

# GAS HOLDERS ICONS OF THE URBAN LANDSCAPE



*I started professionally photographing the holders around five years ago and became obsessed by their changes in size, design and where they were situated. They also fitted well with my interest in industrial design. The more research I undertook I learned that these structures, that had become quite special to me, were slowly being demolished to make way for new development. I decided to document as many as I could and travelled the length and breadth of London finding some in splendid isolation and others in the process of being dismantled. I subsequently visited a few outside London too as you will no doubt see in my book.*

*The book explores the role these imposing and striking structures have had on our subconscious and contains a brief history to explain the journey they have taken from examples of great innovation to unwanted monoliths. All pictures have been taken using 'film' photography and in monochrome which helps emphasize their graphic qualities and their historical significance. To order your copy please visit the 'Blurb UK' website (<https://www.blurb.co.uk/b/10249994-gas-holders>) and search for 'Gas Holders' and for more images please visit my website: [www.mgindustrialphoto.co.uk](http://www.mgindustrialphoto.co.uk).*

**Mark Greenway**

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# The Historic Gas Times



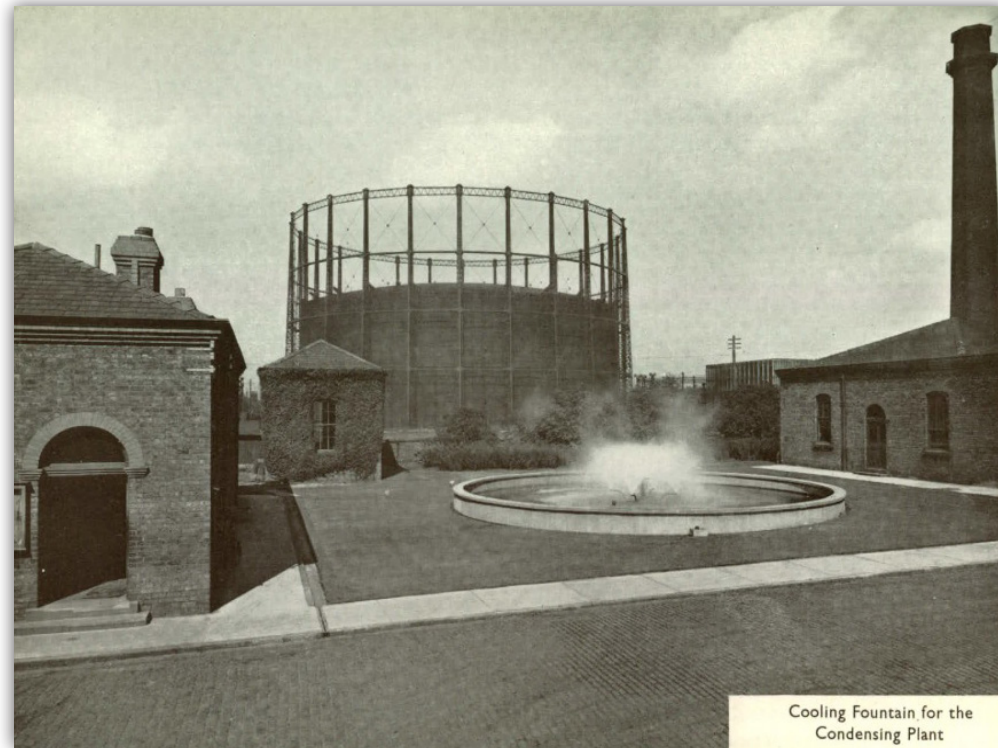
Issue 105

NEWSLETTER OF THE HISTORY PANEL

December 2020



## THE SECRET LIFE OF A GARSTON COOLING POND



Cooling Fountain for the Condensing Plant

During the blitz of the Second World War, sections of the Garston boundary wall were damaged, and the youngsters of the local neighbourhood were reported to have raided the fish at every chance. The only fish to escape capture were two bronze-coloured immature goldfish and a dozen rudd which had been introduced from a local pond.

