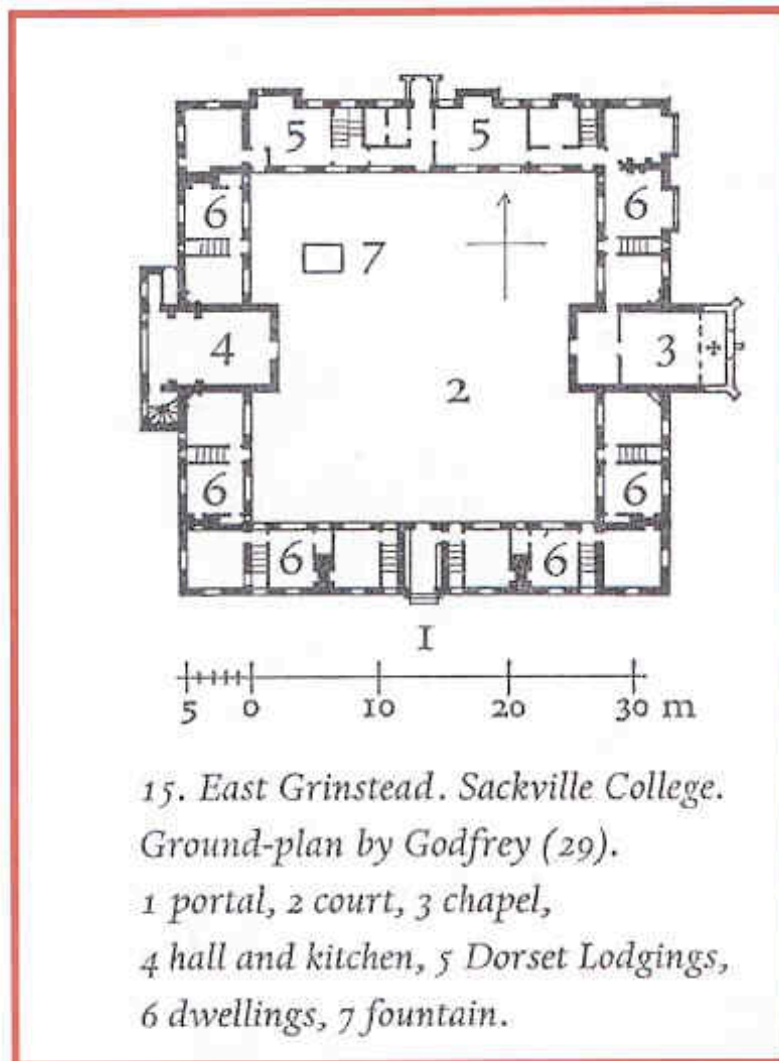


ALMSHOUSES

Around the 15th century, although the care of the sick underwent no particular change, a number of charitable benefactors felt obliged to look after the welfare of the old and needy. This led to the establishment of almshouses which were often associated with hospitals. A characteristic was the provision of individual accommodation arranged in a variety of ways: usually two storeys around three or four sides of a courtyard. A feature of these almshouses is the row of great chimneys where a separate fireplace served each dwelling. In addition, an almshouse group of buildings may have included a chapel, a hospital and a school. Many dating from the 17th century are still in use today.



Dates from 1618 & 1619, still occupied [TCEH, figure. 15]

CHRIST'S HOSPITAL, ABINGDON, BERKSHIRE



Original almshouses built about 1500, rebuilt in brick 1718, a notable feature being the characteristic tall individual chimney stacks [TCEH, 60].

EWELME HOSPITAL, OXFORDSHIRE



The hospital almshouses. Note the tall chimney stacks, a notable feature of many almshouses, each serving a dwelling, [TCEH, 71]

HOSPITAL OF ST JOHN THE BAPTIST, LICHFIELD



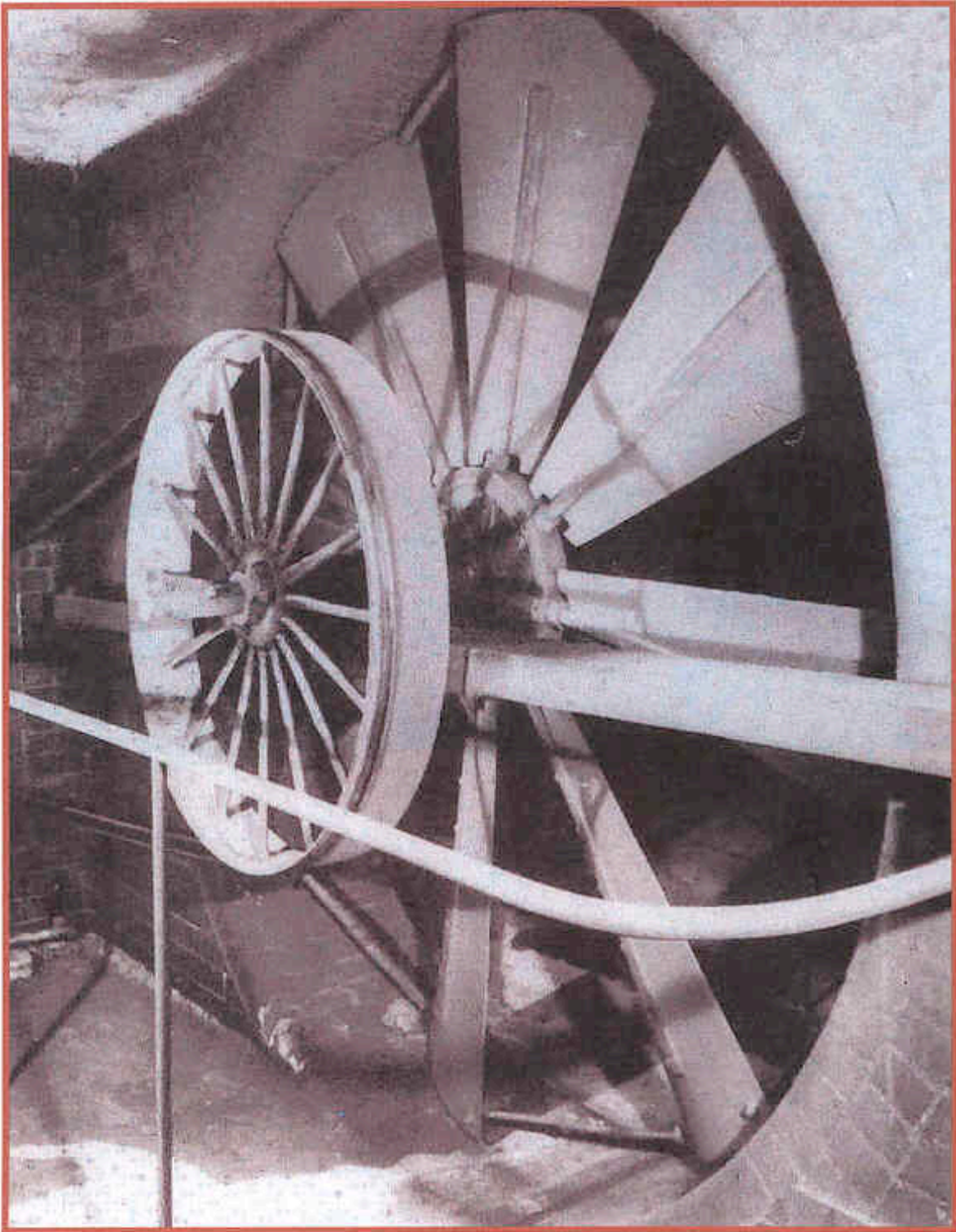
These Staffordshire hospital almhouses date from the 12th century and are much altered since the 18th century, incorporating a chapel and hall and featuring the characteristic chimneys [TECH, 77].

HOSPITAL OF ST CROSS, WINCHESTER



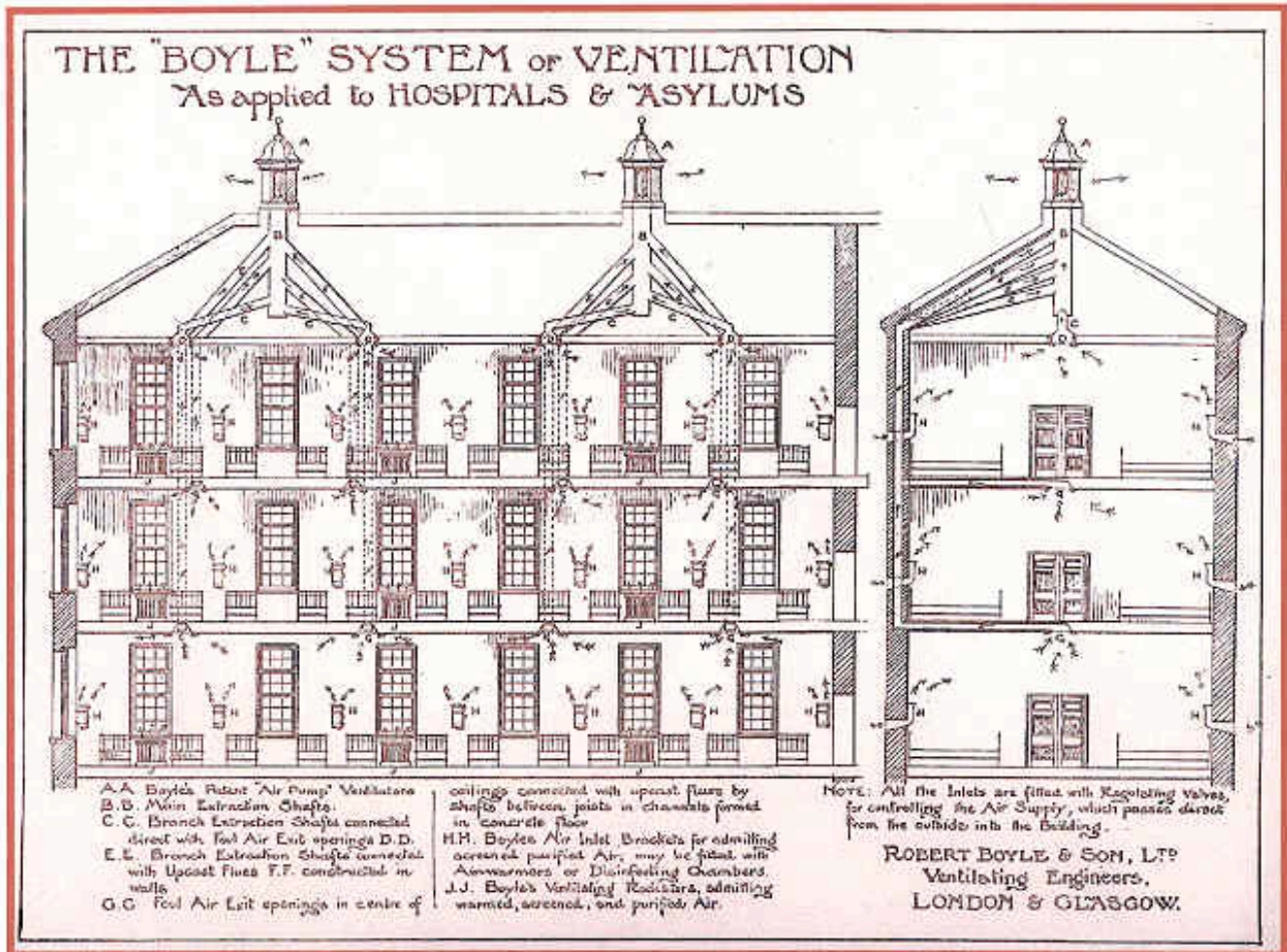
**Founded in Hampshire in 1136. Converted 1446 to Almshouse of the Noble Poverty.
Part demolished 1789. Again those characteristic chimneys [TCEH, 91].**

BIRMINGHAM GENERAL HOSPITAL



The 8 ft diameter fan for plenum ventilation, 1893 [HL, plate 11]

BOYLE'S NATURAL VENTILATION SYSTEM



The Boyle system of hospital ventilation by natural means, c.1900 [BSV, 48].

