

Hints on the planning of poor law buildings and mortuaries / [Albert C. Freeman].

Contributors

Freeman, Albert C.

Publication/Creation

London : St. Bride's Press, [1906]

Persistent URL

<https://wellcomecollection.org/works/nmx2vhp8>

License and attribution

The copyright of this item has not been evaluated. Please refer to the original publisher/creator of this item for more information. You are free to use this item in any way that is permitted by the copyright and related rights legislation that applies to your use.

See rightsstatements.org for more information.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

THE
PLANNING OF
POOR LAW
BUILDINGS
AND
MORTUARIES

ALBERT C. FREEMAN



St. BRI
PRESS,
24 Bride
Fleet Str
E.C. &

Presented by
The St. Brides Press Ltd.
Sept 1904

By . .
R. G. Allanson-Winn,
M.INST.C.E.I.



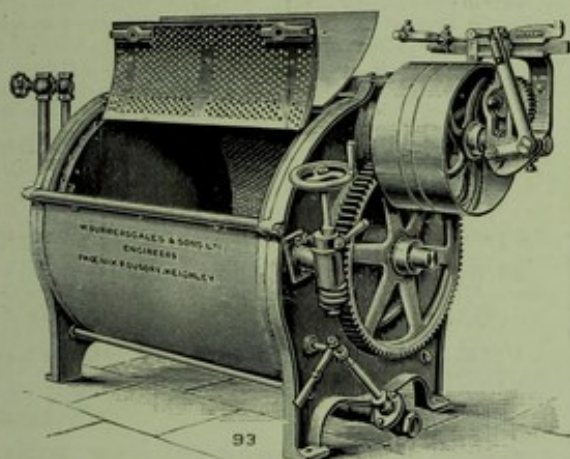
22101927199

LAUNDRY

... MACHINERY.

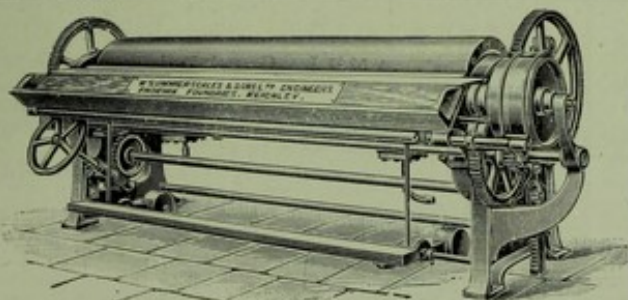
COOKING

... APPARATUS.



THE "CHALLENGE RENOWN"
METAL WASHER.

EXPERT ADVICE GIVEN FREE
ON THE
PLANNING OF LAUNDRIES, &c.



THE "CHALLENGE" IRONER.



STEAM-JACKETTED
COOKING PAN.

London Office :—
133 Finsbury Pavement, E.C.

W. SUMMERSCALES & SONS,
LTD.,
Phoenix Works,
KEIGHLEY, ENGLAND.

The St. Bride's Press Publications.

DILAPIDATIONS. By SYDNEY PERKS, F.A.S.I., A.R.I.B.A.
6½ in. by 4½ in. 25pp. and two diagrams. 6d.

BETTERMENT. By ALFRED THOMAS MACER, P.A.S.A.
6½ in. by 4½ in. 32pp. and diagram. Boards. 1s.

DRAINAGE WORK AND SANITARY FITTINGS. By WILLIAM H. MAXWELL, A.M.I.C.E., Borough Surveyor of Tunbridge Wells. Second (revised and enlarged) edition. 6½ in. by 4½ in. 116pp., illustrated. Cloth. 1s.

TABLE OF DISCHARGE FROM CIRCULAR SEWERS WHEN RUNNING FULL. By a MUNICIPAL ENGINEER. 4½ in. by 3½ in. 42pp. (Second edition). Cloth, with elastic band (for the pocket). 1s.

THE HOUSING OF THE LABOURING CLASSES AND BACK-TO-BACK HOUSES. By H. PERCY BOULNOIS, M.I.C.E., late City Engineer, Liverpool. 6½ in. by 4½ in. 46pp., with 41 diagrams. Cloth. 1s.

THE SEWERAGE ENGINEER'S NOTE-BOOK, being Standard Notes on Sewer Formulae and Sewerage Calculations. By ALBERT WOLLHEIM, A.M.I.C.E. Second (revised) edition. 6½ in. by 4½ in. 178pp., 31 diagrams, and blank pages for memoranda. Cloth. 3s. 6d.

THE FLOW OF SEWAGE. By JOHN P. DALTON, Engineer and Surveyor to the Ryton-upon-Tyne U.D.C. 6½ in. by 4½ in. 4pp. On card. 6d.

METRICAL TABLES, for Engineers, Surveyors, Chemists, Merchants, &c. By FREDERICK ELIE GAY, Assistant City Surveyor, Bath. 6½ in. by 4½ in. 66pp. Cloth. 2s.

PARTY STRUCTURES. London Building Act, 1894, Part viii. By SYDNEY PERKS, A.R.I.B.A., F.A.S.I. 6½ in. by 4½ in. 50pp., 7 illustrations. Cloth. 1s.

THE TESTING OF PORTLAND CEMENT FOR SMALLER MUNICIPAL WORKS. By H. HOWARD HUMPHREYS, A.M.I.C.E. 6½ in. by 4½ in. 16pp., and diagram of strength of cement and mortar. Cloth. 1s.

DESCRIPTIONS OF VARIOUS SEWAGE DISPOSAL WORKS. By R. O. WYNNE ROBERTS, A.M.I.C.E., City Hydraulic Engineer of Cape Town, formerly Borough Engineer and Surveyor of Oswestry. 6½ in. by 4½ in. 105pp., with numerous illustrations. Cloth. 1s.

A HAND-BOOK OF HIGHWAY CASES. By J. B. REIGNIER CONDER, Law Editor of THE SURVEYOR AND MUNICIPAL AND COUNTY ENGINEER. 8½ in. by 5½ in. 109pp. and index. Cloth. 2s. 6d.

DIAGRAMS EXHIBITING THE DISCHARGE AND VELOCITIES OF CIRCULAR AND OVAL SEWERS AND WATER CONDUITS, together with Notes on the Design of Sewerage Schemes. By EDWIN B. NEWTON, F.S.I., A.M.I.C.E. 8½ in. by 5½ in. Cloth. 2s. 6d.

MUNICIPAL ENGINEERING: Model Answers to Questions set at recent examinations of the Incorporated Association of Municipal and County Engineers. 6½ in. by 4½ in. 206pp. 3s. 6d.

SOME MUNICIPAL ENGINEERING WORKS designed and carried out at Stafford by W. BLACKSHAW, A.M.I.C.E., M.S.I., Borough Engineer and Surveyor. 8½ in. by 5½ in. 66pp., with portrait and 30 illustrations. 2s.

ELECTRIC TRAMWAY TRACTION. By ALBERT D. GREATORREX, A.M.I.C.E., M.S.A., Borough Engineer and Surveyor of West Bromwich. 8½ in. by 6½ in. 73pp., bibliography, index, and 41 illustrations. Cloth. 2s. 6d.

THEORY OF ENGINEERING CONSTRUCTION. A Reference-Book for Civil Engineers and Students. By ERNEST H. ESSEX, A.M.I.C.E. 8½ in. by 5½ in. 216pp. Cloth gilt. 5s.

HOW TO BECOME A MUNICIPAL ENGINEER. By J. FREEBAIRN STOW, Civil Engineer, Member of the Incorporated Association of Municipal and County Engineers, Member of the Society of Engineers, &c., Engineer and Surveyor to Uxbridge Rural District Council; late Public Works Department, Cape Colony. 8½ in. by 5½ in. 32pp. 1s.

QUANTITIES.—Vol. 1: Road Making and Sewer Construction, for the use of Surveyors, Municipal Engineers and Architects, with various tables for ready reference. By J. BARTLETT, M.S.A., Member of the Council of the Society of Architects; one of the Examiners to the Society of Architects; Demonstrator of Building Construction and Architecture, King's College, London; Lecturer on Quantity Surveying, King's College, London, and the Battersea Polytechnic, &c. 8½ in. by 5½ in. 220pp. Cloth gilt. 7s. 6d.

A HAND-BOOK OF SEWER AND DRAIN CASES noted in "The Surveyor and Municipal and County Engineer." Comprising cases relating to Sewers in general, Sewage Works, Sewage Disposal and Rivers Pollution Prevention, Combined Drainage, House Sanitation, and the Prevention of Nuisances. Carefully revised and corrected by J. B. REIGNIER CONDER, Law Editor of THE SURVEYOR AND MUNICIPAL AND COUNTY ENGINEER. 8½ in. by 5½ in. 156pp. Cloth. 2s. 6d.

THE HOUSE HEALTHFUL YET ECONOMICAL. Articles on Building By-Laws, preceded by editorial comments bearing on this subject. Reprinted from THE SURVEYOR AND MUNICIPAL AND COUNTY ENGINEER. By T. MYDDLETON SHALLCROSS, Architect. 8½ in. by 5½ in. 20pp. 6d.

SEWAGE DISPOSAL SCHEMES. The Local Government Board's requirements shown on a single sheet. 6½ in. by 4½ in. 2s. 6d.

THE PLANNING OF POOR-LAW BUILDINGS AND MORTUARIES. By ALBERT C. FREEMAN, Architect. 11½ in. by 8½ in. 72pp., index and 56 illustrations. 7s. 6d.

ROOFS AND FLOORS OF NEW BUILDINGS: Their Structure and Stability. Annotations to the Model By-Laws of the Local Government Board. By ERNEST H. ESSEX, A.M.I.C.E. 8½ in. by 5½ in. [In the Press.]

CREMATION. By SIR SPENCER WELLS, Bart. 6½ in. by 4½ in. 4pp.

THE SMOKE NUISANCE AND HOW TO REMEDY IT. By A. E. FLETCHER, Chief Inspector of Alkali, &c., Works, Local Government Board. 6½ in. by 4½ in. 20pp.

SANITARY LAW. By Prof. A. WYNTER BLYTH. 6½ in. by 4½ in. 12pp. The three papers, 6d.

