



BERNARD DRAKE
1858-1931



Company Founder of Drake & Gorham in 1886

1886

1961

**DRAKE
& GORHAM**

Some account

of the

first 75 years...

(CIBSE Heritage Group Collection)

IN 1886 Bernard M. Drake, then 28 years old, borrowed £500 in order to set up in business as an electrical engineer. Shortly after he began work he invited John Marshall Gorham to join him and the partnership of Drake & Gorham was formed. They had a great faith in the future of their industry and from the very beginning they were determined that the business should be built up by insistence on fine craftsmanship and the use of the best available materials.

Mr. Drake had faced a good deal of family opposition nine years earlier when he announced that he wanted to become an engineer, not in the Army like his father, Major-General Mervin Drake, C.B., R.E., who had fought in the Crimean War, but in industry. He got his own way in the end, however, and went as a pupil to Sir Joseph Whitworth, a noted Manchester engineer of that period.

Four years later, seeing the possibilities of being in on the ground floor of a new industry, he joined the Brush Electrical Company. Very soon he was in Madrid, winning a race with German competitors for the honour of providing the first electrical installation in that city.

At twenty-four, as managing director of both the Midland and the Great Western Brush Companies, he was in charge of the early central stations at Bristol, Cardiff and Cleethorpes.

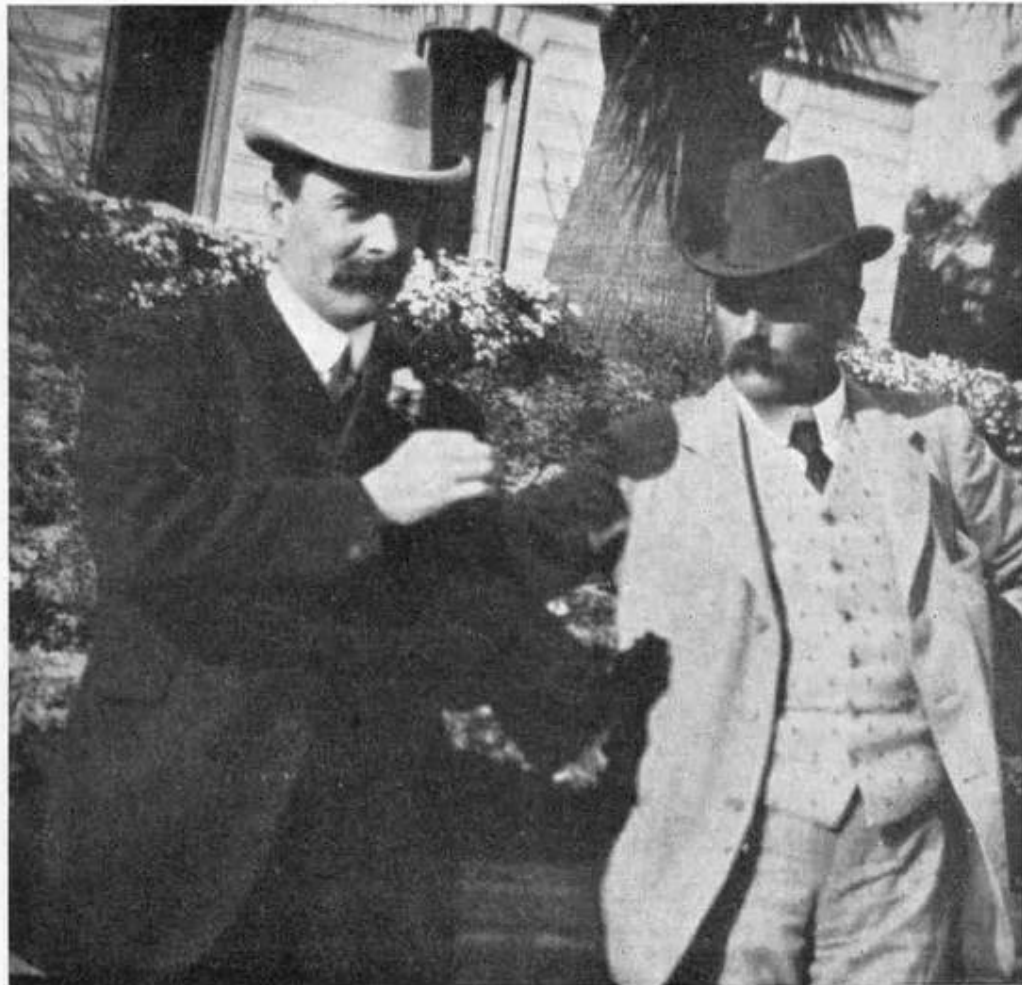
In 1884 he was appointed managing engineer to the Electrical Power Storage Company and, by solving the mystery of the rapid failure of accumulator plates, he turned a company that had been losing money into one making a profit. Associated with him in this work was Mr. Gorham, the works manager, and they read a joint paper on the subject before the Royal Society.

