

# Then & Now

combined with refrigerating equipment formed the basis of the first complete Air Conditioning Systems. The *Daily Mail* plant commissioned in 1924 for air conditioning the Press Room was of particular interest as it was the first to utilise centrifugal refrigeration developed only three years before by Dr. Carrier. Installations for the confectionery and printing Industries head those early lists, followed closely by the requirements of the then rapidly emerging 'Super-Cinema' with a simple plant for Stratford Broadway in 1922 and a plant complete with the 4 in. Carrier centrifugal in UK installed in 1924 in the Carlton Theatre. By 1923 offices had been set up as far apart as Bombay and Paris. The control of humidity was the key to the improvement of many industrial processes.

In 1929 Carrier Continental was established in Paris and Carrier Ross in London. In 1935 Stanley Groom bought out the American-owned shares and in 1936 Carrier Engineering became a Public Company with a factory at Wembley. From that date, Carrier London developed independently of the American Carrier, the latter concentrating on manufacture to become world leader while the British gained widening renown in new applications of air conditioning and, in thermal engineering, under the Drysys name, to become a leader in its specialist field in the automobile industry. The friendly relationship, cemented by certain licence agreements, however, continues today to be maintained between the two Carriers.

## CONTRACTORS OF VARIOUS KINDS

"Designed upon Roman lines, Astoria, London's supreme cinema, at the Oxford Street end of Charing Cross Road, is a noble example of Pompeian style of its best period. A generous five-storeyed frontage of white York stone confronts Charing Cross Road, the main entrance being flanked by a range of shops. To the Renaissance

Dance Hall there is an equally imposing entrance. An exquisite scheme of interior decoration has been followed. The latest system of concealed lighting has been adopted, atmospheric lighting being one of the features. Every seat is of the new tub style, giving ample knee and elbow room. The stalls floor is built with a generous rake, and no column will interrupt the view. The same seating mode is seen in the circle, which is approached from a luxuriously appointed foyer, and in which salon teas and light refreshments may be obtained. The heating and ventilating system ensures constant fresh air to every part, which will be cool in summer and warm in winter. The theatre accommodates 2000 persons, all with a clear vision of the screen."

This is from the London *Evening Standard* of 12.1.1927 and represents one of the more notable of the achievements of **J. Jeffreys & Co., Ltd.**, who supplied the building services. This article states that the project was built and completely equipped in 8½ months. One wonders if it would be possible to achieve the same programme of works today!

J. Jeffreys was established in 1881 and its first premises were at Baron's Place in the Waterloo Road, London. These premises were retained as workshops when the company moved into its new offices in St. Georges House next door in 1938.

From St. Georges House, J. Jeffreys moved to their present address in Teddington in 1965 and were amalgamated with the Balfour Kilpatrick, BICC Group in 1973, but the original name and a large number of long serving members of staff were retained. J. Jeffreys has provided four Presidents of the Institution: **E. Herring** (1918-9), **P. M. B. Grenville** (1924), **John W. Cooling** (1932), and his son, **J. Michael Cooling** (1975).

## Rosser and Russell

Another contracting firm which has its origins as far back as Hadens is Rosser and Russell Ltd. It began with Charles Sylvester who was born in 1774. In the early 1800s Sylvester took out a number of patents, one of which was concerned with 'galvanised metal'. In 1819 he produced a treatise *The Philosophy of Domestic Economy as Exemplified in the Mode of Warming, Ventilating, Washing, Drying and Cooking*. In 1820 Sylvester moved to London and he continued his work as a heating engineer and chemist. After his death in 1828, his son John carried on his business. With the death of John Sylvester in 1852, the operation of the business was taken over by Samuel Egan Rosser who had previously been Sylvester's managing clerk. After 1856 the firm was known as S. E. Rosser,

engineer and heating apparatus manufacturer.

Rosser took out a number of patents and extended the range of the firm to include hydraulic and mechanical lifts. More important in 1866 he took into partnership a young marine engineer called Joseph Russell and the firm Rosser and Russell was born. Joseph Russell lived to 1927, and his son Nelson, whom he had taken into partnership, became President of the Institution in 1902.

During its long history Rosser and Russell have been responsible for the services in a wide variety of installations but they have a special record for large public buildings such as the Bank of England, the Stock Exchange and, to jump many years, the headquarters of the National Westminster Bank with its 600 ft tower in the city of London.

Apart from **J. Nelson Russell**, Rosser and Russell have provided two other Presidents of the Institution, **R. Duncan Wallace** (1950) and **Ian H. Duff** (1968).

## Crown House

Crown House Engineering was formed in 1973 by amalgamating four companies that had for some years been members of the Group known individually as **Wheeler, Crittalls, Berrys** and **Furse**. Each Company had a long and successful history briefly described as follows:-

**F. H. Wheeler & Co. Ltd.** commenced trading as electrical engineers and contractors over 60 years ago from offices in Victoria Street SW1. In those days electricity was just beginning to come into general use for lighting and power. Over the years the firm grew in size and reputation and became one of the largest companies in the industry. They were responsible for some of the largest electrical installation contracts carried out in recent years including numerous power station projects, the Shell Centre and Spencer Steelworks for Richard Thomas and Baldwins Ltd.

**Richard Crittall & Co. Ltd.**, was founded in 1884 and during the early years contracts included churches and country houses. Subsequent development included new designs for radiators; heating buildings with embedded hot water pipes; complete engineering services for the Ritz Hotel London; air conditioning of the Haymarket Theatre and pioneering use of off-peak electricity for heating. **R. G. Crittall** was IHVE President in the difficult war years (1939-43), and in addition **J. L. Musgrave** (1927) and **W. R. Cox** (1957) were also with Crittalls.