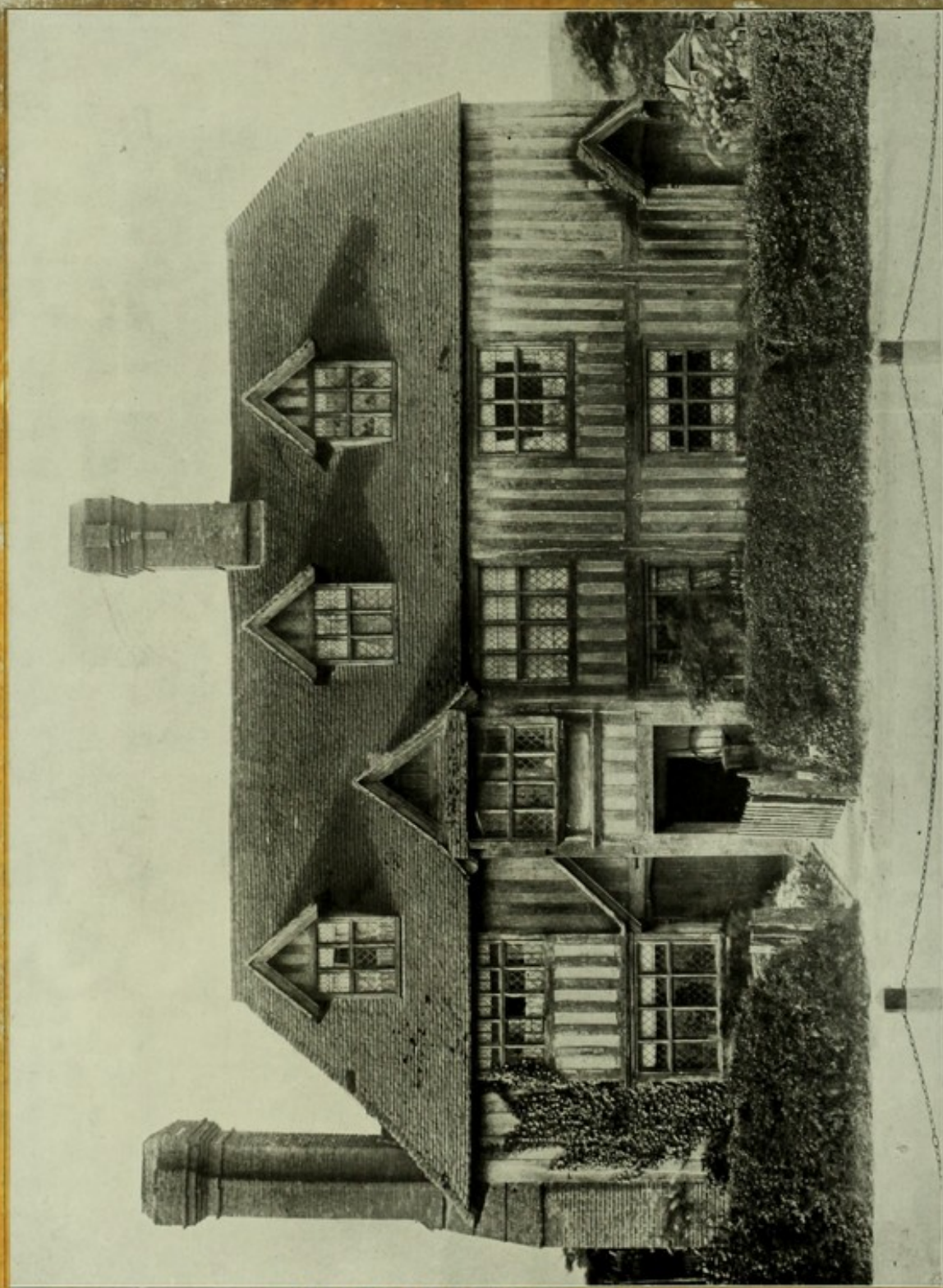
TRAMWAY RAILS. 6½ in. by 4½ in. 6pp.

TREE-PLANTING IN STREETS AND OTHER PLACES. By FRANCIS SMYTHE. 6½ in. by 4½ in. 8pp. Two papers read at THE SURVEYOR Exhibition of Road-making Methods and Appliances, held at the Royal Agricultural Hall, 1899. 6½ in. by 4½ in. The two papers, 4d.

FORM OF AGREEMENT sanctioning the erection of a Wooden Building on certain conditions. These forms have proved extremely useful to district councils, and are largely used by them. Foolscap folio. Price 4s. per quire, or if specially printed with name of the authority, 7s. 6d. per quire.

All prices are nett and post free.

24 BRIDE LANE, FLEET STREET, LONDON, E.C.



HINTS ON THE
PLANNING OF
POOR LAW BUILDINGS
AND
MORTUARIES.

BY
ALBERT C. FREEMAN, *Architect.*

London :—
ST. BRIDE'S PRESS, LTD.,
24 BRIDE LANE, AND 3, 4 AND 13 NEW STREET HILL,
SHOR LANE, FLEET STREET, E.C.

[1906]

✓ 11041566

MINES ON THE
PLANNING OF
POOR LAW BUILDINGS



WELLCOME INSTITUTE LIBRARY	
Coll.	welM0mee
Call	
No.	WA

CONTENTS.

PRELIMINARY	CHAPTER I.
CASUAL AND VAGRANT BUILDINGS	II.
ENTRANCE AND ADMINISTRATIVE BUILDINGS	III.
ABLE-BODIED INMATES	IV.
AGED AND INFIRM, ALSO MARRIED COUPLES	V.
IMBECILES AND SHORT-PERIOD LUNATICS	VI.
SICK, LYING-IN AND ISOLATION WARDS	VII.
COTTAGE HOMES FOR CHILDREN	VIII.
LAUNDRY BUILDINGS	IX.
LOCAL GOVERNMENT BOARD REQUIREMENTS WITH RESPECT TO PLANS, &c.	X.
THE PLANNING OF PUBLIC AND HOSPITAL MORTUARIES	XI.
APPENDIX.	
INDEX.	

I am indebted to the proprietors of the "CONTRACT JOURNAL" and "PUBLIC WORKS" for permission to reprint "Casual and Vagrant Buildings," "Public and Hospital Mortuary Buildings," and "Cottage Homes for Poor and Children," and also beg to express thanks to those architects who have lent plans for reproduction.

A. C. F.

TO
DR. W. H. COATES, M.A., M.B.,
BARRISTER-AT-LAW,
AS AN ACKNOWLEDGEMENT OF GRATITUDE
FOR NUMEROUS FAVOURS RECEIVED,
THIS WORK IS RESPECTFULLY DEDICATED.

CORRIGENDA.

Page 14, line 19.

"At the end of each door" should read : "at the end of each cell."

Page 26, line 1.

"The area of the dining hall" should read :—
"6 superficial feet per inmate, *including gangways.*"

Page 26, line 5.

"The glazed screen dividing the dining hall" should read : "with a glazed screen 7ft. 6in. high."

Page 52, line 12.

"The small wash-house at the rear of the girls' cottages" should read : "in size not less than 140 ft."

Page 31, add

"Bath and w.-c. accommodation in the proportion of one bath to every twenty, one w.-c. to every ten."

1884
2
The following is a list of the names of the persons who have been
admitted to the membership of the Society since the last meeting.
The names are given in alphabetical order of the surnames.
The names of the persons who have been admitted to the membership
of the Society since the last meeting are given in alphabetical order
of the surnames. The names of the persons who have been admitted
to the membership of the Society since the last meeting are given
in alphabetical order of the surnames. The names of the persons
who have been admitted to the membership of the Society since the
last meeting are given in alphabetical order of the surnames.

CHAPTER I.

PRELIMINARY.

One of the great difficulties an architect has to contend with in planning public buildings of this character is the want of forethought (if I may be allowed to use the word) on the part of his clients—the boards of guardians—in considering only the immediate wants and refusing to consider the future requirements in extensions or additions.

When erecting a new building it is advisable to prepare designs for an ultimate addition, and to consider, in case another architect should be called upon to complete such building at a future date, he may then have before him plans previously thought out and be in a position to judge the advisability of carrying out the original scheme, and also find such weak points as there may be through building progression since the first portion of the building was erected.

When designing new buildings the architect and boards of guardians should endeavour to lighten the sternness of the law, and provide suitable buildings for the afflicted and infirm poor to pass their declining years in comfort, and to enable the sick to be speedily restored to convalescence. The buildings for the habitual tramp, casual, and able-bodied dependents, should be made as cheerful and uninviting as it is possible to make them.

The principles of construction may be taken to be similar under all circumstances; that is to say, buildings should be arranged to stand upon pure and dry soil; to be supplied with pure water, and have a constant and ample supply; also be placed in such position for the access of light and pure air as to ensure cleanliness and healthiness.

The various classes of paupers for whom accommodation is provided in workhouse establishments are as follows: Aged and infirm, aged married couples, able-bodied, infants, sick of all classes, harmless lunatics and imbeciles, probationers, and vagrants.

There should be a complete separation of the sexes and of the several classes, for which separate

wards, day-rooms, entrances, staircases, yards, lavatories, water-closets, and clothes stores, should be provided.

Large numbers of inmates in any single block should always be avoided, and it is advisable to sub-divide the several buildings into separate blocks, which should never be planned at right or acute angles.

In spacing the buildings, where the site will allow it, it is advisable to regulate the same by making the distance between any two adjacent blocks at least twice the height of the highest building.

No building should be erected in close contiguity to the boundary walls, as it will be detrimental to light and ventilation.

No ward or dormitory should exceed 100 ft. in length, and its length should be calculated according to the number to be placed therein, with the requisite amount of wall space required per bed; otherwise unnecessary expense will be incurred by waste of space.

The main points to be considered in the planning are to insure free circulation of air, and secure a well-arranged plan which will be free from dark corners, draughty, ill-lighted and ill-ventilated corridors and passages. The fireplaces, as far as possible, should be placed centrally in the dormitories and wards, so as not to encroach upon the bed space; and, where practicable, descending flues should be arranged, thus taking up less floor space and not obstructing the view of the attendant. If fireplaces are placed on the side walls of the wards they are found to encroach upon the floor space, and if placed at the end of the wards, the heat is not equally distributed.

The spacing of beds is a question to be considered, as they are required to be shown upon the plans.

Dormitories should never be planned for double rows of beds down the centre, as in such cases they

The Planning of Poor Law Buildings.

are divided by means of wood partitions, which generally harbour dust, dirt and vermin. Double beds never being provided, except in the case of an infant sleeping with its mother, each bed must be arranged to stand in its own cubic allowance and placed about 12 in. from the wall. In the case of existing buildings being turned into dormitories, and where two rows of beds are placed, the ward should then not be less than 16 ft. in width and the beds placed with the sides next the wall. This form of dormitory would only be permissible for able-bodied inmates.

Means of Escape in Case of Fire. The means of escape in case of fire is a subject to which should be given great consideration, it being desirable that every distinct building

have at least one easy-accessible fire-escape staircase fixed externally, and in the case of long blocks having large wards or dormitories at each end there should then be erected two external staircases. These staircases are generally constructed of iron well framed together, built in flyers of 7-in. risers and not less than 9-in. treads. The escape doorway from the ward or dormitory should lead direct on to the landing of the staircase, and be hung to open outwards, each door being fitted with a mortice lock, the key being hung in a small glazed case fixed on the inside of the doors, and the case lettered—

“GLASS TO BE BROKEN IN CASE OF FIRE ONLY.”

Spiral staircases should only be provided for the use of children; and these are not always advisable, there being a danger of falling down. When adopted, they should be entirely covered with galvanised wire of about 1½-in. mesh and not less than No. 11 i.w.g.; this will prevent children climbing up the hand-rails and possibly falling over.

Open bridges, suspended from one block to another and fixed at each upper floor level, have in some cases been erected, and not only form means of escape from one building to another, but also provide airing pathways for the inmates who are too weak to descend by the staircases to the grounds. The system of bridges has its disadvantages, for it may be found, in case of an outbreak

of fire, means of escape is cut off through the door at the opposite end of the bridge being locked.

