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# GASHOLDERS AT THE FORMER ELTON GASWORKS VICTORIA ROAD, BURY, GREATER MANCHESTER HISTORIC BUILDING RECORDING

TEP

No. 1 The Chambers,  
Bowden Business Village,  
Market Harborough,  
Leicestershire,  
LE16 7SA

Tel: 01858 383120  
E-mail: [mh@tep.uk.com](mailto:mh@tep.uk.com)  
[www.tep.uk.com](http://www.tep.uk.com)

Offices in Warrington, Market Harborough, Gateshead, London and Cornwall

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Author	Amir Bassir / Georgia Day
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Checked	Sarah Hannon-Bland
Approved	Jason Clarke

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# OASIS Report Form

## The Environment Partnership (TEP)

<b>Job Number:</b>	<b>8040</b>
<b>Project Name:</b>	Elton Gasworks, Victoria Street, Bury
<b>OASIS Number:</b>	theenvir1-418656

<b>PROJECT DETAILS:</b>		
Short description	The historic environment team at The Environment Partnership Ltd (TEP) were instructed to undertake a programme of basic Level 2 historic building recording of two 1960s spirally-guided gasholders occupying late 19th century tanks. The gasholders were late examples of their type and replaced earlier gasholders and were constructed by Oxley Dempster and Clayton Son and Co. A third gasholder at the site was demolished but not replaced during the same period.	
Project type	Historic Building Recording	
Previous work	None	
Current land use	Vacant gasholder station	
Future work	Unknown	
Monument type and period	Modern gasholders	
Significant finds	None	
<b>PROJECT LOCATION:</b>		
County	Greater Manchester	
Site address	Elton Gasworks, Victoria Street, Bury, Greater Manchester, BL8 2EQ	
Easting Northing	SD 79480 10940	
Area (sq ,/ha)	-	
Height aOD	-	
<b>PROJECT CREATORS:</b>		
Organisation	The Environment Partnership	
Project brief originator	Montagu Evans LLP, on behalf of National Grid	
Project design originator	The Environment Partnership	
Director/Supervisor	Amir Bassir	
Project manager	Jason Clarke	
Sponsor or funding body	National Grid	
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Site location

Plan of the gasholder station

Gasholder basic data sheets

## 1.0 Introduction

- 1.1 The Environment Partnership (TEP) Ltd was commissioned by Montagu Evans LLP acting on behalf of National Grid to undertake archaeological recording of redundant gasholders at the former Elton Gasworks, Bury, ahead of and during the demolition of these structures. Recording encompassed two 1960s spirally-guided gasholders occupying late 19th century tanks.
- 1.2 The work was carried out in response to a brief by Montagu Evans (ME 2019) and in accordance with an Archaeological Written Scheme of Investigation (TEP 2020). The recording methodology was specified as *Basic Level 2* in accordance with the Historic England guidance documents *Understanding Historic Buildings: A Guide to Good to Recording Practice* (HE 2016) and *Gasworks and Redundant Gasholders: Guidelines for their Evaluation and Recording* (HE 2019).
- 1.3 This document supersedes an interim report and sets out the results of the archaeological work to date. It has been produced in accordance with current best practice as defined in the *Chartered Institute for Archaeologists' Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings* (CIfA 2014) and the *Historic England document Management of Research Projects in the Historic Environment* (2015).

### Site Location

- 1.4 The former Gasworks was located in the Elton suburb of Bury, Greater Manchester, at the intersection of Wood Street and Victoria Street and in close proximity to the Crostons Road / Bolton Road interchange, approximately 0.6 miles to the west of Bury Town Centre. The majority of the former gasworks was demolished in the 1960s with the gasholder compound surviving until the time of recording.
- 1.5 The areas to the immediate north, east and south of the site comprise modern retail and light industrial units and to the west is an area of open space, Whitehead Park. The surrounding area is generally residential with a mix of late 19th and 20th century housing and retail and light industrial units. The Grade II Listed Church of All Saints is located a short distance to the north of the site.
- 1.6 The River Irwell flows north / south to the east of the site, and to the immediate west of the site and forming its western boundary is the surviving extant remains of an elevated Canal Feeder, which historically led to the Manchester, Bolton & Bury Canal Reservoir.
- 1.7 Elton Gasworks is located at Victoria Street, Bury, Greater Manchester BL8 2AJ, centred at approximately National Grid Reference SD 7948 1094 and covers an area of 0.6 hectares. This is referred to throughout this report as 'The Site' or 'Recording Area'.
- 1.8 The local planning authority is Bury Council. The Historic Environment Record relevant to this site is held by the Greater Manchester Archaeological Advisory Service (GMAAS).

## 2.0 Objectives and Methodology

- 2.1 The objectives of the archaeological survey and report were to:
- Produce a comprehensive drawn, photographic and written record of the gasholders and associated infrastructure prior to and during demolition;
  - Provide an account of historic fixtures, fittings, and architectural features where visible or accessible; and
  - Provide a written account of the recorded structures and the site, outlining and 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 dated to 2015, *Understanding Historic Buildings: A guide to good recording practice* (HE 2015a) and *Gasworks and Redundant Gasholders: Guidelines for their Evaluation and Recording* (HE 2019).
- 2.3 Basic Level 2 is described as 'a descriptive record drawn from a visual inspection of the interior and exterior of a structure, advised by historical research and accompanied by a photographic survey'.
- 2.4 Specific objectives highlighted in the brief were as follows:
- Use of historical survey drawings for comparable investigation relating to building form and function, identification of fixtures and fittings where visible or accessible;
  - Provide an account of fixtures, fittings and architectural features where visible or accessible; and
  - Provide a photographic record of the structures in context.
- 2.5 The initial recording was carried out on the 19th January 2020 shortly prior to commencement of dewatering and dismantling works by the appointed demolitions contractor, Erith Group. The gasholders were encircled with Heras fencing which prevented closer examination and recording of the gasholders and their components. Further site visits were carried out in February and May 2020 to record the interior of the gasholder. Photographs were also provided by the demolitions contractor's site manager Mr Frazer Pickering.
- 2.6 As part of research for this report a search was undertaken of the National Gas Archives which provided historic photographs, maps and plans of the site. A visit was undertaken to the Bury Archives and various secondary resources including the Historic England photographic archives, National Archives, and Britain from Above archives.