J. Marshall Gorham was another young man who had gone a long way in a comparatively short time. A gifted mechanic with an inventive mind, after training with a Lincoln engineering firm he had been in charge of the power plants at the earliest electrical exhibitions ever staged in this country. He had also spent some years as electrical engineer to the King of Roumania.

Drake and Gorham began their partnership with a very clear idea of their first objective. It was to bring "the electric light," as it

was then called, to the stately homes of Britain. Although by that time gaslight was commonplace in even the most modest town house, in the country oil was the only practicable alternative to the wax candle, even in the homes of the great. Doubtless there was an initial conservatism to be overcome; to the older generation of country landowner the partners' offer to provide the means of turning night into day at the touch of a switch must have sounded

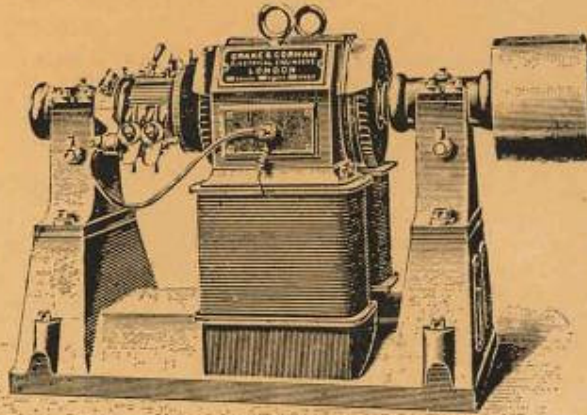
Mr. Bernard Drake (left) with Mr. Gorham.



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rather like moonshine, but within twelve years Mr. Drake was able to tell the Royal Institute of British Architects:

“The electric light is no longer the light of the future; it is essentially the light of the present, and has come to stay. Only a few years back its use in a country house was regarded as a curiosity; now, the redolent oil lamp and guttering candle have been laid aside with the high-wheeled bicycle and other relics of bygone days.”*

Perhaps the finest example of country house electrification of that period was at Chatsworth. Certainly it received the best Press, for, showing a flair for what would nowadays be called public relations, Mr. Drake arranged for about forty newspapermen from London and the provinces to see the result for themselves.

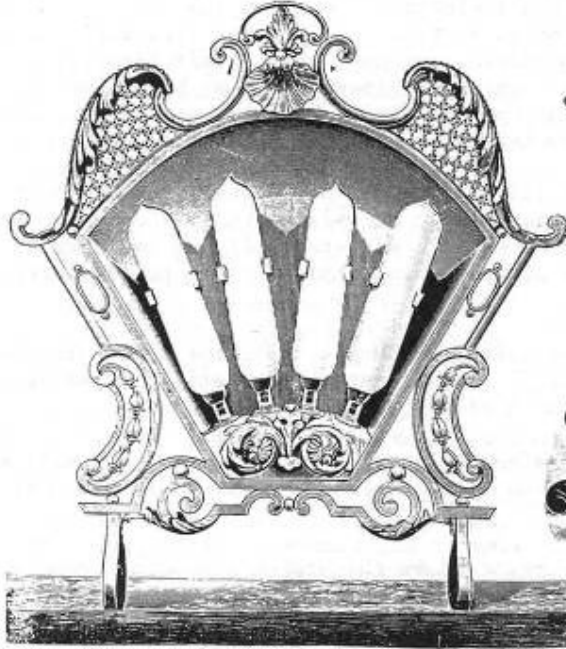
The many columns of type inspired by the visit are preserved, in a handsome, leather-bound cuttings book, in the archives at Chatsworth and one report gives so lively an account, both of the installations and of the contemporary layman's views on electric light in general that it is worth quoting just as it appeared in the Pall Mall Gazette on December 11, 1893:

INGENIOUS APPLICATION OF THE ELECTRIC LIGHT INSTALLATION AT CHATSWORTH

Chatsworth House, the Derbyshire seat of the Duke of Devonshire, is now lit by electricity. In several respects the installation, which has just been completed, is practically unique. Works have been carried out elsewhere on a larger scale, but not in such elaborate fashion as at Chatsworth. In London the mention of electric light suggests the bluish icy-cold gleam of the arc-lamps in railway stations and streets, or the warmer but still chilly glare of incandescent burners, one and all in glass bulbs of about a swan's egg size. The installation, moreover, in an old building seems almost necessarily to imply the running of wires along the ceilings of passages, with a pretence at their concealment in unsightly strips of grooved lath. As to the electric power, you either have to get it from the mains of one of the monopoly companies, or else you have an engine of your own in the basement, which roars and rattles and gives off a warm smell of oil that recalls a mid-channel steamer. The electric light at Chatsworth House knows none of these drawbacks. There are no arc-lamps at all, and the unobservant might even fail to remark on any of the 850 incandescent lights which are distributed about the house, so deftly have they been introduced. The mansion used to be lit with oil lamps and candles, and to outward appearance no change has been made, save of course in the enormously increased volume of light.

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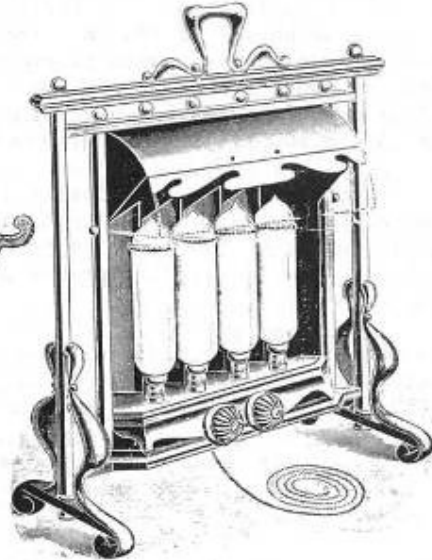
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*(From "Building Services Engineering,"
Neville S Billington & Brian M Roberts, 1982)*

During 1886 Drake and Gorham had been responsible for installing a Marshall steam-generating plant at the Prudential Assurance Company's head office at Holborn, and in 1904 this was extended to comprise a total of some 8,000 lights. This installation was replaced in 1931 by a diesel generating plant.

The same year work was carried out at St. Michael's Mount and at Port Sunlight and a contract was secured for a central generating station at Church Stretton, this last being powered by one of the few suction gas plants then in use in this country.

Other notable installations carried out during this period were at Kensington Palace (remodelling the entire installation for H.R.H. Princess Louise), the Manchester Assize Court, the Fountain Hospital (960 incandescent lamps and six arc lamps), the Royal Ear Hospital, Windsor Castle, Eton College, Lambeth Palace, Westminster Cathedral, Marshall and Snelgrove, the Imperial Tobacco Company, and the Albert Hall, Manchester, where, in addition to electric light, "organ blowing" and "kinematograph" apparatus was installed.



*Prudential Assurance, High Holborn, London, 1905
(From "Prudential Building, Holborn Bars: A History and Appreciation,"
Dr C J K Cunningham, undated)*