The first experiment of fire-escape bridges was, I believe, made by Mr. T. W. Aldwinckle, at Camberwell Workhouse.

Fire Hydrants. In the corridor of every building on each floor provide a fire hydrant, with the necessary fittings, also buckets filled with water, for cases of emergency.

Lifts. All sick wards of two or three storeys should be arranged with lifts in the centre of the staircase sufficiently large to admit of the carrying of the patient on a stretcher or in a bed-chair.

Windows. All external windows should be double hung in deal cased frames, extending to within 9 in. of the ceiling and about 3 ft. 3 in. to 3 ft. 6 in. from the glass line to the floors. In the case of wards and dormitories a window should be arranged between every two beds, the upper part of the window being fitted with a fanlight, hung at the bottom, to open inwards, and be fitted internally with iron glazed hoppers. Excessive amount of window space is inadvisable, as the external temperature has thereby a tendency to affect the temperature of the wards.

The proportion of window surface to a ward being 1 square foot of window surface to every 70 or 80 cubic feet of air space (*see Knight's "Workhouse Buildings"*), all windows should be fitted with high bottom beads, to allow of the lower sash being opened without causing a draught.

Cost of Buildings. The cost of a workhouse or infirmary varies according to the district in which it is built. In London the cost may be placed at, say, £150 to £200 per bed, or, by measuring the cubic area, the wards and dormitories may be priced at 9d. per cubic foot and the administrative buildings at 1s. per cubic foot. In the provinces these buildings may be priced at £120 to £150 per bed, and at 7½d. and 9d. per cubic foot respectively, as before stated. The reason of giving the cube of the wards and dormitories at a lower price than the administrative buildings is owing to the amount of open area in the former and the necessary fittings in the latter.

CHAPTER II.

CASUAL AND VAGRANT BUILDINGS.

How to remedy the increase of vagrants is one of the many problems unsolved. Some boards of guardians appear to think that by providing attractive accommodation and light labour it will decrease this class of pauper. The various boards of guardians of Lincolnshire have had under consideration a scheme for converting tramps into respectable, industrious citizens by the means of tramp settlements, wherein it is proposed to teach the inmates various trades. Now, is it possible to convert an habitual vagrant, who has never done a day's work outside a casual ward, into an industrious working man, or prove to him that honest industry is a more satisfactory state of life than a vagrant existence? The average casual is found to be the offspring of a pauper, of indolent parents, who make a practice, especially in London, of frequenting, as far as possible, the most comfortable casual wards and avoiding those establishments where the labour master is stringent and the accommodation is most cheerless. The casual traffic will never be stamped out, and, as these incorrigibles are to be maintained by the taxpayer, the buildings provided for them should be made as cheerless and uninviting as possible. The buildings for vagrants in connection with a workhouse or union are generally detached from the main building, and planned to allow of sufficient yard accommodation for the storage of timber and stone, and be surrounded by high walls finished with iron spikes, to prevent an inmate escaping. When wood-chopping or stone-breaking is carried out in the yard, sheds should be erected, and divided into bunks about 4 ft. wide by 6 ft. long with wood partitions about 5 ft. 6 in. high, to divide the inmates and check the amount of individual labour.

There are two systems of providing accommodation—the "associated wards" and the "separate cells," the latter being usually adopted. In the case of associated wards the whole of the inmates sleep and have their meals in a large ward, fitted

with hammocks suspended from the walls and ceiling or plank beds arranged with 3-ft. floor space each. These wards should not be less than 18 ft. wide, and provide 54 superficial feet and 540 cubic feet per inmate, and have suitable w.-c. and bathing accommodation, together with attendant's duty-room overlooking the ward. When this system is adopted the whole of the labour is carried out in the yard, as before mentioned.

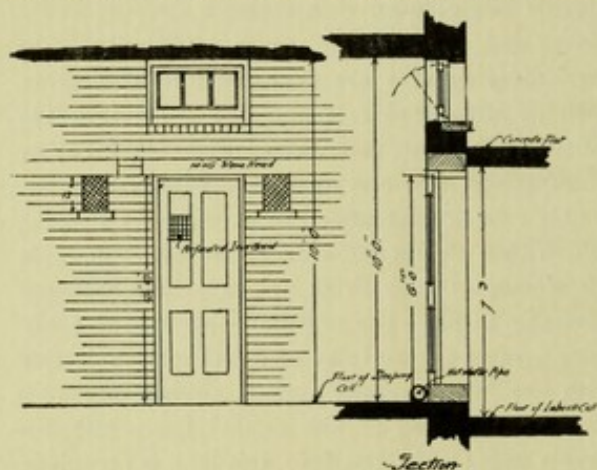
Buildings planned on the separate cell system provide two cells for each male—a sleeping and a labour cell—and for females one cell only. The male sleeping cells are arranged 4 ft. 6 in. wide, with 36 superficial feet and 360 cubic feet, the labour cell being the same width and having 27 superficial feet and about 186 cubic feet. The female cells are the same size as the male sleeping cell, with a number of cells about 6 ft. 9 in. wide for women with a child. It is generally found advisable to place the cells on either side of a corridor arranged so as to be in direct communication with the labour master's office. When the male cells are arranged on the ground floor, with the female cells on the first floor, less land is occupied; there is a saving in the cost and perfect separation of the sexes.

The walls of the buildings should be faced with stock bricks, whitewashed, and have salt-glazed brick or painted dadoes. The walls dividing the cells should be 9 in. thick. The floors of the sleeping cells should be paved with wood blocks or asphalte, the latter being preferable, it being easily cleaned and more sanitary. The floors of the male labour cells should be formed of concrete or other hard substance which will withstand the breaking of stone, and be about 6 in. lower than the floor of the sleeping cell. The step in the doorway, when raised 6 in. above the floor of the sleeping cell, will allow of heating pipes passing through each cell, and will form a seat for the vagrant while he is at work in his cell, which is

The Planning of Poor Law Buildings.

necessary when stone-breaking. In the outer wall of this cell provide iron grills, with 2-in. square mesh, about 2 ft. above the floor, and of not less dimension than 18 in. wide by 3 ft. high, formed of galvanised wrought-iron frame $1\frac{1}{2}$ in. by $\frac{1}{4}$ in., and cross rails $1\frac{1}{4}$ in. by $\frac{3}{8}$ in., the whole riveted together and fixed upon iron hooks on the outside of the wall, and fitted with three 6-in. iron spring bolts of $\frac{3}{4}$ -in. metal, the centre bolt being fitted with a strong padlock (see Illustrations).

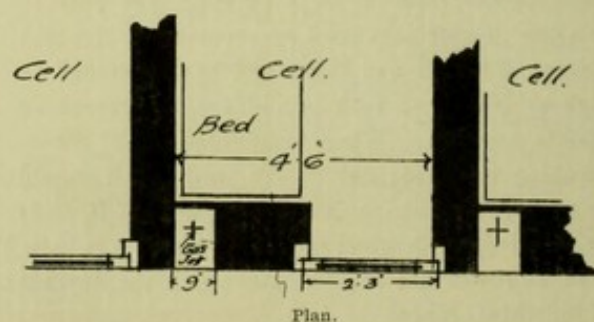
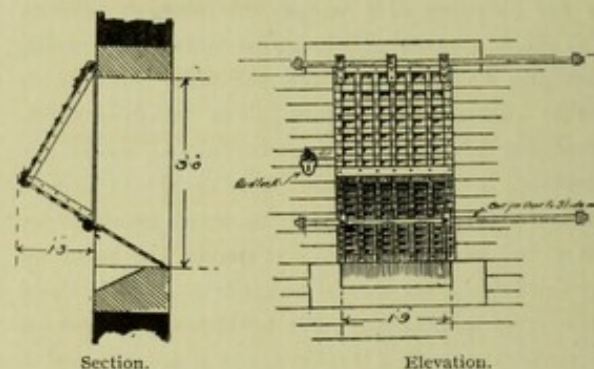
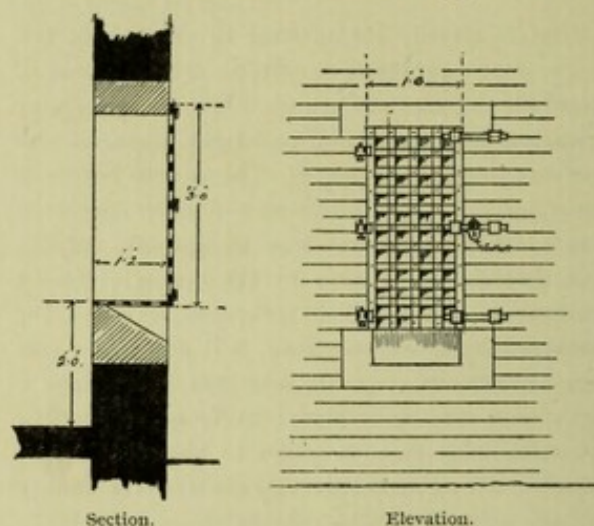
The doors of the cells are 2 ft. 3 in. wide by 6 ft. 6 in. high, framed double battened, hung with strong butts in frames set flush in the brickwork, hung to open outwards in all cases, and having a small perforated iron panel to allow the attendant



DETAILS OF DOORS TO CELLS.

to view the occupant of the cell during the night and day without unlocking the door, this precaution being made to prevent cases of suicide. At the end of each door is formed a small recess in the wall, about 9 in. by 12 in., and fixed on the cell side of the same is a perforated iron grating. In this recess on the corridor side is provided a gas jet for lighting the cell and corridor at night. A window is necessary in each sleeping cell, having part made to open, for ventilation. This can be arranged by the labour cell being roofed in at a lower level by means of a lead flat. For the purpose of lighting the corridor a small window or fanlight above each door will provide adequate light. In each cell an electric bell is necessary, to ring in the attendant's office, with an indicator showing the number of the

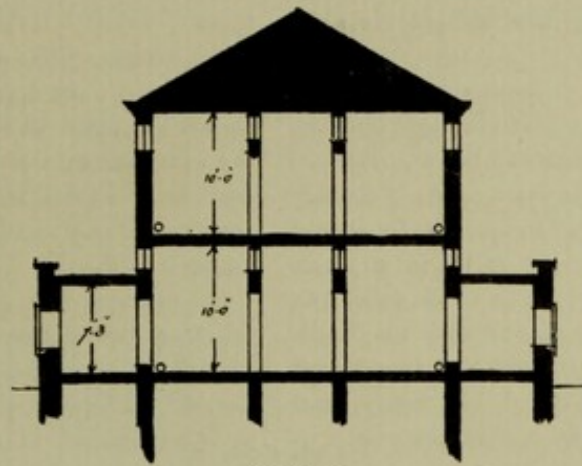
cell requiring attention; the bell-push should be placed in a position that in case an inmate be taken ill while in bed he can reach it without moving. A mess-room is necessary, wherein supper can be