## 3.0 Historic Background

- 3.1 The Bury Gas Light and Coke Company was formed by an Act of Parliament passed on 18th April 1828. The promoters of the company were primarily merchants, shopkeepers and local businessmen whom it is argued were not primarily motivated by financial investment, but rather wished to facilitate a gas supply to their businesses (Loveseed 1993). The Company had powers to sell and dispose of coke, oil, and pitch, and to light the townships of Bury, Elton, and Heap, as well as places within three miles of Bury Market Place.
- 3.2 The earliest gasworks was at Freetown, adjacent to Peel's Mill, and the venture was sufficiently progressed to obtain a further Act of Parliament with the Bury Gas Act of 1846 which increased the maximum capital and borrowing limit. The Act also set in place regulations to protect consumer and public interest such as prohibiting the discharge of waste into the River Irwell. The Act also changed the company name to Bury *Gaslight* and Coke Company.
- 3.3 Following the Act of 1846 the company expanded its operation through the construction of a new works on land leased from Lord Derby; this land, which was known as "Dirt Hole, Bury Bridge", was located Victoria Street, Elton, and was known variously as Brooksmouth, Elton, and Victoria Street Works. Specifications for an early holder are provided by Loveseed as 60ft diameter, 18ft in height and with four guide wheels with 1ton counter weights.
- 3.4 In 1857 negotiations to purchase the undertaking began with the Bury Improvement Commissioners and were passed in short order with the Bury Gas Act of 1857 transferring the undertaking to the Commissioners. By the mid-19th century the works holder capacity was 300,000 cu. ft. at a time of increased demand and growing consumer base. In 1876 the town of Bury became a Borough and the gas undertaking became vested with the corporation. Loveseed notes that at a Town Council meeting in 1878 the works were deemed deficient and unsuitable for the purpose, and that it was desirable to secure a site adjacent to the railway. Despite calls for a new site however it was decided to improve the existing works at Victoria Street. In addition to the constraints of the location, the site also required a new holder, condensers, scrubbers, exhausters and coal stores. A report by Thomas Newbigging, a Consultant Gas Engineer, concluded that the retort house was inconvenient and in a poor state of repair with inadequate ventilation. Newbigging also noted that the "*the new telescopic holder... in course of construction... is in excess of what is required...the inlet and outlet stand-pipes for the new holder (are too small)*". Loveseed records the following about the Gas Committee's comments on the new holder: "*the new holder is an admirable piece of workmanship. The tank too, though built under difficulties, some of which tended to destroy its symmetry, so far promises well*". These difficulties, apparently due to collapses during excavation, caused damage to the mains and threatened a nearby holder.



- 3.5 By 1881 demand exceeded supply, requiring new plant such as retort benches which produced 28% more gas than the old plant. In 1890 a new holder began to be constructed, this replacing a 30ft high holder with a 90ft one. New branch railways were also completed in 1893. In the first decade of the 19th century more improvements were carried out to the No.1 and No.2 Retort Houses which were also equipped with an integrated coal and coke handling system. A description of the works was given in the December 1913 Journal of Gas Lighting & Water Supply (p807-808) and notes that the site had three gasholders having total capacity of 2 million cubic feet. A description of the works is also given in October 1926 Gas Journal (p111-116). These descriptions however provide little information on the site's gasholders.
- 3.6 The Ordnance Survey map of 1891 provides a detailed overview of the gasworks with various features and buildings labelled. The gasholder compound was located to the north of the main works area though a purifier house was located within the gasholder compound. There are three gasholders shown, numbers 1 and 2 being column-guided, each with ten columns, and number 3 being larger with fourteen columns. The storage capacities of the three gasholders is given as follows No.1. 670,000 cu. ft., No.2. 656,000 cu. ft., No.3. 800,000 cu. ft.
- 3.7 A square meter house was located abutting the northern site boundary and adjacent to each of the gasholders is shown a circular pit with pumps. Two valve houses were also shown adjacent to gasholders 2 and 3. The area along the western site boundary was labelled as *Pipe Store* and *Paint Shop*. The buildings along the south-eastern site boundary, comprising a subdivided linear range with a southern wing which is no longer extant, are labelled as *Fitters and Blacksmiths Shop, Garage, Test House, Laboratory, Carpenters Shop, Stables, Harness Room* and *Coach House*. The site access is as at present with a ramp to the south.
- 3.8 The mains works compound, labelled as Corporation Gas Works, is shown as occupying the area bound by Victoria Street at the east and Ainsworth Road at the south and bound by the canal feeder at the west. At the north of the site was the Retort House and centrally to the compound was a block comprising Purifier House, Engine Room, Boiler Houses and other smaller rooms. Condensers and Scrubbers were houses in an enclosed compound adjacent to this block. Along the western boundary was the Coal Store with rail sidings leading in from the south. The eastern boundary along Victoria Street included an office building and a linear range which contained *Sulphate of Ammonia House, Test Meter and Governor House, Filter Store* and *Fire Engine*. At the junction between Victoria Street and Ainsworth Street is shown a range of terraced buildings and a larger detached building labelled *Old Dun Horse Hotel*. Later plans also show below-ground tar and liquor wells and water tanks within the works compound.
- 3.9 This arrangement of the site continued with minor changes into the mid-20th century. Following Nationalisation of the gas industry in 1949, the undertaking was vested with the North Western Gas Board. In the same period the works output was bolstered with the construction of new water-gas plant. A short-lived cwg (carburetted water gas) relief tank was constructed in a separate area to the south-west of the main works in this period.