BRADFORD HOSPITAL, YORKSHIRE

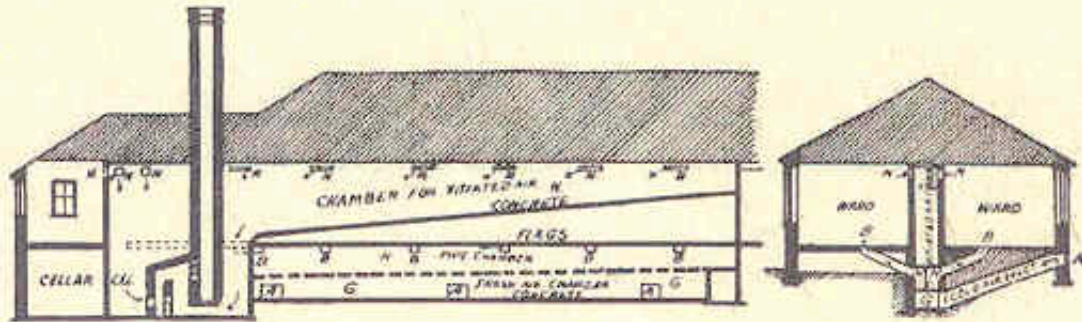


FIG. 64.

FIG. 65.

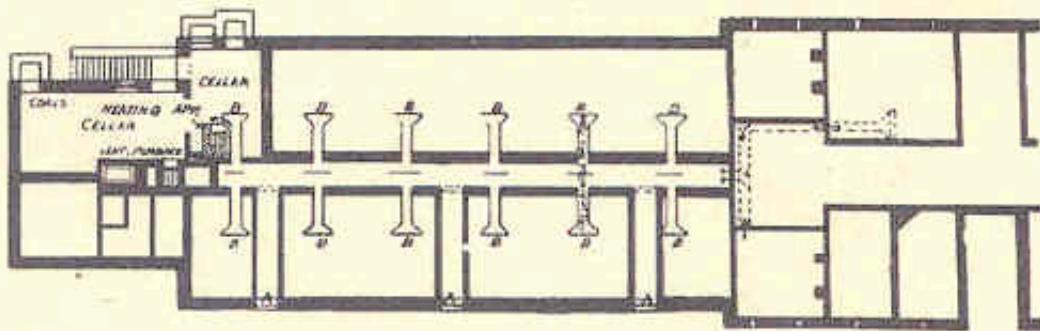


FIG. 66.

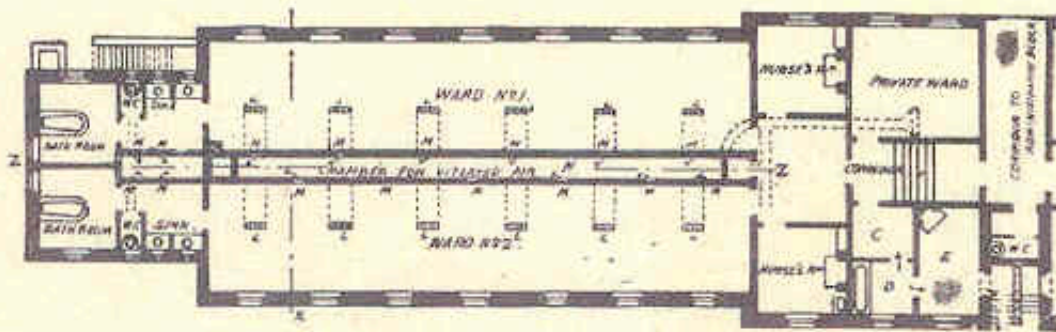


FIG. 67.

Fire-assisted warm air ventilation for a small-pox hospital, c.1890.
 [VH, 305, from *The Builder*]

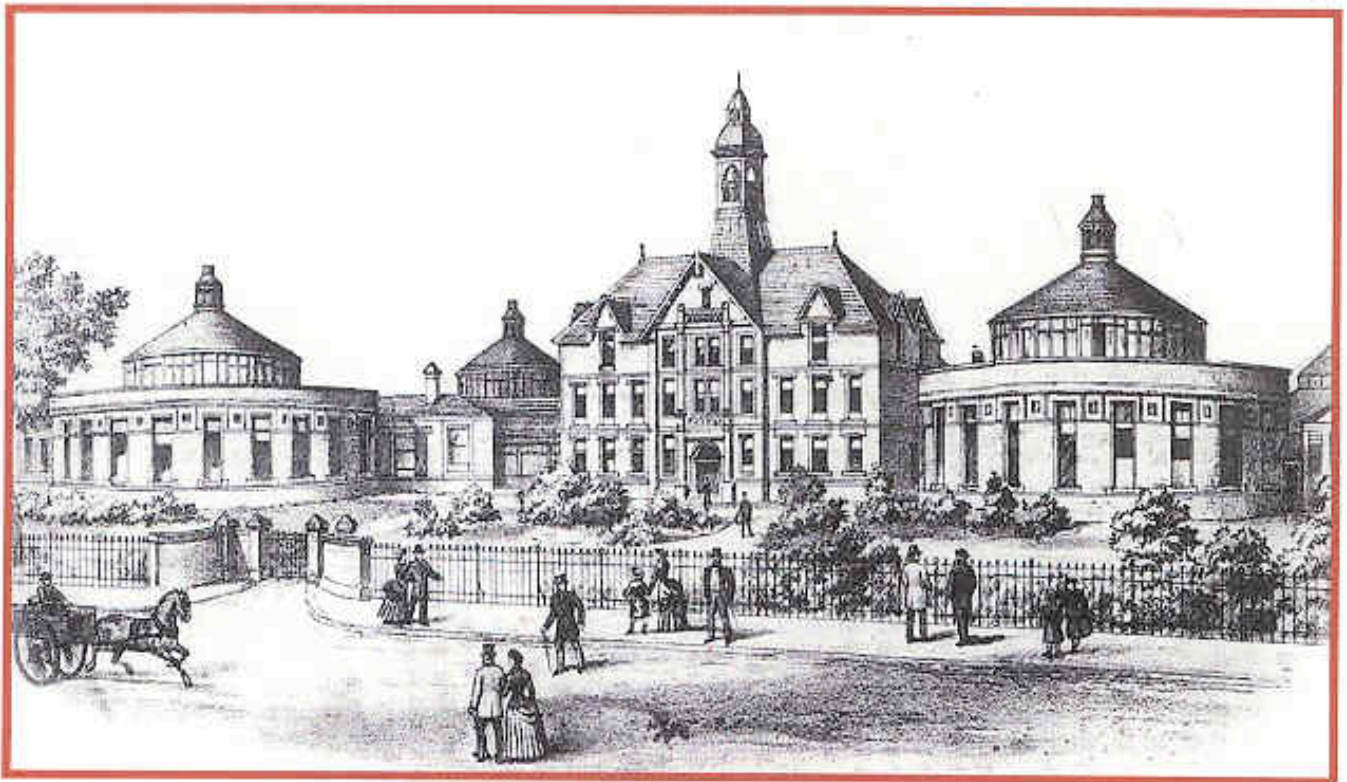
BRADFORD HOSPITAL

This two ward hospital was constructed by the Corporation of Bradford, consisting of two wards, each 75 x 15 feet, placed back to back, with a space of a about 3 feet between them. This space forms a foul-air chamber from which air is drawn by an aspirating (heat-assisted) ventilating shaft. Below the ward floors is a fresh-air chamber and heating surfaces. The windows are described as airtight so fresh air enters through the inlets AAA and into the lowest compartment G of the space between the wards. From this duct the air passes through flues B and enters the wards through floor gratings at the foot of each bed. The foul-air registers are in the ceiling over each bed. All the foul air passes through the furnace at the base of the aspirating shaft. An American review [VH, 304-305] comments "For the English climate this will, no doubt, answer, but when the external air is at zero (Fahrenheit) this is a very wasteful method of heating."

An errata slip with the review states, "The Bradford Hospital, illustrated... sets forth the invention of Mr Edwin Oldroyd, a well-known expert at Leeds, England, Managing Director of the firm of E Oldroyd & Co Ltd, who are the sole constructors and patentees.

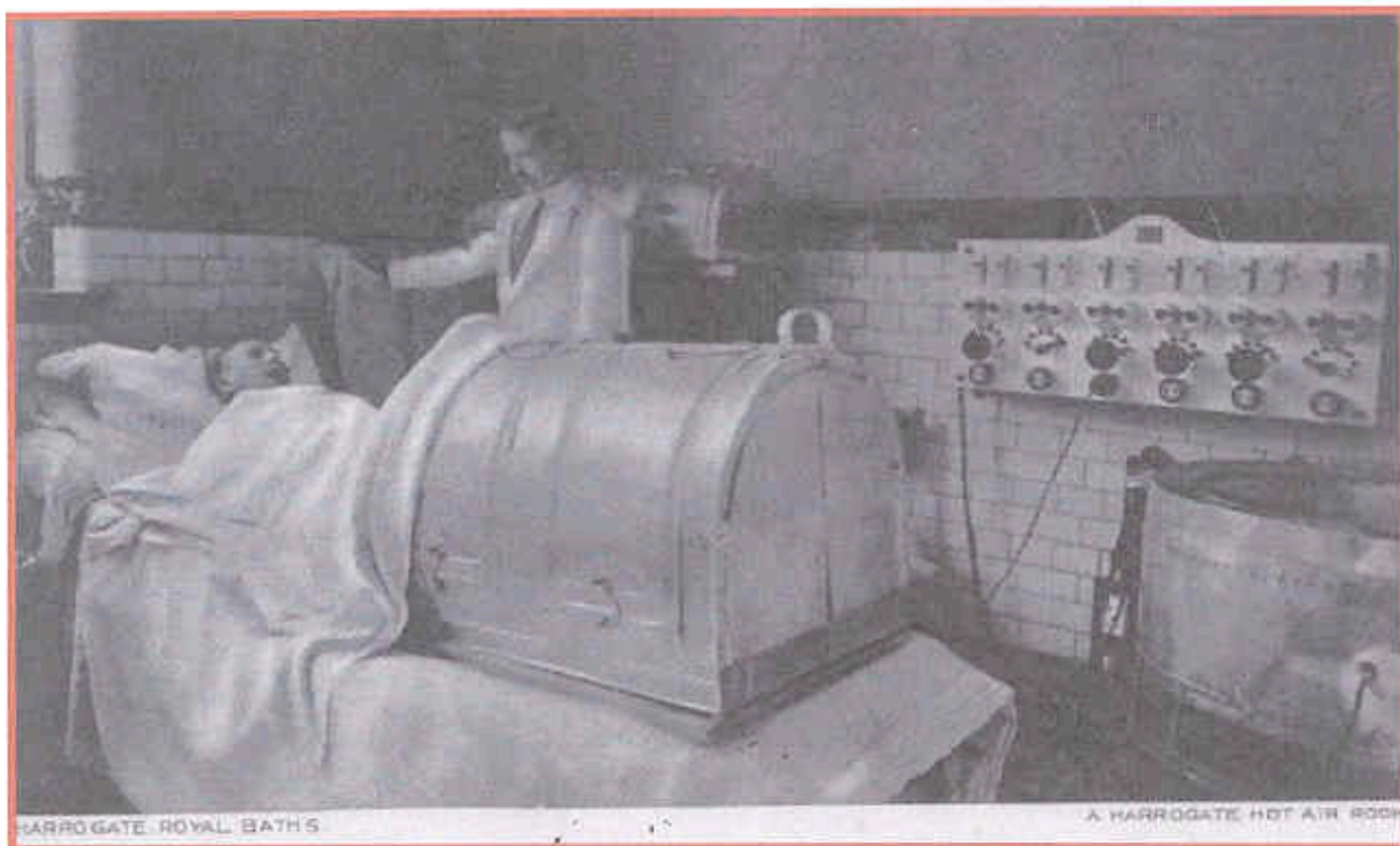
An improved patent has subsequently been taken out."

VICTORIA HOSPITAL, BURNLEY



Design for Victoria Hospital, Burnley with unusual circular ward towers around the central administration block. Only two of the towers were actually built, 1884-86 [EH, 9 from Lancashire County Library]

HARROGATE BATHS



**Hot Air Treatment Room, Harrogate Royal Baths, c.1905 [MPH, 19]
An amazing electrical switchboard is sited on the tiled wall (right).**

The Heritage Group has a copy of the printed competition booklet (proposal) prepared by the Victorian engineer, W W Phipson in 1890, a year before his unexpected death.

