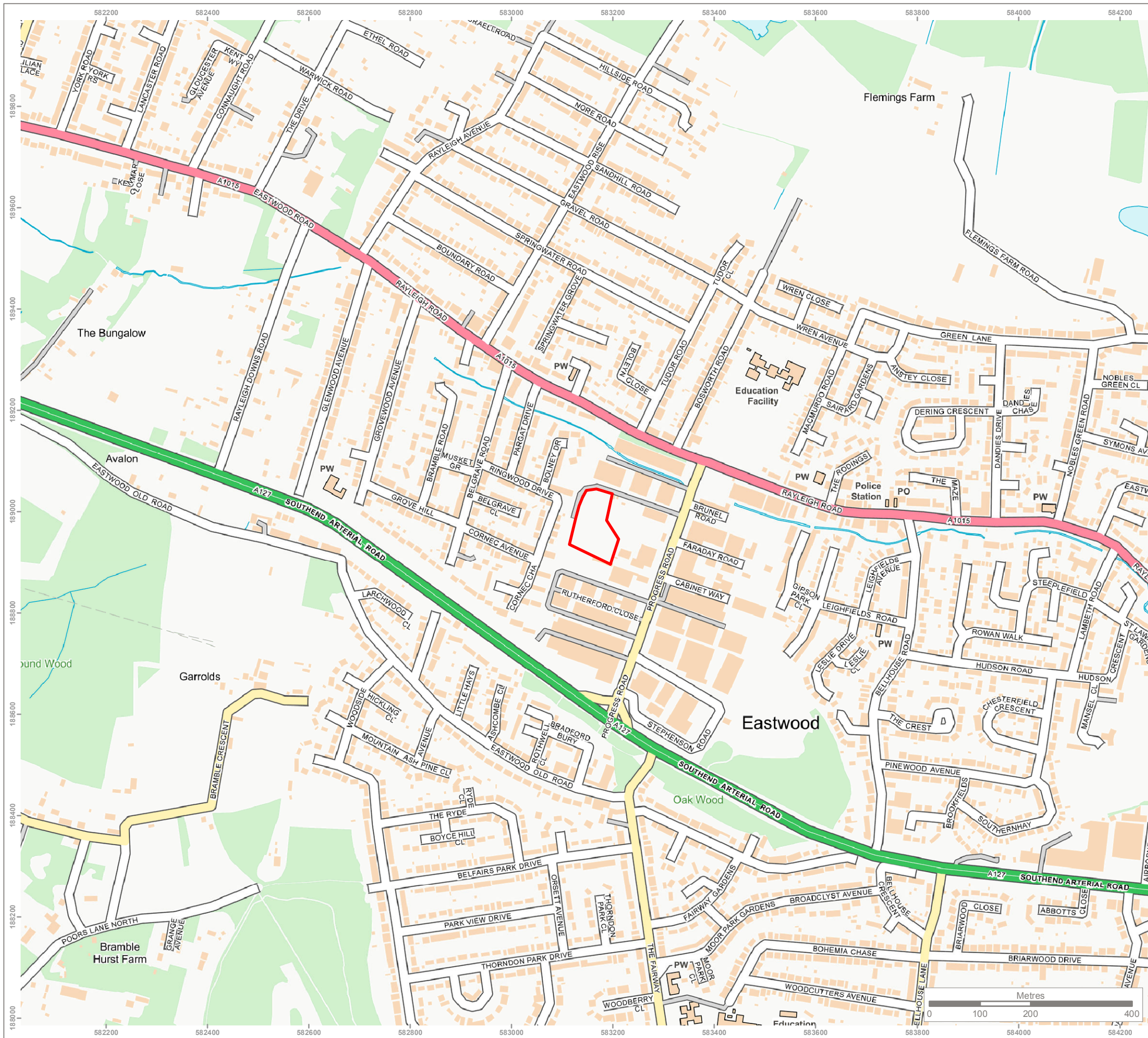
- 4.20 At the centre of the crown were two 3" gas and air valves. Other miscellaneous valves and siphons were noted around the crown. Three raised square and two flush circular manholes were recorded; a square and a circular lid were located side-by-side at the north side of the crown corresponding with the inlet / outlet mains pipes. On the opposite side of the crown to these was a circular lid and two square lids were at the east and west. The crown edge was fully encircled with railings and also included a solid plate barrier forming a tall toe guard for additional safety. This guard was bracketed to the crown surface by triangular gussets.
- 4.21 The roller carriages comprised of dual-roller sets with the rollers 300mm diameter; the axles (spindles) were mounted in joined axle housings fixed onto large single-piece footings with anchor bolts securing the carriages to the tank kerb. The lift roller carriages were grip-mounted with vertical stiffeners providing support. The design of the roller carriages was similar to those seen on Gasholder 1.
- 4.22 The lift stairs had been removed prior to this survey with only the lowest part of each remaining in place. These appear to have been of the standard angled frame design with spiral rails on the inner face.
- 4.23 The gasholder data sheet describes the gasholder as having a hot water anti-freeze system; a number of modular electrical circulation units were installed on the lift handrails (manufactured by Almar Services Ltd, Preston). Various telemetry, alarms, sensors and monitoring units as well as switches and control units were installed around the perimeter of the tank and on the lifts. As also noted on Gasholder 1, pivoting cable trays and pylons, each with control units, were installed on each of the lifts to support cables during the gasholder operation. These were at the east side of the gasholder; an electrical kiosk with anti-freeze monitoring and controls was on the path at the east side of the gasholder.
- 4.24 The inlet main pipe was at the north side of the gasholder where elevated Donkin flow valves and electrical controls were positioned adjacent to a dry-well with pump. No maps or plans of the site showing the arrangement of gas distribution around the site was available for this report. It was unclear if the outlet pipe was located alongside the inlet or at the opposite side of the gasholder at the south.
- 4.25 Hammer switches with maglocks and hi / low alarms were located on stanchions of variable height at the north-west side of the gasholder, each manually engaging with projecting knock-off arms mounted on each lift.

