



**Historic Building Recording of Gasholders
at the Bengal Street Gasholder Station
Chorley, Lancashire
September 2018**

Report No. 18/121

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Project Manager: Anthony Maull
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OAS/S REPORT FORM

PROJECT DETAILS		OAS/S molanort1-329483
Project title	Historic Building Recording of Gasholders at the Bengal Street Gasholder Station, Chorley, Lancashire, September 2018	
Short description	<p>MOLA (Museum of London Archaeology) carried out a programme of historic building recording of Gasholders 1 and 2 at the Bengal Street Gasholder Station, Chorley, Lancashire. Gasholder 1 was a spiral-guided holder with below-ground tank and was built in 1953, replacing a former early 20th-century column-guided gasholder. Gasholder 2 was a spiral-guided gasholder with above-ground tank and was constructed in 1931. Both gasholders conformed to the typical patterns of development and construction styles of their respective dates. Neither of the gasholders was assessed as having heritage or architectural significance and both were subject to basic Level 2 historic building recording. An adjacent 1930s Governor House was also recorded.</p>	
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Future work	Unknown	
Monument type and period	1931 and 1953 spiral-guided gasholders	
PROJECT LOCATION		
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Site address	Bengal Street, Chorley	
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PROJECT CREATORS		
Organisation	MOLA Northampton	
Project brief originator	Atkins Ltd on behalf of National Grid	
Project Design originator	MOLA Northampton	
Supervisor	Amir Bassir	
Project Manager / Director	Anthony Maull	
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Historic Building Recording of Gasholders at the Bengal Street Gasholder Station Chorley, Lancashire September 2018

Abstract

MOLA (Museum of London Archaeology) carried out a programme of historic building recording of Gasholders 1 and 2 at the Bengal Street Gasholder Station, Chorley, Lancashire. Gasholder 1 was a spiral-guided holder with below-ground tank and was built in 1953, replacing a former early 20th century column-guided gasholder. Gasholder 2 was a spiral-guided gasholder with above-ground tank and was constructed in 1931. Both gasholders conformed to the typical patterns of development and construction styles of their respective dates. Neither of the gasholders was assessed as having heritage or architectural significance and both were subject to basic Level 2 historic building recording. An adjacent 1930s Governor House was also recorded.

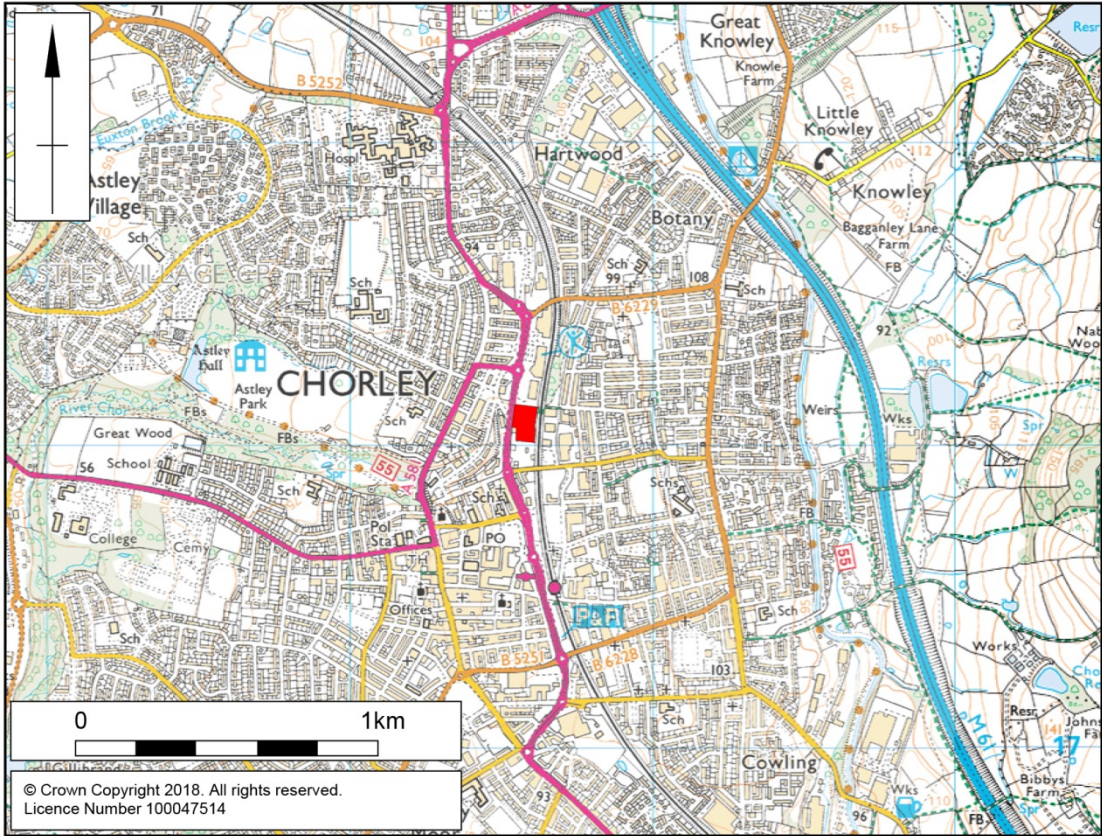
1 INTRODUCTION

MOLA (Museum of London Archaeology) was commissioned by Atkins Ltd, acting on behalf of National Grid, to undertake a programme of historic building recording of two gasholders at the Bengal Street Gasholder Station, Chorley, Lancashire (NGR SD 5856 1807, Figs 1 and 2).