**Z. D. Berry & Sons Ltd.** originated as a one-man business in 1810 with workshops in Regency St. London SW1. Some fifty years ago the company designed and manufactured heavy

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kitchen equipment and patented heating systems for swimming pools, rapid water heating calorifiers and many other heating appliances. Over the years the company developed from a relatively small engineering business and became prominent in the heating and ventilating industry.

In October 1967 Richard Crittall and Co. Ltd. and Z. D. Berry & Sons Ltd. amalgamated to form Richard Crittall & Z. D. Berry Ltd. and in April 1969 the joint company merged with F. H. Wheeler & Co. Ltd. to form Wheeler Crittall Berry Ltd. In January 1973 Wheeler Crittall Berry merged with Furse Electrical Installations to form the present company.

The first of the Furse companies, W. D. Furse & Co. Ltd was founded in 1893 with headquarters in Burton Street, Nottingham, and moved to Traffic Street, Nottingham in 1899. In 1919 two associate electrical contracting companies W. J. Furse & Co. (Manchester) Ltd. and W. J. Furse & Co. (London) Ltd. were formed. Throughout their history, starting with many country house generating plants, the Furse companies have been engaged in projects at power stations, chemical process plants, steelworks, collieries, gas plants, universities, hotels, paper mills, tobacco factories and sports arenas and have worked for most principal commercial and industrial companies in the country.

## Gas Engines and Heating

Queen Victoria had been crowned only seven years when in 1845 Mr. Henry Warner commenced trading in Ipswich as a whitesmith (a worker in tin goods) and a bell-hanger in private houses. From such a modest acorn grew the present day East Anglian heating and ventilating engineering family business of **Henry Warner & Son Ltd** of Ipswich, Suffolk with the associated company in Kings Lynn, Norfolk, of **H. Warner** (Kings Lynn) Ltd.

Steady progress in the business was maintained in the mid-nineteenth century and eventually a son, Alfred Warner, joined his father at the age of 14. Late with the invention of the internal combustion engine the firm became agents for the Crossley gas engine. Early steps in heating engineering were also undertaken with the advent of cast iron "caulked pipes and saddle" type boilers mainly used in greenhouse and church heating, also the larger country houses.

Mr. Fred Warner, Alfred's elder son, joined the firm in 1897 and eventually became a partner as by then he was a specialist in gas engines. He had also developed a special interest in water and irrigation engineering in addition to continuing with the expansion of central heating work. Fred Warner became one of the earliest members of the Institution.

One of his brothers, William, commenced a separate company in Kings Lynn in 1912 to cover the northern half of East Anglia and this arrangement still continues to the present day.

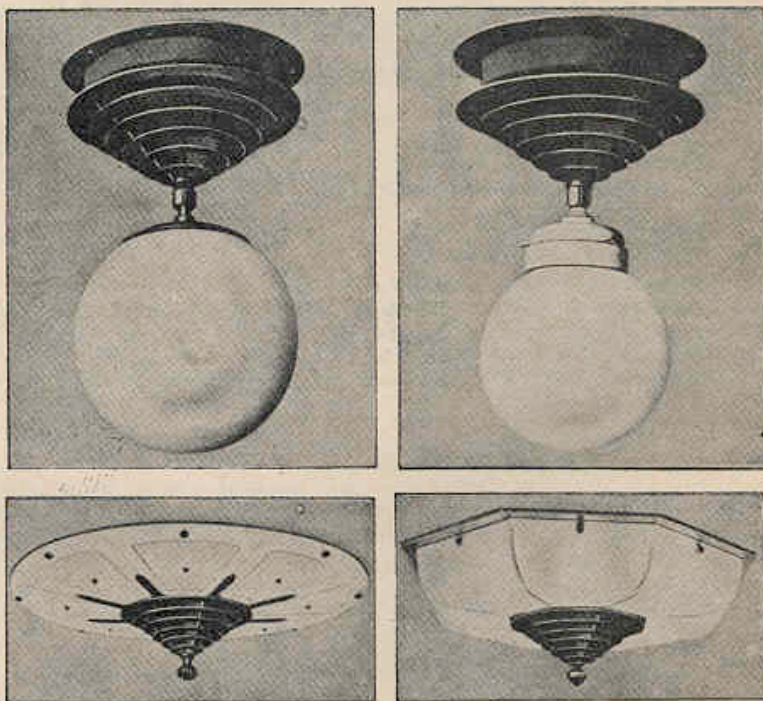
Surviving the vicissitudes of World War I when they became engaged on munitions work, Warners reverted to their normal business of heating and water engineering and became members of the HVCA in 1920. Fred Warner later conceived the principle of a special delayed action ball valve which later went into production on a commercial

basis. Today these patent 'arclion' ball valves are used in Buckingham Palace, 10 Downing Street and many high rise buildings all over the world. Fred Warner's son Harry followed in the business after the last war and his son Michael is now a working director so that the firm is in its fifth generation of Warners.

The two firms have always prided themselves on the quality of their work giving 'personal' attention to each contract and have always firmly believed in providing the best possible after-sales service for all their mechanical services installations. Such a policy has ensured their steady growth in business with a confident outlook for the future.

## Pipework without Fittings

J. Cooksey and Son (Ashford) Ltd, was founded in 1883 and became a family business commencing in small works through the turn of the century up to World War II. The war gave an upturn in trade. Little central heating as we know it today was installed in the early days and the company's activities revolved mainly around replacement of boilers and kitchens ranges within schools and churches. In addition they installed dozens of tube wells as there was a limited supply of mains water in the area and most householders had to fill their tanks daily via a semitoratory pump. In fact Ashford Manor Golf



Examples of Richard Crittall's combined lighting and ventilating fittings (c. 1930)

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Club requested them to install 18 such wells and pumps on each of the 18 greens to enable watering to be carried out.

The second generation J. Cooksey was asked to demonstrate the 'new' innovation of bronze welding by BOC who actually came to the workshop to photograph him.