PARK HOSPITAL, HITHER GREEN, LEWISHAM



View of sanitary towers at the ends of the ward pavilions, 1897 [EH, 139]

PARK HOSPITAL

THE PARK HOSPITAL, HITHER GREEN, LEWISHAM.

On Monday the Prince of Wales, accompanied by the Princess and Princess Victoria, opened the new fever hospital at Hither Green, Lewisham, which will be the ninth hospital under the management of the Metropolitan Asylums Board.

The building is situated on an elevated site (the highest in the district) near Hither Green Station, on the South-Eastern Railway, about three-quarters of a mile from Lewisham and six miles from London Bridge. The average level is about 95 ft. above high-water mark, there being a difference of over 30 ft. in altitude from east to west, and of 23 ft. from north to south. The "infected" buildings are generally about 100 ft. from the boundaries of the site. The site consists of 20 acres of ground.

The hospital is intended for cases of scarlet fever, enteric fever, and diphtheria, and the accommodation is as follows:—Scarlet fever, 48 wards for 368 patients; diphtheria and enteric fever, 24 wards for 120 patients; isolation wards, 36 wards for 60 patients. The disposition of these is shown on the accompanying block plan—the scarlet fever wards lying to the right, the diphtheria and enteric fever wards to the left, and the isolation blocks to the rear of the former. The pavilions are disposed on a roughly radial plan, and are connected by covered ways with the kitchen, steward's stores, water tower, dispensary, and telephone exchange, all of which are in the centre, together with the male and female servants' residences, the latter facing the road. As the receiving rooms for the different diseases are at the outer or zone ends of the respective covered ways, the danger of patients suffering from different diseases coming into contact is very remote, all direct

source of contagion being thus

The linings of the sash-windows are made to open for sweeping. Weights and sash-lines can be removed and renewed without taking out the sashes. In some of the buildings is a new type of sash-window, designed by the architect. There are no hollow linings, the frame is solid but the sashes slide up and down. In addition, they are made to open inwards to throw the air upwards. They can be regulated to any angle, and can be opened to admit air through the full area of the frame—*i.e.*, double the area of an ordinary sash-window. For "scouring" a ward this is of value. They can also be cleaned, painted, and reglazed from the inside. The mode of securing these sashes is by a fastener on the bottom rail, avoiding the necessity in high windows of steps. It also enables the sashes to be made rigid, so that they cannot rattle in a wind. In one of the wards ordinary hollow sash-frames have National Accident Prevention Window Company's sashes, which are hung on centre pivots, and are similarly accessible for cleaning, painting, and reglazing from the inside. The water-closets used are of the bracket type, fixed clear above the floor, which can thus be kept clean. The main waste from the baths is an open trench in the floor. Attached to the pavilions at both ends are airing balconies to which the beds can be wheeled for "sun" baths, and every pavilion has its own airing-court.

The laundry—divided into two parts for patients and staff respectively—is a long rectangle. Soiled linen enters at one end and passes through the several cleansing processes to the distributing-room at the other. The disinfectant is at the entrance to the laundry-yard, and is fitted with a Lyon's apparatus. The boiler-house is partly under the laundry. There

are four large boilers

The floors and steps are of red granolithic concrete. Under all these covered ways are well-lighted subways in which are fixed the water and steam mains and heaters, electric light, telephone and fire alarm cables, &c., all accessible at any point for repair. The heating of the hospital is carried out on the low pressure hot water system, the heat being generated separately in each pavilion by means of one of Messrs. Z. D. Berry & Son's improved multitubular heaters, fixed in the subway at the point where each pavilion branches from the main corridor. A flow and return main is then taken off the heaters, and run right round the walls of the pavilions under the ground floor, and vertical pipes are taken from this main to supply the radiators on the ground and first floors, a separate pair of verticals to each radiator on each floor. Steam is conveyed from the boilers to each of the heaters, and the condense water from each heater is collected into a condense main and taken back to the hot well in the boiler-house, and thence pumped back to the boilers. The wards are heated by means of radiators fixed in cast-iron cases. Behind each radiator are two large fresh air inlets fitted with cast-iron hit and miss gratings, and coupled together and connected with a lever taken to the top of the radiator case, so that the quantity of fresh air may be regulated; the fresh air is then warmed and discharged into the wards through a large hit and miss grating constructed in the top of the radiator case. The radiator cases have been specially designed to meet the requirements of a fever hospital. Each case is fitted in the front with a large pair of doors which are opened with a key so that the interior of the case and the radiator

Text from *The Builder*, August 1896, extract-1.

To be read complete left hand column (continued on following pages), then middle column, then right hand.

PARK HOSPITAL

kept away from the central block, to which tradesmen and others have access. The nurses are located on the summit of the site, having to the south of their homes grounds where they may get rest and recreation away from the sight and sound of their work. To the south-east are placed the laundry, the boiler and engine houses, workshops, disinfecting house, well and water-softening apparatus. The medical superintendent's house is near the entrance and the offices. The discharging rooms, mortuary, post-mortem rooms, &c., are close by. The assistant medical officer's house is near the diphtheria pavilions, and the steward's house commands the entrance to the stores and kitchen yard.

The number of staff for whom accommodation has been provided is 316.

All pavilions are axially nearly north and south, and are two-storied, with fire-proof and sound-proof floors. There is no internal communication between the two stories — the upper floor being reached by an external staircase opening front the covered ways. Lifts are provided at each staircase for coals, food trolleys, &c. A scarlet-fever pavilion contains on each floor three wards — one for twenty beds, one for two beds, and one for one bed — a ward scullery, and other offices, the scullery being fitted with hot-plate kitchener, sink, &c. There are also provided a bath-room, two water-closets for patients and one for staff, sink-room, two bed-pan slop-sinks, lavatories, movable baths, &c. In addition to hot-water radiators, there are central open fireplaces and stacks of flues. In these central stacks every smoke-flue can be swept from the external basement. The smoke-flues are surrounded by aspirating-flues, which, being thus heated, induce an up-current, and so draw off the heated

vitrated air from the centre

"Economiser" connected to the furnace shaft. The engine-room contains laundry-engine and the electrical plant of three engines and dynamos for lighting the hospital.

The hospital is to be supplied by water taken from the chalk, and the wells are now being sunk. The water will be pumped into a softening apparatus alongside, and thence to the water tower and the various other storage tanks. The water-tower forms a central feature, and contains a four-dial clock, visible from all parts of the premises.

The kitchen-block is a one-storied building, the walls internally faced with glass. Close by are the larder (also faced internally with glass), the steward's stores, and all the servants' homes, &c.; this group enclosing a large yard.

The female servants' block contains a separate cubicle for each maid, large mess and sitting rooms, and offices. The matron's quarters consist of a separate "flat" in the same block. The male servants are similarly housed on the opposite side of the quadrangle. The nurses' home is divided into three houses, connected with glass and iron corridors on every floor as an additional means of egress in case of fire. Separate dining and sitting rooms are provided for charge and assistant nurses, and a common writing and reading room. Each nurse has a separate bedroom. In these residences, as well as in the fever pavilions, all water-closets, lavatories, &c., are in detached towers, approached by enclosed passages, so that every building is practically separated from its sanitary annexe. All annexes are warmed, and hot water is laid on to baths and lavatories.

There are telephones in the various buildings, and from anyone an official can

communicate with every one

dusted out and thoroughly cleaned by those in charge of the wards. In the bottom of each door is provided a hit and miss grating, which in very cold weather enables the air in the wards to be circulated through the radiator. The hot water which supplies the baths, lavatories, sinks, &c., is generated in a multitubular heater similar to those used for the hot water heating (one for each block), and a flow and return main is run by the side of the main for heating, and branch loops are taken off to supply the various fittings. All branch loops are in circulation. The whole of the horizontal pipes and valves are so arranged that they can be attended to and examined without the engineer having to enter the wards. There are some six miles of pipes within the area of the hospital. The various diseases are kept separate in the drainage scheme, and all "non-infected" drains are kept distinct from the others. The manholes or inspection chambers are of solid glazed fire-clay (Border's patent), the bottoms and all the branches being cast in one piece. The pipes are of the Archer jointed type, laid on and covered with concrete. The whole pipe system is divided into separate lengths for efficient ventilation, and all drains are fitted with flushing tanks.

The architect of the hospital is Mr. Edwin T. Hall, and his design was selected in competition. Mr. Turner has acted as chief clerk of works, and Mr. Mansell as assistant clerk of works. In the special electrical work Mr. Wray was clerk of works. The electric scheme has been designed and supervised by Messrs. Burstall & Monkhouse, civil engineers. Mr. Dolby, C.E., has advised on the mechanical engineering throughout and has supervised

PARK HOSPITAL

wards. In each stack (which is externally made of glazed faience) are eight of these air-flues and four smoke-flues, and the whole are contained in an area 3ft. 6in. square. All these air-flues can be swept, and all have outlets on two sides. Throughout the pavilions there is not a single buried pipe or inaccessible space of any kind.

building throughout the hospital. Fire hydrants are fitted throughout the buildings and in the yards, and fire-alarms in every block communicate with six alarm bells in various parts of the hospital, while a special arrangement is made to call all the staff together in emergencies. It has been already noted that covered ways connect all parts. These are of brick and concrete.

the erection of the boilers and machinery. The contractors were Messrs. Leslie & Co., Limited, of Kensington. The contract sum is 210,000*l.*, a little less than the architect's estimate. The work has been carried out under the personal supervision of Mr. Shingleton, Managing Director of Messrs. Leslie & Co., assisted by his manager, Mr. Kitchener, and the general foreman of the works, Mr. Easter. Messrs. John Hall & Co., of Stourbridge, supplied all the ivory-coloured glazed bricks used in the building. Messrs. Colledge & Bridgen made and supplied the locks, lock furniture, and brassfoundry work.

Text from *The Builder*, August 1896, extract-3.



Park Hospital, 1897.

ROYAL INFIRMARY, LIVERPOOL



[Top] Architect Alfred Waterhouse, incorporating 290 beds and with two circular ward blocks, 1890 [RI, cover]. Heating designed by Wilson W Phipson.
[Bottom] Opening of the Outpatients' Department by the Earl of Sefton, 6 March 1911 [LRI, 8].

ROYAL INFIRMARY, LIVERPOOL



[Top] One of the circular ward blocks. Note ornamental heater (left) [LRI, 5].
[Bottom] No.9 Ward at the Royal Infirmary, Liverpool, May 1911 [PH, 99].

ROYAL INFIRMARY, LIVERPOOL



This postcard is labelled "A Ward Scene, Unknown Location, c.1917) [PH, 70] However, it may be the Royal because of the rare circular ward and tiling and window designs (compare with other Royal photographs).