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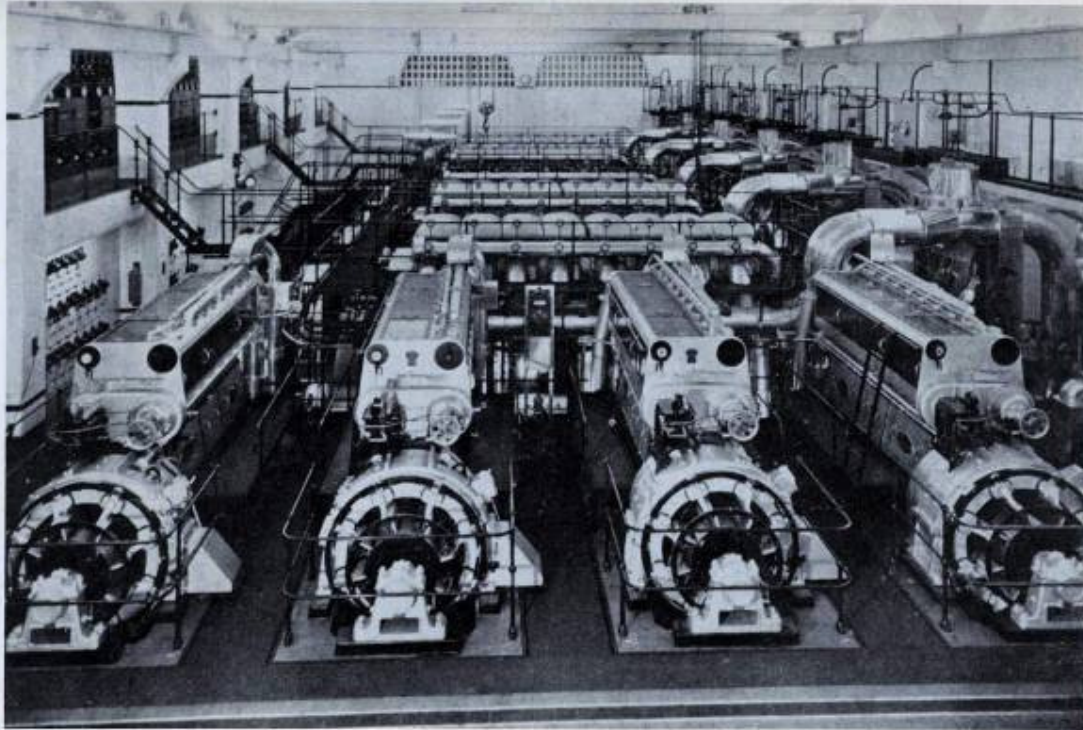
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(Advertisement of 1908)



The generating station in the basement of The Bank of England - the waste products being conserved for heating within the building.

Completed 1930's (From "Oscar Faber," John Faber, 1989)

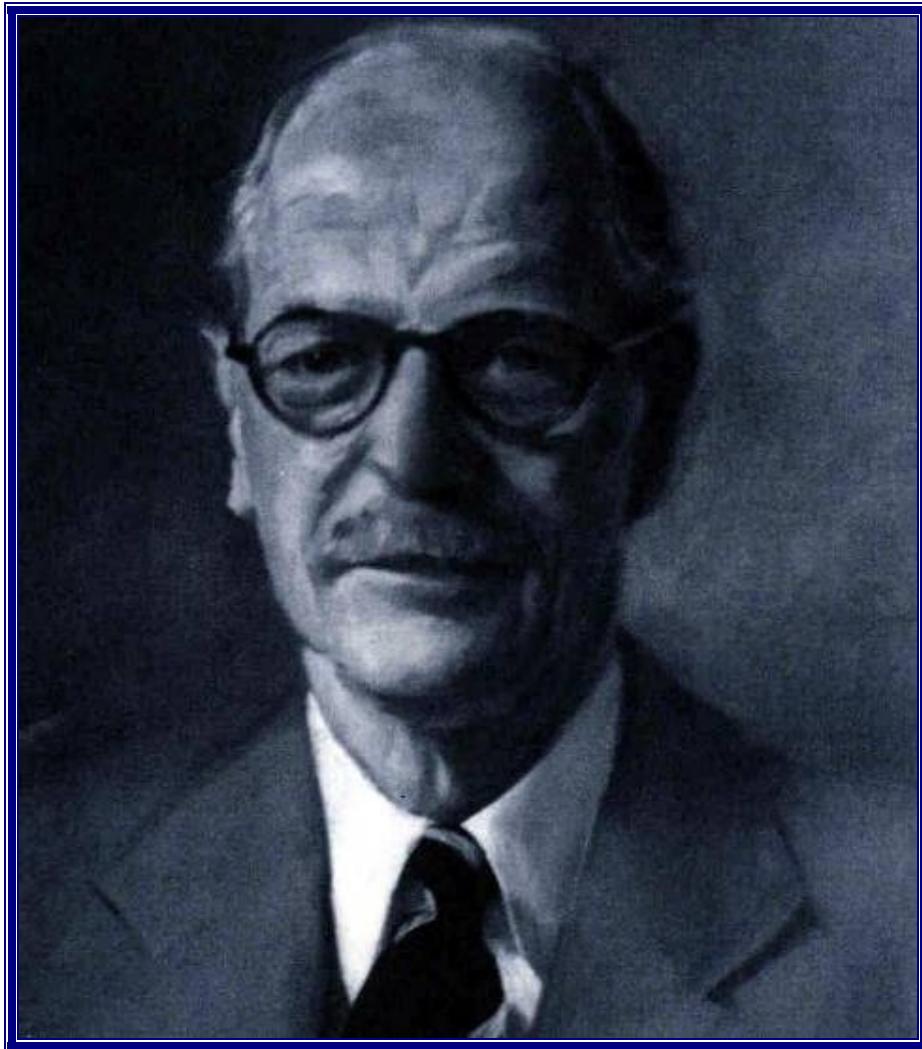
The installation at the Bank of England took ten years to complete. Most of it was carried out under the personal supervision of Bernard Drake. Unfortunately, he did not live to see the completion of the work, for in 1931 he died suddenly at the age of 73. His son Robert Hamlyn Mervyn Drake took his place as Chairman of the Company.