In 1945 the cooling pond, now free of snails, had the fountain sprayers removed and so returned to an ambient temperature. The two surviving gold fish, which had grown to six in long and had become highly coloured, were re-introduced, plus three dozen small Shubunkins. Pygmy waterlilies were added and also the strong-scented water hawthorn, a South African import of real beauty. Whatever happened to the life in this pond we do not know; those who knew

A Cooling Pond at Garston Gasworks had a rather curious history. As well as being the cooling pond associated with a turbo-booster it ended up as a semi-tropical fishpond. When the booster plant was working the water temperature would fluctuate between 4°C and 37°C. Goldfish were somehow introduced into the pond and thrived under the warm conditions. The fish were not short of food with the plant and animal life that abounded in the near-tropical conditions.

The rapid fluctuations in temperature had strange effects on the fish. In young fry, gold colouring replaced the protective dark bronze at twelve weeks instead of twelve months. The fish grew much faster than normal and diseases strange to the species appeared. Specimens of the fish even found their way, via Liverpool Museum, to the Fisheries Board and the Liverpool University for research. The School of Tropical Medicine became interested and took many infected fish for research. Around 1937 water snails were discovered in the pond, probably finding their way into the pond on the feet of birds. Without any natural enemies, snail population exploded and in one cleaning alone, three barrows full of snails had to be removed. One small variety of snail was that hated by sheep farmers, as it acts as first host to the liver-fluke in sheep.

To resolve some of the infestation problems, the pond was then chemically treated, and the fish, 106 in number, several over ten in long, were removed to a small pond at the rear of the office. A "scaleless" goldfish, blue-green in colour, known as a "Shubunkin," successfully interbred with the other fish and produced many multicoloured hybrids.



The upper view looks West towards Ariel, the original 1890s holder, and shows how the pond and entrance to the Works had been tidied-up. The lower view shows the same small white pond near the Works Entrance and offices, after a concrete fence had been added either to keep the fish in, or the local scalys out. The spiral guided holder in the foreground had been added in the mid-1920s. Unusually, it had no tank as such, but floated in a narrow circular trench cut into the sandstone which reached almost to ground level.

Garston Works in later years were not aware of its past aquatic inhabitants, and doubt whether Functional Management would have approved of their associated costs!

Russell Thomas

collected something like a million pennies, or 10 tons of coppers from meters during the year" and West Bromwich Corporation almost matched that with "the income from prepayment meters was £4,389 collected from the meters in bronze coins, which weighed 9 tons 16 cwt." Thirty years later the Oldham Gas Department collected 24,000,000 pennies in the year ended the 31st March 1929 which weighed over 220 tons. This figure is dwarfed by the Gas Light & Coke Company who handled 800,000,000 pennies in the same year. The company was reported as having had at one time £50,000 in pennies locked up in the cellars of their premises in Horseferry Road, London. Even the smaller companies had some weight to deal with. This quote is from the Bedford Gas Progress magazine dated December 1938: "Slot collectors collected 39 tons, 18cwt, 47lbs, of silver and copper. Number of coins collected 4,540,634." Unfortunately no time scale is given but it was probably over one year.

To ease the situation the Southern Gas Board stated in their annual report of 1956-7 that "the policy of eliminating copper coin slot meters was pursued vigorously during the year, the penny slots being sealed on a further 20,000 meters and 12,500 penny meters replaced by meters taking only shilling coins." Their next report of 1957-8 proudly noted that "the elimination of copper coin meters, often the cause of inconvenience to consumers through full boxes, was completed, except for special cases in which it was thought that hardship to the consumer might result." This process had made the collector's job easier with fewer coins to count and less weight to carry.

The banks also experienced problems. The High Wycombe Gas Company minutes of the 28th March 1899 record that "the manager also reported he had received an intimation that the bank had difficulty to dispose of copper coin and probably would have to charge this company a percentage for expenses incurred."

It was resolved to "let the matter rest until an official communication was to hand." Fortunately their attitude changed over the years with the gas companies becoming valued sources of coin.

Finally to the Royal Mint.