After this J. Cooksey became famous for his pipework installations using little or no fittings. The original house and small office which together cost £399.6.11d are still standing and are occupied by a fourth generation of the family.

After the war the company settled into mechanical service installations generally up to present day where it handles contracts up to £350,000 for a variety of local authorities and private clients. Such figures would no doubt cause some surprise to the founder of the firm if he could see them!

## Drake and Scull

The story of Drake & Scull Engineering Ltd. is a story of two companies, Drake and Gorham and Arthur Scull and Son. Bernard Mervyn Drake was born in 1858. When he was 23 he joined the Brush Electrical Company where his ability was recognised by rapid promotion. But in 1884 after three years with Brush he was appointed managing engineer with the Electrical Power Storage at the comparatively princely salary of £300. It was at this company he met Marshall Gorham, the firm's works manager, and after two years they both left to set up Drake & Gorham in 1886, an electrical contracting company.

Arthur Stanley Scull was born in 1860 and at the age of 14 years was apprenticed to G. F. Tuckey, a master plumber who had been established in Bristol for 56 years. Plumbing in those days was mainly concerned with lead work, i.e. guttering and flashings on roofs and

covering boxes with lead for cisterns and sinks.

When Scull started work only one house in three had water laid on, and water closets were rare. Even in 1894 the installation of water closets in Manchester was considered unusual. He received his indentures in 1881 and with the 10 guineas he had saved during his apprenticeship, set up on his own in Milk Street, Bristol.

But Scull recognised the growing importance of sanitation and so his nameplate carried the title 'Sanitary Engineer'. Within two years he was employing two plumbers and their mates and extending his activities to include piping for gas supplies, bell hanging and hot water supplies.

In 1928 Arthur Scull retired at the age of 67 years owing to ill-health, and died a year later. In the same year the family firm was created a limited company with a capital of £15,000 with Anthony Scull as chairman and managing director and William Rudman also on the board of directors. Anthony Scull set about enlarging the scope of the company's operations with the formation of a central heating department.

March 1959 saw the formation in Bristol of Scull Electrical to design and install lighting and electrical heating systems and from the very start it proved an unqualified success. The new company also undertook defrosting work, fire alarm systems and other specialised work in hospitals, factories and boiler houses.

A merger was agreed upon in 1964 between the two sons of the founders, and Drake & Gorham Scull became a holding company with the two companies operating independently until May 1964. They then were integrated to form Drake & Scull. At this time the new company engaged in providing packaged engineering services contracts for the growing industrialised building market. By July 1965, one year after the merger, the order book stood at £12m and by the next year had risen to £18m. In 1965 the group took over **Sturtevant Engineering**, adding another 1,500 people to its payroll, and expanding its activities to the manufacture and installation of all aspects of air and gas handling, including electrostatic precipitation. Sturtevant also had other companies within its own group which joined the Drake & Gorham Scull empire, including E. Reader & Sons Ltd of Derby.

In 1966 Sturtevant was split into two, Sturtevant Air Treatment Ltd. dovetail in with Drake & Scull's activities and Sturtevant Engineering making its own fans and air treatment equipment.

When the two services companies merged in 1964 the directors had in mind the advantages offered by a multi-

services approach to building services. Advantages not only to the contractor himself, but also to architects, local authorities and property and industrial developers. Planning and organising of all site work under a multi-services contract is carried out under the guidance and control of a single man, the project manager. He co-ordinates all the various trades work so that the installation proceeds smoothly and quickly without the frustrations that can accompany sites where several contractors are working side by side.

## Cash from Auntie

Way back in the 1880's, the late Lewis Hill, with the aid of some cash borrowed from his Great Aunt, formed the new fangled heating company known as Hill & Drummond. He must have paid off his debt to Auntie pretty quickly (good profits in those days!), as in 1890 Lewis Hill, Great Uncle of the present Senior Partner, founded the heating & ventilating company known as 'Lewis Hill'. In 1904, Lewis Hill became one of the Founder Members of the Heating and Ventilators Contractors' Association.

The Company continued under this name until 1950, concentrating solely on the heating and ventilating of public buildings throughout the United Kingdom, encompassing, for instance, Naval Dockyard Premises at Devonport and the R. A. F. Establishment at Cranwell. In 1941, on the death of Lewis Hill, the company was taken over by his nephew, Eric Gordon Hill, who only retired fully in 1975. By 1950, the scope of work had been increased to cover all building services and it was decided that the name of the company should be as at present. Rowland James Hill, son of E. Gordon Hill, is the present Senior Partner.

In 1940 the premises standing on the present site were wiped out by German bombing and the firm carried on in temporary premises until the new building was completed in 1950.

Over the years, they have executed all manner of heating systems, from dozens of Welsh churches, using the old Perkins  $\frac{3}{4}$  in. high pressure pipe, to the so called modern micro-bore system. In the boiler field, they have ranged from gunmetal coke-fired units (what price nowadays?), to the present modular form of boiler house.

In closing, over a period extending nearly 100 years, there have only been three 'Chiefs', all from the one family, but "a hell of a lot of good Indians", so they can truly call themselves a 'Family Firm'.

## REFRIGERATION AND AIR CONDITIONING

The principal of preserving perishables by storing in cold environments was

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known to the Romans, and many of the country houses of Tudor times and earlier had an ice pit in which food was stored for long periods.

It was not until the turn of the 18th century however, when other means of producing cold storage (i.e. mechanical refrigeration) began to occupy mens imagination—Richard Trevithick the famous 19th century pioneer of the industrial revolution and an employee of John Hall, founder of **J & E Hall**, had written about his concept of a 'cold machine' in the 1820's but the papers were put aside with so many of his other revolutionary ideas.