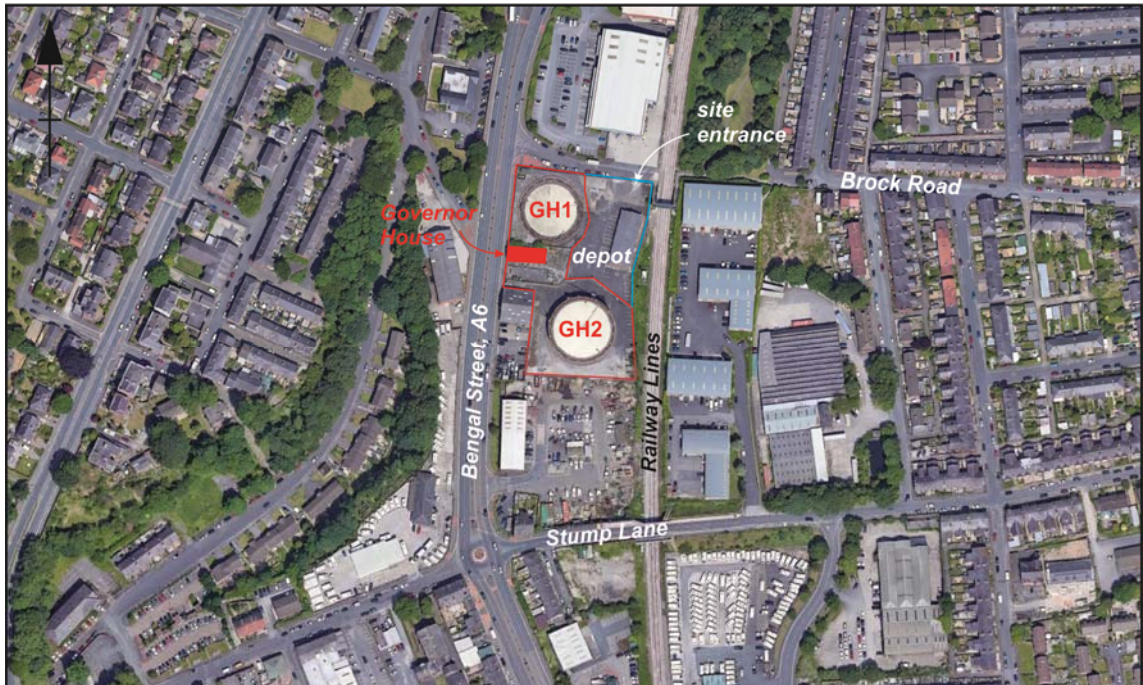
This survey is a voluntary exercise commissioned by National Grid as part of their commitment to the heritage of their broader estate. This report is in accordance with current best archaeological practice as defined in the Chartered Institute for Archaeologists' *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (CIfA 2015). This report follows an approved Written Scheme of Investigation which set out the proposed aims and recording methodology (MOLA 2018).

An assessment of the significance of the site concluded that the site does not include any designated heritage assets and concluded that the gasholders were of low heritage significance or architectural value (Montagu Evans, Undated). The heritage review recommended basic Level 2 recording should be undertaken for both of the Gasholders as well as the surviving 1930s Governor House.

BENGAL STREET, CHORLEY



Site location Fig 1



The recording area (Map data: © Google Earth) Fig 2

2 OBJECTIVES AND METHODOLOGY

The objectives of this survey were to:

- Produce an illustrated, written document detailing the fabric, appearance and form of the gasholders and associated infrastructure;
- Provide historical survey drawings (or sketches) for comparable investigation relating to building form and function, identification of fixtures and fittings where visible or accessible;
- Provide an account of historic fixtures, fittings and architectural features where visible or accessible;
- Provide a photographic record of the structures in context.

The level of recording was specified as basic Level 2 in accordance with the Historic England document *Understanding Historic Buildings, A Guide to Good Practice* (HE 2016), and as specified in the site specific *Heritage Review* (Montagu Evans, undated) which concluded that the gasholders were of minimal heritage significance.

Recording was carried out on the 13th September 2018 and encompassed the two gasholders and related pipework. The exterior of the Governor House was photographically recorded but the interiors were not accessed.

The site was photographically recorded to include general views of the gasholders and their setting, as well as detailed views of any structural, historic or architectural features.

Photography was carried out using a Nikon D7200 DSLR equipped with Sigma 10-20mm and Nikon 18-105mm lenses. Supplementary photography was undertaken using a Panasonic Lumix FZ1000. Photographic scales were included in views where practical.

Measured sketches were carried out of an example roller carriage of each gasholder.

A visit was made to the Lancashire Archives in order to examine mapping, documents and local history books pertaining to the site and gas making in Chorley and Lancashire generally.

3 SITE LOCATION AND TOPOGRAPHY

The gasholder station was located to north of Chorley Town Centre at the junction of Bengal Street (A6) and the former western approach to Brock Road which now serves as a short access track and footpath. The recording area was largely disused and comprised two gasholders and a Governor House dated to 1931, as well as associated pipes and infrastructure. The site was bound on its western side by Bengal Street, to the south by a storage yard and vehicle depot with Stump Lane beyond. The eastern site boundary was defined by the Lancashire Union Railway line. To the north of the site were large modern retail units of the Alliance Retail Park. The general land use of the surrounding area comprised modern and 19th-century residential properties and retail units and a large park was located to the west of the site. The north-western part of the gasholder station comprised an active National Grid Depot and active gas pipes were located adjacent to the Governor House. An electrical substation / former Boiler House was located in the north-west corner of the recording area, adjacent to Gasholder 1.

The area lies at approximately 89m aOD and is generally fairly flat. The underlying geology has been mapped as comprising interbedded strata of the Carboniferous Milnrow Sandstone and Penning Lower Coal Measures as well as other sedimentary deposits of the same period (BGS 2018). Overlying the bedrock are superficial glacial and glaciofluvial sand, gravel, and till deposits of the Devensian and Diamicton period.

4 HISTORICAL BACKGROUND

As shown on Ordnance Survey Town Plan of 1849 (*not reproduced*), the town of Chorley occupied a linear arrangement along the north to south Manchester to Preston Road, with other routes converging at the town. The Lancashire and Yorkshire Railway which was built in the early to mid 19th century mirrored the path of the main road and passed along the eastern side of the town. The Leeds and Liverpool Canal flowed north-south a short distance to the east of the town. Bengal Street was a short road leading from the eastern end of Hollinshead Street and connecting to the Water Street Mill. The recording area at this time was undeveloped and a small brook flowed through the site, passing under the railway lines towards the Mill. A small gasworks was located a short distance to the south-west of the site in the space between Water Street and Hollinshead Street, close to a brewery. At the Water Street Mill two small gasometers are identified on the map adjacent to a chimney. Further to the north, the Waterloo Cotton Mill also had gas manufacturing plant and a single gasholder at the rear of the mill; likewise Chor Mill also had a single gasometer adjacent to the mill.

Gas lighting in Chorley can be dated to the very early 19th century with the formation of the Chorley Gas Light Company in 1819; however this public supply was preceded by a small works located at a local cotton mill, and which was later expanded to supply public gas (Wilson 1991). The Company was incorporated by Act of Parliament in 1850.