5.0 Discussion

- 5.1 Gasholders 1 and 2 were both low-pressure, water-sealed, spirally-guided gasholders with below-ground tanks. Gasholder 2 was particularly large with a tank diameter of 61m and a nominal capacity of 3.5 million cu. ft. It is worth noting that neither gasholder was a replacement of an earlier structure and therefore the below-ground tanks are original to each gasholder. Often, when constructed on a 'fresh' site, spirally-guided gasholders were constructed with above-ground tanks; it is unclear why in this instance below-ground tanks were used. It may be that since the gasholders had four-lifts, sinking the tank provided increased stability to the structure, as well as reducing the visual impact when the gasholders were raised.
- 5.2 The two gasholders were late examples of their type, dating to 1959 and 1966, with the construction of new gasholders generally ceasing after the 1960s. The Progress Road site was not used for the production of gas and served as a distribution centre, containing only the gasholders and associated distribution structures. By the late 1960s the production of town gas had ceased following a switch to the use of natural gas from the North Sea. Gasholder 1 originally stored town gas whereas Gasholder 2 was constructed subsequent to the change to Natural Gas.
- 5.3 The gasholders were found to be fairly typical of their type and period with a standard range of fittings including modern remote monitoring, telemetry and safety features. In spite of their late date of the construction both gasholders utilised rivets in addition to welding.
- 5.4 The site is not included in the 151 sites covered in the Step 3 Monuments Protection Programme (Trueman 2002).