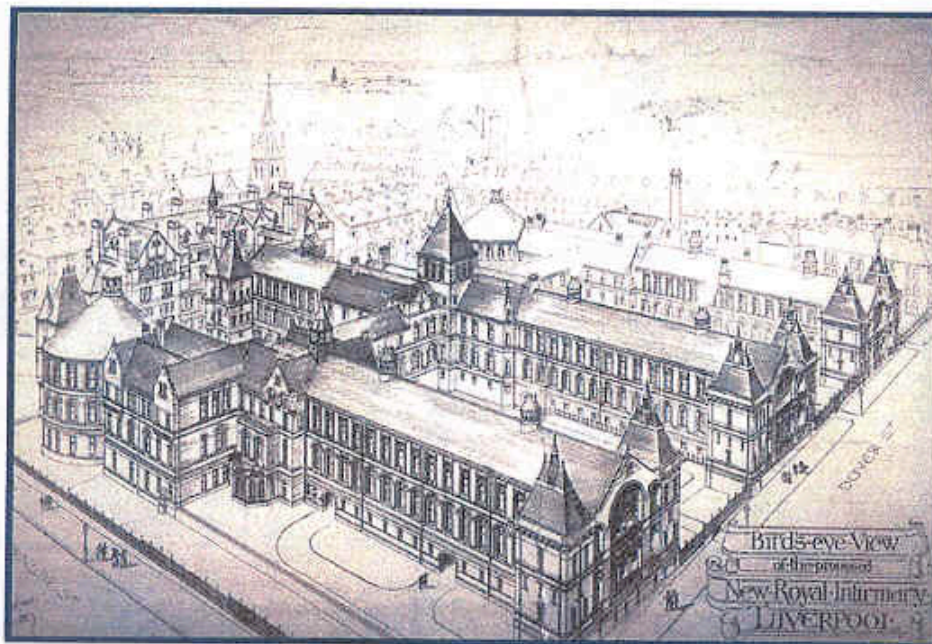
ROYAL INFIRMARY, LIVERPOOL

3.5 Royal Infirmary, Liverpool, 1889 Architect Alfred Waterhouse

The history of the Royal Infirmary has been documented in a booklet published by the University of Liverpool. [LRI, undated, 1990s] Liverpool's first Infirmary (1748) was built on Shaw's Brow, close to the site now occupied by St George's Hall. A second Infirmary (1824) on Brownlow Hill) was renamed the Liverpool Royal Infirmary following the visit of Queen Victoria (1851). This hospital's shortcomings were said to have been highlighted by Florence Nightingale in her visit of 1858, but it was not until 1882 that the trustees finally decided to rebuild according to her guiding principles. Liverpool-born Alfred Waterhouse was the obvious choice as architect. He was appointed in 1885 and submitted five provisional plans within nine days, accommodating the required 290 beds on a very confined site.

Florence Nightingale had already recommended the use of small "Pavilion" wards. Ideally, these were around 16 ft high by no more than 30 ft wide, would be "well-ventilated and spacious," with the window space not less than one-third of the total wall, reaching "from two to three feet from the floor, to one foot from the ceiling. There would be no more than two rows of beds.... Waterhouse was an admirer of the circular ward concept, which he had inspected first hand at the Antwerp Civil Hospital, completed in 1884. The concept considered to be the invention of Professor John Marshall FRS, was actively supported during the 1850s and 1860s by the editor of 'The Builder', George Godwin FRS. Marshall argued that circular wards provided light and ventilation from all directions, and extra headroom and floor space. This approach was expected to meet with Florence Nightingale's approval, as she considered ventilation to be a key factor in a 'healthy hospital'. However, she was not to be convinced that the greater diameter afforded by the circular walls would produce the necessary ventilation." [LRI, 4-5. For Antwerp Hospital see TB.1883ii/14-5]

Though Waterhouse made provision for eight Nightingale pavilion-style wards, he still managed to incorporate two circular ward blocks into his design. The designer for the heating and ventilation was Phipson, who had previously collaborated with Waterhouse, most notably at the Natural History Museum in London.



42. Bird's-eye View of the Proposed New Royal Infirmary, Liverpool, 1887 [LRI, cover]

ROYAL INFIRMARY, LIVERPOOL.



43. Royal Infirmary, Liverpool. Doctors & Nurses in One of the Circular Ward Blocks [LRI, 5]
Note the circular radiator (left), complete with a bird-cage on top.

CONTRACTORS TO HIS MAJESTY'S GOVERNMENT.
Twelve Gold and Silver Medals awarded.

Patented under the Trade Mark Regulations Act, 1875.

Leroy's Improved Patent
Non-Conducting
Composition

FOR COVERING BOILERS, STEAM
PIPES, HOT WATER PIPES,
CALORIFIERS, CYLINDERS, &c., &c.,
TO PREVENT LOSS OF HEAT
AND SAVE FUEL.

Largely used by Heating Engineers throughout the County.
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F. LEROY & Co.,
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(coll.)

44. Advertisement Heading for Leroy's Composition
(Insulation), 1904 [HHW, xxii]

ADVERTISEMENTS.

LONGDEN & CO.
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SOLE MAKERS OF
THE "SUNBEAM" PATENT RADIATORS.

Prepared either for steam or hot water.
All joints are screwed.
No India-rubber or other packing used.
10,000 Radiators of our make in use in Great Britain.
Made in circular and other forms.

Trade **SUNBEAM** Mark.

LONDON OFFICE: 447 OXFORD STREET, W.

These Radiators are used in the following places—
New Town Hall, Sheffield; National Portrait Gallery,
Edinburgh; Natural History Museum, South Kensington;
New Assize Courts, Birmingham and Nottingham; Guild-
hall, Gloucester; Hove Town Hall; Venetian Royal Hospital
for Consumption; Polytechnic Institute, Regent Street,
London; St. Paul's Schools, West Kensington, London;
Coats' Memorial Church, Paisley; and many other public
and private edifices.

45. Advertisement for Sunbeam Patent Radiators,
Longden & Co, 1897 [HWB, 10]

ROYAL INFIRMARY, LIVERPOOL

Construction of the Infirmary began in October 1887. The first patients were admitted in November 1889. It was said the interior incorporated state of the art technology: "This included patented fireproof floors; a central heating system employing steam pipes and elegant circular radiators; an air circulation system driven by a 6 hp engine*; and a miniature train running on tracks from the kitchen, located at the top of the administration block, through the 'corridor' formed by the triangular roofspace, to deliver food to the various ward blocks. Unavoidably, Waterhouse also employed soon to be obsolescent technology: gas lights -(but no mantles) and coal fires in the wards which were used until gas fires were fitted after the second World War."
[LRI, 6] [*No mention of this engine is made in the detailed report [PC/38] Was it added later to improve air circulation?]

In the Phipson Collection is a detailed handwritten report on the services. It may have been drafted by Phipson or copied from his notes [PC/38, undated, probably 1890].

The New Royal Infirmary, Liverpool

The Heating and Ventilation, as well as the Steam and Hot-water Service supplies for this building have been carried out by Mr Wilson W. Phipson, Mem.Inst.C.E. who was selected, in a limited competition, prior to the contract for the building being given out.

By this means the Architect, Mr Alfred Waterhouse, R.A., was able to devote much time and attention to the subject and to embody all details of the scheme in his plans.

The Heating is by low pressure steam, the water of condensation being returned to the Boiler Room after having passed through the several systems of heating mains and Radiators, being finally put into the Boilers by means of a Worthington steam pump.

Two 50 H.P Galloway Steam Boilers are provided for this and the other services. They are set on the Live! principle [what this is, is unknown] and are fitted with all the latest improvements, in order to ensure an economical cost of annual maintenance.

Six service pipes are taken from the main connecting the two Boilers -No.1 being for Heating, No.2 for the Kitchen and Ventilating Coils, No.3 & 4 for the Laundry, No.5 for the Pumping Services, and No.6 for the Disinfecting Apparatus.

On each of them stop valves are fixed, by which means all these services are under the control of the Engineer in the Boiler Room.

The supply main for Heating, which is 4" in diameter is carried in the pipe tunnel constructed below the Corridor of Communication running East and West. At the intersection of this Corridor by the several Blocks, an outlet is left in the main, fitted with a stop valve and pressure reducing valve for the supply of steam to each Block. By this means, while still retaining the Boiler pressure in the main pipe, in order to overcome the loss of pressure caused by the great distance the steam has to travel, the supply for Heating and in circulation over each Ward is delivered through the reducing valve at any pressure required to meet the variation of the external temperature.

From the experience obtained by the trials of this arrangement it is found that the steam in the most distant or West Wards can be circulated through the Radiators at a pressure of from 3 to 5 lbs on the square inch.

It will thus be understood that though all the Blocks are connected to the one Steam Supply from the Boilers, they are independent in their action and under control at the points where the supply and return mains leave and re-enter the main tunnel above referred to.

The mains are of the best quality of steam pipe, faced flanged joints being used for all pipes over 2" in diameter, while right and left screw joints are used for pipe of 2" and under.

ROYAL INFIRMARY, LIVERPOOL

In all cases due allowance is made for the expansion and contraction of the pipes by the frequent use of long and easy bends, and swinging the mains where necessary. By this practice the disadvantage of telescopic or other forms of expansion joints is avoided.

In order to estimate the extent of this apparatus it may be mentioned that over 13,000 superficial feet of steam and hot-water mains have been coated with Messrs Leroy & Co's non-conducting composition and in addition to this there are 6,000 superficial feet of branches that are not coated, while the direct heating surfaces throughout the Building are estimated at 8,000 square feet.

The heating of the Building throughout is by means of steam radiators, now known under the name of "Sunbeam" and manufactured by Messrs Longden & Co of Sheffield. The advantage of these radiators is that the loops are connected to the base by a Whitworth screw joint and all parts of them are interchangeable; therefore should a loop be accidentally broken no trouble is experienced in renewing the same while the radiator is in position.

In the Wards the radiators are circular and are fixed in a central position. The heating in all cases is from the centre because it is found in practice that it causes less disturbance of the atmosphere in the Wards than when the radiators are placed against the external walls. The heating from the central position causes a current of warm air down the side walls.

To all the circular radiators a direct supply of fresh air is provided and the heating power fixed upon has been calculated to ensure in conjunction with the open fire places, during the winter months a mean temperature of 60° Fahr: with an amount of air admitted to the radiators and from other sources equal to the entire renewal of the atmosphere in the Wards four times in the hour.

The fire places in the Wards are also central and constructed to form the main upcast shaft for the extraction of vitiated air. The flues from the fire places are carried up in iron pipes, quadruple on plan, each stack serving for four fire places and the extracting shaft.

By this means a simple system of extraction is obtained by utilizing the waste heat from the fires. The area of outlet for the smaller Wards being 6 square feet), and for the large Wards, through two central fire places, 12 square feet). In each outlet the gratings fixed are provided with talc (mica) valves.

In the other Departments of the Building inlets and outlets are constructed, but in these rooms the upcast flues are carried into the roofs, where they are collected and conveyed by means of a main trunk into the general extract shaft situated over the Central Block.

In this shaft steam coils are fitted so as to ensure in all seasons a powerful upcast.

The hot-water supply to Baths, Sinks and Lavatories is obtained by means of four Steam Heaters with cylinders attached, the horizontal circulation being of 3" cast iron galvanised pipe, with all rising mains and branches of steam galvanised pipe.

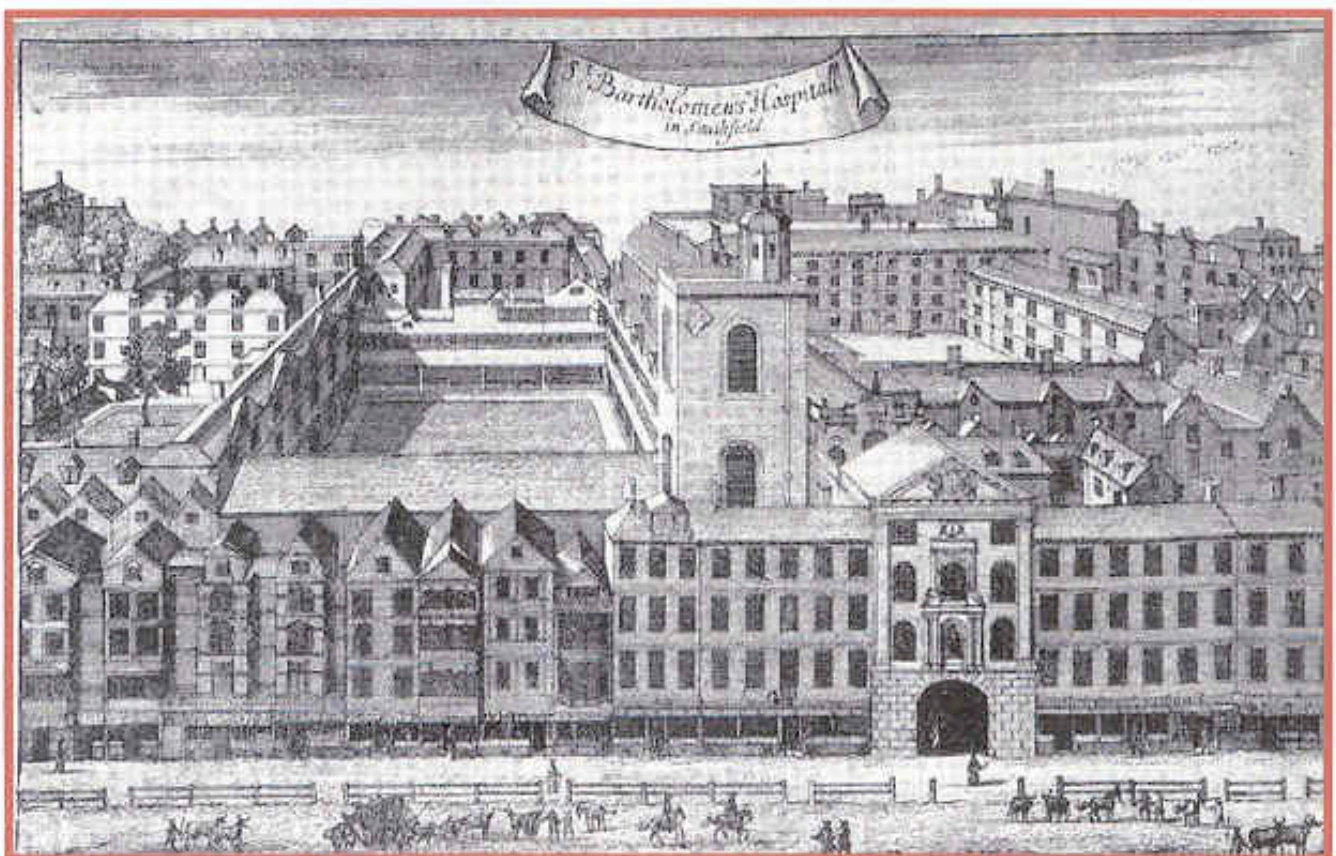
Valves are fixed on all branches, so that in case of repair to pipes, no interruption will take place in the general supply. In order to economise fuel, the condense water mains are passed through the heaters before being returned to the Boiler House.