The town's rail links were expanded in the 1860s with the construction of the Lancashire Union Railway and later 19th-century mapping show an increase in outlying industries, mainly textile mills, and associated residential properties to house the workers. The space between the main road, Market Street, and the nearby railway lines was infilled during this period and new development and construction can be seen along the two roads leading into the town from the west. The Water Street Mill was no longer present by 1890 and the site remained undeveloped until very late 19th or very early 20th century. The Gasworks at Water Street was expanded by the 1890s and a group of three gasholders, two fairly small and one double their size, were constructed adjacent to the Cattle Market, a short distance to the south of the recording area. The street immediately to the south of the gasholders was named Livesey Street, perhaps named for the gas engineer George Thomas Livesey. These gasholders replaced those at the main gasworks, which in order to expand production capability, required the removal of the original gasholders.

The gasholder station at Bengal Street was established by 1910 and comprised a single gasholder, a column-guided holder which was later replaced by Gasholder 1. The chosen site was located at the intersection of Bengal Street and the recently created Brock Street, and was in close proximity to the gasworks at Water Street. Two of the gasholders at Livesey Street were dismantled by this time and the impetus to create the Bengal Street station was likely to allow for the clearance of the cattle market station. The new gasholder appears to have been approximately double the size of the largest gasholder at Livesey Street. The area to the south of the Bengal Street gasholder is labelled as Corporation Yard and Refuse Destructor on the Ordnance Survey map of this 1910.

The gasholder at Livesey Street remained standing in the 1920s but by the mid 1930s had been demolished and a Public Baths constructed on its site. The Bengal Street site was expanded in the 1930s with the construction of Gasholder 2 in 1932. As was common with gasholders not utilising a pre-existing tank it was constructed with an above ground tank which provided significant cost and practical advantages to

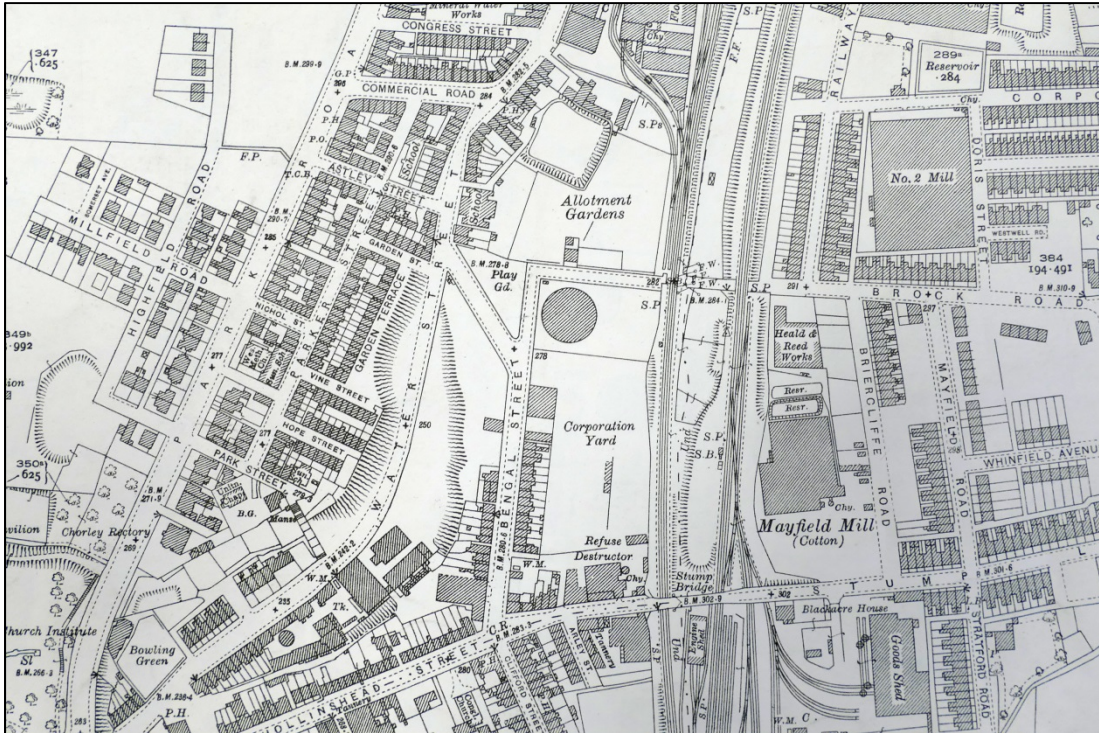
excavating a below-ground tank.

Following nationalisation the site came under the control of the North Western Gas Board which was established in 1949. The former column-guided Gasholder 1 had been reconstructed as a spiral-guided gasholder in 1954. Ordnance Survey mapping of 1959 labels the former gasworks as *Disused Works* and marks several of the buildings as *Ruin*.

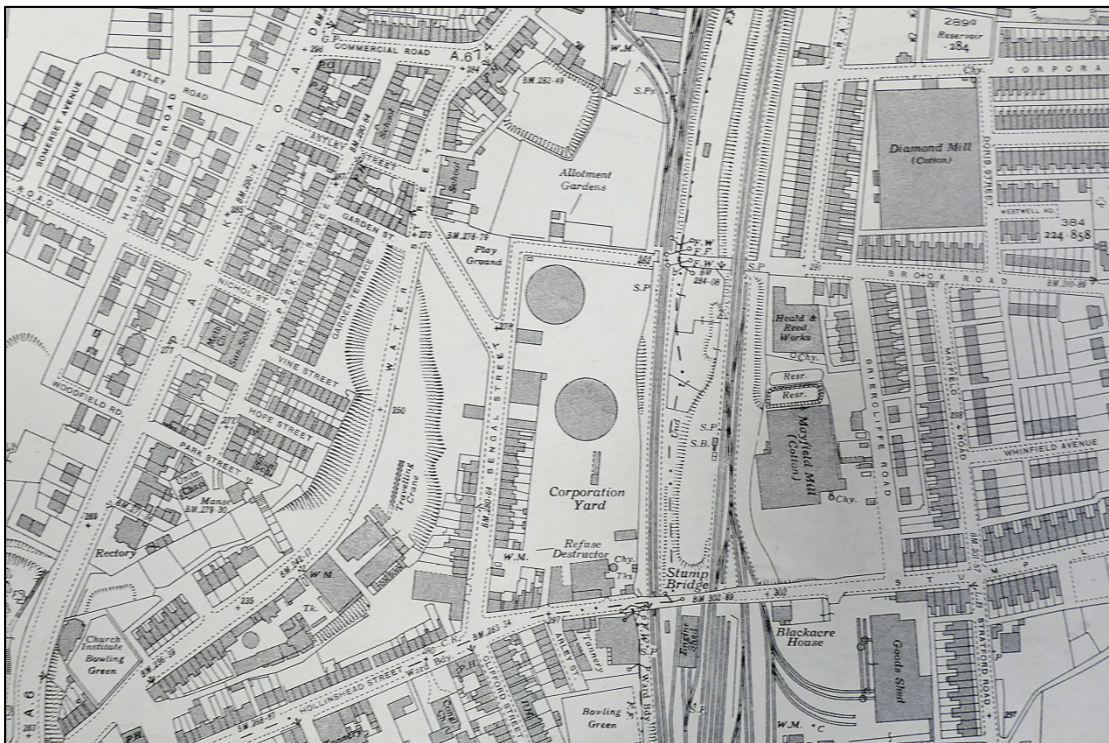


Ordnance Survey map of 1894, with the future gasholder station highlighted. Note gasholders adjacent to the Cattle Market Fig 3