References

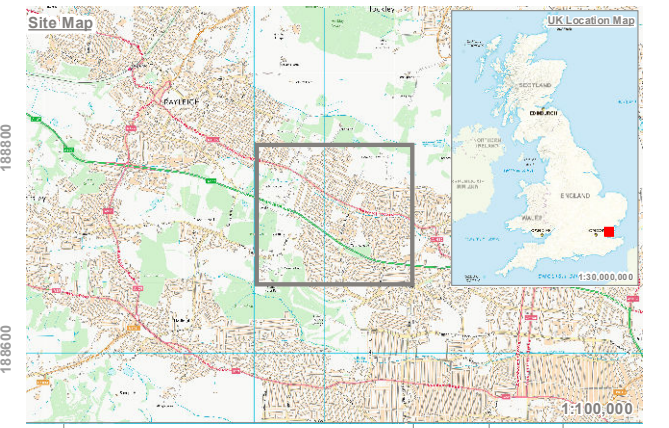
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KEY
 Site Location



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Rev	Description	Drawn	Approved	Date

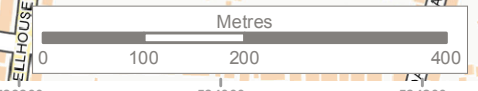
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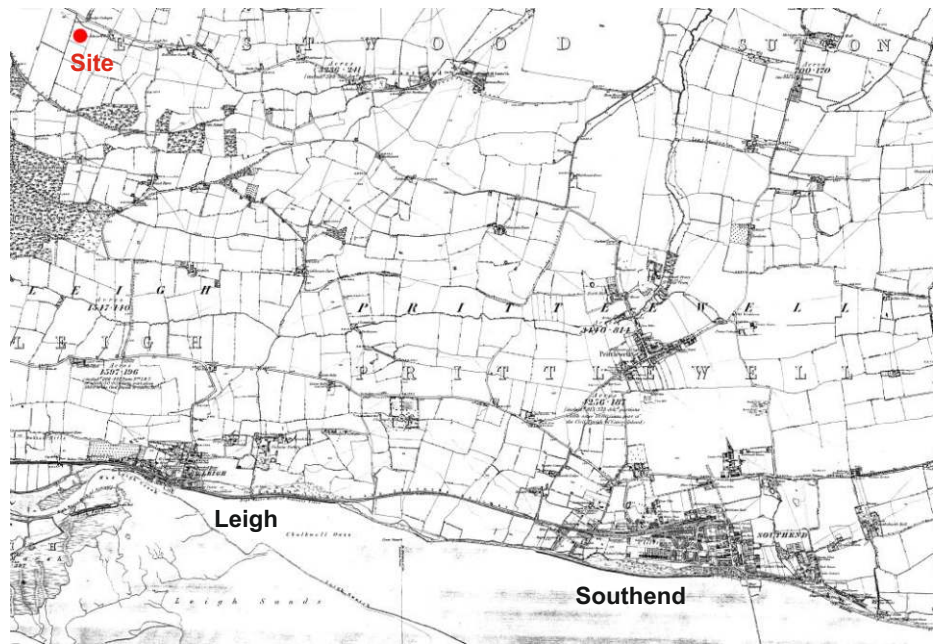
Project
Leigh on Sea, Progress Road

Title
Site location

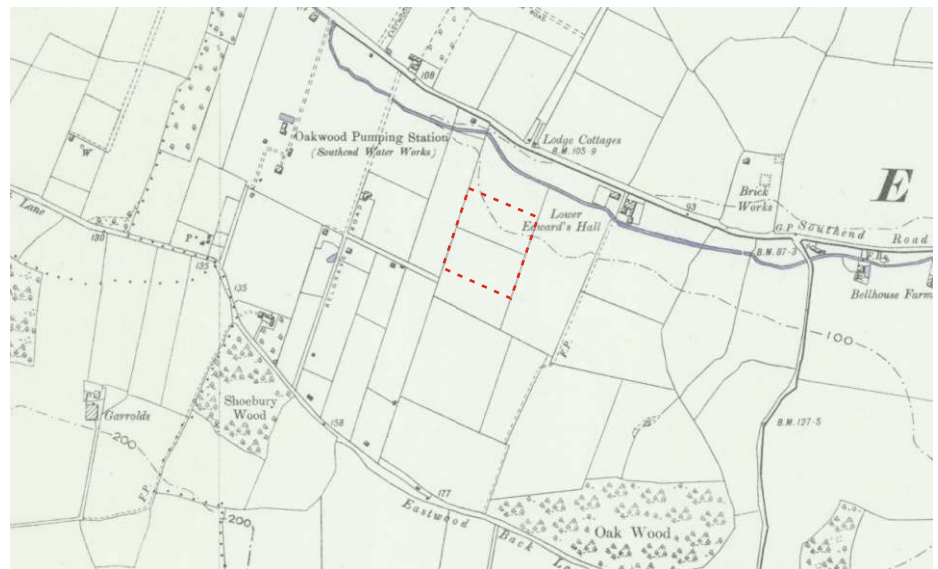
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AB	MK	JC	1:7,500 @ A3	13/08/2019