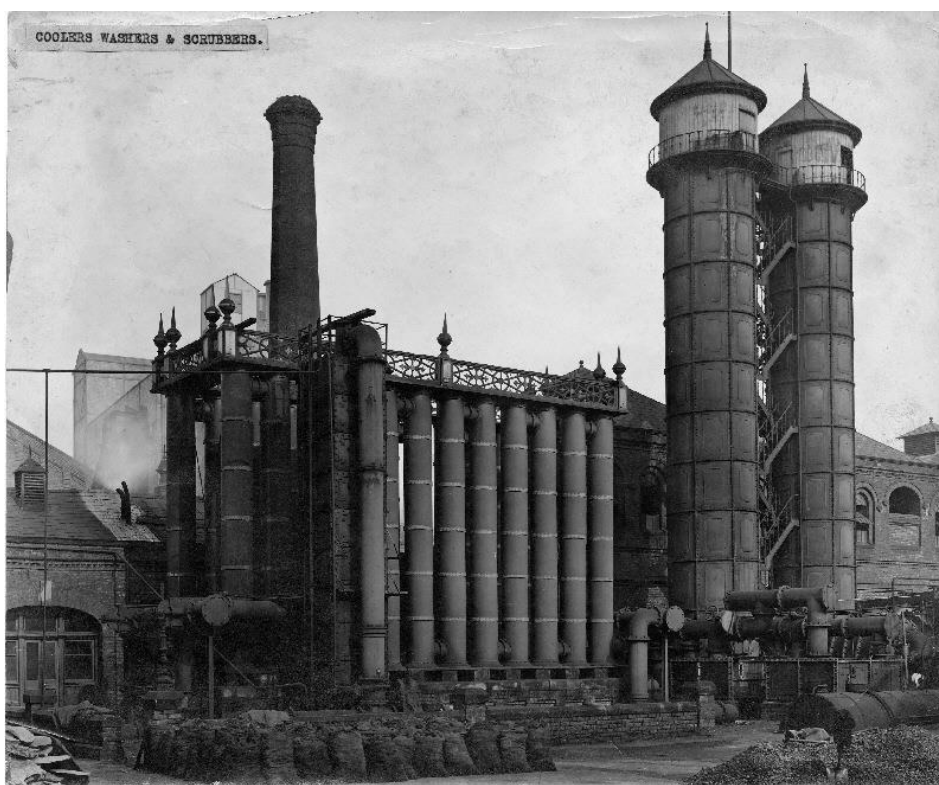


Figure 2: Undated (late 19th century) view of the coolers, washers and scrubbers (NGA ref xg03295).



Figure 3: Undated (late 19th century) view of the purifiers (NGA ref xg03287).

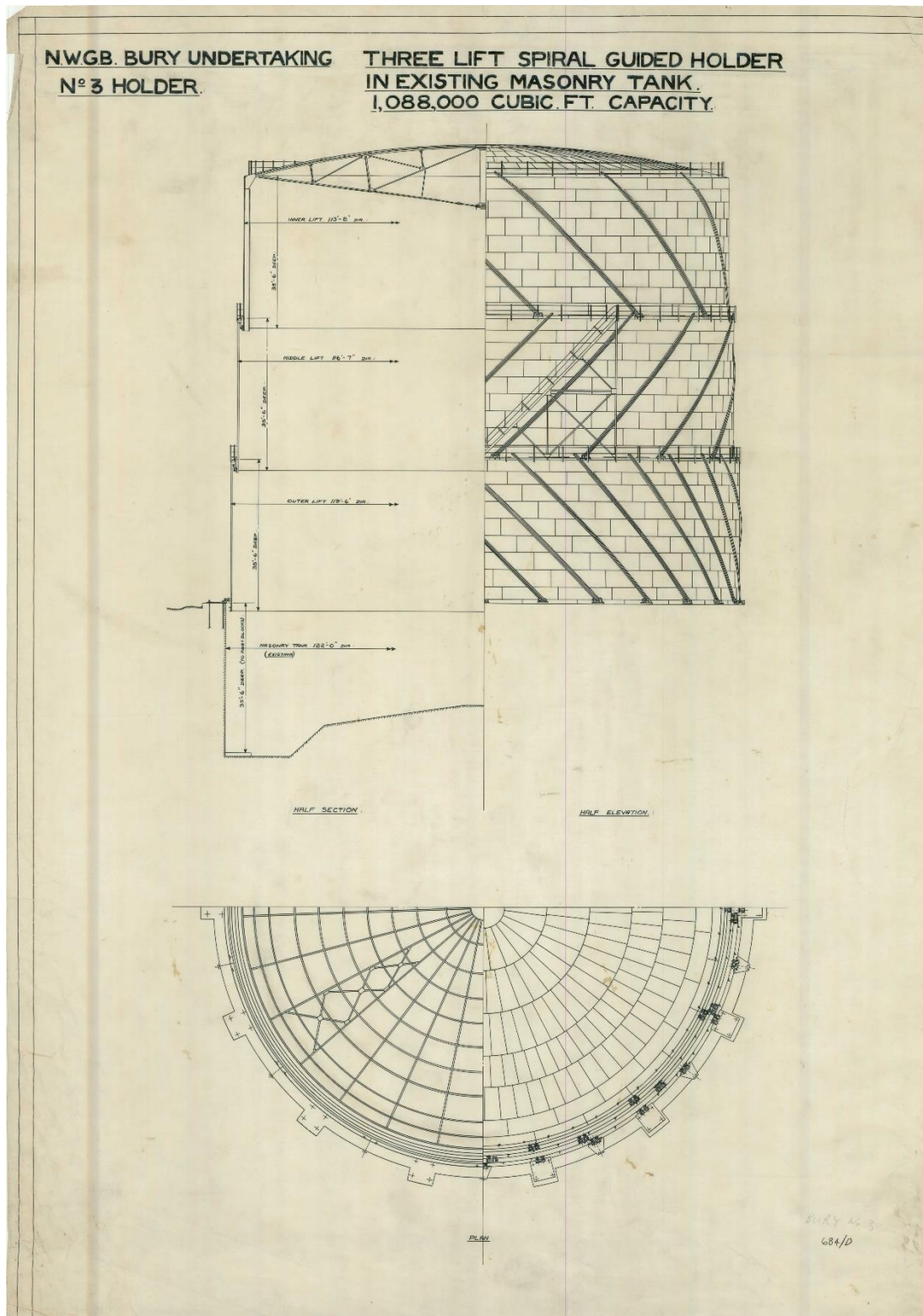


Figure 4: Design drawing for Gasholder 3 (NGA ref: NW/MA/BUR/E/E/9).

## 4.0 Historic Building Recording

### Gasholder 1

- 4.1 This was a spirally-guided gasholder constructed in 1967 by Oxley Dempster Ltd within an early below-ground tank constructed in c1890 for a former column guided gasholder. The tank was 31.69m (104' 0") in diameter and the three lifts rose to a height of approximately 27m, providing a nominal storage capacity of 15,434 cu. m. (545,000 cu. ft.) as noted on a sign adjacent to the gasholder. The Gasholder's no.1 sheet gives the capacity as 19,198 cu. m. (677,600 cu. ft.); plans of the site provide its capacity as 690,000 cu. ft. The crown rise was 1.5m (5' 0").
- 4.2 The gasholder's principal dimensions were as follows:

*Table 1: Gasholder 1 dimensions*

Lift	Top (inner)	Second	Third (outer)	Tank
Diameter	28.80m (94' 6")	29.79m (97' 9")	30.48m (100')	31.69m (104' 0")
Depth	9.39m (30' 10")	9.39m (30' 10")	9.39m (30, 10")	9.44m (31' 0")
No. of Spiral Guides	12	16	20	