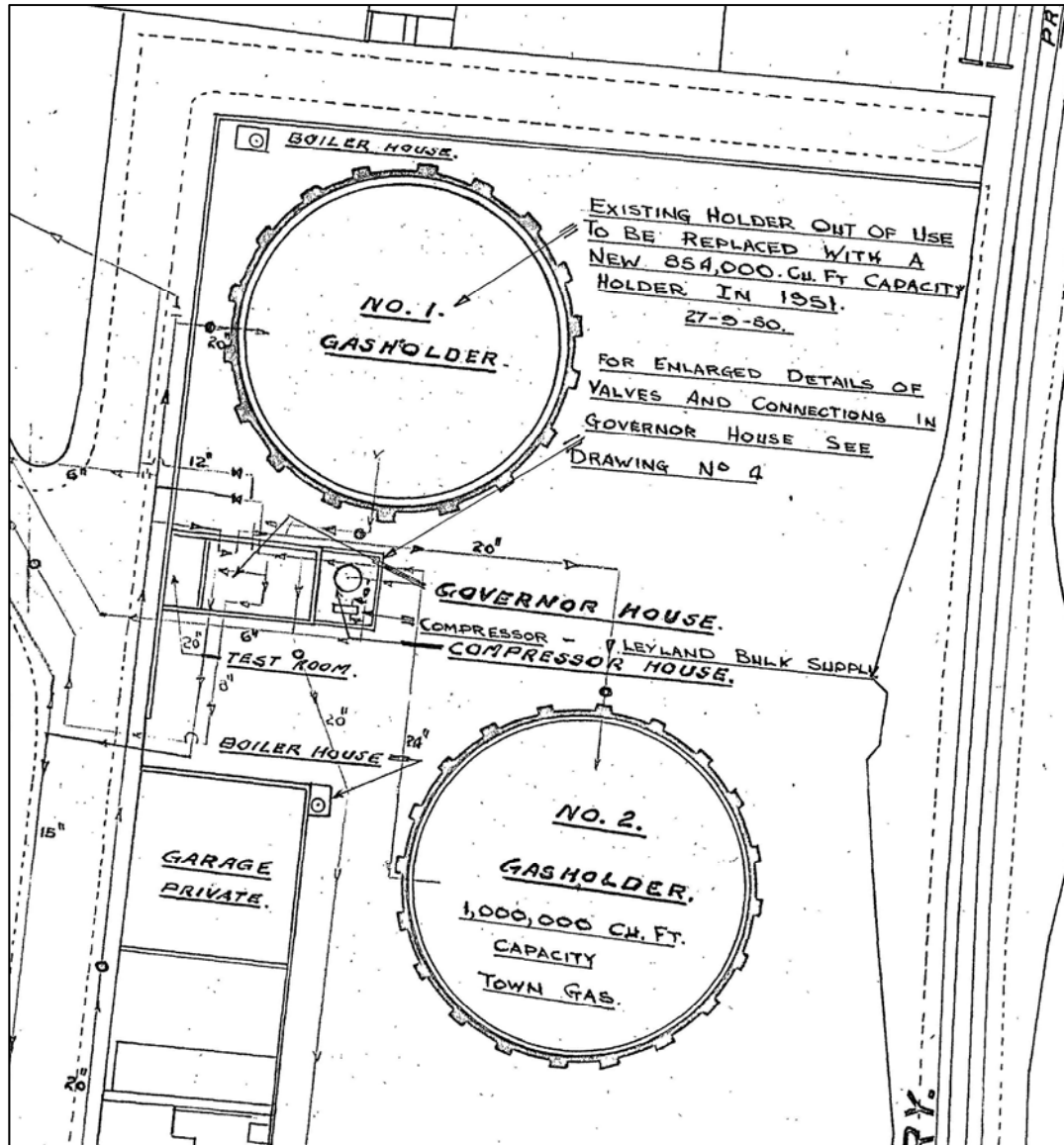
BENGAL STREET, CHORLEY



Ordnance Survey map of 1910, showing the precursor to Gasholder 1 Fig 4



Ordnance Survey map of 1938, showing the southward expansion of the holder station by the addition of Gasholder 2 Fig 5



Extract from an undated site plan (late 1940s?), showing the precursor to Gasholder 1 prior to its replacement (NW/WL/CHR/E/E/4) Fig 6

5 HISTORIC BUILDING RECORDING

The site was enclosed by brick walls around its western perimeter and modern fencing around the east and south. The site was accessed through secure gates from the former Brock Road to the north. A modern building occupied the eastern side of the site and was not subject to recording. The Governor House was located at the east of the site within an active pressure reduction station and could not be accessed. An electrical substation / meter house was located in the north-west corner of the site. The gasholders were found to be in a generally good condition.

A series of concrete bays were located in the south-eastern corner of the site and formerly served as storage areas.

5.1 Gasholder 1

Gasholder 1 was a four-lift spiral-guided gasholder with a below-ground tank and was built in 1953 by R & J Dempster of Oldham Road, Manchester. Gasholder 1 replaced a former column-guided gasholder of c1910 and utilised the existing below-ground tank of that holder.

The tank was 36m (118' 0") in diameter and sunk to a depth of 7.5m (24' 6"). The gasholder had a total storage capacity of 24,875 cu.m. (878,531 cu.ft) including the 1.6m (5' 4 ½") crown rise capacity. The four lifts are described in the basic record form as welded steel, fabricated from 8BG sheets with thicker 5/16" sheets at the top and bottom rows (See Appendix). The dimensions of the lifts were as follows:

Table 1: Gasholder 1 lift dimensions

	Inner, 1st lift	2nd lift	3rd lift	Outer, 4th lift
Diameter	32.8m (107' 7 ½")	33.6m (110' 3")	34.4m (112' 10 ½")	35.2m (115' 6")
Depth	7.0m (23' 0")	7.3m (24' 0")	7.3m (24' 0")	7.3m (24' 0")
Number of rollers	12	12	18	18

The cup and grips were square profile, comprising 10" x 3 ½" channels, and measured 10"x 22 ½". The grip channels served as narrow walkways and had simple steel handrails fitted at the edges, bolted to the toeguards. Between the tank face and the first lift was a gap of 380mm.