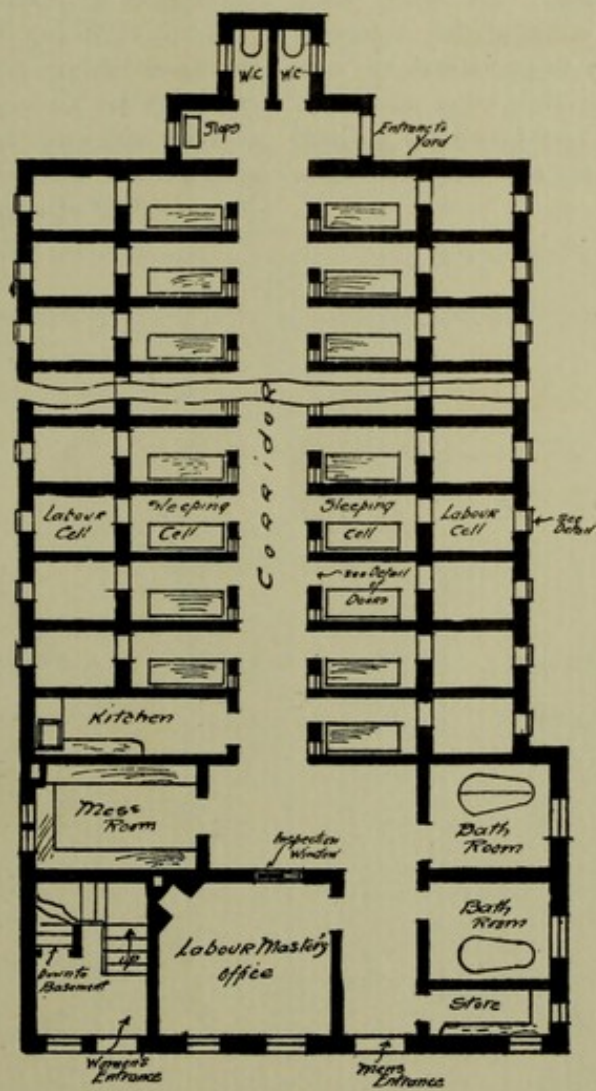
DETAIL OF IRON GRILLS TO CELLS.

served to the inmates upon their admission. I have found in many buildings, where the whole of the meals are served to the vagrants in their cells, wilful persons will dirty the cell to make

CASUAL WARD BUILDING.



SECTION.



PLAN.

The Planning of Poor Law Buildings.

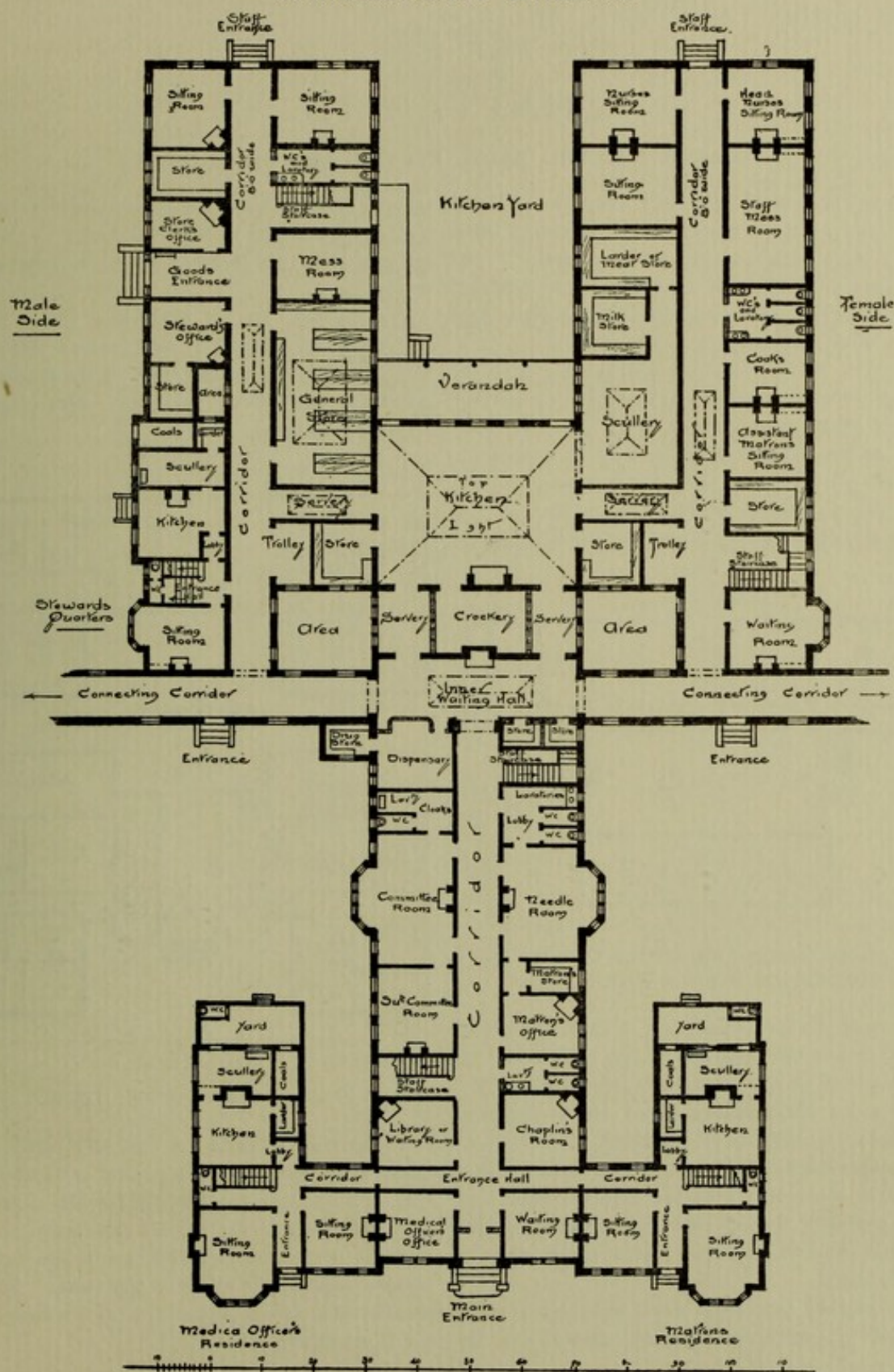
additional work. This mess-room should be fitted up with plain deal seating fixed around the walls and a table in the centre.

Bathing accommodation is necessary, in the proportion of one bath to every seven or eight inmates, together with a range of lavatory basins. No two baths should be fixed in the same room—"decency forbids." The supply of hot and cold water should be laid on to each fitting, the valves in all cases being fitted with loose keys, so as to be under the entire control of the attendant; and the baths should be provided with quick wastes, to allow of the same being quickly emptied. In many cases provision is made for vagrants in separate cells to relieve the wants of nature by providing automatic seat-flushing w.-c. apparatus; but unless these fittings receive constant attention they become a nuisance. It is advisable to provide at the rear end of the corridor, or in some other convenient position, a slop sink, for emptying night utensils, for the supply of water for scrubbing, and other purposes.

Accommodation is necessary for the labour master, whose office should be near the entrance, and overlooking the corridor where the building is planned with two floors; and his living apartments should be placed on the first floor. As is generally the case, the wife of the labour master takes the position of female attendant, and the cooking for the female vagrants is carried out in the labour master's kitchen.

Provision is also necessary for drying and disinfecting the clothes of the inmates upon their admission; also linen stores, etc. The building should be provided with a heating apparatus fixed in the basement. I should suggest hot water, as the pipes, when run through each cell, may pass in the front of the labour cell doorway, the step being raised to avoid any obstruction to the opening of the doors. Every precaution should be taken to guard against an outbreak of fire. A hydrant, together with water buckets, should be provided in each corridor, and the staircases in all cases should be constructed of stone or fireproof material.

ADMINISTRATIVE BUILDING.



GROUND PLAN.

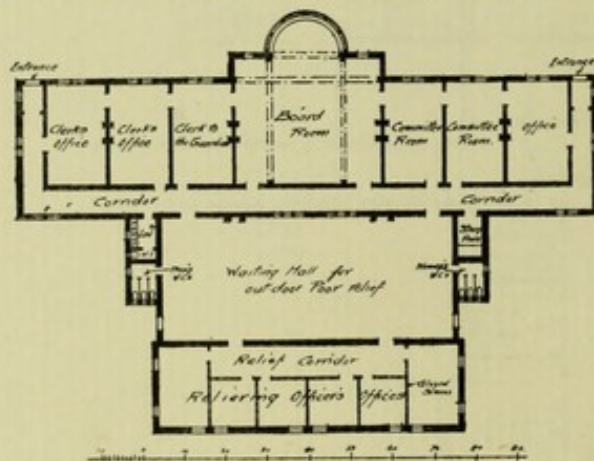
CHAPTER III.

ENTRANCE AND ADMINISTRATIVE BUILDINGS.

The entrance building usually comprises porter's house and office, receiving ward, inmates' own clothes store, and bathing accommodation. The guardians in some cases require the union offices arranged in connection with the entrance buildings of the workhouse, especially when the union is a small one. In this case provision for the clerk to the guardians, general clerk's office, relieving officer's office, waiting-rooms, a strong-room, and relief offices. The board-room may be placed in connection with this building, but I think it should be arranged in the administrative building, so the guardians, when passing in and out, see the general

entered from the main entrance (*vide* Casual and Vagrant Buildings) to the workhouse; it is most essential they be planned with an independent entrance.

The entrance to the workhouse being placed centrally, and in view of the master's office, will obtain perfect supervision both by the master and porter, as the latter's house and office is placed adjoining the same.

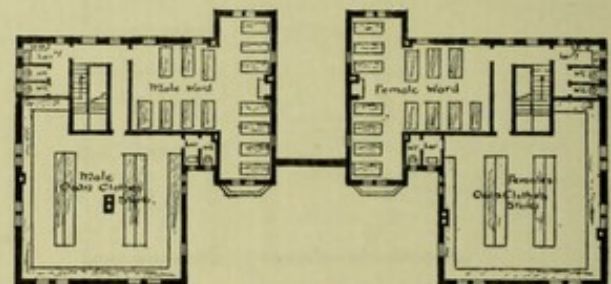


PLAN OF UNION AND RELIEF OFFICES IN CONNECTION WITH A WORKHOUSE.

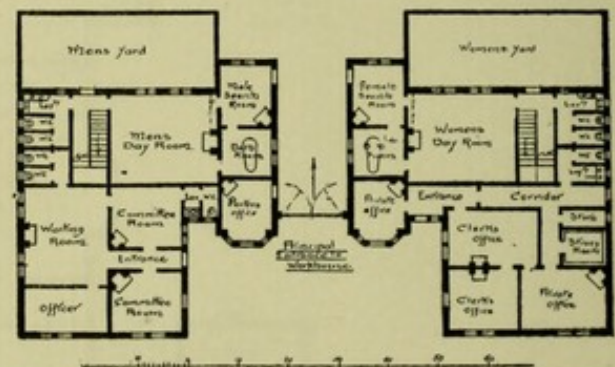
working of the institution, and so have opportunities of calling the attention of the master to any irregularities in the administration which might come under their notice, which under ordinary circumstances might not be noticed.