Production figures for the penny coin are most revealing. During 1885 just over 7 million were made and in 1890 the amount had jumped up to 15.3 million. Probably too early to credit this increase to the coin-fed gas meter but the 1896 figure of 24 million adds weight, excuse the pun, to the argument. During the following five years, 1897-1901, a total of 115 million pennies were minted the majority in my opinion to cater for this new invention. In August 1914 the Woburn Gas Company's minutes record the Chairman's stating "it had been brought to his notice that difficulty had been experienced by some of the slot consumers in obtaining coppers for the meters. It was recommended that a notice be put up in shop window stating that coppers could be obtained at secretary's office." Of course, some dishonest consumers broke into the coin box to alleviate the penny shortage but that line of enquiry, as the police would say, is for another article.

Tony Marks



A typical selection of the foreign coins, washers and carefully-crafted discs found in the coin boxes of slot meters. Most will have freed the meter and allowed gas to pass, but the meter dial will have recorded this consumption and the customer will be expecting to make up the difference when the Collector calls. This material could also get stuck in the coin mechanism, as could a bent coin, which would leave the house without gas. The job sheet for this situation was usually marked "Penny Fast", at least in the North.

**Complaint Department.**

"That gas consumers are well looked after by the Company is evident from the organization that is specially devised to meet their requirements and to attend to their complaints. Two years ago the Inspection and Complaint Department was re-organized, and is now working so well that all complaints are attended to the same day they are received. To insure this, the whole area of supply, containing a number of depots, which are in direct telephonic communication with the head office, from which the complaint men work. There are 73 foremen and fitters engaged in this work, all under a chief complaint inspector, who is under the Stove and Fittings Superintendent. There are also stove inspectors who systematically carry out a free adjustment of stoves on the consumers' premises. Then there are 54 men who fix fittings purchased from the Company's show-rooms.

The prepayment meter department is a separate and growing one. The slot installation consists of a griller, pendant, one or two brackets, and one incandescent burner with a free mantle every six months. The meter is adjusted to give 15 ft for 1d.

Installations are at present being put up at the rate of about 70 per week, and the work employs 42 fitters and boys.

The Mains and Service Department is looked after by about 90 men. The area is divided into two districts, northern and southern, with an inspector over each. Altogether about 1000 men are employed by the Company. The gas-engines connected to the supply at the end of last year numbered 850.

All these facts and figures indicate the prosperity and

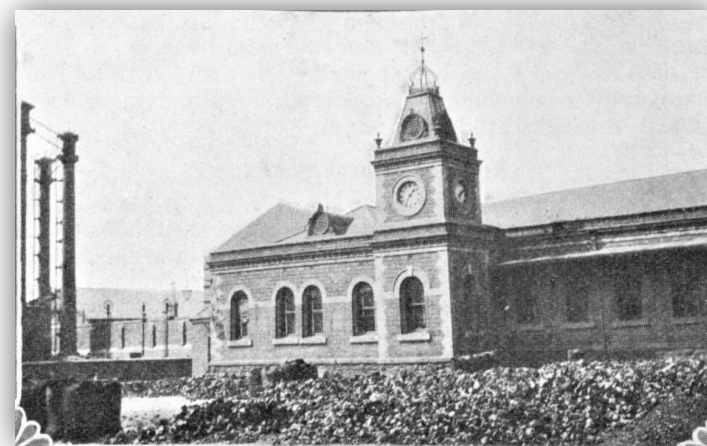
development of the Gas Company in Melbourne. The increased gas consumption during the last two years has been about 9 per cent.

Considerable reconstruction has been, and is being, carried out by Mr. Hunt. The Directors of the Company are to be highly complimented upon having chosen so hard-working, earnest, and conscientious an official - the worthy son of a worthy father.

The writer also here wishes to acknowledge his great appreciation of Mr. Hunt's kindness and courtesy and hospitality to him while in Melbourne, and for some of the photographs reproduced."

Condensed from the 'Journal of Gas Lighting' of 1/9/1908.

JBH



The clock tower and offices at West Melbourne gas works.