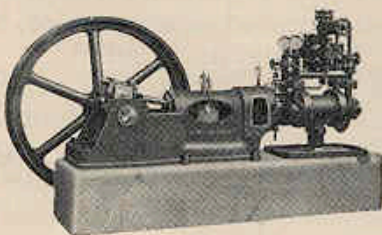
By about 1860 however many of the obstacles of early mechanical refrigeration were being overcome, and at the Great Paris Exhibition 1877 one Msr. Giffard exhibited his 'Cold Air Machine'—at the time one of the most advanced concepts of refrigeration. This machine was acquired by the then owner of J. & E. Hall and brought back to the U.K. for development and exploitation. It was just 100 years ago this year when a small engineering works in Dartford Kent, already world famous for marine engines and boilers, paper machines and milling machinery began its association with refrigeration. By the 1880's the cold air machine had been superceeded by CO<sub>2</sub> machines and the cold revolution was well under way with J & Hall & Co. (the forerunner of Hall-Thermotank) to the fore.

In the 1890's in Glasgow three brothers were working for the John Brown shipyard on the building of the early transatlantic Liners, they were engaged in the design of the heating and ventilating systems for the passenger quarters, the design of which was the subject of a patent taken out in 1898 for improvements in ventilating and heating or cooling apparatus. There was such a demand for these systems, that the brothers set up shop in Glasgow and the Thermo-tank company was born. One of the first jobs was for installation of a

'THERMOTANK' on board a ship of the Imperial Russian Navy (reputedly the first shipboard air conditioning system in the world) from these the Company went on to equip all the Atlantic Blue Ribbon ships, *Lusitania*, *Titanic*, *Mawretania*, *The Queens*, *Canberra*, and ships of the Royal and other Navies, all round the Globe. A unique Thermotank development of 50 years ago was the Punkah Louvre the well known directional air terminal, now seen all over the world in many guises. Today the Hall-Thermotank Company is a multi-division, international organisation, part of a world famous engineering group—but Hall-Thermotank Products Ltd, with the main sites in Dartford and Glasgow, are the direct descendants of these early pioneers with still many son-father-grandfather connections with the past. And for the future many exciting developments are being germinated at the Dartford site, one of the most important of recent times being the Hallscrew compressor.

It was in the difficult post-war world of 1919 that C. A. Dunham Ltd started operations in London, importing steam traps from its parent company in Canada. By 1928 the company had built up a reputation for quality steam specialties and the product line had been expanded to include pumps and unit heaters. Old heating engineers may remember the company's vacuum heating system, which at that time was very popular in the United States and Canada.

In 1935 the company acquired its own manufacturing facilities at Morden in South London, and the company continued to expand until it outgrew these premises and in 1958 the works



*One of the earliest West & Beynon ammonia compressors, pre World War I*

and head offices were moved to their present location near Portsmouth. During the years following the Second World War their parent company, now in the U.S.A. had been concerned with a number of acquisitions and mergers, the most notable of which was the merger between C. A. Dunham and the Bush company in 1965 to form Dunham-Bush Inc. This resulted in a company manufacturing a complete range of

heating, air conditioning and process refrigeration equipment. The parent company is now an affiliate company with the American Signal Group of Companies, which includes the Garrett Corporation and Mack Trucks Ltd.

The head offices and manufacturing facilities of the British company, **Dunham-Bush Ltd.**, are concentrated at Portsmouth and the production staff there are also responsible for the supervision of production at the German factory at Raumheim, near Frankfurt. **West-Beynon** was incorporated in 1909, being founded by Messrs. Ernest West and Herbert Beynon. Ernest West was the son of H. J. West who was one of the pioneers of the refrigeration industry in Great Britain.

West-Beynon initially manufactured a range of ether, ammonia and CO<sub>2</sub> machines, some of which are still in use, and later, a range of Freon compressors were introduced. The company effectively ceased manufacture of compressors in the late 1950's although machines for specialist applications were manufactured until the early 1970's. During the war, a wide variety of refrigeration equipment was installed on board HM ships and to this day West-Beynon continue to provide specialist equipment for marine use.

The company is currently actively engaged in the design, installation and servicing of all aspects of refrigeration and air conditioning. Recent applications range from a suite of environmental test chambers for a poultry research station in the Middle East, air conditioning of an X-ray Department in a London Hospital and a cook-freeze installation for a Police Authority. Ernest West & Beynon Ltd. also specialises in supplying ultra low temperature cabinets and all types of storage equipment for medical research.

## HEATING AND VENTILATING

A well known manufacturing firm with a very long record is **Keith Blackman Ltd** of Tottenham. Its history goes back to 1823 when James Keith, tinsmith and gas fitter began business in Arbroath. It is claimed that the James Keith Company was responsible for the introduction of both the sectional boiler and the sectional radiator to the British Isles, and it had an unusually enlightened labour relations policy which included a reduction of the working week—most uncharacteristic of those times.

In 1900 James Keith amalgamated with the Blackman Air Propeller Ventilating Co., Ltd., which in 1883 had introduced a range of belt-driven ventilating and exhaust fans. At the time these were

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described as "contrivances for moving any quantity of air with a minimum of power". The Keith Blackman Company (as the combined company became known) is famous for combining the twin industries of heating and ventilating, and can therefore be said to be truly one of the first heating and ventilating manufacturing concerns.

The company now manufactures a very wide range of centrifugal fans for both ventilation and industrial processes work, bifurcated fans, high pressure blowers and special purpose axial fans, also low noise level fans for packaged air conditioners and air handling units.

As a pioneering gas man, James Keith would approve of the present day activities of Keith Blackman's industrial gas division, which supplies standard products from gas burners to switches and controls.

"**Matthews & Yates Ltd**—ventilating, heating, lighting and sanitary engineers, and plumbers and glaziers"—started business under this banner at the Todd Street Works, Long Millgate, Manchester in 1880.

Today, almost 100 years later, Matthews & Yates are the one of the country's leading centrifugal fan and central station air handling unit manufacturers exporting agricultural equipment, air conditioning, heating and ventilation plant and industrial fans all over the world.