- 4.3 The earlier column-guided gasholder which Gasholder 1 replaced had ten columns as evident from the first edition Ordnance Survey map of 1891. As noted on the gasholder data sheet and confirmed on site by the author, Gasholder 1 had twenty roller carriages around the tank's perimeter, sixteen on the outer lift, and twelve on the second lift. The tank roller carriages were seated onto raised rectangular concrete blocks with steel plates bolted with anchor bolts into the brick / masonry tank structure. Each of the dual-roller carriages were contained with plate steel housings; where this housing had fallen away the rollers were seen to be contained within separate square axel casements. The spiral rails appeared to be of the standard type and were fitted with run-off caps. The inner lifts were of the same design, also fitted with weather-proof housings, and the lift spiral rails were fitted with run-off plates.
- 4.4 Recording during demolition works revealed that the lift sheets were welded and aligned in angled courses parallel with the spiral guide rails. Horizontal courses were set at the top and bottom of each lift and the lifts were made rigid with regular horizontal angles and vertical stiffeners comprising channel Rolled Steel Joists (RSJs).
- 4.5 The cup and grips were square profile with welded construction and were fitted with safety rails with simple stanchions and circular profile bars. The cup and grip dimensions were 250mm (10") and 280mm (11") respectively with an overlap height of 780mm (35"). Modern remote telemetry and monitoring equipment were fitted to the safety rails at various places around the lifts.



- 4.6 The crown appeared to have a fully welded construction and the crown sheets were arrayed in six staggered concentric rows. Flat, circular access lids were located over the inlet and outlet pipes at the north-west and south-east sides of the crown. No valves were visible at the crown apex but these may have been removed prior to this survey. Small hydrostatic tanks and oil film applicators were also noted at various places around the edge of the crown. The no.1 sheet provides the sheeting thickness as 3/8" at the outer row and 1/4" and 3/16" on other rows.
- 4.7 The crown frame comprised principal, secondary, and tertiary rafters radiating from a central pipe to meet the top curb of the crown. The upper chords were formed of lengths of channel RSJs joined with brackets to the concentric purlins, also channel RSJs. Vertical struts connecting to each of the rafter / purlin joints were joined to the lower chords. At the base of the central pipe was an anchor ring to which tensioning bars were joined. The trusses were joined to each of the vertical stiffeners by means of tapered gusset plates. When at rest the crown frame was supported by a freestanding stanchion comprising a frame of welded angles and a concrete base.
- 4.8 The gasholder utilised steam anti-freeze which was supplied from a boiler house which remained extant close to the site entrance. The building was not entered during the survey due to asbestos. Lagged pipes encircled most of the perimeter of the tank, held above the ground by simple steel stanchions. Vertical pylons fitted to each of the lifts carried the pipes upwards as the lifts were raised, ensuring full distribution of steam to the gasholder whilst in operation.
- 4.9 At the south-east side of the gasholder a 24" outlet pipe rose through Donkin flow valves and was carried via gantries to the main circulation system. Adjacent to this pipe was a raised steel platform with a hand-operated sump pump with decorative leaf-shaped handle and decorative cap. This appeared to be of late 19th century origin and may represent a surviving component of the previous column-guided gasholder. Adjacent to the mains pipe, valves and pump were also located electrical control units as well as maglocks and knock-off arms installed on the lifts. A 24" inlet pipe was also located at the north-west side of the tank passing through a flow valve and continuing below ground towards the north-west. An elevated platform with short ladder was installed adjacent to the pipe.
- 4.10 There were three sets of stairs; one fixed to the tank and two installed on the middle and inner lifts. The stair frames were comprised of plate girders with vertical and horizontal members joined by riveted or bolted gusset plates, supporting the steel treads and safety rails.

- 4.11 The tank, which predated the present gasholder, was constructed of brick and puddled clay in the typical manner and was dug to a depth of c9.5m (31'). The brickwork was arranged in a variant of English garden wall bond comprising courses of headers between five stretcher courses. The tank kerb was lined with stone and was interspersed with stone blocks that seated the roller carriages. It is unclear if these blocks were original to the tank or added subsequently since the number of stones matched that of the roller carriages, not the former columns, and no differentiation could be seen between the stones. Smaller stone blocks and vertical scars related to the removal of former vertical guides. A survey of the dumpling calculated the tank volume as 7163m<sup>3</sup> and the dumpling volume as 965m<sup>3</sup>. The dumpling was very shallow with the sides merging gradually to the flat surface of c8m width. The annulus was c2m in width and included RSJ rest blocks which may have been contemporary with the original column-guided gasholder.
- 4.12 Due to the proximity of the gasholder to the site's access track, vehicle crash barriers were installed around the eastern perimeter.

### Gasholder 2

- 4.13 Gasholder 2 was formerly a late 19th century column-guided gasholder of seemingly identical proportions to Gasholder 1; it remained in use until the 1950s, but unlike Gasholders 1 and 3, it was not rebuilt as a spirally-guided gasholder but instead demolished and a Pressure Reduction Station (PRS) was built within its footprint. The former tank had been backfilled to several meters below the tanks edge such that the PRS compound was slightly below the surrounding ground level. The curving edge of the former tank remained visible; no features relating to the former gasholder or its columns were evident.

### Gasholder 3

- 4.14 Gasholder 3 was constructed in 1963 by Clayton Son & Co and comprised a spirally-guided gasholder with three lifts, built within the below-ground tank of a former late 19th century column-guided gasholder. The overall gasholder diameter was 36.6m with the lifts rising to a height of c30m and providing a nominal capacity of 1,138,273 cu. m. (32,233 cu. ft.). The crown rise was 2.28m (7' 6"). The gasholder no.1 sheet gives a date of completion for the tank as 1877.
- 4.15 The principal dimensions of the gasholder were as follows:

*Table 2: Gasholder dimensions*

Lift	Top (inner)	Second	Third (outer)	Tank
Diameter	34.64m (113' 8")	35.53m (116' 7")	36.42m (119' 6")	36.57m (120')
Depth	10.8m (35' 6")	10.8m (35' 6")	10.8m (35' 6")	10.8m (35' 6")
No. of Spiral Guides	14	21	28	