## HEAVY METAL - THE PERENNIAL PROBLEM

By Tony Marks

No, not mercury, nor the nasties which were the consequences of the gas making process, but the coin of the realm which accumulated in the cash boxes of the newly introduced prepayment meters in the 1890's. After a hesitant start in Liverpool in 1889 others quickly followed suit as the invention of a coin-fed gas meter opened up the working-class market. These potential consumers inhabited the quaintly styled 'cottage' properties of the time, known today as the famous two-up, two-down terraced houses. No deposit was required and with the guarantee of payment for gas everybody should have been happy. Well, not quite. The gas companies, banks, and even the Royal Mint had to face unforeseen problems.

The weight of the coins was an obvious drawback. For a complete picture these Southport figures are the most revealing - "prepayment meters were introduced to non-consumers of gas in April 1898, and during the year under review there were 501 of these meters fixed - the total quantity of gas consumed by them being 2,319,400 cubic ft, and the revenue £401 17s 8d, collected in 96,452 pennies, weighing about 18 cwt. The average consumption and revenue of each meter were 4,629 cubic ft and 16s respectively." Other early examples feature in the Journal of Gas Lighting; one dated the 14th March 1899 concerned the Tunbridge Wells Gas Company who reported that "they had



Such was the weight of the copper collection that some Gas Companies bought special handcarts like this one. The London Gas Museum had an example but its whereabouts are unknown. Later options included motor scooters with panniers or sidecars. All these ideas brought their own security problems if you couldn't keep the vehicle in sight, so Collectors were often allowed to pay-in at suburban banks.



Since our recent item on London's first traffic signals, the official poster has been located by the National Grid Gas Archives. It is 'signed' by the Chief Constable.

# THE METROPOLITAN GAS COMPANY OF MELBOURNE

"Seventy years ago the site upon which the magnificent City of Melbourne now stands was virgin forest. In this short space of time, "Marvellous Melbourne" (as it is rightly called) has sprung up, substantially built, equipped with all the most modern conveniences of civilization, now ranking as the premier city of the Australian Commonwealth. Its population is about 500,000; and it has cable tramways, gas and electric light works, and a good water supply. A visit to the Houses of Parliament, led to an interview with the Minister of Agriculture, The Hon. Mr. George Swinburne, the Minister of Agriculture, who extended a most hearty welcome to the writer". Mr. Swinburne came from Tyneside and had been in Australia for 22 years. He was "one of its best known engineers in irrigation, hydraulics, electricity, gas, and railways. As Minister, he extends to rich man and farm hand the same courtesy; and the near future will in all probability see him in the high position of Premier of Victoria."

"Mr. Swinburne, besides governing many gas companies and being interested in many others, is one of the Directors of the Metropolitan Gas Company of Melbourne. The Chief Engineer and Manager of the Company is Mr. P. C. Holmes Hunt, who kindly gave the writer every opportunity of obtaining as much information as possible, and accompanied him through the works. The Metropolitan Gas Company was formed in 1878 by the amalgamation of three old Companies. There are now three gas-works belonging to the present Company".

## Fitzroy Works.

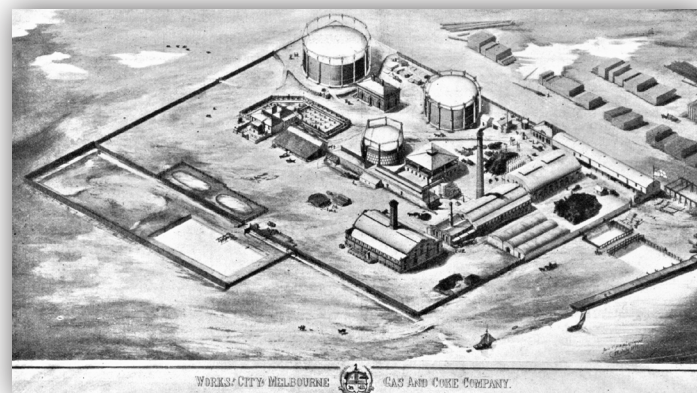
The large inclined retort-house contained two benches, each with eight beds of seven retorts, or 112 retorts in all. They had all the best mechanical aids but the building was apparently planned for horizontals and lacked the width needed for the drawing and charging stages is rather too narrow. More seriously, these works were greatly handicapped by the whole of the coal having to be carted, whereas the other two works had direct access to the steamers.