The apartments of the master and matron, when placed in connection with the entrance buildings, have not such control over the working of the institute as when they are situated in the administrative block.

The vagrant and casual ward, although forming part of the entrance buildings, should not be



First Floor Plan.



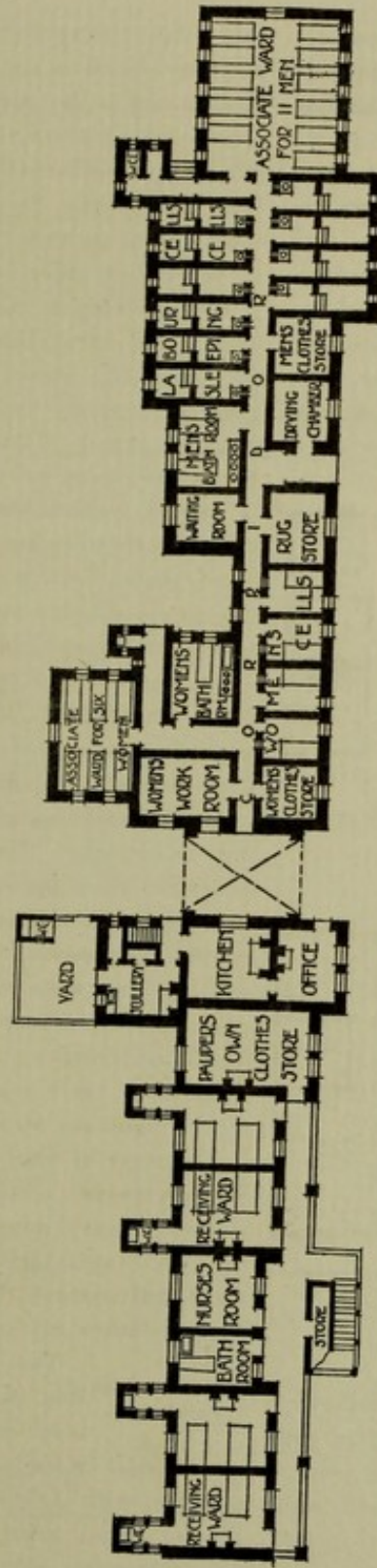
Ground Plan.

PLAN OF ENTRANCE BUILDINGS.

The porter's office in the case of a small workhouse comprises part of the general entrance buildings, and quarters are provided for him inside the main building; but it is more satisfactory to provide the porter's office and house in one building where the cost will allow of the same. In this case accommodation is provided for a married man (*see* Illustration).

SHOREHAM WORKHOUSE, SUSSEX.

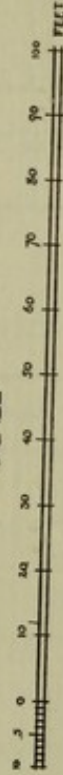
ENTRANCE BUILDINGS.



RECEIVING WARDS

VAGRANT WARDS

SCALE



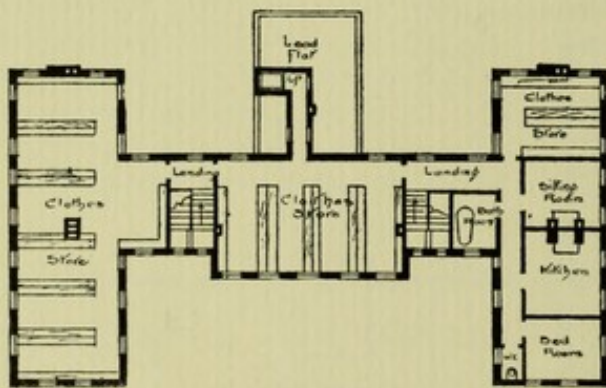
CHARLES E. CLAYTON,
ERNEST BLACK, } Architects.

The Planning of Poor Law Buildings.

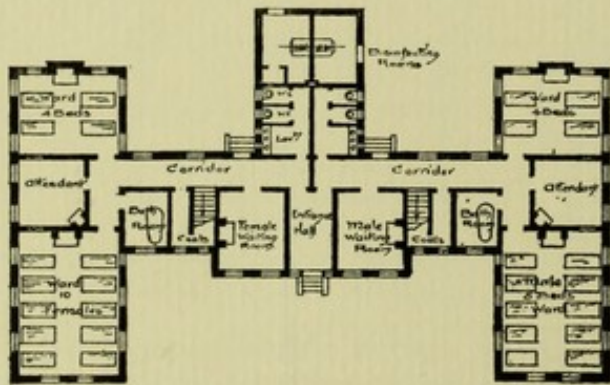
The weighbridge is in most institutes placed outside the porter's office, it being part of his duty to check all goods delivered; but I rather favour the weighbridge being placed outside the general stores, and the store clerk undertaking the checking and weighing of goods, he being more competent to undertake the duty than the porter.

Upon the admission of a pauper into a workhouse he is taken into the searching-room, where he is undressed and searched, and, after bathing, clothed with workhouse dress, and there remains, pending an

*Receiving
Wards.*



Ground Plan.



First Floor Plan.

NEWMAN & NEWMAN,
Architects.

LADYWELL WORKHOUSE RECEIVING BLOCK.

examination by the medical officer. The clothes he wore at the time of his admission are purified and deposited in the paupers' "own clothes store," where they remain until such time as he shall leave the institute. An inmate is not detained in the receiving ward any longer than is absolutely neces-

sary. After being examined by the medical officer and found free from any disease of the body or mind, he is placed in the workhouse, and assigned to the class to which he may belong. Should the medical officer, upon examination, find a pauper suffering from any disease, he is then placed in the sick wards, or in such other ward as shall be directed by the medical officer.

The receiving ward should be at least 10 ft. in height, and have allowance of 40 superficial feet per bed. The number of beds provided will be governed entirely by the situation of the workhouse or union. The search-room should have a floor space of not less than 170 square feet, and be in direct communication with the bath-room. Ample ventilation and light should be provided in these rooms, and provision made for warming during the winter months. A day-room is provided in some receiving blocks, but, inasmuch as a pauper ought not to be detained in this building more than twenty-four hours, this accommodation appears unnecessary.

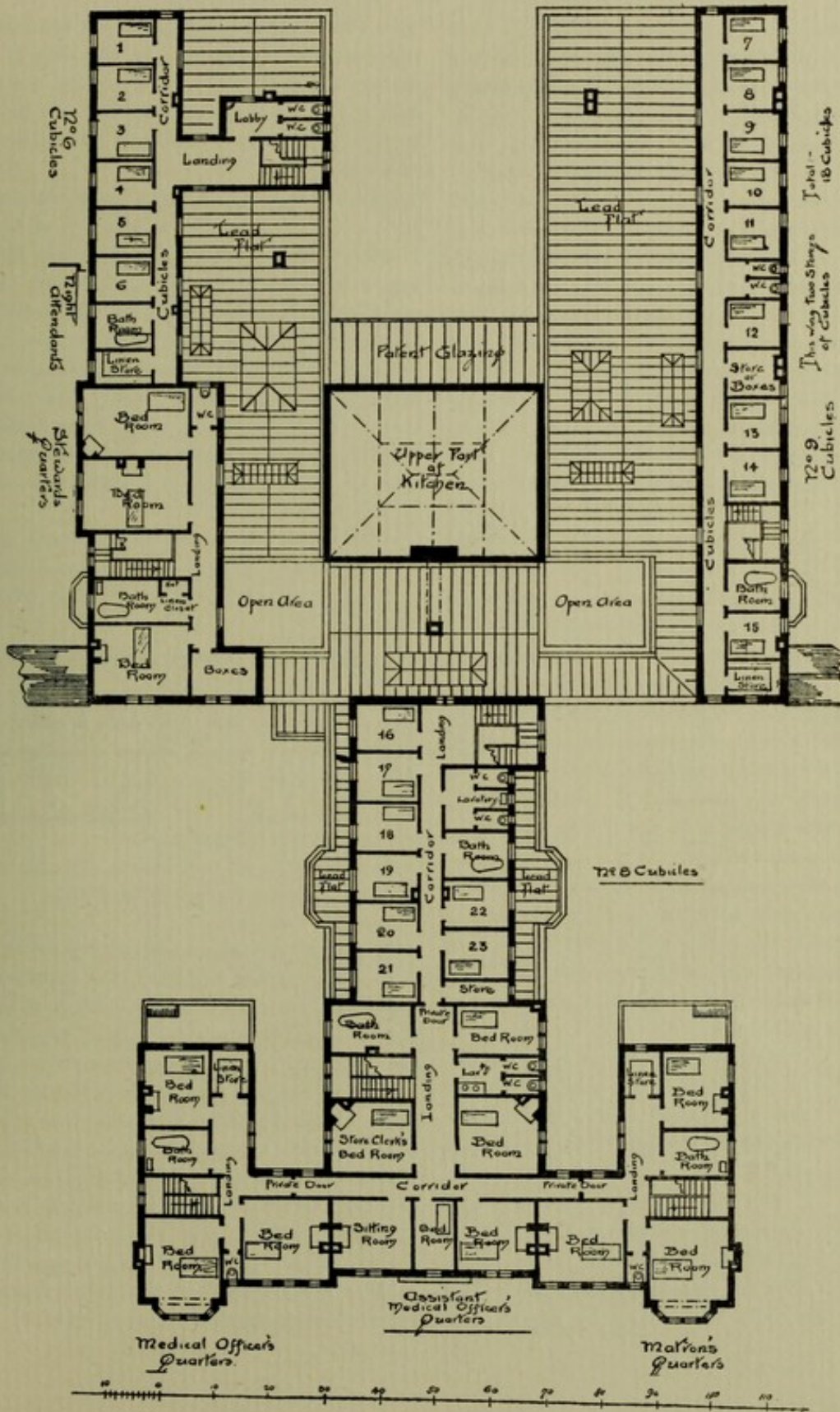
A fumigating or disinfecting chamber is necessary in connection with this building, for purifying the clothing. The clothes store should be adjoining or above the receiving ward, and fitted with strong-rack shelving (*see Sketch*). Means of heating on the low-pressure hot-water system is necessary, with coils of pipes carried around and under the rack shelving, to keep the clothing well aired; for should an inmate's clothing be destroyed, whether by damp or other means, they have to be replaced by the guardians upon him taking his discharge.

The receiving ward in connection with an infirmary is somewhat similar, and provision is made for the attendant's duty-room overlooking the ward (*see Sick Wards*), and it is essential every ward be fitted with suitable bells, to communicate readily with the attendant in case of sudden illness.

The arrangement and accommodation provided in an administrative block is governed by the subsidiary

accommodation, and should be situated in a central position, with deference to the various buildings for the general supervision, great care being taken not to interfere with the circulation of air or ob-

ADMINISTRATIVE BUILDING.



FIRST FLOOR PLAN.

The Planning of Poor Law Buildings.

struction of light of the adjacent buildings. It is essential for this block to be connected with the other buildings on the ground-floor level by means of covered corridors.

When planning an administrative block it is important that an architect should be somewhat conversant with the details of the working and superintendence of Poor Law institutes, and also be acquainted with the duties of a medical officer, master and steward, as he will then have a better conception of the requirements necessary. Provision should only be made for such rooms and offices considered absolutely necessary, otherwise needless expense will be incurred.