For the Administration Block a distinct branch with valve and pressure reducing valve is taken from the main steam supply for Heating Ventilation and Hot-water service supplies."

[These notes are reproduced in an article in *The Builder* of 1 November, 1890]

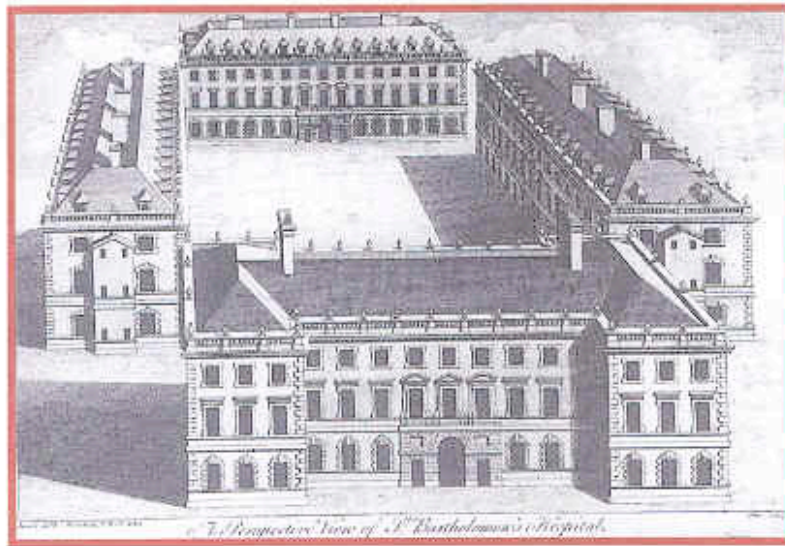
The last patient left the Royal Infirmary in December 1978, and it was vacated completely in 1981. It has since been refurbished to house a primary healthcare facility.

ST BARTHOLOMEW'S HOSPITAL, LONDON



[Top] Initial from the illuminated cartulary written by Brother John Cok, 1456-68 [BH, frontis].
[Bottom] The hospital in the early 18th century [SB1, opp. p.34].

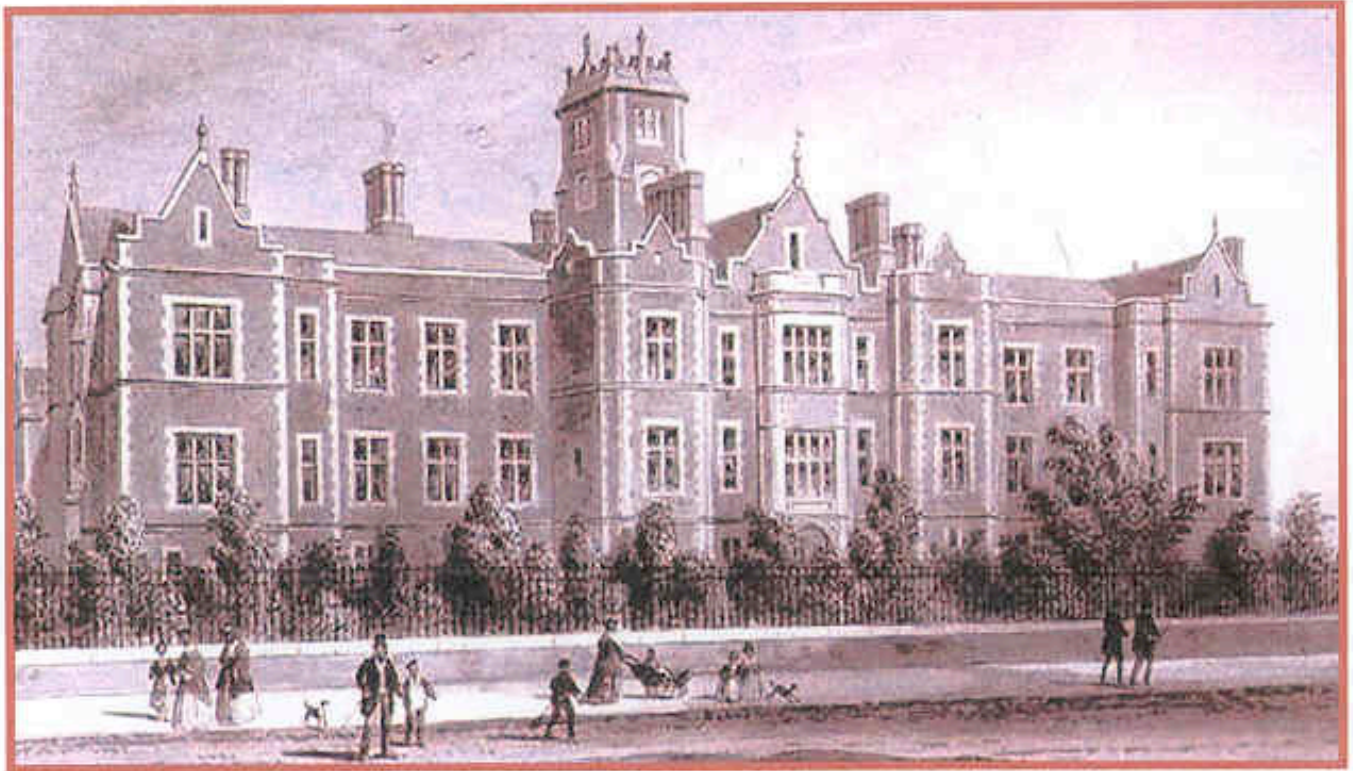
BARTS



[Top] Gibb's design, rebuilding taking place from 1730-68 [EH, 19]
Note the chimney stacks.

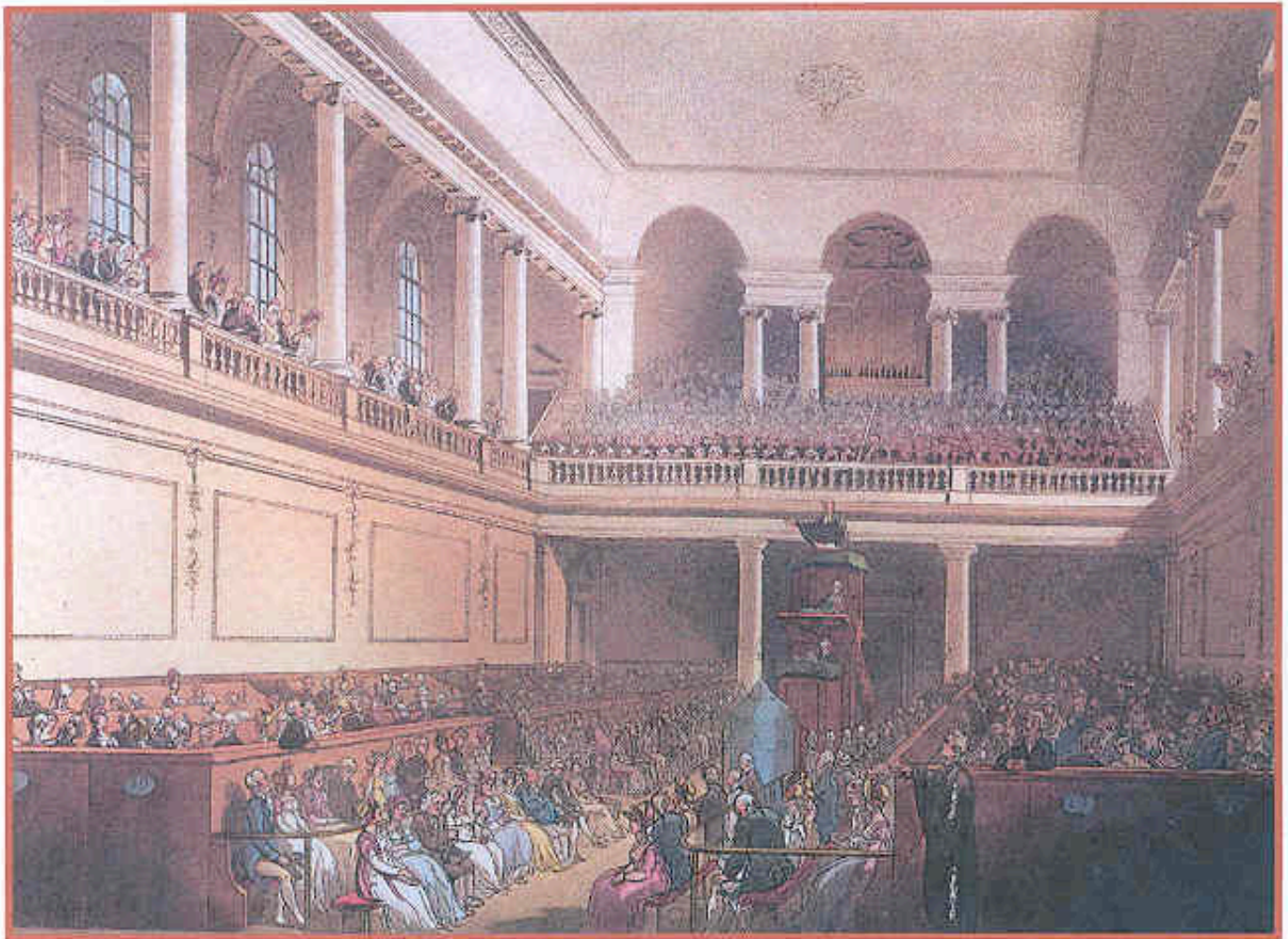
[Bottom] A ward about 1890 [SB1, opp.p48] though elsewhere [SB2, plate 77]
the same photograph is captioned Stanley Ward, about 1920.
A fireplace with chimney can be seen in the picture (back right).