- 4.16 The 19th century column-guided gasholder had fourteen columns; this number provided a constraint to the number of spiral guides utilised on the replacing gasholder which had 28 roller carriages around the tank, this number decreased in increments of 7 on the proceeding lifts. As was common practice, the new tank rollers were positioned to utilise the existing column bases: fourteen of the tank rollers were seated on pairs of C-section RSJs secured by anchor bolts to the tank, the remainder were likewise set onto paired RSJs but tapered into a smaller triangular footprint. The roller carriages were of a commonly found type with the dual rollers held within independent axel housings secured by bolts to the carriage blocks. The lift-mounted roller carriages were of the same design. The spiral rails appeared to be of the typical design and proportions; run-out plates were installed on the lift spiral rails but not on the outermost spiral rails.
- 4.17 The outer roller carriages were projected slightly forward of the tank face, and anchoring bars were dropped downwards to join stone blocks embedded in the brickwork.
- 4.18 Unlike Gasholder 1, the welded and riveted lift sheets of Gasholder 3 were arranged in horizontal courses with the spiral rails being welded and riveted to the outer face. No horizontal stiffeners were used and the lifts were stiffened using I-section RSJs. Circular manholes were located in each lift which when aligned would allow access into the gasholder.
- 4.19 The cup and grips were flat profile with riveted construction and had toe-guards and simple steel safety rails. The cups comprised 300mm (10" x 3 1/2") channels and the grips 365mm (12" x 3 1/2") channels with an overlap of 730mm (24"). Various telemetry and remote monitoring equipment were installed onto the safety rails around each of the lifts. Hydrostatic tanks were also mounted on the safety rails with cables leading to monitoring equipment on the crown.
- 4.20 The crown had a riveted construction and comprised six concentric rings of staggered sheets. The outer row sheets were 3/8" thick and other rows were 1/4". No valves or vents were visible at the centre of the crown. A pair of flat circular lids to the inlet / outlet pipes were located together close to the crown edge at the south-east side of the gasholder. The gasholder data sheet provides the inlet and outlet pipe diameters as 18" and 15".
- 4.21 The crown frame was of a lighter construction than that of Gasholder 1, comprising 28 trusses, each formed of 5" x 5" angle upper chords joined by 4" x 4" tees and flat bar intermediate bracing. The trusses radiated from a central pipe and at the top curb were joined to tapered gusset plates at the top of vertical stiffeners on the inside face of the inner lift.
- 4.22 A survey of the tank and dumpling undertaken as part of the pre-demolition works measured the diameter and depth of the tank as 36.6m and 11m. The tank was faced in brick laid in English garden wall bond with stone at the kerb. In contrast to the very shallow dumpling of Gasholder 1, that of Gasholder 3 stood at c5m height with steep, near vertical drops to the 2m wide annulus. The sides of the dumpling were faced with brick in English garden wall bond and the edge to the flat surface was lined with stone blocks. Within the annulus were welded steel rest blocks.

- 4.23 It was noted that around its western side the tank had deformed with a noticeable outward lean. This would certainly have affected the operation of the gasholder but no obvious mitigation was noted and it was unclear when this movement took place. The topography of the area has an eastward decline resulting in terracing of the gasholder station which is several meters above the level of Victoria Road. The contrast in the two gasholder's dumplings is likely a response to the underlying ground conditions and the site topography.
- 4.24 The gasholder utilised steam anti-freeze with lagged pipe carried around the edge of the tank and rising to the lifts supported by vertical pylons.
- 4.25 The lift stairs were of a slightly different design to those of Gasholder 1, here the frames comprised solid plate vertical members with paired angle horizontal and diagonal framing and flat bar cross-bracing.
- 4.26 Electrical control units alongside maglocks and knock-off arms to the lifts were located at the south-west side of the gasholder.
- 4.27 At the south-eastern side of the gasholder, close to the linear building was a circular pit with hand-pump partly remaining in-situ alongside a ladder into the well. This feature is visible on the Ordnance Survey map of 1891 and various plans of the site.

### **Miscellaneous**

- 4.28 The former Laboratory building was still extant at the south-east corner of the site during this survey. The building dates to at least the 1890s and is shown on the Ordnance Survey map of 1891, on which has been added the internal subdivisions and functions which include a *Fitters and Blacksmith Shop, Garage, Test House, and Laboratory*. An adjoining wing which contained a stables, coach house and carpenters shop was demolished in the 1960s. As was fairly typical of 19th century gasworks buildings, the structure was utilitarian but well-built, and was constructed of red brick in a variation of English Garden Wall bond with five courses of stretchers between the header course, with rusticated ashlar plinth course to window sill level. The building was single-storied and occupied a rectangular footprint measuring c36m x 6m and with a smaller square block abutting the north end.
- 4.29 The fenestration showed various ad-hoc rearrangement with blockings and new insertions evident. Historic windows were six-light with wooden frames and stone sills and had segmental brick arches which were also present over door openings. Later windows included simple horned sashes with flat concrete lintels. The building had a simple cornice of bullnose bricks below the eaves. The roof was surfaced in Welsh slate and was hipped at the north and south ends with the smaller block also having an independent hipped roof. The northern block had a raised cast-stone or terracotta louver with lead cap.
- 4.30 The eastern elevation to Victoria Street is broken up by recessed panels of brickwork each with group sets of blocked windows, generally in groups of three. It is probable that many of these windows were always blank, serving primarily to break up an otherwise monotonous elevation, but a number were functional with glazing.
- 4.31 The interior was not accessed during this survey.

- 4.32 The gasholder compound was historically separate from the main area of the gasworks and was encircled by stone enclosing / retaining walls. The site was accessed via a ramped entrance at the south flanked with stone gate posts. The stonework of the walls was well-constructed with dressed ashlar at the edges and coping and rusticated ashlar work in the main. Stone dentils were set below the coping. The position and level of the Laboratory building was respected by the wall and the coping and dentils were dropped down around the building.
- 4.33 It was related to the author by the site manager that areas of cobbled stone setts remained in-situ around the site but at the time of this survey they had been covered to prevent damage by plant movement and could not be recorded.
- 4.34 The western retaining wall to the elevated Canal Feeder presented a substantial and well-built rusticated ashlar facing with deliberately unsorted and roughly shaped stonework.
- 4.35 Historic mapping from the 1890s through to the 1960s show a small square structure built at the north of the site abutting the northern wall. This is identified as a Meter House in 1891 but may have changed function in later years. During the survey the partial remains of this, or a replacement structure on the same footprint, were evident in the form of partial return walls and decorative tiles remaining in situ on the main north wall.