The accommodation necessary for the working and supervision of a workhouse differs to some extent from that which is required for an infirmary.

The apartments for the resident medical officer should be on a fairly liberal scale, as the accommodation provided will influence to some extent a candidate for the post. When these apartments are situated within the administrative building it is necessary to provide a private entrance and access from the main building for the officer taking his usual round of the wards; also in case of emergency. In large infirmaries the management of the whole institute is placed under the charge of the medical officer, and a steward is appointed under him to manage the stores and such offices.

Medical officer's apartments are not necessary in a workhouse; only an office need be provided, it invariably being the practice to engage the services of an independent medical practitioner, who visits the institute daily and prescribes for such inmates found to be in ill-health.

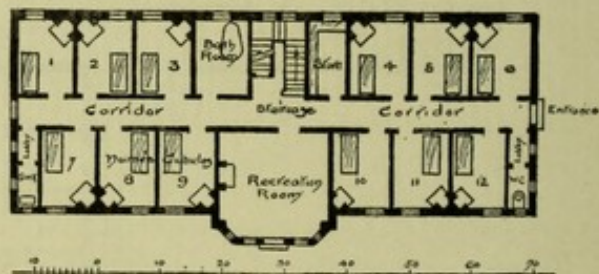
Matron's Apartments. Matron's apartments are provided in large infirmaries similar to those for a medical officer, the matron undertaking the superintendence of the female inmates and staff.

The apartments for the master and matron of a workhouse should be placed in the administrative buildings, for reasons already stated. The duties are generally undertaken by a man and

wife, and the whole management of the institute is superintended by them. In the case of an infirmary the apartments for a steward are situated near the stores and similar offices, and the accommodation necessary is similar to that for the master of a workhouse.

When providing the staff accommodation, provision is necessary for the sub-division of the sexes. The building, if planned with two wings or projecting blocks at the rear of the building, the male and female accommodation can be satisfactorily arranged in the respective wings or blocks. Mess-rooms are necessary for both sexes, and should be placed near the kitchen, with easy means of service from one to the other. Less accommodation is necessary for the male staff in an infirmary than generally arranged for in a workhouse, the male staff being much smaller.

Apartments are necessary in a large infirmary for an assistant medical officer in addition to the medical officer, and be situated as to afford complete privacy.

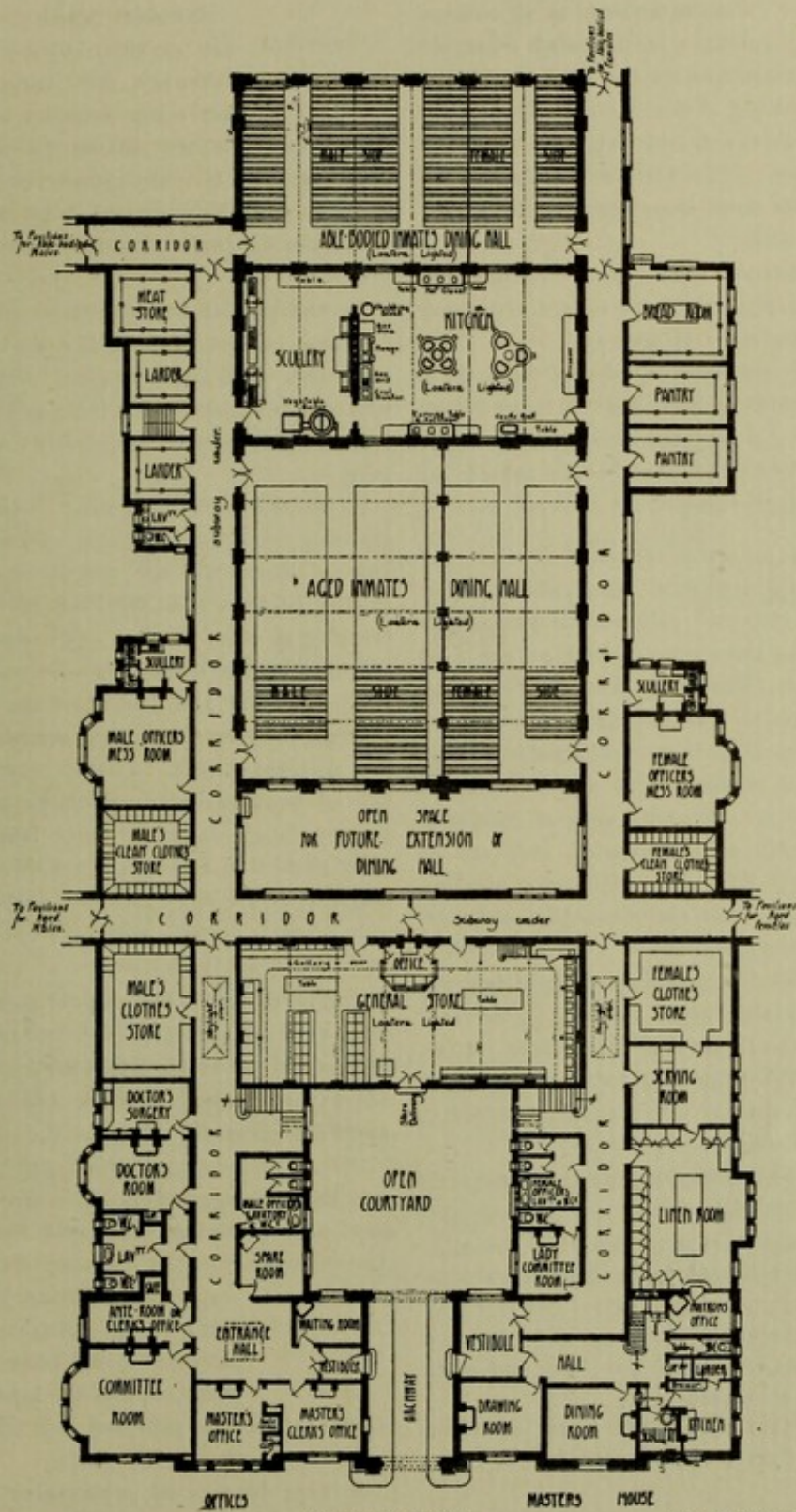


PLAN OF NURSES' HOME.

A general recreation and sitting room for the use of the staff is necessary, the superficial area being in accordance with the number of the staff, the minimum floor space being 15 superficial feet per person. Private sitting-rooms of not less than 120 superficial feet area are requisite for the head nurse, assistant matron, and such other officials.

The sleeping accommodation for the general staff is arranged on the "cubicle plan," the divisions or partitions between the corridors and cubicles being carried up to within 6 in. of the ceiling, to allow of a constant passage of fresh air throughout. These cubicles are arranged in the upper floors of the administrative block or in a detached nurses'

GROVE PARK WORKHOUSE. ADMINISTRATIVE BUILDING.



GROUND PLAN.

THOS. DINWIDDY & SONS,
Architects.

The Planning of Poor Law Buildings.

home. The latter is advantageous, as it obtains more privacy and quietude for the staff when off duty, and the night nurses are not likely to be disturbed by the working of the institute during the day time. The cubicles should be heated by means of hot-water pipes. The amount of floor space usually allowed for these apartments is 100 superficial feet per cubicle.

The head attendants, nurses, and such officials, are provided with separate bed-rooms, having not less than 120 superficial feet area each room. The arrangement and construction of staircases in a nurses' home should be such that in case of an outbreak of fire the inmates may easily escape. Bathing and lavatory accommodation should be provided, in the proportion of one to every nine or ten.

A separate entrance for the delivery of goods is most essential, and the steward's and store clerk's offices should be adjoining the same, to check all goods as they are delivered. The stores should be contiguous to these offices, so that the master or steward has full supervision at all times. The general store being arranged in proportion to the number of inmates, it is used for dry goods, such as crockery, brushes, pails, soap, soda, groceries, etc. It is advisable to fit up this store with rows of rack shelving around the walls and down the centre of the building, having gangways at least 4 ft. wide; also suitable tables for weighing and cutting up raw and dry materials. Small stores are necessary for storing cooked and uncooked meat, eggs, butter, bread, milk, etc. These stores should be fitted with shelving, made of slate or other suitable material, and be well ventilated and lighted.

The needle-room and store are most conveniently placed near the matron's office, for her supervision. The needle-room is generally arranged to have about 250 to 350 superficial feet, it being used for the purpose of making and mending clothing, and for the sewing and general repairs of the linen and such goods in use in the institute.

The matron's office should not have less than 170 superficial feet area, with access from the main corridor.

Suitable waiting-rooms, having not less than 160 superficial feet, are necessary, one being provided near the main entrance, for the use of friends and relations visiting the inmates or staff; also one near the committee-room, for the relief cases to wait their turn of being called before the guardians for their respective cases to be inquired into.

In the past it has generally been the practice for these cases to wait in the corridors, which are invariably cold and draughty, and for applicants who are in poor health it is most essential that suitable accommodation should be provided for them.

A private room is required in large institutions for the use of the chaplain. Some institutes provide a library for the use of the staff, and for storing books which are kept for the use of the inmates at their leisure. This accommodation is considered an extravagance and unnecessary.

A dispensary and drug store are necessary, with easy access from the central corridor which unites the adjacent blocks. These rooms must be well lighted and ventilated, otherwise mistakes in dispensing drugs may occur, with fatal consequences. They should be fitted with suitable dispensary fixtures, such as bottle shelves, tables, closets, and sink properly tapped, and have hot and cold water supply laid on to the same.

Operating-rooms are not necessary, such cases being rare are generally sent to a general infirmary or hospital when an important operation is considered necessary. Splints, bandages and such goods are generally stored in the dispensary.

Offices for out-door relief are not, as a rule, provided in connection with this building, the applicants receiving their allowance either from the union offices or the relieving officer's office.

A general dining hall is not provided in an infirmary building, the patients' meals being served in the wards, and in the centre of the large wards tables are provided for the use of such patients who are not bedridden.