Ordnance Survey map of 1880, showing the site in relation to Leigh and Southend Fig 2



Ordnance Survey map of c1880, showing the approximate position of the later works Fig 3



Ordnance Survey map of c1970 Fig 4



General view of Gasholder 1, looking north-west Fig 5



View of the raised tank kerb with stair and access barrier Fig 6



View of the elevated maglocks and knock-off arm Fig 7



Pivoting cable trays at the north-east side of the tank Fig 8



Dry well with pump and flow valves at the south of the gasholder Fig 9



General view of the crown, looking north-west Fig 10



View of the crown with manholes, looking north-east Fig 11



Overflow pipe and valve Fig 12



Electrical cables and controls Fig 13



Example of the modular electrical anti-freeze units Fig 14



Truncated spiral stair with roller Fig 15



Example of the tank roller carriages Fig 16



General view of Gasholder 2, looking south Fig 17



View of the gasholder, crown and cable trays, looking south-west Fig 18



View of the pivoting cable trays Fig 19



Detail of the raised kerb with well access. Note truncated stair Fig 20



View of the lift handrails and crown with manholes; looking east Fig 21



General view of the crown with circular manhole Fig 22



Elevated maglock / hammer switches and lift knock-off arms Fig 23



View of tank and lifts with handrails Fig 24



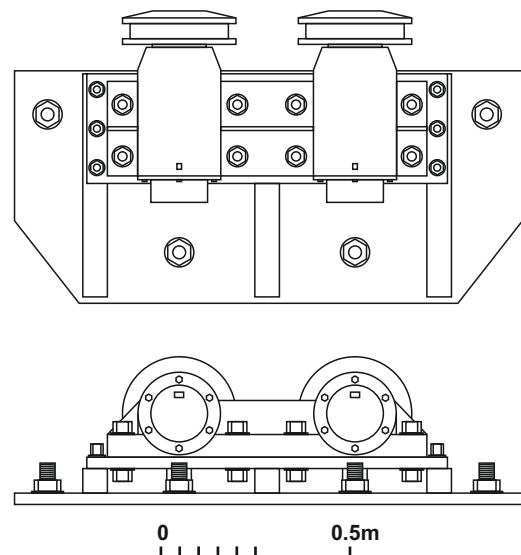
Example of the electrical anti-freeze fittings Fig 25