The firm was first formed as a partnership between William Matthews and Joseph Yates. At this time their specialised range of products included feed water heaters, air propellers and radiators.

Before the turn of the century, Walter Yates, son of the co-founder, joined the Company and it was he, perhaps, who contributed most to the early successes of the organisation. At the time of his death in 1953 he was governing Director of Matthews & Yates. He had been an

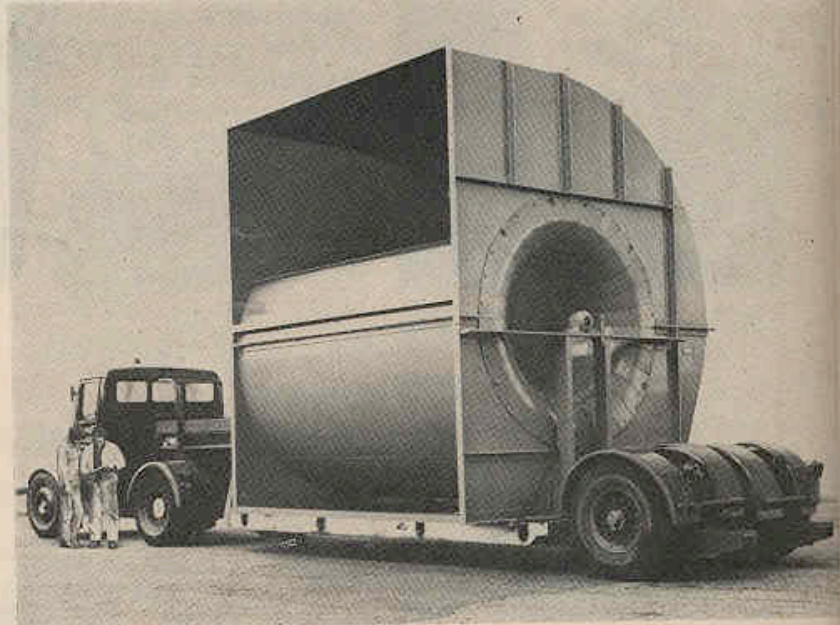
active figure in the fan engineering field.

Throughout the years Matthews & Yates have manufactured a very wide range of products. Whilst generally related to heating or air movement, they have been as diverse as shirt dryers for commercial laundries and oxy-acetylene welding equipment, from bottle drying apparatus to electric vacuum cleaners. Matthews & Yates

were, at one time, quite prominent electric motor manufacturers. But throughout its history the manufacture of fans has been the company's principal activity. Early catalogues list the prominent buildings incorporating Matthews & Yates equipment. These include Buckingham Palace, The Carlton Hotel, St Thomas' Hospital, and, fully described in a paper read before the IHVE in 1907 by Walter



The old,.....



..... and the new

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Yates, "The Ventilation of the House of Commons". In 1969 the Company became part of the Peck Engineering Group, now known as the Doulton Engineering Group, a subsidiary of S Pearson and Son Ltd. **Walter Yates** was IHVE President in 1909, and **Oswald Scott** in 1926.

When **Standard and Pochin Ltd.**, of Leicester began life back in 1919 it is hard to believe but there was no such thing as a unit heater. Legend has it that this massive section of the H & V industry began when an office boy at S & P was sited too far from the radiator. The enterprising youth placed a fan behind the radiator and the unit heater was born.

Originally part of a company which manufactured boot and shoe machinery, S & P developed a range of fan, dust and fume removal systems. Later with the development of heating appliances, the company ceased to be an offshoot and became an important part of the H & V industry.

The first unit heaters were called Stanlocks and were manufactured by S & P from the early 1920's. Customers included such great names as the Birmingham Carriage Co., London County Council Tramways, the Lancashire and Yorkshire Railway Company and the Imperial Japanese Navy. Quite why the Japanese Navy needed them is lost in fading memories.

Some of the very first Stanlocks are still in operation more than 50 years later and a much modernised version of the S & P 1930's Calorier heater is still being produced by S & P and is much in demand.

Up to 1973 the company was part of the privately owned Standard Engineering Group of Companies but in that year it was taken over by Halma Ltd., who with Argosy Fenton Ltd., The Power Equipment Company and Secomak Air Products already had a large stake in the H & V world.

Now Standard and Pochin manufacture a vast range of fans, coils, air conditioning equipment and refrigeration units. Even though everything is on a much larger scale these days, the company say they still retain the personal touch. On a day-to-day basis they receive requests for fans from 20—40 years old and they say they might even be able to find spares for a Stanlock heater if ever a repair became necessary.

## ... ABOUT ... EXPERIENCE

**I**T has been said that experience must be bought—it is true that many do make this very expensive and unsatisfactory purchase—but it is a doubtful luxury when it comes to buying Sheet Metal Goods.

□ □ □ □

**I**F you are interested in Sheet Iron Work as applied to VENTILATING DUCTS (square and round), CYCLONE DUST SEPARATORS and AIR FILTERS, etc., we strongly advise you to communicate with us at once, when we shall be delighted to wait upon you.

□ □ □ □

**W**E have bought our experience—a purchase covering many years—IT IS AT YOUR SERVICE. Why not avail yourself of it and make sure you get what you require.

□ □ □ □

**W**ILL it give you confidence when we tell you—

**THAT** our Annual Output of TRUNKING alone averages upwards of 200 tons.

**THAT** one contract recently carried out at our works comprised approximately three miles of TRUNKING, varying in size from 6 ft. 0 ins. × 1 ft. 3 ins. in section to 12 ft. × 3 ins.

**THAT** we have recently constructed a very large "CYCLONE DUST SEPARATOR" from  $\frac{3}{4}$  in. plate; its size may be imagined when we say it required seven pair horse lorries to remove it in sections.