The tank was edged with stone blocks with an adjacent raised kerb of brick and concrete. The kerb was interrupted at regular intervals by the 18 large outer roller carriages. It can be assumed that the early 20th-century gasholder which the present gasholder replaced was a column-guided holder, though little information about the former holder could be found in mapping, documents or historic photographs. As such it is probable that all of the outer roller carriages utilised the pre-existing column footings; in many examples of gasholders being converted from column to spiral it was common for the number of rollers to be increased (often doubled), but 18 columns in this instance would be the expected number of supports for a gasholder of this diameter. The roller carriage footings comprised short pairs of I-section beams held together by flange plates and projected a short distance beyond the tank edge to support the dual roller carriages. The roller axels were housed in separate steel boxes and joined by flange plates; the rollers were 350mm in diameter. Roller carriages of a very similar form were recorded on Gasholder 2 (Built in 1954 by R and J Dempster) at Hind Lane, Birkenhead (Bassir 2018a). The lift roller carriages were of

the same design and were mounted on the grip channels; the spiral guide rails were fitted with run out stops.

The lift stairs frames comprised pairs of angles joined by flat bar lattice webs and diagonally braced. They were mounted on the grip channels and fitted with spiral rails which interacted with small rollers. Due to the gasholder diameter the stairs were relatively steep. Signs providing details of the lift pressures, gasholder designation, and electrical safety warnings were fitted to the side of the outer lift stair at the south-west side of the tank.

The crown comprised concentric rows of welded steel sheets; these being primarily 8BG with thicker sheets, $\frac{1}{2}$ " and $\frac{1}{4}$ " at the top curb. Two manually operated gas 3" valves / vents were located at the crown apex. The 18" inlet pipe was located at the west side of the gasholder and an oval flat lid on the crown allowed access to the pipe. Likewise the outlet pipe at the south side of the gasholder had a corresponding oval flat lid and a raised square access point on the south side of the crown. A dry-well adjacent to the tank at its southern side allowed access to the outlet pipes. An oval flat lid access was also located at the north-east side of the crown.

The crown frame is described in the Basic Record form as comprising 24 main rafters (6" x 4" x $\frac{1}{2}$ " tees) with tie bars and bracing, suggesting a fairly standard form of crown framing for a gasholder of this period.

The gasholder had an electrical anti-freeze system and circuit boxes and holder height controls were located at the east and south sides of the holder. Pylons for carrying the electrical anti-freeze cables to the lifts were located at the south side of the gasholder and were mounted on the lift grips. Two oil film applicators were located at the east side of the crown close to a number of sensors and alarms fitted onto the hand rails.

5.2 Gasholder 2

Gasholder 2 was a three-lift spiral-guided gasholder with an above-ground tank and was constructed in 1930/1 by C & W Walker.

The internal diameter of the tank was 37.9m (124' 3") and it stood to a height of 9.8m (32' 2"). The gasholder had a total capacity of 29,862 cu.m. (1,054,550 cu. ft.) including the 2.4m (7' 9") crown rise capacity. The lift dimensions have been recorded as follows (See Appendix):

Table 2: Gasholder 2 lift dimensions

	1st / inner lift	2nd lift	3rd / outer lift
Diameter	35.5m (116' 6")	36.5m (119' 9 1/2")	37.1m (121' 9")
Depth	9.6m (31' 6")	9.6m (31' 6")	9.6m (31' 6")
Number of roller carriages	12	16	20

The tank was comprised of five courses of riveted steel sheets. The seams of the lower two courses were strengthened with additional overlap plates. The upper courses were interrupted by regularly spaced pairs of triangular brackets or gusset plates which projected outwards to support the walkway and also supported smaller brackets on the inside face of the tank that carried the outer roller carriages. A similar arrangement was recorded at Gasholder 67, Tewin Road Holder Station, Welwyn Garden City (Bassir 2018b). The gasholder was seated on a circular concrete pad and likely has a riveted steel floor to which the tank was joined by a continuous curb, likely a riveted steel angle. A continuous concrete curb had been built around the very base of the tank around the west east and southern sides of the tank, perhaps to protect the tank / floor seam; it is unclear if this was original or a later addition. A vehicle barrier had latterly been installed around the perimeter of the tank.

The lifts are described on the basic record form (see Appendix) as riveted steel and the square profile cup and grips are described as 10" channels with the grip plates being 21 3/4" in height. The sheet thickness is given as 10G and the thicker top and bottom sheets as 1/4" and 3/8" respectively.

The positions of the inlet and outlet pipes found during the survey were not found to correspond with those given on an early 1950s plan of the site (NW/WL/CHR/E/E/4), indicating a rearrangement of these subsequent to the reconstruction of Gasholder 1, or possibly following the conversion of the holders to natural gas.

The 24" inlet and outlet pipes were located together at the western side of the holder. Part of the pipes formed a loop which rose above the ground to join a flow valve. An electrical junction box was installed on top of the flow valves and a switch or junction control box was located nearby. Vertical cable trays led from ground level to the top of the tank; a platform projected out from the top of the tank at the west side of the gasholder and housed electrical switch boxes and holder height / pressure trips. The gasholder employed an electrical anti-freeze system and various cables and electrical equipment were fitted to the lift handrails. The gasholders likely formerly had a steam anti-freeze system and the truncated pylons for lagged pipes were noted around the top of the tank and lifts.

The tank was accessed via a two-flight stair located at the north-western side of the gasholder. The mid-level landing was supported on a steel frame / gantry on which was a sign providing the gasholder designation and pressure information. A

commemorative plaque was fixed to the side of the gantry and read C.&W. WALKER. LTD. / DONNINGTON. / WELLINGTON. / SHROPSHIRE. / 1930.

The roller carriages were of a compact design comprising two rollers with the axels held in single-piece casings bolted to the carriage footings. The outer roller carriages projected a short distance from the tank face and were braced by tapered brackets or gusset plates in turn secured to the brackets on the outer face of the tank. The lift rollers were mounted on the grip channels and were likely supported by vertical steel beams (stiffeners) fixed to the inner face of the lifts. No run-out stops were noted on any of the spiral rails.