An old retort-house was used as a coal store, holding eight weeks' maximum supply. The atmospheric condensers were covered by a light roof to protect them from the summer heat. The remaining plant was conventional to British eyes, except for the public road which divided the works. The tar produced couldn't fill the local demand, which was chiefly for road making.

## West Melbourne Works.

These works were on the River Yarra, and were passed by the writer when he entered Melbourne by steamer from Geelong. They were about one mile from the city; and the gas from them was distributed principally in the northern suburbs. The gas-works coal wharf was built on a high staging, connected to the gas-works by a bridge spanning a main roadway. Four hydraulic cranes and skips unload the coal direct from the boats, and

deliver it into small iron trucks on a narrow-gauge railway, on which they are drawn by locomotives. The coal, which comes from Newcastle, N.S.W., is unloaded at the rate of 120 tons per hour. The whole of the hydraulic equipment, including one 60 B.H.P. hydraulic pumping engine, accumulator giving a pressure of 750 lbs. per square inch, capstans and cranes, was made by Messrs. John Abbot and Co. of London, who have done a lot of work in Melbourne.



A sketch of the West Melbourne Works of the Melbourne Gas and Coke Company in 1872. The Yarra river is in the bottom right corner. The curious square-plan building next to the smallest holder could, perhaps, have been a gasholder house? And here is another of those very tall chimneys.

There were then three retort-houses but No. 3, with 189 horizontal oval retorts, was kept as a stand-by, and served as a coal store. No. 1 retort-house has 25 beds each of seven inclined retorts, arranged in three benches. The furnaces, were all regenerative. In No.2 retort-house, lately reconstructed, there were 16 beds of eight horizontal retorts, arranged in two benches, the retorts being 20 ft long by 21 in. by 15 in. There was a De Brouwer charger of the self-contained hopper type, with a separate "D.B." pusher. All the fire-clay material in the settings was Australian-made and giving good results; but the regenerators are being improved as opportunity occurs. The foundations for this retort-house had to be very sound, as the subsoil was alluvial and treacherous. A bed of reinforced concrete, 204 ft long by 30 ft wide, was therefore put down.

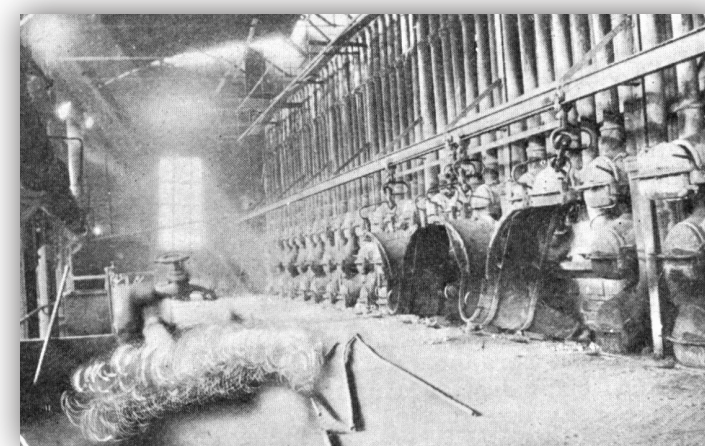
"A visit to the electric power house confirmed the enthusiasm with which Mr. Hunt has tackled the question of power in gas-works. There are two 45 H.P. "National" gas engines (one being in reserve) which drive a 32 KW dynamo. The charger, pusher, and conveyor are all driven electrically. An indicator board, designed by the Engineer, is controlled by the man attending to the coal elevators and coke conveyor, so that starting and stopping can be effected without risk of trouble or breakdown. Mr. Hunt freely expressed his views on electric motors in gas-works. He said that the sooner gas engineers do away with the idea that they must use gas-engines as otherwise offence might be given to their consumers, the better it will be for

them. A business man, he said, obtains the cheapest and most convenient power he can for his business."



On the coal pier at West Melbourne works showing the narrow gauge railway and its impressive signals. Mr.P.C.Holmes Hunt strides towards the camera.