□ □ □ □



*Stanlock units leaving the Standard & Pochin factory in 1921.*

### DUCTWORK AND PIPEWORK

An example of a firm that has kept its name and product during the whole of the IHVE is **J. Gardner & Co., Ltd.**, The company was founded in London in the year 1873 by John Gardner, the grandfather of the present Chairman, P. J. Gardner, VC, MC. In 1889 it moved to Monument Iron Works, Dockhead, SE, and was incorporated in 1913. Owing to the need for expansion

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in 1922 the site of the old Beckenham Brick Works was purchased and a start was made to develop the factory that exists today.

The company started as sheetmetal workers and manufacturers of general horticultural equipment and in 1902 were also manufacturing 'Ventilation Tubes'.

Stanley Gardner started with the company in 1897 and obtained the City and Guilds Certificate for Metal Plate Work in 1901. With the growth of heating and ventilating he worked closely with the Buffalo Forge Company of USA and was soon changing the production of the company to the manufacture of sheet metal ducting for the ventilating and dust collecting industry and was probably the first manufacturer to be made an Associate of the IHVE in 1911.

With the formation of the Carrier Engineering Corporation of USA in 1914 they were invited to manufacture air ducting, air washers and many engineering products associate with their business especially in relation to the 'Automobile Industry' and became their main suppliers up to about 1935 when they opened their own factory in Wembley.

On the death of Stanley Gardner, Philip Gardner was appointed Chairman and Managing Director. He has now appointed his cousin, John Gardner, to succeed him as Managing Director while he continues as Chairman and also Chairman of the parent company J. Gardner Holdings Ltd.

Throughout all these years Gardners have served the heating, ventilating air conditioning industry, and still rank among the most prominent and well-known manufacturers in the industry.

## Deeds not Words

Another highly respected ductwork firm is **Henry Hargreaves** of Bury.

Henry Hargreaves, founder of the firm, was born in 1851. At this time his father owned a clog makers shop in

Contractors to His Majesty's Government.

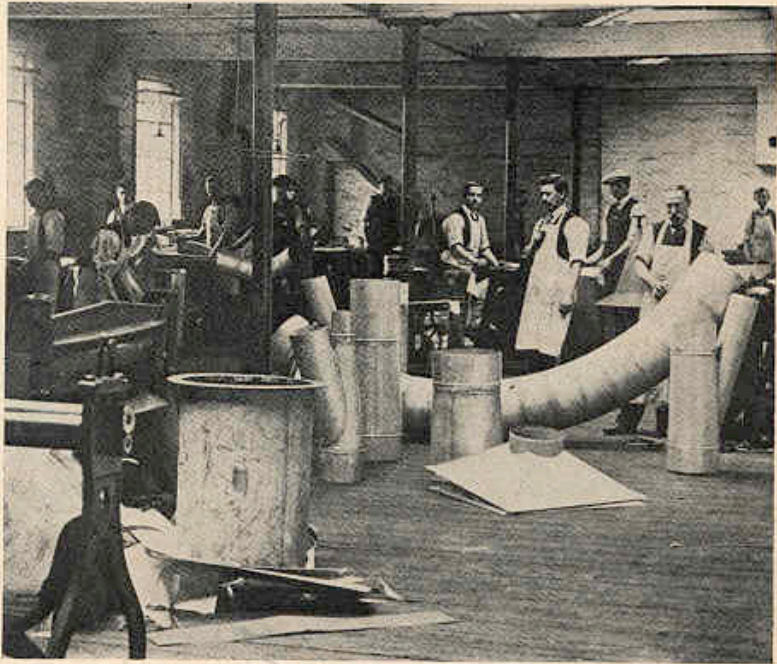
## Gardner & Company,

MANUFACTURERS OF  
GALVANIZED IRON and BLACK STEEL SHEET GOODS.

CONTRACTORS and  
BARGE PUMP MAKERS  
AND  
GENERAL  
HORTICULTURAL  
ENGINEERS.  
ALSO  
EXHAUST, BLAST  
AND  
VENTILATING TUBES  
A SPECIALITY.

Manufacturers of  
RAILWAY and GARDEN SEATS,  
CISTERNS  
CORN BINS and BARROWS

Monument Iron Works,  
**Jacob Street, Dockhead, LONDON.**



*Inside Hargreaves' sheet metal shop in the 1920's*

Ramsbottom, and above the door was a motto: 'Deeds not Words'. Later the family moved to Bury. Henry Hargreaves 'served his time' with a Mr. Ward, as a tinsmith in North Back King Street. Incidentally, it is claimed that the sheet metal industry began in Bury, and the first 'tinkers' (or 'finbashers') had originated in this area many years before.

Prior to 1890 a workshop was acquired in Heywood Street, this being subsequently taken over by Shaw and

Starkey, provision merchants and grocers. In these premises Henry's father made loaf tins to sell in the shop and in the old Bury market at the weekends; also grass boxes for lawn mowers. In 1892, premises were acquired in Silver Street. There Henry remembered making a Deed Box for a Bank 'As large as a coffin'! It was here too that Henry Hargreaves and Sons set up the business of assembling and selling bicycles and Henry became known as the 'Cycle King'. All the family participated in the



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bicycle and ironmongery business, together with running the Cook Street business. The works in Heywood Street were also maintained, making principally grass boxes, and it was about this time that Hargreaves made their first roof ventilators, used on churches and schools.

With the advent of the motor industry, Henry Hargreaves decided to make a decision of vital importance to the future of the Hargreaves family. He sold the cycle business to concentrate wholly and solely on sheet metal work.

During the 20s, Hargreaves established themselves as one of the leading manufacturers of ventilators and roof turrets. These were manufactured in all shapes and sizes. Some with elaborate ornamental designs (constructed of copper) which still grace many eminent buildings in this country, and in very large quantities, roof ventilators made principally from galvanised steel.