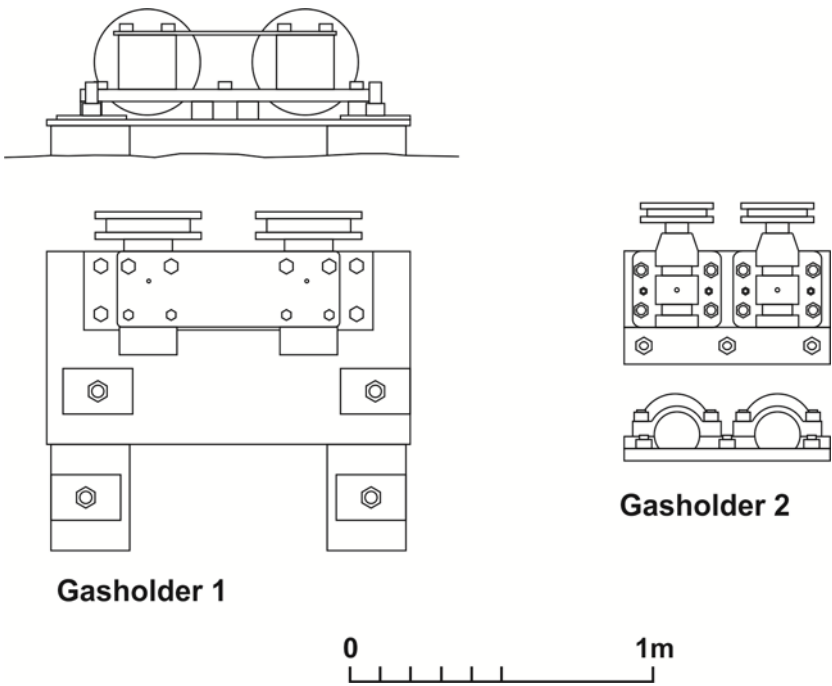
The tank walkway was encircled by simple handrails and a toe guard and the cardinal compass points were marked on the walkway surface by hand sprayed capital letters. The lifts were likewise encircled by simple handrails.

Of interest were concrete blocks placed on the lift channels of the 1st and 2nd lifts on their southern side. Similar such features have been noted by the author on several other gasholders and they appear to have served to deliberately increase the weight on one side of a lift as a means of balancing them (see Gasholder 2 (1942), Thomas Street, Stretford (Bassir 2018c), Gasholder 1 (1904), Spofforth Road, Wavertree (Bassir 2017)).

The crown was formed of concentric rows of steel sheets riveted at the edges. The general sheet thickness was 10G while the thicker sheets of the upper curb were ¼". The underlying frame is described on the Basic Record form as "Milbournes Patent Framework, 24 rafters 5" x 5" x ½" Angle. Main Tension Rods 3" x ¾" Flats, 11 Ring Purlins" (see Appendix). Numerous small welded repairs were noted on the crown sheeting and the paintwork had flaked in many places leading to rusting of the steel. Oval flat lid access or inspection points were located at the north-west, north and south-east sides of the crown. Two oil film applicators were located at the west side of the crown.

When the gasholder was at rest the three lift stairs came together at the north and north-east sides of the tank. The steps were inclined at 45° and were supported on a frame comprised of pairs of angles with flat bracing and held to one another by bolted stiffeners or gusset plates.

An overflow pump and interceptor tank were located at ground level on the north side of the gasholder. The tank had a raised concrete access / inspection chamber with stairs and was covered with a steel grate. A similar arrangement of interceptor and pump was recorded at Lostock Hall, Preston (Clarke and Bassir 2014).



Examples of the gasholder roller carriages (Scale 1:25) Fig 7

5.3 The Governor House

The Governor House was a single-storey linear building located at the west side of the site and presented a gabled elevation to Bengal Street. It had a tripartite rectangular plan, measuring approximately 22m x 8.5m, and aligned roughly east to west; the three rooms have, at different times, variously served as Governor House, Booster House, Instrument House, Test Room, Compressor House and Electrical Switch Room. It was located within an enclosed active pressure reduction station (PRS) and recording was carried out from the fence line. A number of active pipes and valves remained *in situ* within the compound.

The building had a gabled roof of stone slates and two ventilating louvers straddled the ridge line. The gables had simple stone coping with kneelers.

The walls were constructed of red brick and arranged into a series of recessed panels with dentils along the upper edges. This was a common and effective method of enlivening an otherwise plain brick façade. A number of ventilating bricks were set within the walls. A single-width door in the west elevation allowed access to the building from the street. A commemorative stone block was set in the west gable and read CHORLEY CORPORATION / GAS DEPT. / EXTENSIONS 1931.

The fenestration was utilitarian with wooden framed windows, some with louvered panels, and with concrete sills and lintels. A blocked door was noted on the south elevation.

Various cable trays were fixed to the external walls along with electrical switch and control boxes, as well as modern security lights and cameras. The north elevation was less visible due to fencing and vegetation; an interceptor for Gasholder 1 appeared to be located within the compound, adjacent the Governor House.

5.4 Electrical Substation / Meter House

This was a small rectangular brick-built structure, measuring approximately 5m x 3m, located in the north-west corner of the site adjacent to the boundary walls. The area immediately adjacent to the building was fenced off to enclose electrical equipment. There was a single-width door in the south-east corner allowing access to the gasholder compound and an adjacent door opened to the smaller electrical compound. The building first appears on Ordnance Survey maps of 1910 (Fig 4) and is variously labelled as Meter House and Boiler House on plans of the site. The brickwork suggests that the building was perhaps altered or repaired, likely reflecting a change of function. The building had a flat roof of roofing sheets and it may be that an earlier roof was replaced.

6 DISCUSSION

Both of the gasholders were fairly typical of the trends in gasholder design at their respective periods though the column-guided precursor to Gasholder 1 may be considered a relatively late implementation of this design at a time when steel standards and frame-guiding began to replace columns, allowing for the construction of larger holders with a greater number of lifts. Gasholder 2 was built in 1931 during which time the spiral-guided design became an increasingly popular choice owing to its cost-effectiveness, ease of repair and the ability to achieve large storage capacities on a limited footprint. The above-ground tank also represented an advantage over frame-guided gasholders which generally required the excavation of a tank at much greater cost and effort.

The replacement of the column-guided gasholder with a spiral-guided one in 1953 was again a common development since this allowed a gasworks to significantly increase its storage capacity without the need to build more gasholders, and the re-use of the existing tank represented a cost-saving measure.