Bernard Drake was a typical Victorian entrepreneur. He lived and worked through the Electric Revolution from its earliest beginnings to its completion. He was a perfectionist in his chosen trade, totally intolerant of careless or faulty workmanship. But he never expected a job to be done that he could not do himself. There were times when he would frighten his staff. But those who knew him, thought no worse of him for that – he was both liked and respected.

(From "A History of Drake & Scull: Past & Present," 2000)



**ROBERT HAMLYN MERVYN
DRAKE
1900-1966**



Son of the Company Founder of Drake & Gorham

Hamlyn Drake was 32 years old when he became Chairman of the Company. Like his father he was a shrewd businessman with an inventive turn of mind. Hamlyn made only one immediate change. He altered the Company's motto from – 'the best is always the cheapest in the end' to his own – 'the best is really not quite enough.'

The economic instabilities of the 1920s had resulted in severely increased competition in the building and allied industries. This resulted in the era of the 'jerry' builder, which lasted through the 1930s and resulted in the acceptance of standards of work that had been unthinkable a few years earlier.

This was particularly evident in electrical contracting. Unscrupulous firms would go to any lengths to cut prices and skimp their work. Cheap and sometimes dangerous fittings and equipment were used together with shoddy sub-standard wire and conduit. The most extraordinary methods and devices were resorted to in order to save time.

But throughout this period, Drake & Gorham stuck rigidly to its policy of 'nothing but the best.' This policy, together with its electrical experience, ensured that it not only survived during those difficult years but continued to grow.

Only in 1933 did Drake & Gorham show a loss, producing a debit balance of £17,431. Drastic economies had to be made, but not at the expense of workmanship or materials.

'The firm must maintain its reputation for first-class work and look for reductions in cost not through roughly finished work and the use of inferior materials but by improving organisation and a keener sense of duty on the part of each employee,' said Hamlyn Drake.

(From "A History of Drake & Scull: Past & Present," 2000)

The two managing directors accepted a reduction of 15 percent of their salaries, the other directors gave up ten percent. Certain sections of the staff voluntarily agreed to similar temporary reductions. Once again the Board of Directors looked at ways of diversification. The Manchester branch, now suffering because of the depression in the cotton trade, turned its energies to manufacturing electric signs and aircraft warning lights. The Acton factory concentrated on the production of high-tension switch-board equipment. Meanwhile the London office pursued new business in the entertainment sector – ice-rinks, greyhound tracks, dance halls and cinemas.

During the thirties Drake & Gorham continued to work on large scale commercial projects. The Company carried out extensive light and power installations in large department stores. Other major contracts included Dolphin Square, Belgravia (a contract which was Europe's biggest blocks of flats) and installations for BBC transmitters at Beaumaris, Daventry and Droitwich.