## 5.0 Discussion

- 5.1 The two gasholders were late examples of their type both being constructed in the 1960s and replacing late 19th century column-guided gasholders, utilising the existing below-ground tanks. The two gasholders were constructed by different companies, Oxley Dempster and Clayton Son & Co, both fairly prolific manufacturers of gasholders and gasworks plant nationally; this resulted in minor differences to the design of the two structures, such as the different roller carriage designs and crown-frame constructions, but fundamentally the gasholders correspond with the typical design of spirally-guided gasholders of the period.
- 5.2 A third gasholder at the site was demolished but not re-built and instead was filled in and a PRS station constructed in the former tank.
- 5.3 As originally built, the gasholders were located in a separate compound to the main part of the gasworks. As was typical for such sites, the works was located in close proximity to railway lines and a canal feeder was located adjacent. The sloping topography of the site required the gasholder station to be levelled and seemingly as a result of this the two gasholders have very different dumpings, one having an almost flat base and the other having a wide dumping with very steep sides.
- 5.4 The 19th century tanks were faced in brick variant of English garden wall bond and the pre-existing column bases were re-used to seat the new roller carriage, which in the typical manner were double in number to the former columns and reduced in regular increments on the lifts. The lifts of Gasholder 1 were welded and aligned parallel to the spiral guides, whilst those of Gasholder 3 were riveted and aligned horizontally. On both gasholders the crown sheets were arranged in concentric courses radiating from the apex.

## 6.0 Photographic Recording



Figure 5: Gasholder 1, looking west.



Figure 6: Gasholder 1 designation plaque and information.





Figure 7: Gasholder 1, anti-freeze pylons at the north side of the gasholder.



Figure 8: Gas mains and anti-freezes joining the south side of Gasholder 1.



Figure 9: Gasholder 1, an example roller carriage on a former column pad.



Figure 10: Gasholder 1, view of the lifts and crown.





Figure 11: Gasholder 1, view of the crown frame, looking north.



Figure 12: Gasholder 1, view of the crown frame and stanchion.





Figure 13: Gasholder 1, view of the tank.



Figure 14: Gasholder 1, view of the lifts and grips.



Figure 15: View of the former tank to Gasholder 2 with PRS Station.



Figure 16: Gasholder 3, looking east.





Figure 17: Gasholder 3 designation plaque and information.



Figure 18: Gasholder 3, looking north-east, showing one of the anti-freeze supports.



Figure 19: Example of the roller carriages located on a former column base.



Figure 20: Example of the roller carriages with tapered design.





Figure 21: Gasholder 3, example of the lift rollers with run-out stop plate.



Figure 22: Gasholder 3, general view of the crown, looking east.



*Figure 23: Gasholder 3, view of lifts and tank, also showing inlet / outlet pipes.*





*Figure 24: View within the annulus.*



*Figure 25: Gasholder 3, detail of the top curb and lift grips.*



Figure 26: The west elevation of the former laboratory building, looking north-east.



Figure 27: The south wall of the laboratory building and the site entrance.





*Figure 28: View of the laboratory building and retaining wall on the west side of Victoria Road.*

## References

### **Best Practice and Guidance**

Chartered Institute for Archaeologists 2014a, *Code of Conduct*

Chartered Institute for Archaeologists 2014b, *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings*

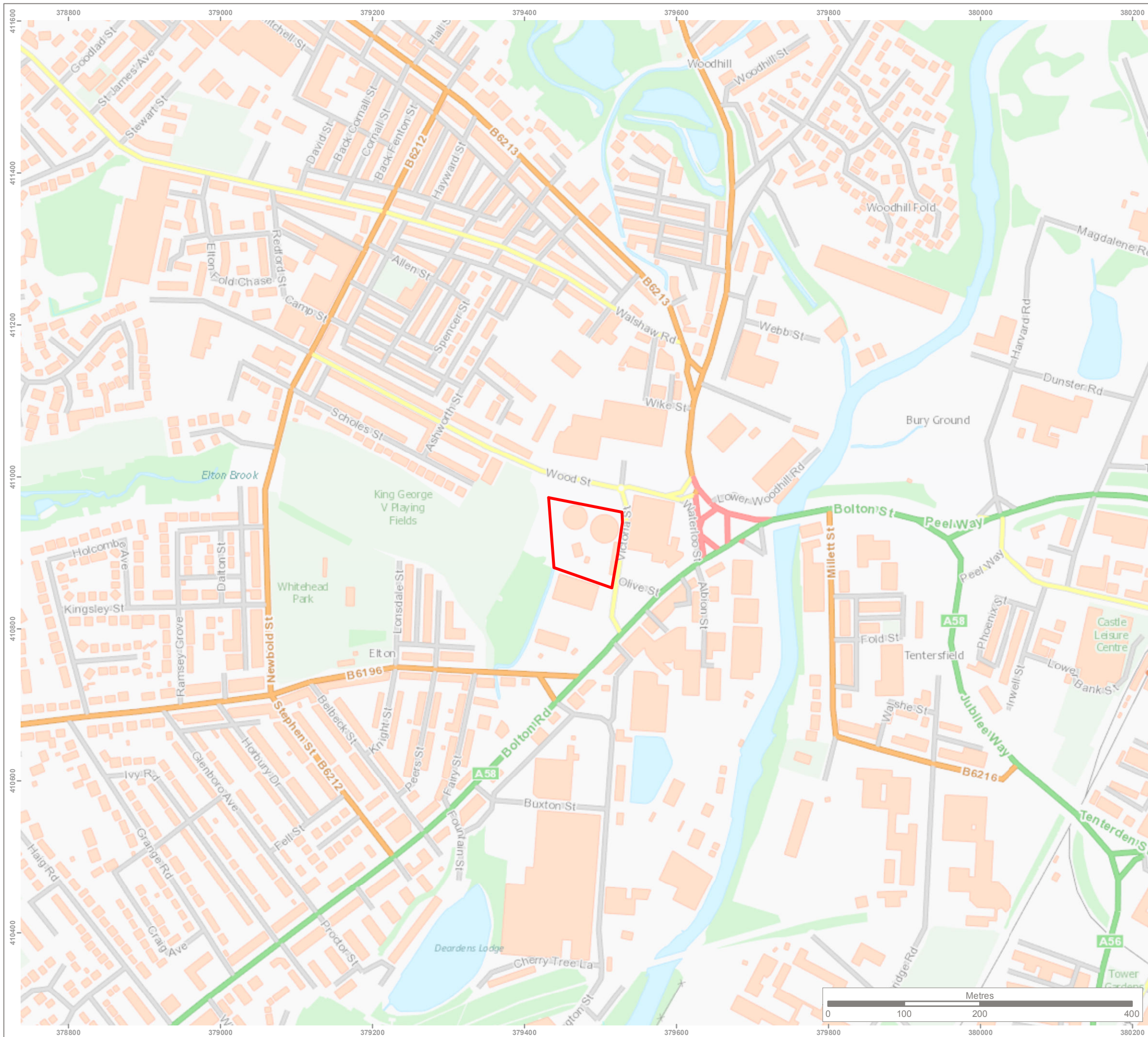
Historic England 2015a *Understanding Historic Buildings: A Guide to Good to Recording Practice*