Mr Gordon Hargreaves has recently commented: "Whilst reading through our History of Hargreaves produced for the 1972 Centenary, it is surprising how soon that has become out of date during the past five years. I noted that our turnover was just in excess of £1M and we employed 500 people; we now have a turnover of £5½ M and employ over 700 people!"

W. H. Capper & Co, the Warrington-based pipework fabricators, celebrated

their 40th anniversary on 7 March 1977.

The founding company of the £50 million Capper-Neill Group, W H Capper fabricates pipework mainly in the 75mm (3in) to 600mm (24in) diameter range, in complex 3-dimensional configurations, often embodying fittings, oblique-angle junctions of unequal pipes and compound machined components in a variety of materials.

Works fabricated pipework has always been the back-bone of W. H. Capper's operation. Where site fabrication is required, such as the piping-up of plant or the installation of flexible small bore pipe, the support of associated site construction companies is available.

W. H. Capper & Co. is the original company around which the Capper Group of Companies was formed under the name Capper Holdings Ltd. From an initial work force of 10 the number of employees at Capper Holdings had grown to 800 when the present works of W. H. Capper was opened at Woolston in 1960. Norman Wilkinson, the company's managing director who



The original Hargreaves workshop in Bury



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joined W. H. Capper as a trainee works manager in 1954, was appointed to his present position in April 1975.

In 1964 Capper Holdings commenced negotiations to acquire the publicly quoted Wm Neill & Son (St Helens) Ltd by means of a reverse take over bid. It was through this merger that Capper-Neill Ltd was formed in 1965.

As a leading subsidiary W. H. Capper fabricates pipework to a wide range of technical specifications including Lloyds, AOTC, ASME, API, BS 2633 and BS 2971. Products include coils, coolers, heat exchangers, internally lined fabricated pipework, headers and tube assemblies.

## CRANE AND IDEAL

**Crane Ltd**, a subsidiary of Crane Company of USA—founded in the mid-nineteenth century and now a large international complex with worldwide manufacturing and selling facilities—serves world industry with specialised products, particularly those related to fluid handling and control.

The history of Crane in the UK commenced in 1906 when James E. Bennett set up in business as a coppersmith and shortly after began importing American pipe fittings, valves and tools from Crane Co. The business developed to such an extent that in 1919 Crane Ltd of Montreal—the Canadian subsidiary of Crane Co—purchased the assets of E. Bennett & Sons Ltd. and formed Crane-Bennett Ltd. with the ultimate object of manufacturing in England. A 42-acre site was purchased at Ipswich, and in 1921 the corner stone of the new works was laid. In 1932 the company simply became Crane Ltd.

During the 1960's the company acquired several businesses whose activities were compatible with its own. Today, in addition to the Ipswich complex, Crane UK has the 45-acre Glenfield & Kennedy plant at Kilmarnock, the Blackett Hutton foundry at Guisborough, Yorkshire, as well as a

substantial pumps manufacturing plant at Stockport, Cheshire, and a large modern central distribution warehouse at Northampton. The business is structured into three operating divisions, each with its own manufacturing, marketing and sales facilities, all supported by Head Office Control Division. The total number of employees exceeds 4000.

The origins of the **Ideal Company** lie in the year 1894, when the American Radiator Co. became interested in the possibility of marketing its product in Europe, and, in 1895, it set up in business in a small office in Victoria Street, London, with warehouse space at Bankside, Southwark, and an opening stock of radiators imported from the U.S.

The company expanded rapidly and larger offices were acquired at Shoe Lane, London, and a warehouse built in the East End. Within a decade demand for radiators and boilers grew to such an extent that it could no longer be satisfied by importation alone and manufacture began in England.

In 1905 a new company, The National Radiator Company, was formed to take over all the assets and liabilities of the London branch of the American Radiator Company and work on factory and office accommodation began at Hull in March, 1906. Nine months later the furnace was lit and the first radiator cast.

Following World War I the Company had its first major change, it ceased production of American units in favour of boilers and radiators specifically designed for the UK. This was the first, appearance of the well-known Ideal domestic boiler, the forerunner of over one and a half million similar appliances to be produced by the company up to the present day.

New designs of radiators completed the modernisation programme and so passed into obsolescence all the patterns and designs which had been imported from America. Gas and oil-fired appliances were introduced in the 1930's and although the company diversified into other products the range of Ideal boilers has retained its identity to present day.

Stelrad Group, a British Company with strong European outlets, acquired Ideal Boilers in 1976. As part of Stelrad, Ideal Boilers will continue to prove their hard-won reputation for product innovation and technical expertise.

## MANUFACTURING AND CONTRACTING

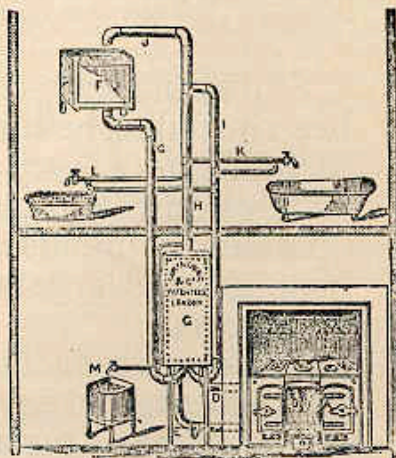
In the early days it was quite common for contracting firms to manufacture their own equipment such as boilers, cast-iron socket and spigot pipework, water-to-water calorifiers for heating

purposes and steam-to-water calorifiers. Many of the early jobs were carried out in cast-iron socket and spigot pipes which can today be seen in old churches and older public buildings.