Dry well and pump with flow valves at the north side of the gasholder Fig 26



The roller carriages; also showing truncated spiral stair Fig 27



Measured drawing of an example roller carriage Fig 28



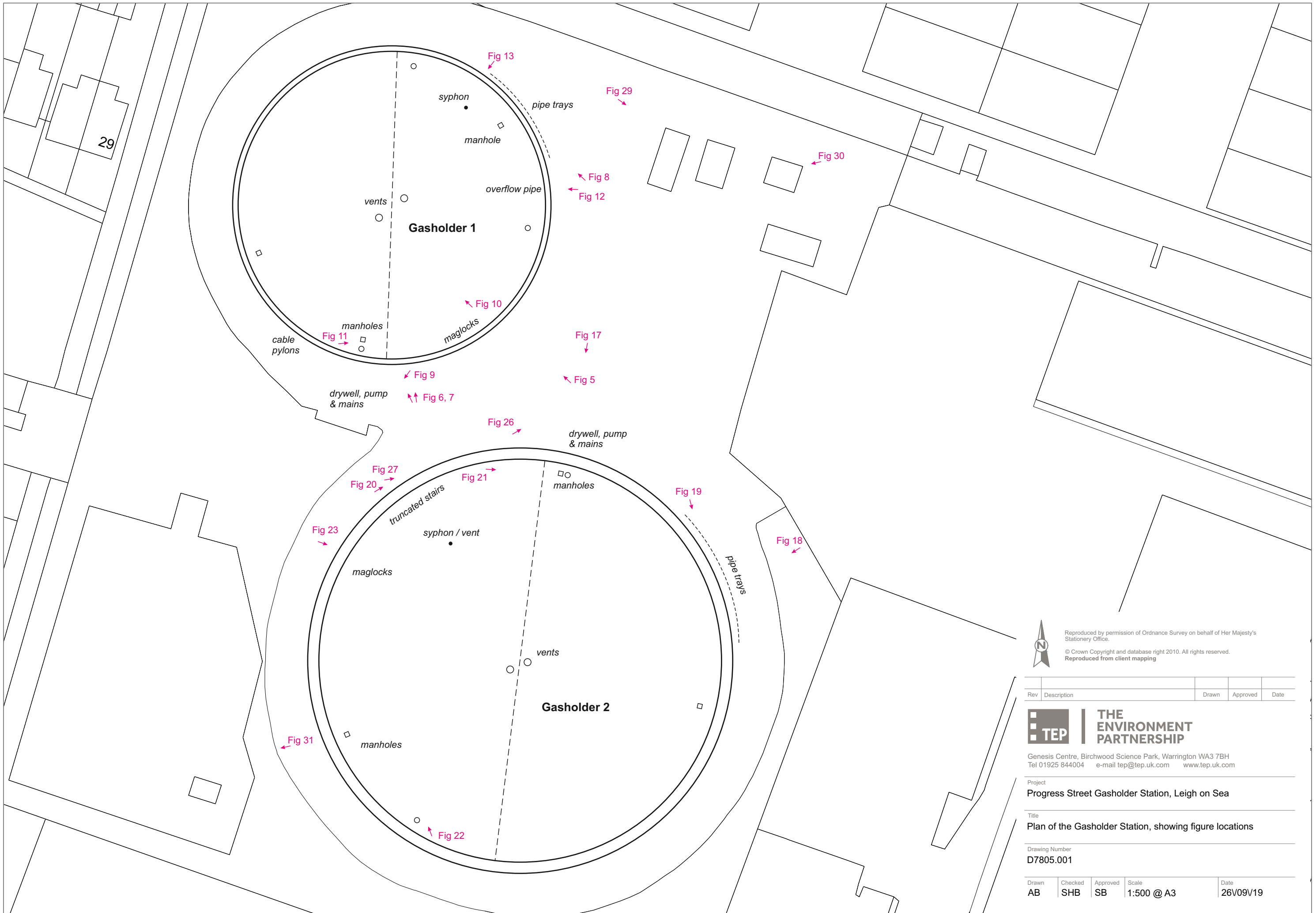
General view of buildings at the site entrance Fig 29



General view of electrical substation at site entrance Fig 30



Modern building at the south-east of the gasholder station Fig 31



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Rev	Description	Drawn	Approved	Date

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Project
Progress Street Gasholder Station, Leigh on Sea