BROMPTON HOSPITAL, LONDON



**Brompton Hospital for Consumption, 1879. Architect Thomas Henry Wyatt.
Heating by G N Haden & Sons [HT, 19]**

THE FOUNDLING HOSPITAL, LONDON



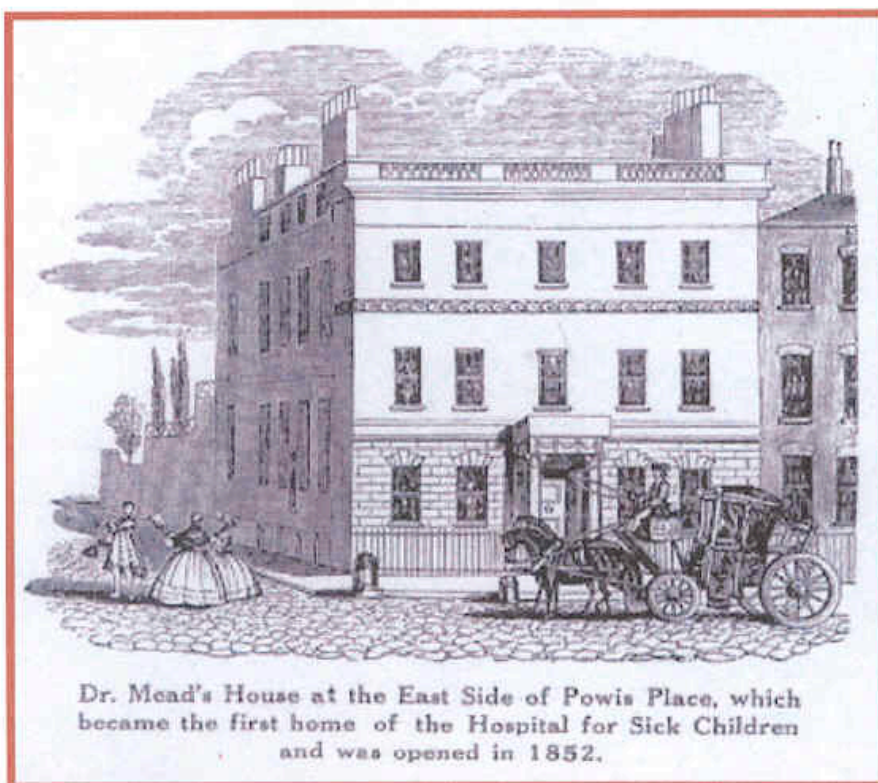
Designed for 400 children. Founded by Thomas Coram and located on Coram Fields in Bloomsbury, demolished in 1926. Illustration, c.1810, is of the Chapel with a large heating stove in front of the pulpit [AIL, 195]

FREE CANCER HOSPITAL, LONDON



**Women's Ward, Free Cancer Hospital, (now Royal Marsden, Chelsea)
rebuilt 1885. The photograph of c.1893 shows heating
by a fireplace (centre) [EH, 130].**

GREAT ORMOND STREET, LONDON



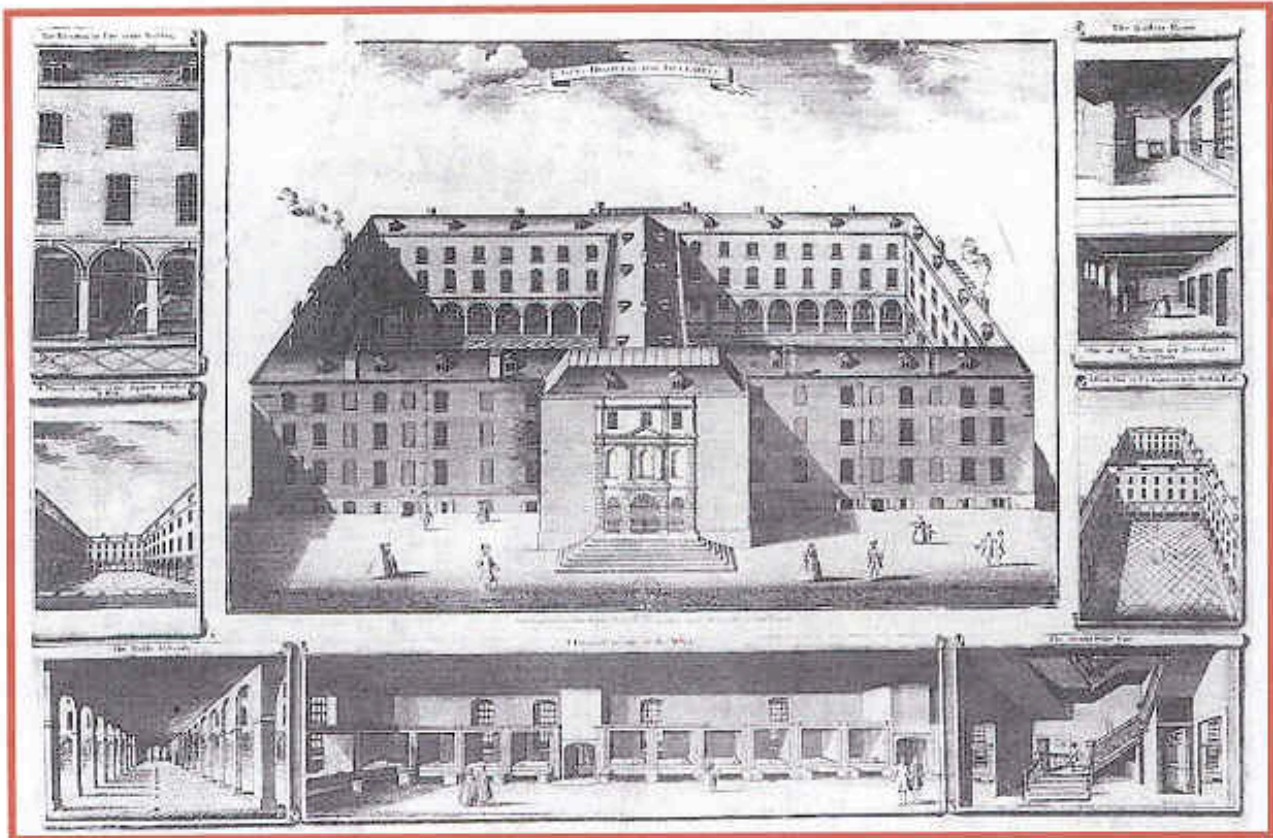
GREAT ORMOND STREET, LONDON



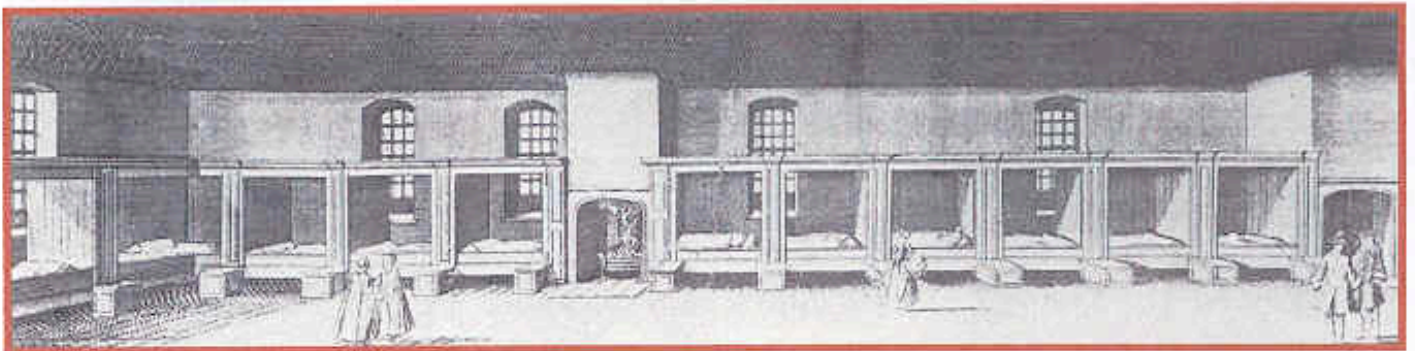
**The Hospital for Sick Children in about 1893 [EH, 111]
The Jubilee Wing (right), architect Charles Barry, 1890-93.
The original building (left), architect E M Barry, 1872-77 (now demolished).
The corner turrets housed the baths and sanitary facilities.**

*In 1929, the author James Barrie gave the hospital the full copyright
of his story "Peter Pan."*

GUY'S HOSPITAL, LONDON

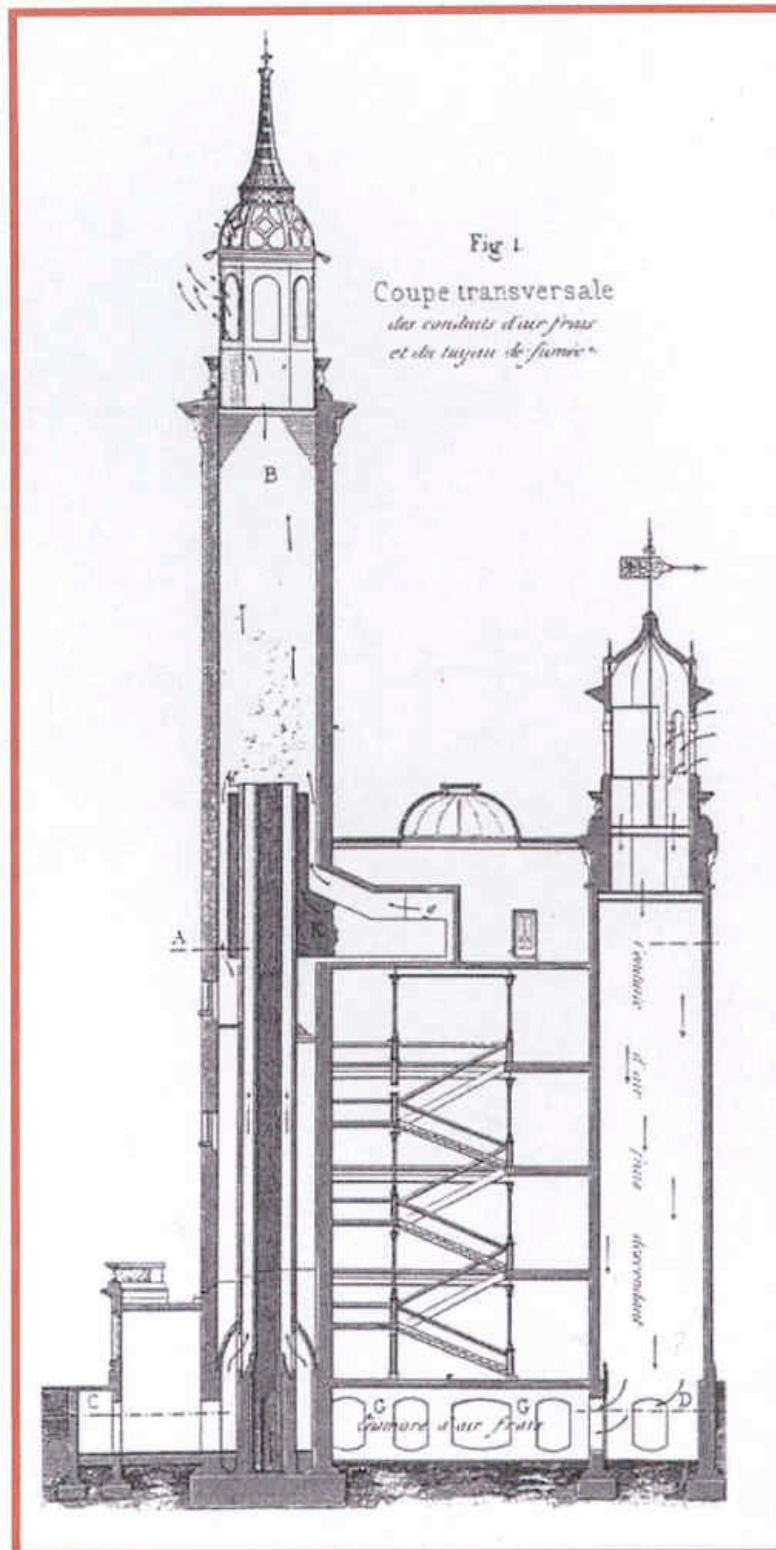


Engraving of Guy's Hospital, London, 1725 [EH, 18]



Detail showing individual beds in cubicles with heating by a fireplace.