This was the era when cinema going was at its peak. Cinemas relied entirely upon electrical services – to run the film, for sound, stage lighting, heating, air-conditioning, and the elaborate decorative lighting in vestibule and auditorium and for the outside display of neon lighting. Electricity was also required for the 'Mighty Wurlitzer' electric organ, then an essential part of the cinema experience. No wonder many of the earlier cinemas styled themselves 'The Electric Palace.' Between the wars the cinema was the very epitome of the Electric Revolution.

Throughout this period the Company was still doing a substantial amount of work in country houses. It is remarkable that even in the 1930s, when many of the humblest homes were wired for electricity, some stately homes still relied on gas and candles. The public mains supply now reached almost

everywhere and most houses only required wiring rather than plants. But by this time some of the large house installations carried out by the founders themselves in the 1890s were, at long last, beginning to wear out and their owners were coming back for replacements.

But in 1938, the firm's order book took on an ominous tone as war clouds gathered over Europe. The Company undertook underground cabling work at ten RAF aerodromes and installed generating plant and special wiring in subterranean oil storage caves at Lyness, the Orkneys and Invergordon.

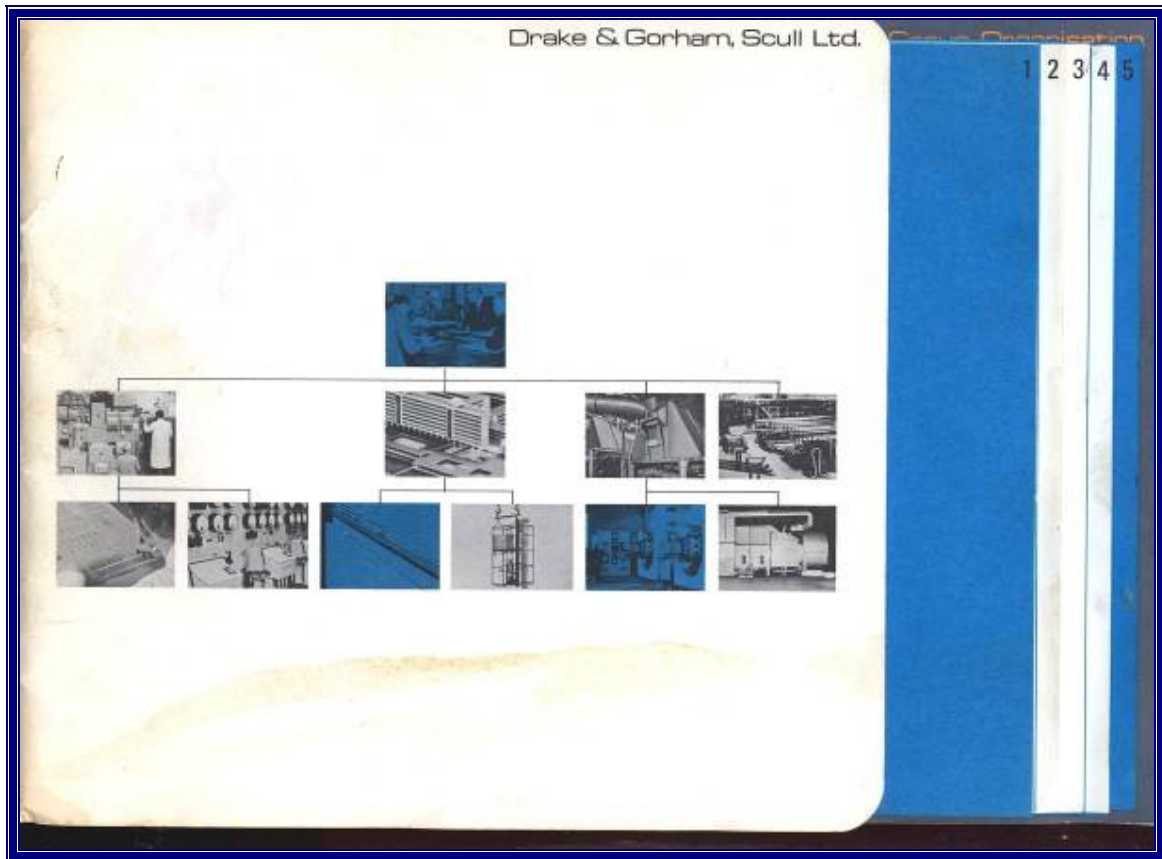
Hamlyn Drake addressed the staff at the Company's Diamond Jubilee in 1946. He recalled that 'for sixty years we have been brought up to believe that the best in materials, workmanship and service is still not quite up to Drake & Gorham standards, and this motto means as much today as it has done throughout the history of the Company.'