Title
Plan of the Gasholder Station, showing figure locations

Drawing Number
D7805.001

Drawn	Checked	Approved	Scale	Date
AB	SHB	SB	1:500 @ A3	26V09V19

Leigh on Sea, Progress Road Gasholder Station

Photographic Register

21st August 2019

Nikon D3500, Nikon 18-70mm Lens

File / Photo No.	Description
DSC0342	Buildings at site entrance
DSC0345	Pipes and valves at GH1 mains pipes
DSC0346	PRS compound
DSC0347	PRS compound
DSC0349	PRS compound
DSC0468	Buildings at site entrance
DSC0649	Buildings at site entrance
	Gasholder 1
DSC0340	Gasholder 1, General view SE-NW
DSC0348	Gasholder 1, General view SE-NW
DSC0390	Gasholder 1, General view SE-NW
DSC0419	Gasholder 1, Circuit controls
DSC0420	Gasholder 1, pipe / valves at dry well
DSC0421	Gasholder 1, crown access at S
DSC0422	Gasholder 1, Maglocks at S
DSC0423	Gasholder 1, Crown and maglocks looking NW
DSC0424	Gasholder 1, knock off arm
DSC0425	Gasholder 1, crown manhole
DSC0426	Gasholder 1, pipe / valves at dry well
DSC0427	Gasholder 1, maglocks
DSC0428	Gasholder 1, electric controls
DSC0429	Gasholder 1, crown and manholes
DSC0430	Gasholder 1, crown and vents
DSC0431	Gasholder 1, crown, looking NW
DSC0432	Gasholder 1, crown, looking N
DSC0433	Gasholder 1, crown kerb, lutes and lifts
DSC0434	Gasholder 1, anti freeze
DSC0435	Gasholder 1, anti freeze
DSC0436	Gasholder 1, roller carriage
DSC0437	Gasholder 1, roller carriage
DSC0438	Gasholder 1, roller carriage
DSC0439	Gasholder 1, roller carriage
DSC0440	Gasholder 1, roller carriage
DSC0441	Gasholder 1, crown manhole
DSC0442	Gasholder 1, crown kerb, lutes and lifts
DSC0443	Gasholder 1, crown
DSC0444	Gasholder 1, crown from NW-SE
DSC0445	Gasholder 1, crown at S to N
DSC0446	Gasholder 1, electric alarms and switches
DSC0447	Gasholder 1, pipe trays
DSC0448	Gasholder 1, view at N
DSC0449	Gasholder 1, view at N
DSC0450	Gasholder 1, truncated stair
DSC0451	Gasholder 1, manhole at N
DSC0452	Gasholder 1, handrails and truncated stair
DSC0453	Gasholder 1, access track
DSC0454	Gasholder 1, electric junctions
DSC0455	Gasholder 1, tank kerb and water controls
DSC0456	Gasholder 1, pipe trays
DSC0457	Gasholder 1, pipe trays
DSC0458	Gasholder 1, detail of signage
DSC0459	Gasholder 1, walkway at tank perimeter
DSC0460	Gasholder 1, manhole at NE
DSC0461	Gasholder 1, crown edge with anti freeze, at E looking SW