The Governor House was a functional and utilitarian structure, cost-effective and well-suited for its purpose and, like the other structures on site, typical of buildings of this type and period.



View of Gasholder 1, looking north-west Fig 8



General view of Gasholder 1, looking south-east Fig 9



The lifts and hand rails, showing various electrical and telemetry and an oil applicator Fig 10



Example of the outer roller carriages Fig 11



Example of the lift roller carriages, note run-out stops Fig 12



General view of the crown, showing one of the access points Fig 13



Circular and raised square manholes at the south side of the crown Fig 14



The lift stairs, looking south-east Fig 15



Dry well and pressure controls at the south side of the gasholder Fig 16



Example of the anti-freeze supporting pylons Fig 17



Gasholder 2, looking south Fig 18



Gas holder 2, looking north-west Fig 19



Detail of the tank construction Fig 20



The walkway supports Fig 21



The tank stairs Fig 22



Commemorative plaque attached to the stair gantry Fig 23



Pipework and adjacent control box at the north-west side of the tank Fig 24



The lift stairs Fig 25



General view of the lift grips and crown, looking south-west Fig 26



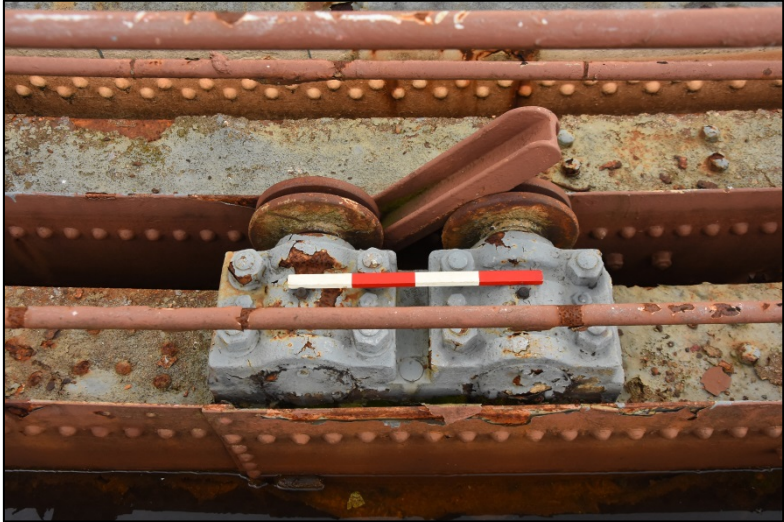
View of the lifts and crown, note 'balancing weights' installed on the 1st and 2nd lift grips Fig 27



Detail of the crown and top curb, also showing one of the access lids and an oil film applicator Fig 28



Example of the outer roller carriages Fig 29



Example of the lift roller carriages, also showing the riveted grip construction Fig 30



General view of the Governor House and PRS compound Fig 31



The south elevation Fig 32



The east elevation Fig 33



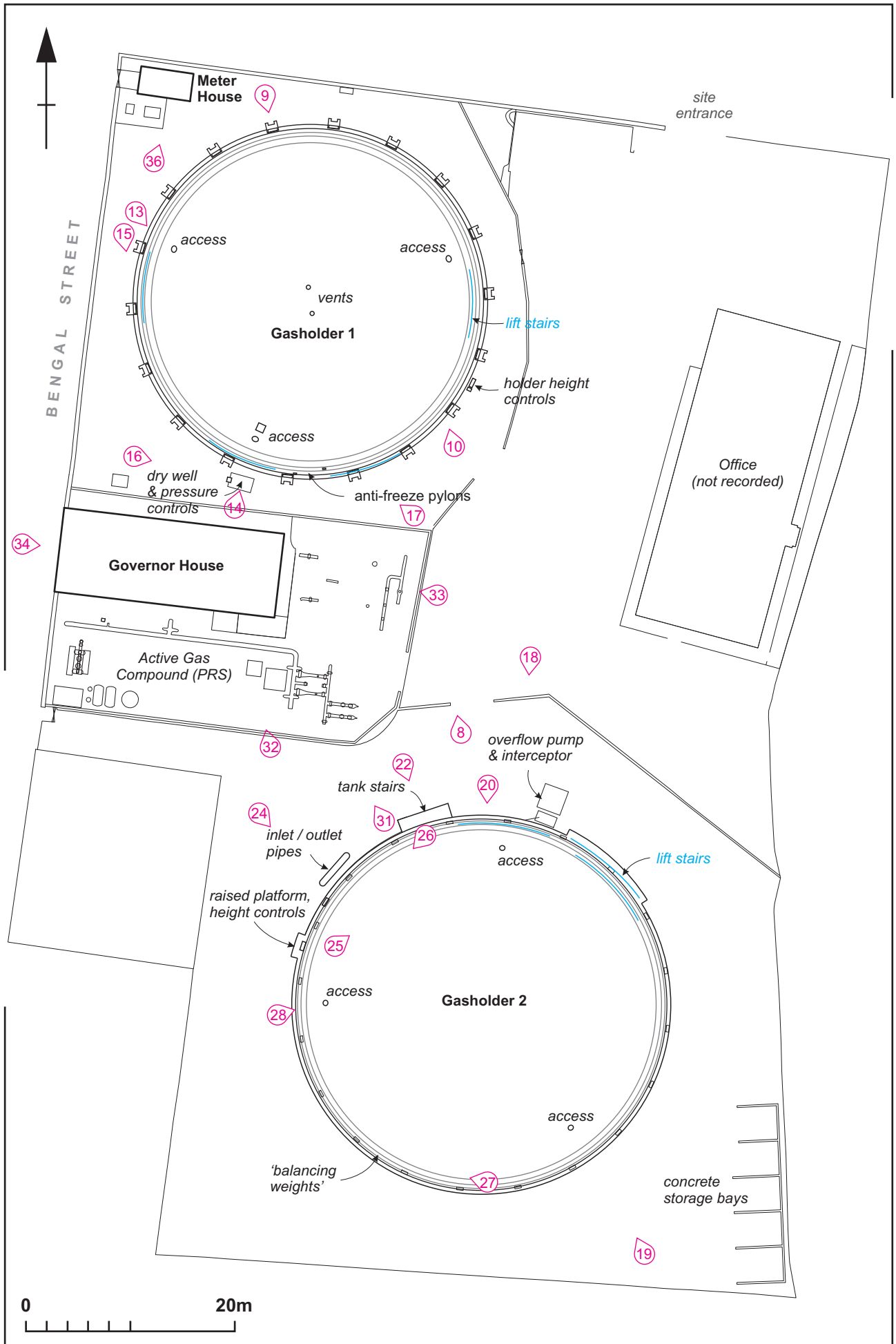
The western frontage to Bengal Street Fig 34