Historic England 2015b, *Management of Research Projects in the Historic Environment*

Historic England 2019 *Gasworks and Redundant Gasholders: Guidelines for their Evaluation and Recording*

Loverseed, D, 1993, *A History of the Bury Gas Undertaking, 1828-1949*, North West Gas Historical Society

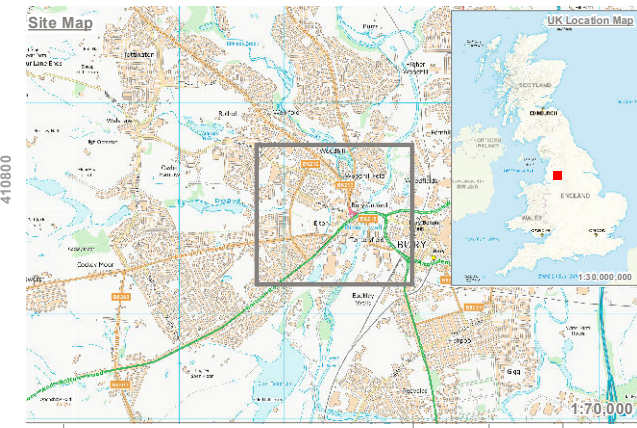




**KEY**  
 Approximate site location



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Rev	Description	Drawn	Approved	Date

**TEP** | **THE ENVIRONMENT PARTNERSHIP**  
 The Reynard Suite - First Floor Offices,  
 Bowden Inn Farm, Market Harborough, LE16 7SA  
 Tel 01858 353120 e-mail tep@tep.uk.com www.tep.uk.com

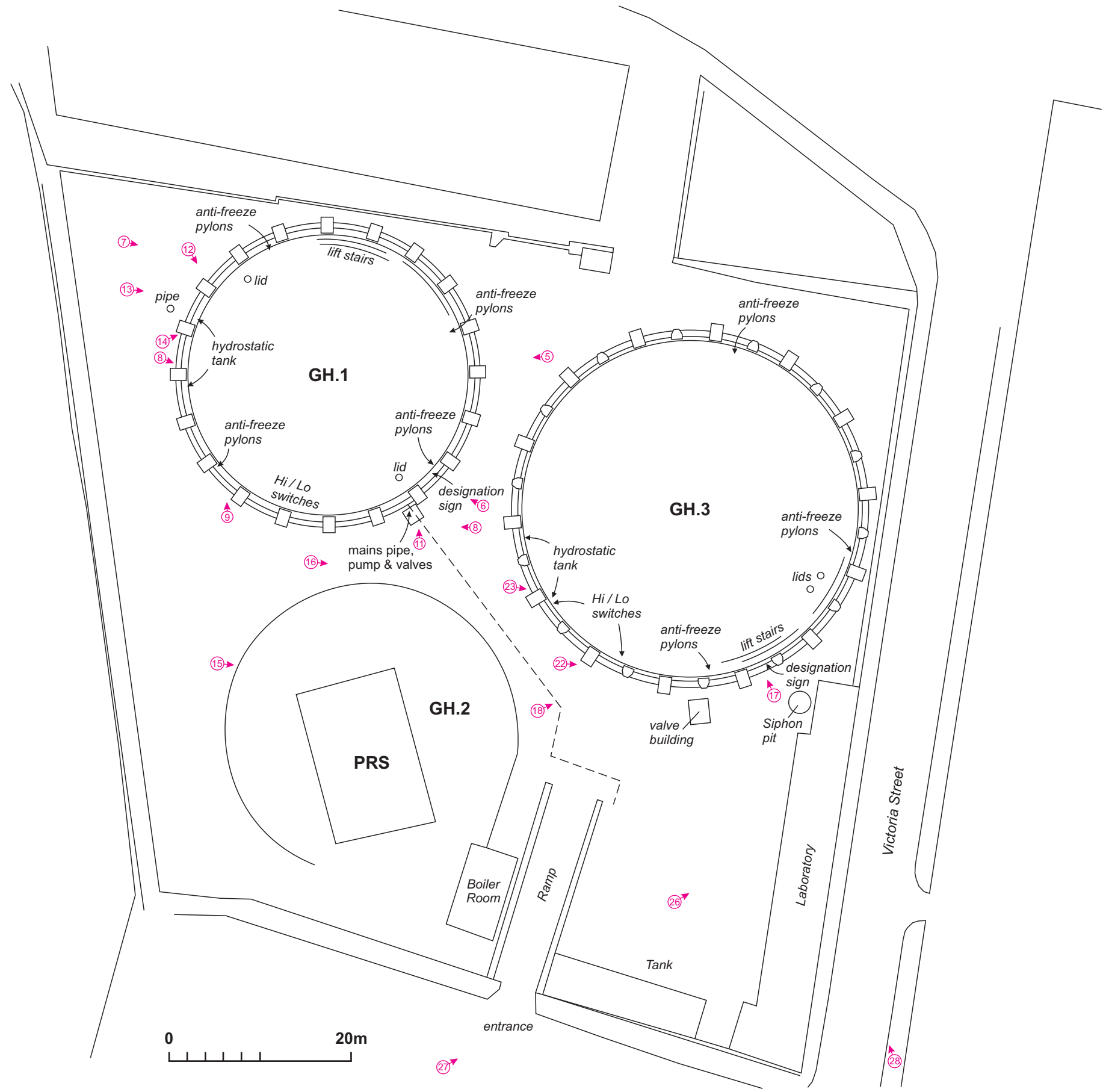
Project  
**Elton Gasworks, Bury**

Title  
**Site location**

Drawing Number  
**G8040.001**

Drawn	Checked	Approved	Scale	Date
AB	SA	JC	1:5,000 @ A3	15/04/2020





Rev	Description	Drawn	Approved	Date

**TEP** | **THE ENVIRONMENT PARTNERSHIP**  
Genesis Centre, Birchwood Science Park, Warrington WA3 7BH  
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project  
**Elton Gasworks, Bury**

Title  
**Plan of the gasholder station**

Drawing Number  
**D8040.001**

Drawn	Checked	Approved	Scale	Date
AB	SHB	JC	1:500 A3	21/04/20

# BRITISH GAS

REGIONAL PLANT DEPT.