DSC0462	Gasholder 1, manhole
DSC0463	Gasholder 1, crown and manhole at NW
DSC0464	Gasholder 1, crown and manhole
DSC0465	Gasholder 1, vent
DSC0466	Gasholder 1, pipe trays
DSC0467	Gasholder 1, truncated stair
	Gasholder 2
DSC0344	Gasholder 2, general view looking SE
DSC0350	Gasholder 2, general view from NE
DSC0351	Gasholder 2, general view from NE
DSC0352	Gasholder 2, general view from S
DSC0353	Gasholder 2, general view from S
DSC0354	Gasholder 2, general view from S
DSC0355	Gasholder 2, cable trays and electrical switch
DSC0356	Gasholder 2, Detail of switch
DSC0357	Gasholder 2, general view looking W / NW
DSC0358	Gasholder 2, general view looking W
DSC0359	Gasholder 2, general view looking N
DSC0360	Gasholder 2, view of crown
DSC0361	Gasholder 2, lutes and handrails at S of tank
DSC0362	Gasholder 2, crown vent
DSC0363	Gasholder 2, view of crown looking N
DSC0364	Gasholder 2, roller carriage
DSC0365	Gasholder 2, view of crown from S to W
DSC0366	Gasholder 2, lifts / lutes at S of tanks
DSC0367	Gasholder 2, crown top curb
DSC0368	Gasholder 2, crown top curb and manhole
DSC0369	Gasholder 2, detail of manhole
DSC0370	Gasholder 2, cable trays at NE
DSC0371	Gasholder 2, antifreeze control
DSC0372	Gasholder 2, antifreeze control
DSC0373	Gasholder 2, antifreeze control
DSC0374	Gasholder 2, cable trays at NW
DSC0375	Gasholder 2, cable trays at NW
DSC0376	Gasholder 2, pipes and valves at N
DSC0377	Gasholder 2, pipes and valves / drywell at N
DSC0378	Gasholder 2, pipes and valves at N
DSC0379	Gasholder 2, detail of signage
DSC0380	Gasholder 2, drywell and syphon pump
DSC0381	Gasholder 2, roller carriage
DSC0382	Gasholder 2, roller carriage
DSC0383	Gasholder 2, roller carriage
DSC0384	Gasholder 2, roller carriage
DSC0385	Gasholder 2, roller carriage and truncated stair
DSC0386	Gasholder 2, mains pipes manholes
DSC0387	Gasholder 2, view of crown from N to E
DSC0388	Gasholder 2, crown syphon
DSC0389	Gasholder 2, view of crown from N to W
DSC0391	Gasholder 2, electrical cables and junction
DSC0392	Gasholder 2, maglocks
DSC0393	Gasholder 2, transmitter unit
DSC0394	Gasholder 2, transmitter unit
DSC0395	Gasholder 2, maglock
DSC0396	Gasholder 2, crown syphon
DSC0397	Gasholder 2, maglocks
DSC0398	Gasholder 2, maglocks
DSC0399	Gasholder 2, antifreeze unit
DSC0400	Gasholder 2, maglock
DSC0401	Gasholder 2, maglock
DSC0402	Gasholder 2, roller carriage
DSC0403	Gasholder 2, crown and manhole at W
DSC0404	Gasholder 2, crown at W to SE
DSC0405	Gasholder 2, handrails, lutes



DSC_0340



DSC_0348



DSC_0390



DSC_0419



DSC_0420



DSC_0421



DSC_0422



DSC_0423



DSC_0424



DSC_0425



DSC_0426



DSC_0427



DSC_0428



DSC_0429



DSC_0430



DSC_0431



DSC_0432



DSC_0433



DSC_0434



DSC_0435



DSC_0436



DSC_0437



DSC_0438



DSC_0439



DSC_0440



DSC_0441



DSC_0442



DSC_0443



DSC_0444



DSC_0445



DSC_0446



DSC_0447



DSC_0448



DSC_0449



DSC_0450



DSC_0451



DSC_0452



DSC_0453



DSC_0454



DSC_0455



DSC_0456



DSC_0457



DSC_0458



DSC_0459



DSC_0460



DSC_0461



DSC_0462



DSC_0463



DSC_0464



DSC_0465



DSC_0466



DSC_0467



DSC_0344



DSC_0350



DSC_0351



DSC_0352



DSC_0353



DSC_0354



DSC_0355



DSC_0356



DSC_0357



DSC_0358



DSC_0359



DSC_0360



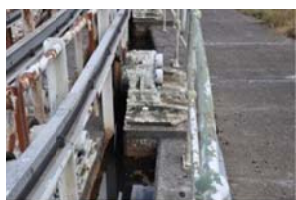
DSC_0361



DSC_0362



DSC_0363



DSC_0364



DSC_0365



DSC_0366



DSC_0367



DSC_0368



DSC_0369



DSC_0370



DSC_0371



DSC_0372



DSC_0373



DSC_0374



DSC_0375



DSC_0376



DSC_0377



DSC_0378



DSC_0379



DSC_0380



DSC_0381



DSC_0382



DSC_0383



DSC_0384



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DSC_0386



DSC_0387



DSC_0388



DSC_0389



DSC_0391



DSC_0392



DSC_0393



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DSC_0396



DSC_0397



DSC_0398



DSC_0399



DSC_0400



DSC_0401



DSC_0402



DSC_0403



DSC_0404



DSC_0405



DSC_0406



DSC_0407



DSC_0408



DSC_0409



DSC_0410



DSC_0411



DSC_0412



DSC_0413



DSC_0414



DSC_0415



DSC_0416



DSC_0417



DSC_0418



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