GUY'S HOSPITAL, LONDON

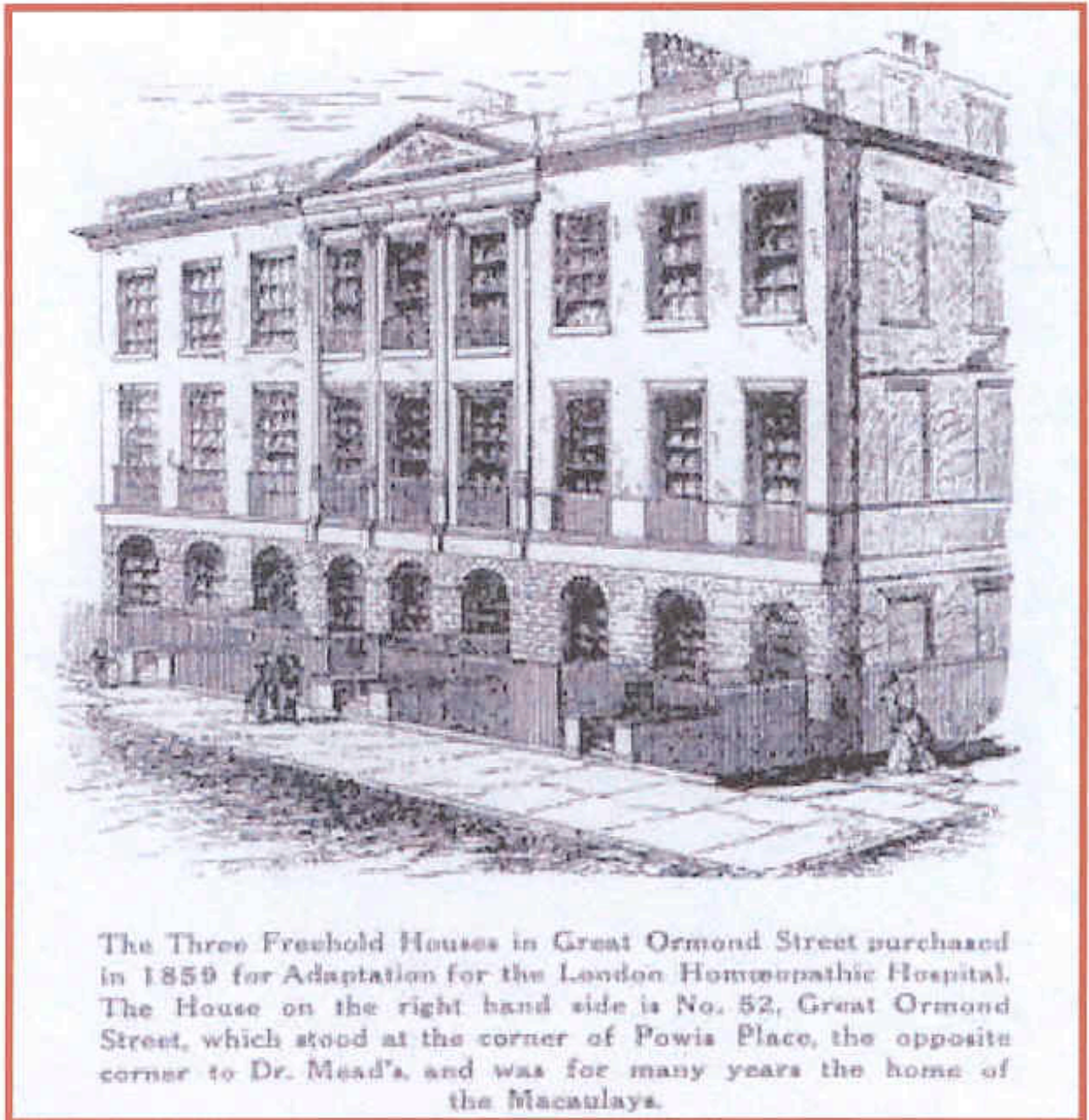


Heat-Assisted Ventilation of Guy's Hospital, London
by John Sylvester, 1850 [From Morin, in WHK, 61]



Visiting time in the Accident Ward of Guy's Hospital [*The Graphic*, 1887].
Heating was by open fireplaces; one can be seen at the far end of the right-hand wall.

LONDON HOMOEOPATHIC



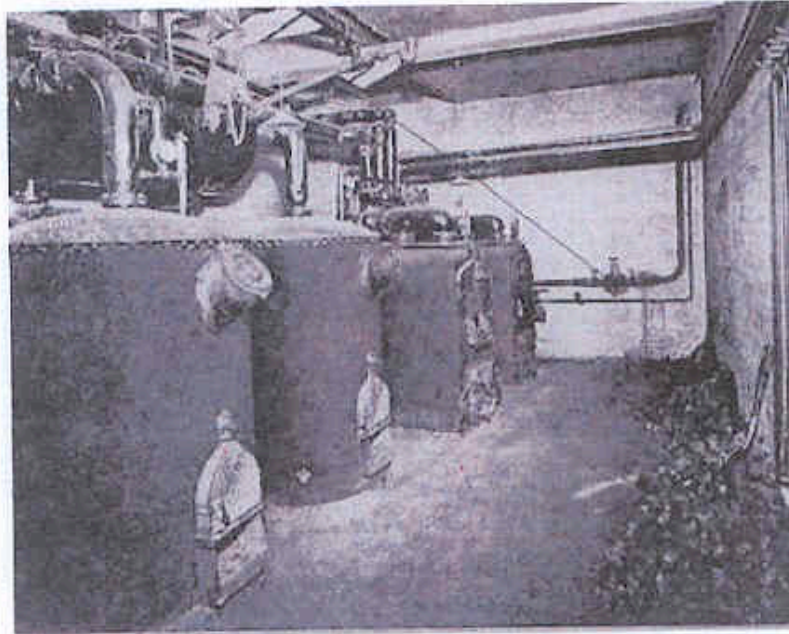
Located in Great Ormond Street, opened in 1859 with the warming and ventilation and fitting of baths costing £990.

LONDON HOMOEOPATHIC

THE HISTORY OF THE LONDON HOMOEOPATHIC HOSPITAL

Presented by Peter Morrell & Sylvain Cazalet

THE HEATING AND HOT WATER SYSTEM



THE BOILER HOUSE.

The two Boilers providing hot water are in the foreground, and the two Heaters for warming the building by Radiators are to the right. 454 tons of coke were consumed in this house last year. In addition, 206 tons of coal were used in the wards and other open fires.

THE BOILER HOUSE.

The two Boilers providing hot water are in the foreground, and the two Heaters for warming the building by Radiators are to the right. 454 tons of coke were consumed in this house last year. In addition, 206 tons of coal were used in the wards and other open fires.

The hot water system of the old part of the Hospital and the gas cooking ranges are the work of Messrs. James Slater and Co.

The warming of the building generally is by means of a low-pressure hot-water system, radiators being provided in the wards, corridors and principal offices. In the boiler house two cast iron sectional heaters are installed for generating the hot water required for

LONDON HOMOEOPATHIC

warming, the two heaters being coupled together and arranged so that both heaters can be used together or either independently of the other. In the early spring and late autumn one heater only is required to be in use, but in cold weather both heaters are worked together.

Ventilation is also combined with the warming system, cold fresh air, being admitted behind the radiators, passes over and through them and becomes warmed, and thus passes into the wards, &c., warmed fresh air. Louvre registers fitted with operating gear are fitted to the fresh air inlets so that the amount of air admitted can be regulated to requirements.

In the boiler house are also provided two independent wrought steel boilers for generating the hot water required for domestic and other purposes. These boilers are each connected to a large riveted steel storage cylinder, having a capacity of about 420 gallons, from which mains and branch pipes are taken to supply hot water to all operating theatres, baths, lavatories, sinks, main and other kitchens, &c.

Both boilers are generally at work together, as a very large quantity of hot water is used, the average consumption per hour being about 400 gallons, but they are connected up so that either boiler can be shut down independently of the other for cleaning purposes, &c.

The heating and domestic hot water supply apparatus are entirely independent of each other, and were installed by Messrs. Z. D. Berry and Sons.

A similar installation has also been fitted in the Nurses' Home.

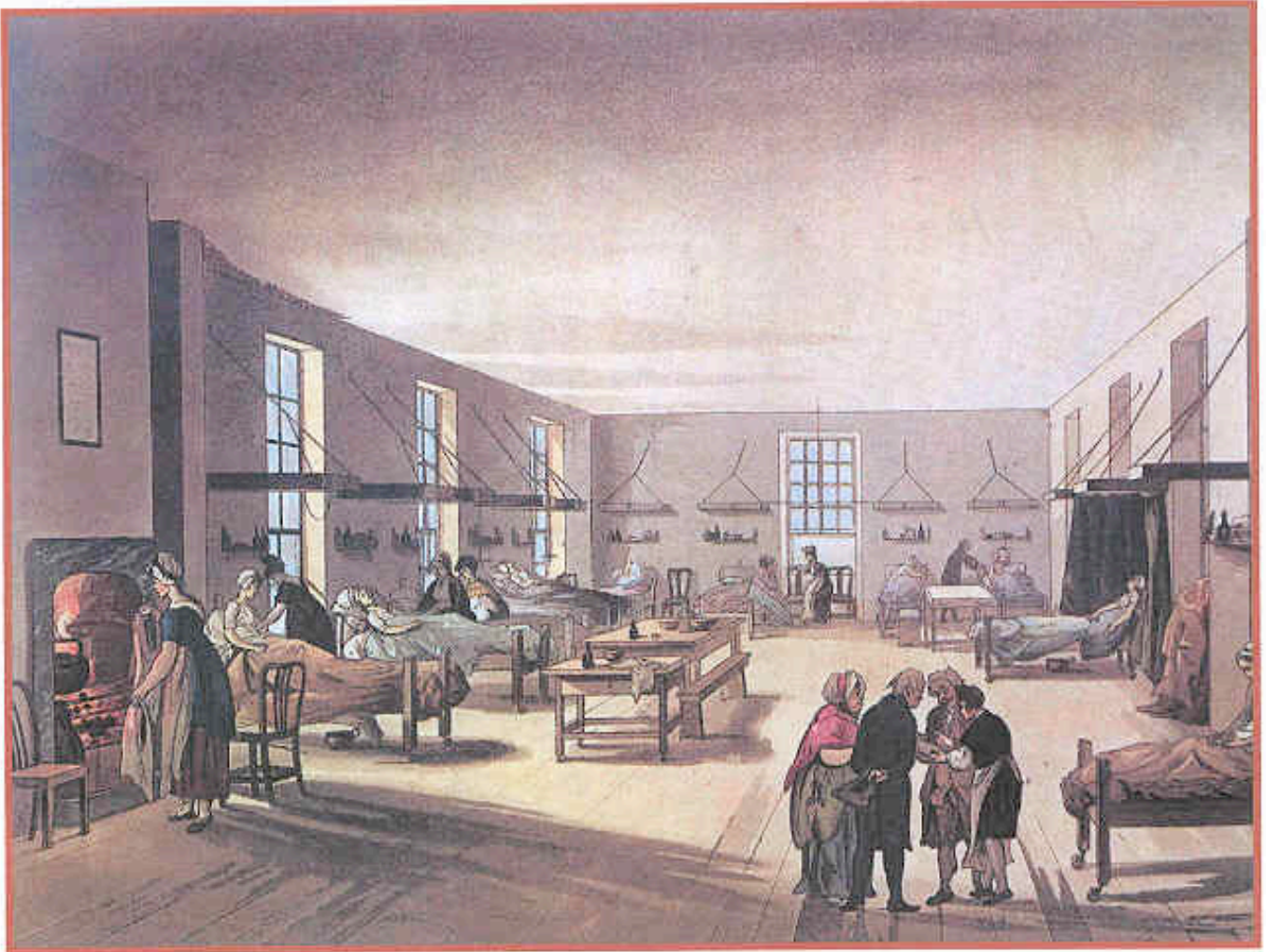
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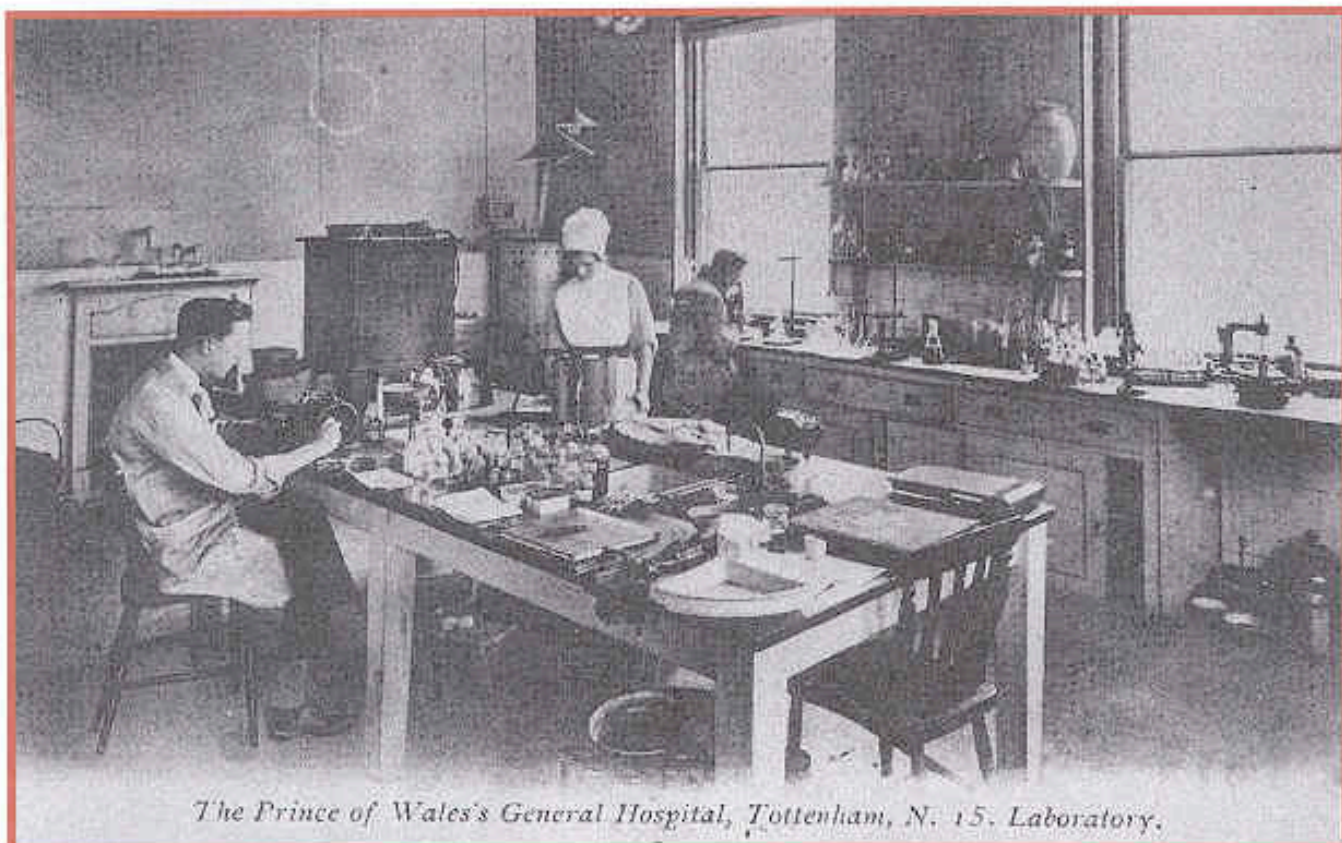
[www.homepoint.org/morrell/londonhh/heating.htm]