The merger negotiations between Drake & Gorham and Arthur Scull & Son were carried out in secret during the first months of 1964. Both sides were aware of the considerable benefits that would result from the merger. They were, therefore, anxious to arrive at an amicable agreement and to avoid anything in the nature of a 'take-over battle' of the sort so frequently seen during the 1960s. In the event, complete agreement was reached and the fact announced to the staffs of both companies on February 18th, 1964.

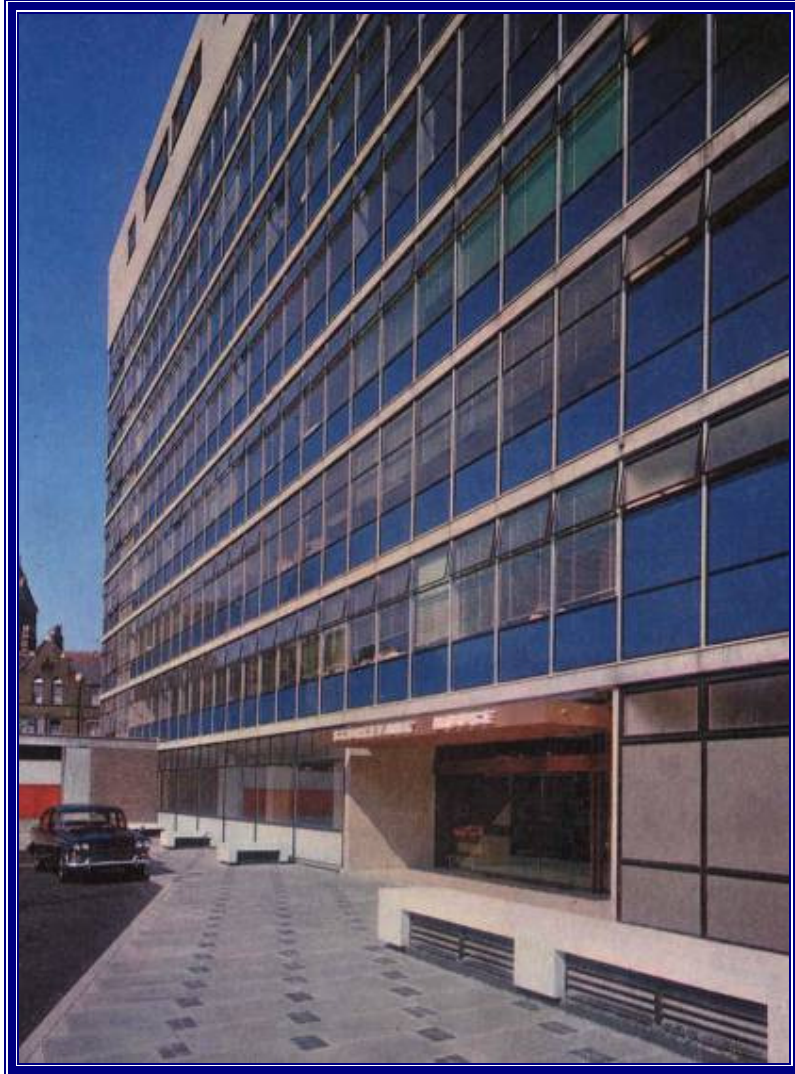
When the merger was complete, a new company, The Drake & Scull Engineering Company Limited was formed. Hamlyn Drake was elected Chairman with Anthony Scull as his deputy. The new company was responsible for the integration and development of the two businesses. It was divided into four regions, operating from London, Bristol, Manchester and Glasgow. Each region had three separate divisions: plumbing, electrical and mechanical services. In addition, there was an overseas division managed from Bristol.