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

NAME British Gas North Western North Area  
 LOCATION Bury BL8 2QS  
 GASHOLDER No. 1 Date of inspection .....

SITUATION .....

HOLDER BUILT BY Oxley Dempster Ltd Date of completion 1967  
 TANK BUILT BY Not known Date of completion Before 1890  
 LIFT ADDED BY ..... Date of completion .....

TYPE (i.e. Column, Spiral or Rope Guided) Spiral guided  
 CAPACITY (exclusive of Crown) 660,000 cu.ft. (18,690 cu.m.)  
 CAPACITY OF CROWN 17,600 cu.ft. (498 cu.m.)

LIFTS

	Top	Second	Third	Fourth	Fifth
Diameter	94' 6"	97' 9"	100'		
Depth	30' 10"	30' 10"	30' 10"		
Pressure (in. w.g.)/(mbar)	8.3"	10.5"	17"		
No. of Columns <del>or Ropes</del> Spiral Guides <del>or Ropes</del>	12	16	20		

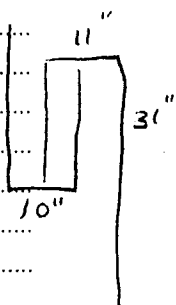
GUIDE FRAMING (General Description) Spiral rails on rail plates

CROWN—RISE 5' 0" { Number and Type of Manholes 2 flat covers  
 Position and Number of Gas and Air Vents .....

Crown: Outer Row 3/8" Other Rows 1/4" 3/16" & 10BG

SHEETING THICKNESS { Sides: Top Row 5/16" Intermediate Rows 10BG  
 Bottom Row 5/16"

CUPS & GRIPS (Size and construction, with sketch) Cups 10" wide Dips 11" wide



TOP CURB & CROWN FRAMING (Construction—See Sketch Sheet) Top curb 12" x 1 3/4" x 1/2" box section 12 main bars 10" x 5 3/4" x 21 lb U.B. with bracing and tie bars

TYPE OF LADDER Staircases to each lift

TANK { Diameter 104' Depth 31' Construction Masonry  
 Position in Relation to Ground Level: Top curb at ground level  
 Rest Blocks: Not known Number: ..... Size: .....

MATERIAL USED FOR CONSTRUCTION OF { Gasholder Steel welded  
 Tank Brick and puddled clay

INLET & OUTLET CONNECTIONS { Size: 24"  
 Position of Each: N & S Together or separated: Separate

TYPE OF SAFETY SEAL { On Inlet Connection: None  
 On Outlet Connection: None

SIGNATURE ..... DATE .....



# BRITISH GAS

REGIONAL PLANT DEPT.

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

NAME British Gas North Western North Area  
 LOCATION Bury B28 2 Q5  
 GASHOLDER No. 3 Date of inspection.....  
 SITUATION.....  
 HOLDER BUILT BY Clayton Son & Co Date of completion 1963  
 TANK BUILT BY Not known Date of completion 1877  
 LIFT ADDED BY..... Date of completion.....  
 TYPE (i.e. Column, Spiral or Rope Guided) Spiral guided  
 CAPACITY (exclusive of Crown) 1,100,000 cu.ft. (31,149 cu.m.)  
 CAPACITY OF CROWN 38,273 cu.ft. (1,084 cu.m.)

LIFTS

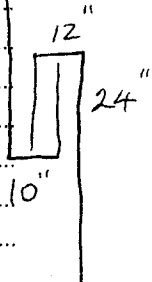
	Top	Second	Third	Fourth	Fifth
Diameter	113' 8"	116' 7"	119' 6"		
Depth	35' 6"	35' 6"	35' 6"		
Pressure (in. w.g.)/(mbar)	6.5"	10.5"	14.75"		
No. of <del>Cables</del> Spiral Guides <del>or Ropes</del>	14	21	28		

GUIDE FRAMING (General Description) Spiral rails on rail plates  
 .....  
 .....

CROWN—RISE 7' 6" { Number and Type of Manholes 3 oval 2' 6" x 2'  
 Position and Number of Gas and Air Vents.....

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

CUPS & GRIPS (Size and construction, with sketch) Cups 10" x 3 1/2" x 24.46 lbs channel  
Grips 12" x 3 1/2" x 26.37 lbs channel



TOP CURB & CROWN FRAMING (Construction—See Sketch Sheet) Top curb 5" x 5" x 1/2" angle 10"  
28 main bars 4" x 4" x 1/2" tees with tie bars and bracing

TYPE OF LADDER Staircases to each lift  
 TANK { Diameter 120' Depth 35' 6" Construction Masonry  
 Position in Relation to Ground Level: Top curb at ground level  
 Rest Blocks: Not known Number:..... Size:.....

MATERIAL USED FOR CONSTRUCTION OF { Gasholder Mild steel - rivetted  
 Tank Brick and puddled clay

INLET & OUTLET CONNECTIONS { Size: 18" & 15"  
 Position of Each: South Together or separated: Together

TYPE OF SAFETY SEAL { On Inlet Connection: Not known  
 On Outlet Connection: Not known

SIGNATURE..... DATE.....



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**HEAD OFFICE**

Genesis Centre,  
Birchwood Science Park,  
Warrington  
WA3 7BH

Tel: 01925 844004  
E-mail: [tep@tep.uk.com](mailto:tep@tep.uk.com)

**MARKET  
HARBOROUGH**

No. 1 The Chambers,  
Bowden Business Village,  
Market Harborough,  
Leicestershire,  
LE16 7SA

Tel: 01858 383120  
E-mail: [mh@tep.uk.com](mailto:mh@tep.uk.com)

**GATESHEAD**

Office 26, Gateshead  
International Business  
Centre,  
Mulgrave Terrace,  
Gateshead  
NE8 1AN

Tel: 0191 605 3340  
E-mail: [gateshead@tep.uk.com](mailto:gateshead@tep.uk.com)

**LONDON**

8 Trinity Street,  
London,  
SE1 1DB

Tel: 020 3096 6050  
E-mail: [london@tep.uk.com](mailto:london@tep.uk.com)

**CORNWALL**

4 Park Noweth,  
Churchtown,  
Cury,  
Helston  
Cornwall  
TR12 7BW

Tel: 01326 240081  
E-mail: [cornwall@tep.uk.com](mailto:cornwall@tep.uk.com)

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