MIDDLESEX HOSPITAL, LONDON



Founded 1745 in Windmill Street, off Tottenham Court Road (London was part of Middlesex until 1888), moving in 1757 to Mortimer Street (as illustration of c.1810). Heating provided by open fires (as left) [AIL,141]

THE PRINCE OF WALES GENERAL HOSPITAL, LONDON



Laboratory in The Prince of Wales General Hospital, Tottenham, London N15, possibly c.1900 [MPH, 16]. Heating was provided by the fireplace (left) complete, though a laboratory, with buckets of coal.

ST LUKE'S HOSPITAL, LONDON

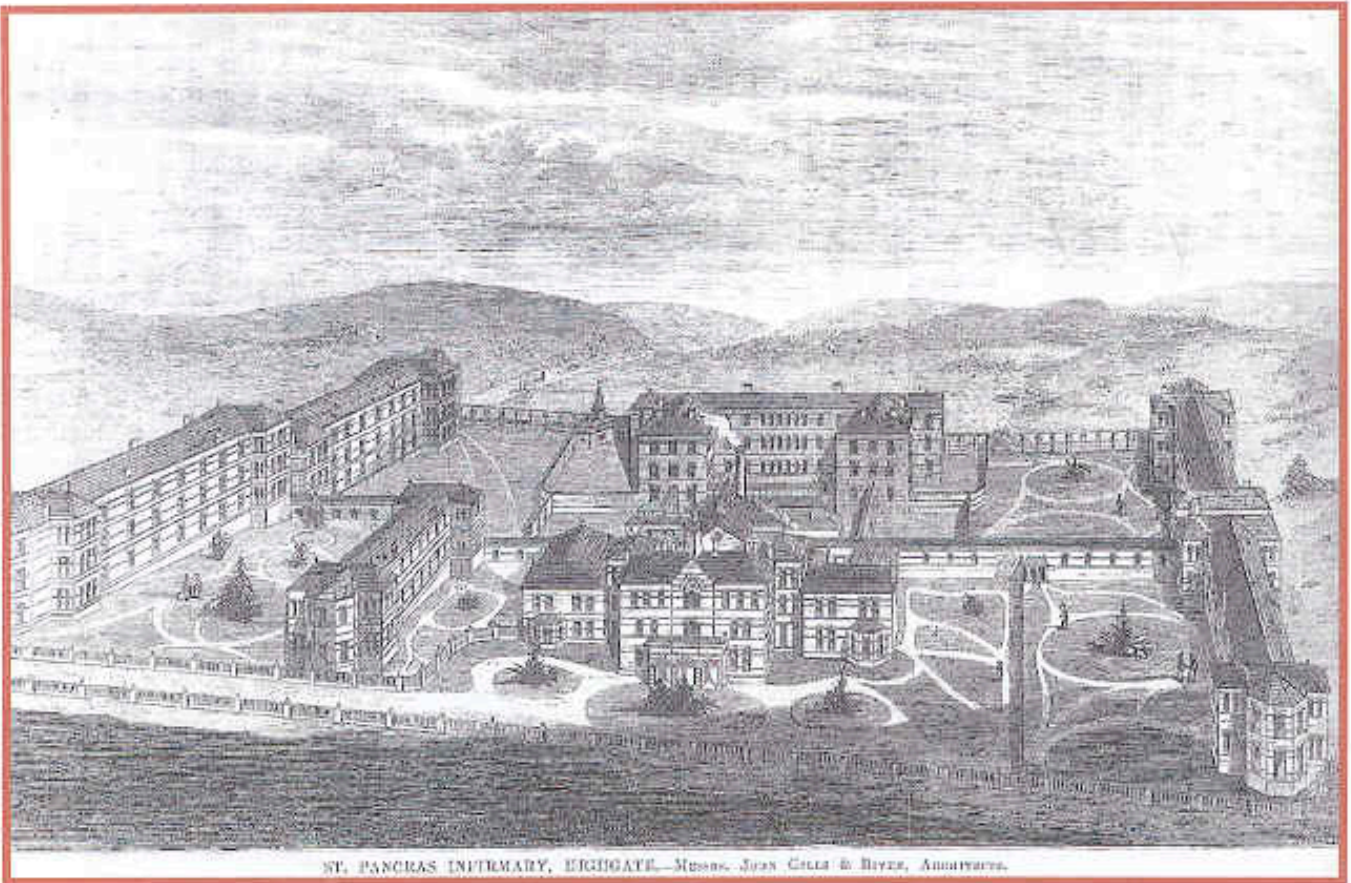


Founded 1751 as a psychiatric teaching hospital in Windmill Street, where for nearly 50 years in the early 18th century the patients suffered physical abuse.

In 1757 moved near Old Street in Finsbury (as illustration c.1810) [AIL, 27]

A picture mystery is the grille above the door, behind which appears to be a fire, (out of reach of the inmates), whether for heating or fire-assisted ventilation, or both, is not clear.

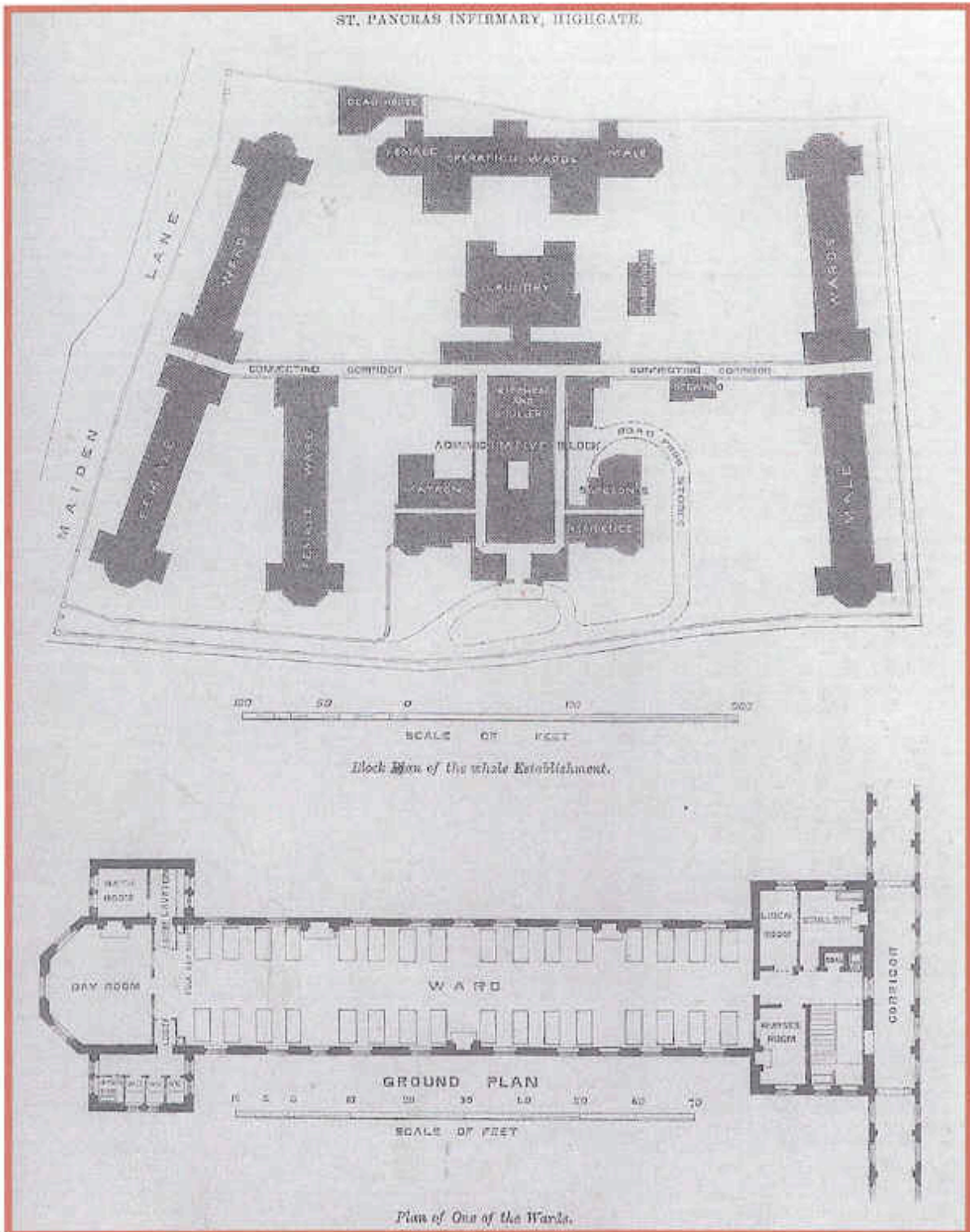
ST PANCRAS, HIGHGATE, LONDON



ST. PANCRAS INFIRMARY, HIGHGATE.—Messrs. J. & R. COLE & BAYNE, ARCHITECTS.

**St Pancras: a 524-bed infirmary with central laundry (see chimney), 1870.
[*The Builder*, 9 January 1869, 28-29]**

ST PANCRAS



St Pancras Infirmary, Highgate, London
Block & Ward Plans. Sanitary facilities were not separated by ventilated lobbies at this time, 1870 [*The Builder*, 9 January 1869, 28-29]