A large dining hall is necessary in every work-

*Committee
and
other Rooms.*

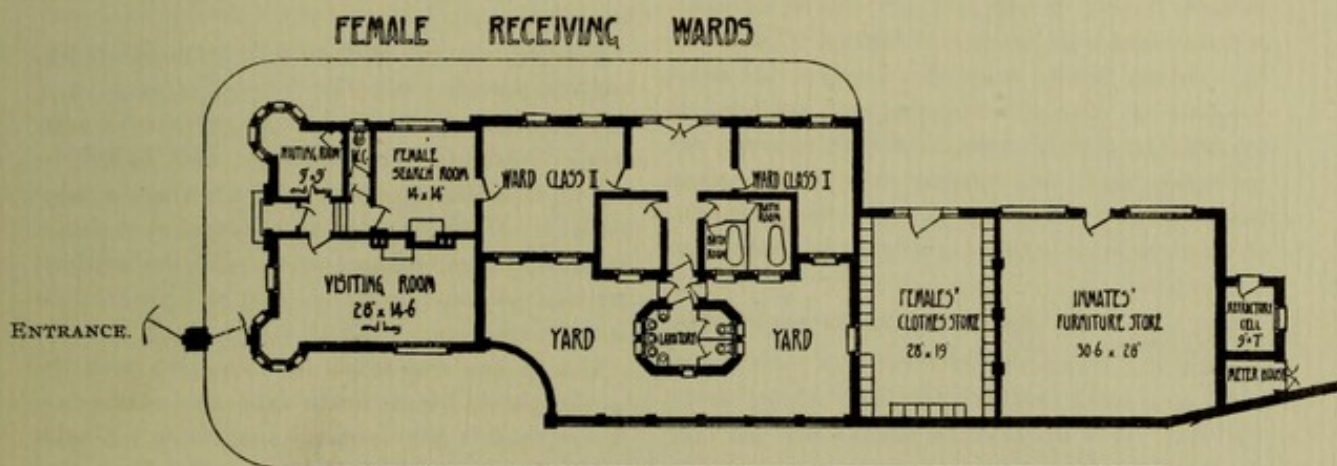
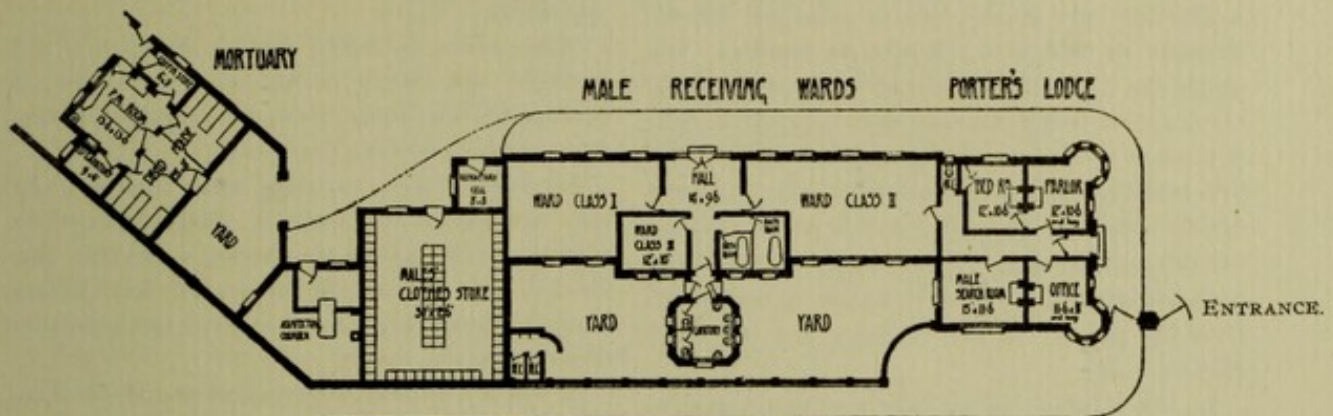
*Stores
and Offices.*

*Needle-room,
etc.*

*Dining Hall,
Kitchen,
etc.*

GROVE PARK WORKHOUSE.

ENTRANCE BUILDINGS.



THOS DINWIDDY & SONS,
Architects.

The Planning of Poor Law Buildings.

house having an area of not less than 6 superficial feet per inmate. This building should be well ventilated, and lighted from the top as well as from any side or end walls. The dining-room should be divided in the centre with a glazed screen, for the separation of the sexes. The hall is fitted with rows of narrow tables and benches, these fittings generally forming part of the furnishing contract.

Unless a chapel is provided in connection with a workhouse, the dining hall is arranged for the chaplain to hold divine service on Sundays; and under the general consolidated order of the Local Government Board the master is required to read prayers to the inmates every morning and evening. The building, when placed centrally, effectually subdivides the sexes. The hall should be provided with a suitable cutting-up table near the servers connected with the kitchen, the food being cut up and served from the end of the hall by the master and other officials.

In the planning of an infirmary administrative building a dining hall is not required, the kitchen in this case being arranged near the central corridor which unites this building and the adjacent blocks, so that the means of serving from the kitchen to the various blocks may be carried out without having to travel in and out of corridors, which is very objectionable. The food is carried to the various blocks from the kitchen in small waggons of non-conducting material arranged to prevent the loss of heat. Suitable recesses are necessary near the kitchen for storing these waggons when not in use, otherwise they will have to stand in the kitchen or sculleries, and thus form obstructions.

The size of the kitchen will be governed by the number of inmates and the amount of cooking and other appliances necessary for the working of the institute. It is advisable to place in the roof over the kitchen a large lantern light, part being made to open, which will then help to carry off the steam

and smell caused by the cooking. Suitable tables are necessary for cutting up meat, etc.

The number and specific kind of cooking appliances I do not propose entering into, it being beyond the scope of this work.

The floor should be formed of granolithic or such other hard material, having channels formed in the same (as recommended for the laundry) and arranged to pass under all sinks and cooking appliances.

When steam is largely used in the kitchen and sculleries the supply is obtained by means of heaters, the waste steam from the laundry building being used for feeding the heaters.

All liquid refuse, including water from pot and pan washing in the scullery, being arranged to discharge into a grease trap having a movable perforated pan, so that the grease and solid matters passing into the trap may be removed and prevented flowing into the drains.

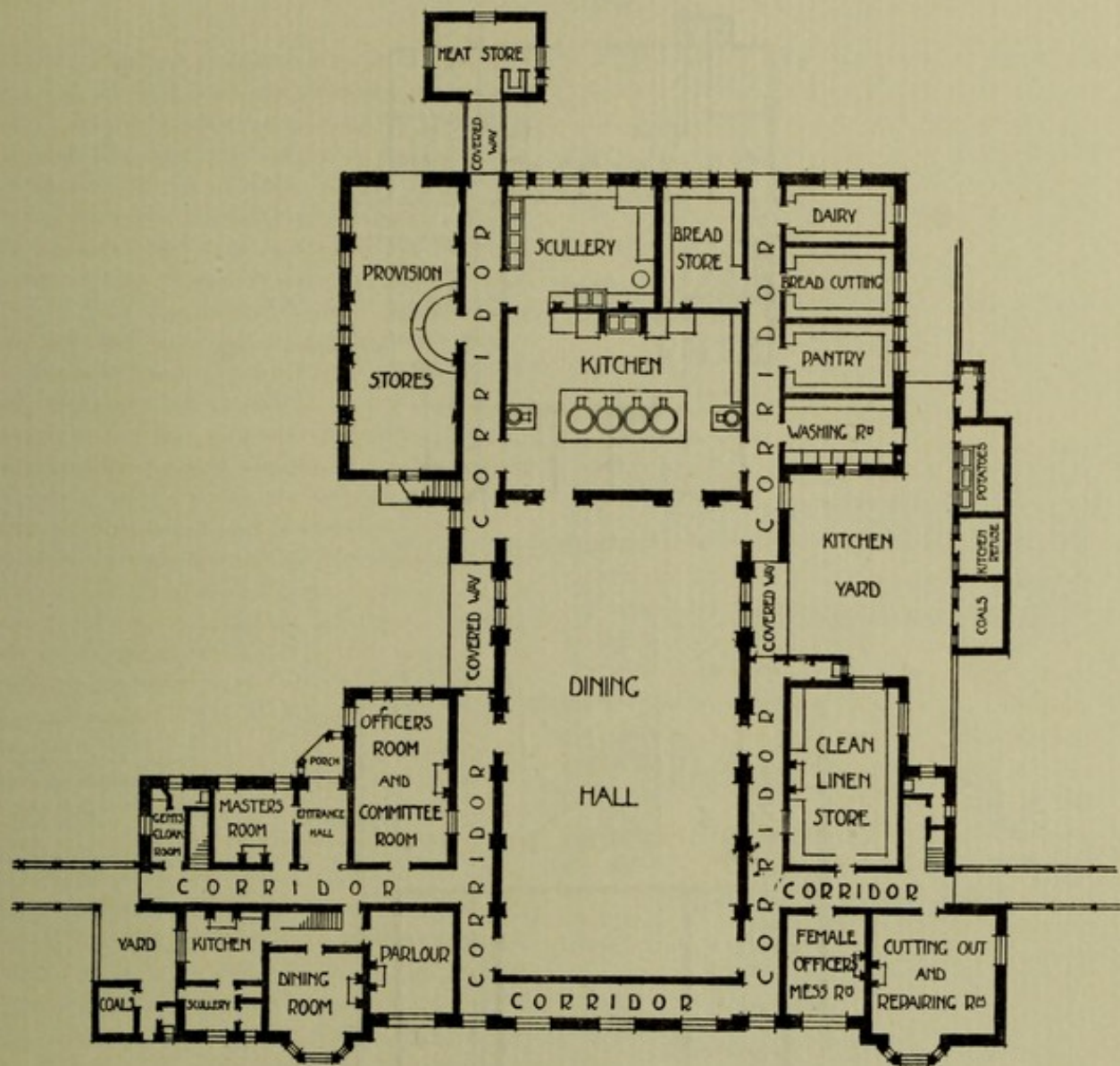
A scullery in proportion to the size of the institute and connected with the kitchen is necessary for the cleaning of crockery; it is also advisable to arrange an entrance from each serving lobby into the scullery, so that the dirty crockery from the various mess-rooms and wards may be delivered direct into the scullery without passing through the kitchen.

Leading off the kitchen and before-mentioned scullery, provide a store for clean plates, mugs, cans, and other utensils in general use. Stores for milk, meat, bread, etc., are necessary, and should be placed with direct access from the kitchen or large scullery. When a knife-room is provided, it should be arranged in communication with the scullery, the knife-cleaning in many cases being carried on in the scullery.

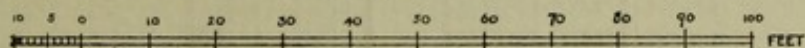
The larders and stores in connection with the kitchen should be fitted with slate or stone shelving. A receptacle is also necessary away from the building for the vegetable and animal refuse, the refuse being sold by the guardians.

SHOREHAM WORKHOUSE, SUSSEX.

ADMINISTRATIVE BUILDING.