One such firm is **C. Steward & Co., Ltd.** The firm was established by Charles Seward in Lancaster in 1869, but its origins go back to his grandfather, who was born in 1775. A range of built up tubular boilers with a brick firebox was developed and patented called The Duplex Tubular Boiler. This range of boilers enabled the firm to take on contracts for bigger buildings and work was undertaken over a large area. A depot was opened at Douglas in the Isle of Man and central heating was installed in the House of Keys, the Governor's house, many churches and later in some of the large amusement centres which were built along Douglas seafront including the Derby Castle and the Palace Ballroom. Also about this time work was carried out in Northern Ireland.

**Comyn Ching** is reputed to have started in the early 18th century—some say 1688. The name changed over the years but Ching first appeared in 1857 and Comyn Ching & Co. Ltd. was registered in 1902. **Mr. R. Comyn Ching was President of the IHVE in 1934 and also founded the Benevolent Fund.** "Ironmongery" covered a wide field in the early days and the firm established a high reputation in the 18th and 19th centuries for all forms of art metalwork which they kept until the pressures of mass-production, to which Comyn Chings would never subscribe, became too great in 1962 when regrettably this side of the business closed. All Cunard liners had been supplied by Chings, with art metal work.

They had a "clever invention" recorded in 1871 in "The Traveller". This was for



*Mssrs. Comyn & Ching's clever invention.*

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a hot water system that would "automatically supply (without risk of explosion) hot water from the highest to the lowest point of the most extensive hotel, mansion, etc". (See illustration). Since then heating and ventilating have been an integral part of the business. For many years they held the Office of Works' contract for gas and later electric lighting in public buildings and held the Royal Warrant under Queen Victoria and King Edward VII. During State functions Ching's men had to be in the roof over the Ballroom to ensure the gas lighting and ventilation functioned properly. They also pioneered telephones.

Latterly, central heating has become the specialisation with the patented Solray panel system and this, with the ever-thriving Ironmongery department (which rejoices in the saying "if you can't get it at Chings, you won't get it anywhere") seem to predict a happy future and the hope of another century or two's trading for what is still very much a family firm.

## Brightside

Another well known contracting firm which began in manufacturing is Brightside. The Parent Company of **Brightside Heating & Engineering Co. Ltd** was founded in 1865, although the earliest Minutes of Board Meetings, still in the possession of the Company, are dated 26 November 1894. These were hand written in copper plate style by the Secretary, who received the handsome salary of £156. per annum.

Brightside Foundry Co. Ltd as it was known in those days later embarked upon the manufacture of cast-iron boilers and radiators, and as a natural sequence commenced to install their manufactured products in buildings. So was born the internationally known Company of Brightside Heating & Engineering Co. which, prior to the turn of the century had established offices in Sheffield and Birmingham.

At a later date additional offices were opened in Liverpool, Newcastle-on-Tyne, Glasgow, and London, and at an even later date Bristol, Belfast Manchester were also chosen areas for increasing the engineering activities.

In the 1930's the heating of factories was generally accomplished by 4in dia. cast-iron pipes supplied in 9 ft. lengths, and assembled with joints caulked with rope and cement. These pipes were generally fixed to roof trusses and imposed a considerable load on the structural frame. Sometimes, to relieve such stresses, these pipes were fixed in ducts below floor level covered by cast iron gratings. Low pressure hot water was used as the heating medium. In due course the "unit heater" was evolved, and coupled with the use of high temperature hot water as the heating medium, brought about a revolution in industrial space heating systems just prior to the outbreak of the second World War.

Brightside played a pioneering role in the development of high temperature hot water heating systems, and patented "Brightrad" radiant panel heating which replaced in many instances unit heater applications.

These panels were the product of the Research and Development Section which was housed in Portsmouth, along with the more recent radiant heating development which employs hot air as the heating medium in a closed circuit of sheet metal ductwork employing indirect as well as direct-fired air heaters.

Brightside have also assisted in pioneering the development of integrated environmental space heating, air conditioning and lighting systems. One of the first of its kind was designed and installed by Brightside in a Multi-Storey Office Block for Cadburys, Bournville, in the early 1960's. Sprinkler fire protection, electrical engineering services and plumbing form part of the activities of Brightside. The latest development is the setting up of a presence in the Middle East in association with Arab interests, with a view to developing still further their technical achievements in building services.

Brightside have provided two IHVE Presidents: **Frank Biggin** (1921) and **F. R. L. White** (1953).

The **Ozonair** company was founded at the turn of the century by the late E. L. Joseph with the object of producing and selling ozone generating appliances. In 1912 Ozonair designed and installed major ventilation systems for the Central London Railway. Ozonair units and systems were by that time becoming common place in buildings such as the Houses of Parliament, Law Courts, Royal Exchange, Harrods and the London Palladium, billed as

London's coolest theatre. The year of 1925 saw the introduction of the well known Ventex filter which, in various forms, has remained a best seller to the present day.

By 1929 the fortunes of the Company were such that the Victoria Street premises could not cope with demands of production. Consequently, by 1930 a new office building and Works was constructed in Longmore Street to cope with the ever growing demands. The advent of World War II created a need to develop activities more helpful to the war effort. One particular development was that of an air filter to combat the possible use of poisonous war gases, and these became standard equipment for air raid shelters.



*An Ozonair advertisement of the 20's*

After the war the development in products, particularly in the air filtration sphere, stretched the capacity at Longmore Street so severely that by 1947 new premises were found at Rochester, whereby a lease was gained upon a portion of the Short Seaplane Works situated on the Esplanade at Rochester. This latter move placated the most important policy decision which resulted in the company devoting its entire interests to manufacturing equipment to serve the trade rather than operate as a contractor.

The country was faced with a vast planning and rebuilding programme due to the bomb damage, and Ozonair fast became recognised as a major supplier of heating and ventilating equipment, specialising in the field of air filtration.

In the 1950's the techniques used in ventilating and air conditioning were changing rapidly, influenced strongly by the American market where environmental control had become an every day science. Ozonair decided to exploit the experience of the American market to seek manufacturing licenses.