"There are horizontal pipe condensers and two of Cutler's water-tube condensers. Also, at the outlet of the holders there are more pipe condensers, on account of the great heat in summer. Other ancillary plant was conventional except that No. 1 purifier shed, with six large boxes on the ground floor, was fitted with hydraulic power for lifting the heavy covers and for raising the oxide to a floor overhead. No. 2 house contained twelve boxes, 26 ft square, which stand on a steel structural floor about ten ft above the ground. Underneath was the oxide revivifying floor. A notable feature of these works was the large workshop, capable of any repairs, whether large or small.



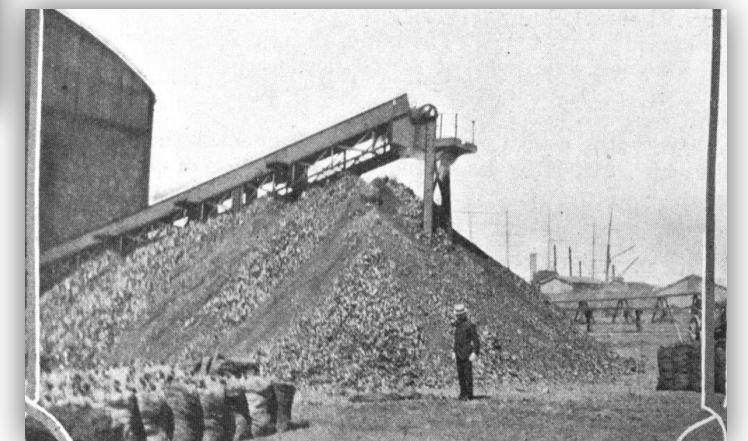
The Drawing Stage (discharge side) in No.1 retort house at West Melbourne showing the long ascension pipes for inclined retorts. The curved structures in front of the mouthpieces are portable sheet iron chutes which sent red hot Coke directly into the furnaces.

## South Melbourne Works.

There were two retort-houses. One of them was quite small, with only five beds of seven inclined retorts, the other, and main retort-house, contained twenty beds of horizontal retorts, seven per bed, heated by direct-firing, and worked by Arrol-Foulis hydraulic machines. Within the same house a new installation of twenty beds of horizontal retorts, eight per bed, was being

built. It was to have De Brouwer machinery and hot coke conveyor. Maurice Graham admired the work, carried out as it was by the Gas Company's own men.

Also at these works were the finest meter making and repairing shops in Australia. "Light and lofty, and 100 yards long by 20 yards wide, they afford employment for a great number of hands. Opposite to them is a building of the same size, divided into compartments for repairing cookers. Mr. Hunt has decided on a new design of standard cooker, and the Company are shortly about to make it themselves in their own shops. In this connection, it may be said that at the end of 1907, there were 11,700 gas cookers on hire."



By 1908 much capital had been invested in mechanisation. This De Brouwer conveyor has quenched the red-hot Coke and taken it into the yard. The bagged Coke, ready for sale, would have filled by hand, however.

## Gas Distribution.

"Having visited the three works, Mr. Hunt the following day kindly drove the writer all round the city and suburbs, and gave him much information relating to the distribution and consumption of gas. The number of consumers reaches about 55,000, and the total length of the mains about 800 miles. There is no high-pressure distribution; but there is a system of mains from the three works to what are called "out-stations," of which there are also three. From the Fitzroy works, there is an 18 in main about 3 miles long which goes to the Richmond outstation, where there is a gasholder of 300,000 cubic ft capacity filled by exhausters placed at the holder. The Hotham out-station is similarly supplied through a 24 in main, also three miles in length, from the West Melbourne works; the Hotham gasholder being of 3 million cubic ft capacity. A holder of the same size is placed at the Tooronga out-station, and receives its gas from the South Melbourne works through a 24 in main, which is about 6 miles long.

The standard illuminating power of the gas is 15 candles; no enrichment is necessary. There are contracts with thirteen local Municipalities for public lighting by incandescent gas; the total number of public lamps attended to by the Company being about 5,750. The City of Melbourne proper is lighted by flame arcs; but this is explained by the fact that the City Council own their own electricity supply undertaking, and therefore no gas lighting is allowed in their streets. Light for light, however, gas is about four times as cheap as electricity."