Dolphin Square, Belgravia, London



*Brochure c.1967 of the newly-merged Companies, the new name being
Drake & Gorham, Scull later becoming Drake & Scull
(CIBSE Heritage Group Collection)*



*London Office of the new Company, Highgate Hill, London.
The name was changed from Sturtevant House (a Company
also acquired by the Group) to Hamlyn House to commemorate
Hamlyn Drake
(CIBSE Heritage Group Collection)*



**CORNELIUS JACOBSZON
DREBBEL
1572-1633**



Devised a temperature regulator

[118] Cornelius DREBBEL

1572-1634

Dutch inventor. Worked for James I of England. Devised a temperature regulator: "Drebbel's apparatus consisted basically of a box with a fire at the bottom and above this an inner compartment containing air or alcohol with a U-shaped neck topped by mercury. As the temperature in the box rose, the increased pressure of the heated air or alcohol vapor pushed up the mercury, which in turn pushed up a rod; this mechanical force was applied to close a damper and throttle down the fire." Drebbel also demonstrated a submarine boat and a thunder-and-lightning machine. According to Francis Bacon [139], Drebbel showed the king an early cooling (air conditioning) device in the Great Hall at Westminster that "reduced the temperature in the Hall to such a degree that James and his attendants fled, shivering."

*(Mini-biography from "The Comfort Makers," Brian Roberts, ASHRAE, 2000
Further research suggests 1633 is his probable date of death)*

11.2 Temperature Control

A historical account of the development of the thermostat or heat governor has been given by A. R. J. Ramsey before the Newcomen Society.⁽¹⁹⁾ The word "thermostat" was coined by Dr Ure in 1830, though temperature-sensitive devices had been in use for more than a century prior to this.

The prototype thermostat is probably that invented early in the 17th century by Cornelius Drebbel, a Dutch engineer. According to an account by Francis Bacon, Drebbel devised his temperature regulator only incidentally, "as an instrument to serve another purpose: alchemy. He believed he could transmute base metals to gold if he could keep the temperature of the process metal constant for a long time."

Drebbel's temperature regulator (Fig. 11.2) has been described as follows:⁽¹⁶⁾

"Drebbel's apparatus consisted basically of a box with a fire at the bottom and above this an inner compartment containing air or alcohol with a U-shaped neck topped by mercury. As the temperature in the box rose, the increased pressure of the heated air or alcohol vapour pushed up the mercury, which in turn pushed up a rod; this mechanical force was applied to close a damper and throttle down the fire. Conversely, if the temperature in the box fell below the desired level, the gas pressure was reduced, the mercury dropped and the mechanical linkage opened the damper."

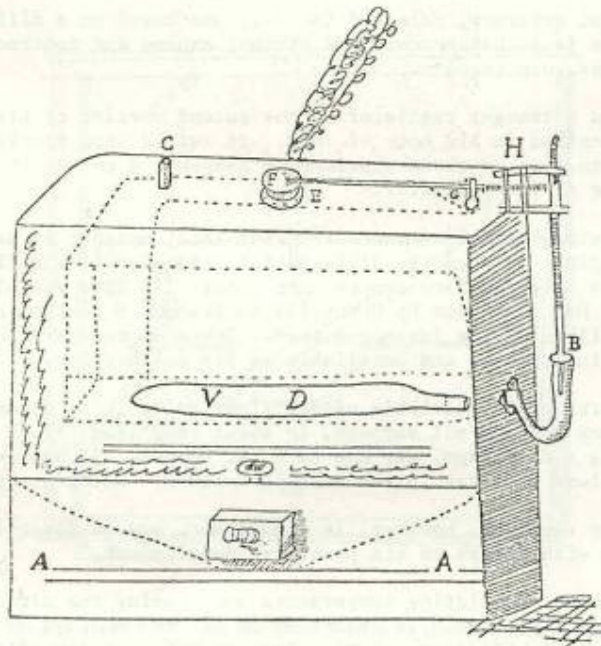


Fig. 11.2. Drebbel's thermostat (early 17th century).

This regulator seems to have worked successfully, for Members of the Royal Society of London, including Robert Boyle, Christopher Wren, and in the following generation Robert Hooke, showed interest in it.

(Extract from "Building Services Engineering, Neville S Billington & Brian M Roberts, 1982)