Detail of commemorative stone Fig 35



The Meter House / Substation Fig 36



Scale 1:500 (A4) The recording area, showing key features and photograph locations Fig 37

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MOLA
02 October 2018

Appendix - Basic Record Forms

REGIONAL PLANT DEPT.
 REPORT OF EXAMINATION OF GASHOLDER
 WATER-SEALED TYPE — BASIC RECORD

NAME BRITISH GAS NORTH WESTERN NORTH AREA
 LOCATION CHORLEY PRT 15A
 GASHOLDER No. 1 Date of inspection _____
 SITUATION _____ Date of completion 1953
 HOLDER BUILT BY R & J DEMPSTER Date of completion 1953
 TANK BUILT BY R & J DEMPSTER Date of completion _____
 LIFT ADDED BY _____ Date of completion _____
 TYPE (i.e. Column, Spiral or Rope Guided) Spiral Guided
 CAPACITY (exclusive of Crown) 854,000 cu.ft. (24,180 cu.m.)
 CAPACITY OF CROWN 24,531 cu.ft. (695 cu.m.)

LIFTS

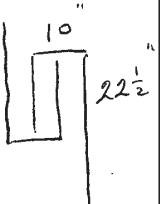
	Top	Second	Third	Fourth	Fifth
Diameter	107'7 $\frac{1}{8}$ "	110'3"	112'10 $\frac{1}{2}$ "	115'6"	
Depth	23'0"	24'0"	24'0"	24'0"	
Pressure (in. w.g.)/(mbar)	6.0	9.0	11.8	14.3	
No. of Spirals	12	12	18	18	
Spiral Guides or Ropes					

GUIDE FRAMING (General Description) Spiral rails on rail plates

CROWN—RISE 5'4 $\frac{1}{2}$ " { Number and Type of Manholes 3 - 24" x 20"
 Position and Number of Gas and Air Vents 2 x 3" IN CENTRE

HEETING THICKNESS { Crown: Outer Row $\frac{1}{2}$ " $\frac{1}{4}$ " Other Rows 8 BG
 Sides: Top Row 5/16" Intermediate Rows 8BG
 Bottom Row 5/15"

CUPS & GRIPS (Size and construction, with sketch) 10" x 3 $\frac{1}{2}$ " CHANNEL



TOP CURB & CROWN FRAMING (Construction—See Sketch Sheet) Top curb 5" x 5" x $\frac{5}{8}$ " angle
24 main bars 6" x 4" x $\frac{1}{2}$ " tee with tie bars and bracing

TYPE OF LADDER STAIRWAYS MOUNTED ON GRIPS

TANK { Diameter 118'0" Depth 24'6 $\frac{1}{2}$ " Construction BRICK
 Position in Relation to Ground Level: BELOW GROUND
 Rest Blocks: Not known Number: _____ Size: _____

MATERIAL USED FOR CONSTRUCTION OF { Gasholder STEEL Welded
 Tank BRICK

INLET & OUTLET CONNECTIONS { Size: 18"
 Position of Each: S & W Together or separated: SEPARATED

TYPE OF SAFETY SEAL { On Inlet Connection: LIVESY SEAL
 On Outlet Connection: LIVESY SEAL

SIGNATURE _____ DATE / /

BRITISH GAS

REGIONAL PLANT DEPT.

COPY SENT TO AREA ON:

REPORT OF EXAMINATION OF GASHOLDER WATER-SEALED TYPE — BASIC RECORD

NAME BRITISH GAS NORTH WESTERN NORTH AREA
 LOCATION CHORLEY PR7 15A
 GASHOLDER No. 2 Date of inspection _____
 SITUATION _____
 HOLDER BUILT BY C & W WALKER Date of completion 1931
 TANK BUILT BY C & W WALKER Date of completion 1931
 LIFT ADDED BY _____ Date of completion _____
 TYPE (i.e. Column, Spiral or Rope Guided) SPIRAL GUIDED IN STEEL TANK
 CAPACITY (exclusive of Crown) 1,013,000 cu.ft. (28,685 cu.m.)
 CAPACITY OF CROWN 41,550 cu.ft. (1,177 cu.m.)

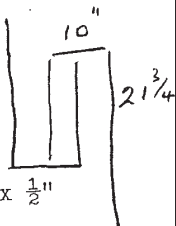
LIFTS	Top	Second	Third	Fourth	Fifth
Diameter	116'6"	119'11" ¹ / ₂	121'9"		
Depth	31'6"	31'6"	31'6"		
Pressure (in. w.g./water)	6.0	9.0	12.0		
No. of COLUMNS Spiral Guides or Ropes	12	16	20		

GUIDE FRAMING (General Description) Spiral rails on rail plates

CROWN—RISE 7'9" (Number and Type of Manholes 2-21" x 16" + 1-31" x 21"
 Position and Number of Gas and Air Vents 2 x 4" IN CENTRE + 1x4" OUTER

FEETING THICKNESS { Crown: Outer Row 1/4" Other Rows 10G
 Sides: Top Row 1/4" Intermediate Rows 10G
 Bottom Row 3/8"

CUPS & GRIPS (Size and construction, with sketch) 10" CHANNEL



TOP CURB & CROWN FRAMING (Construction—See Sketch Sheet) TOP CURB - TWO ANGLES 5" x 5" x 1/2"
MILBOURNES PATENT FRAMEWORK 24 RAFTERS 5" x 5" x 1/2" ANGLE
 MAIN TENSION RODS 3" x 3/4" FLATS 11 RING PURLINS (ANGLES) 3" x 3", 2 1/2" x 2 1/2" & 2" x 2"

TYPE OF LADDER STAIRWAYS MOUNTED ON GRIPS
 TANK { Diameter 124'3" Depth 32'2" Construction STEEL
 Position in Relation to Ground Level: 5 PLATES ABOVE GROUND BOTTOM CURB 10' BELOW GROUND
 Rest Blocks: Not known Number: _____ Size: _____

MATERIAL USED FOR CONSTRUCTION OF { Gasholder RIVETED STEEL
 Tank RIVETED STEEL

INLET & OUTLET CONNECTIONS { Size: 24"
 Position of Each: NW Together or separated: TOGETHER

TYPE OF SAFETY SEAL { On Inlet Connection: NOT KNOWN
 On Outlet Connection: NOT KNOWN

SIGNATURE _____ DATE _____



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