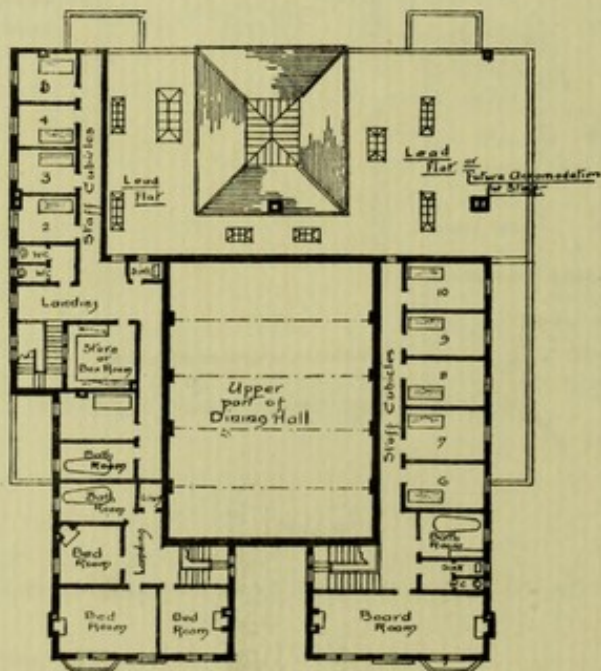
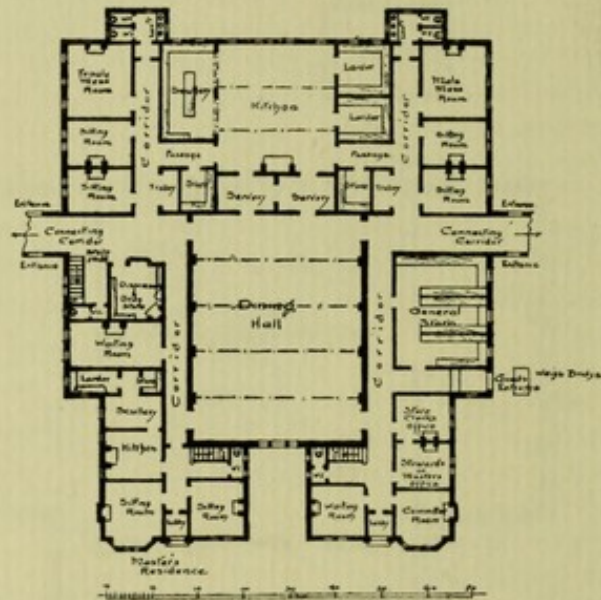
SCALE



CHARLES E. CLAYTON, } Architects.
ERNEST BLACK,

SMALL WORKHOUSE.

ADMINISTRATIVE BUILDING.



FIRST FLOOR PLAN.

CHAPTER IV.

ABLE-BODIED INMATES.

These buildings require accommodation for adult inmates in health, both aged and able-bodied. Sub-division of the classes is essential when provision is made for large numbers, as it facilitates the supervision of the inmates and maintenance of discipline, which is necessary in such institutions. It is not desirable to place the accommodation for these inmates within the administrative building, but be placed in detached blocks, with connecting corridors leading to the administrative building.

The following is the minimum requisite amount of space per bed for adults in health. These amounts are the minimum permissible in well-arranged wards or dormitories. In the case of old buildings being turned into wards or dormitories the space per bed should be increased.

	Wall space, irrespective of that occupied by doors and fire-places.	Floor space.	Cubic space.
	Feet.	Feet.	Feet.
In dormitories ...	4	36	360
In dormitories for women and children	5	50	500
In dormitories occupied by infirm day and night ...	5	50	500

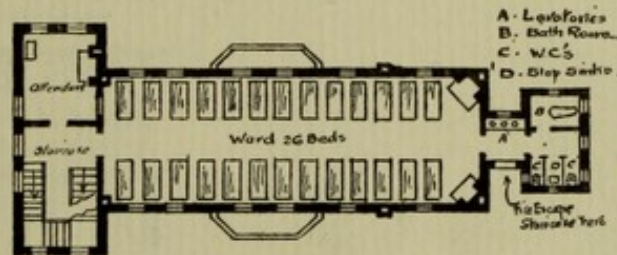
Wards are in some cases arranged 36 ft. wide, with four rows of beds, the two centre rows being divided by means of a wood partition about 4 ft. high. From observation I cannot say I should recommend this form; there are not the facilities for cleaning, and the partitions are found to harbour dirt and vermin. The ordinary wards for two rows of beds are about 18 ft. wide and from 10 ft. to 12 ft. high.

Day-rooms for the inmates in health are provided, and of sufficient area to receive the whole of the inmates of the respective blocks, the minimum amount of floor space allowed for each inmate being

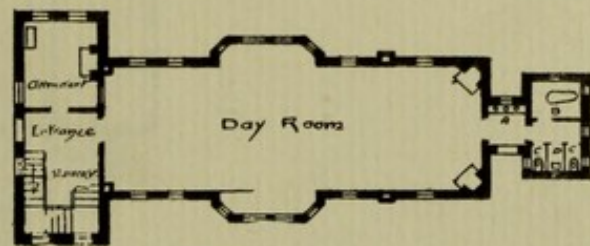
15 superficial feet. The day-rooms for women and nurseries should always be placed on the ground floor; the dormitories for aged inmates are preferable on the ground floor, as it affords greater facility to the aged inmates to get out of doors. These rooms should have direct access to the recreation grounds.

Recreation Wards.

The provision of recreation yards is necessary for both the aged and able-bodied. They should be light, airy and cheerful, and be paved with concrete, asphalt or tar paving, gravel paving being avoided, as it



First and Second Floor.



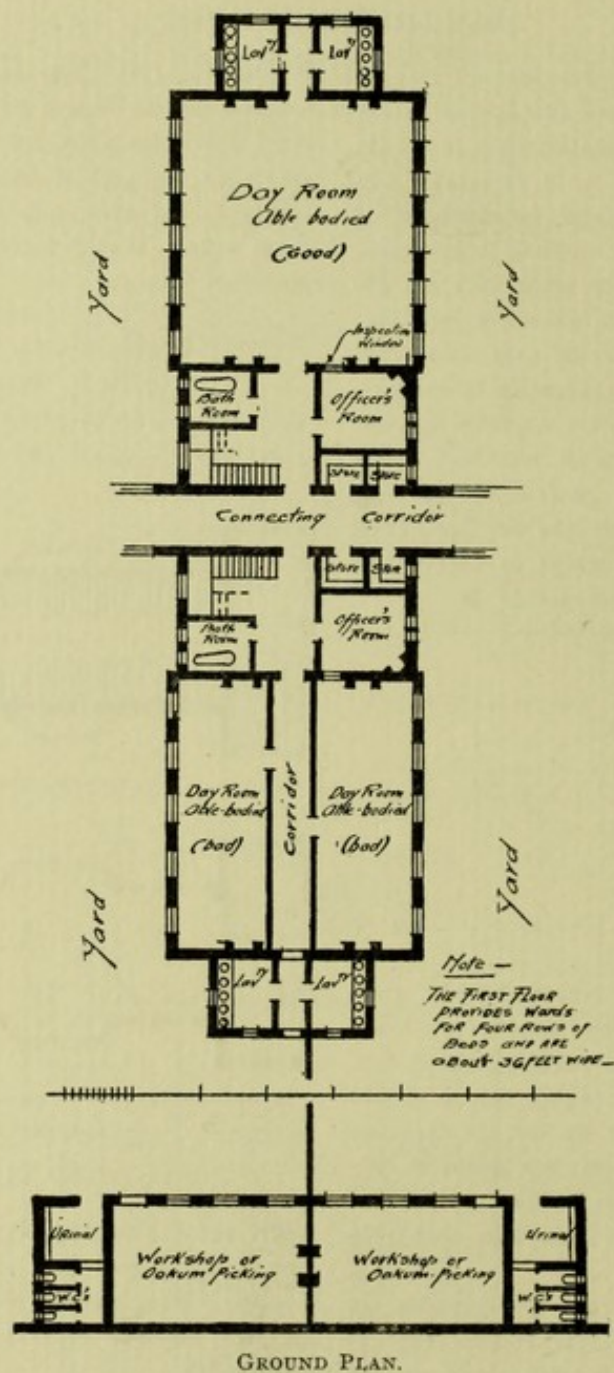
Ground Plan.

ABLE-BODIED INMATES' WARD.

wears out the inmates' shoes, and is the means of dirt being carried into the building during wet weather. Suitable provision should be made for carrying off the water and leaving the centre portion dry.

Each yard should have an open shed for shelter during inclement weather, fitted with suitable seats,

ABLE-BODIED INMATES' WARDS AND WORKSHOPS.



and those of the aged inmates constructed with compartments having arm-rests.

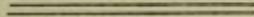
The yards of the aged inmates are divided with dwarf walls and railing, and the able-bodied yards by means of a brick wall 6 ft. or 7 ft. high, for the purpose of classification and discipline. Walls of a greater height interfere more or less with light and air.

Work-rooms are provided in the
Work-rooms. respective yards for the adult inmates in health. They should be light, airy, and as spacious as day-rooms. The work performed by the inmates differs according to the various work-

houses, but it generally consists of wood sawing and chopping, and packing and making into bundles, oakum-picking, stone-breaking, tailoring, boot-making, mat-making, and in some institutions carpentering, plumbing and painting.

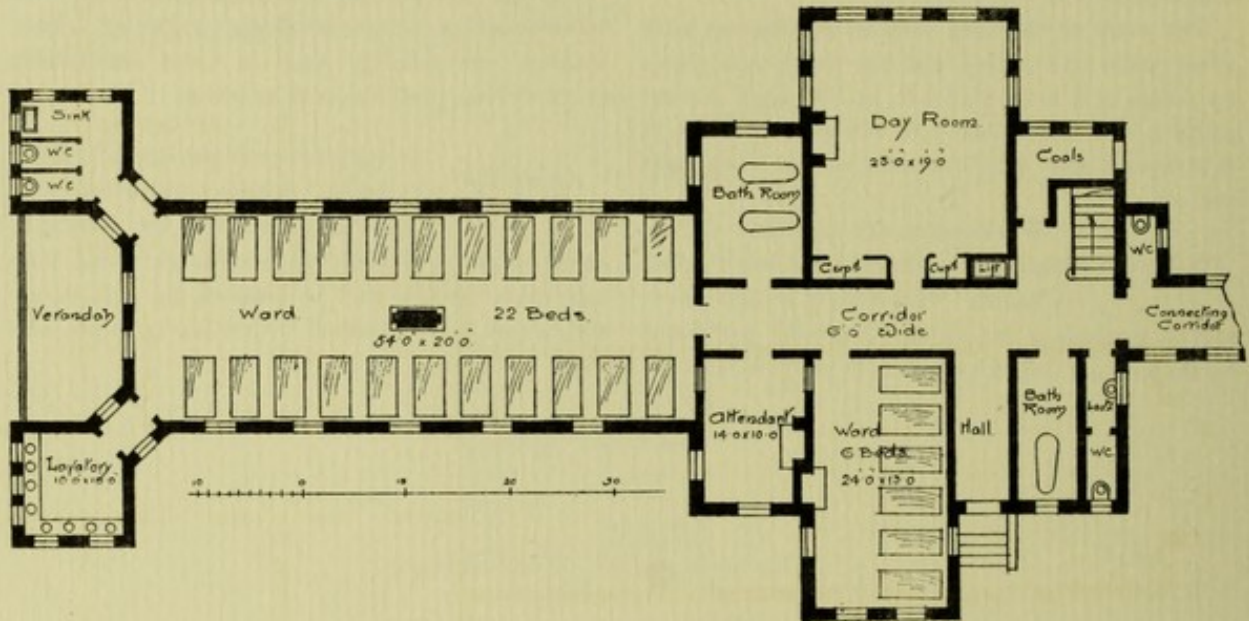
*Refractory
Ward.*

It is necessary to provide a "refractory ward," having a superficial area of not less than 60 ft., and arranged so as to avoid any occupant communicating with any other inmate, and be situated for easy supervision and with means of inspection from the outside.



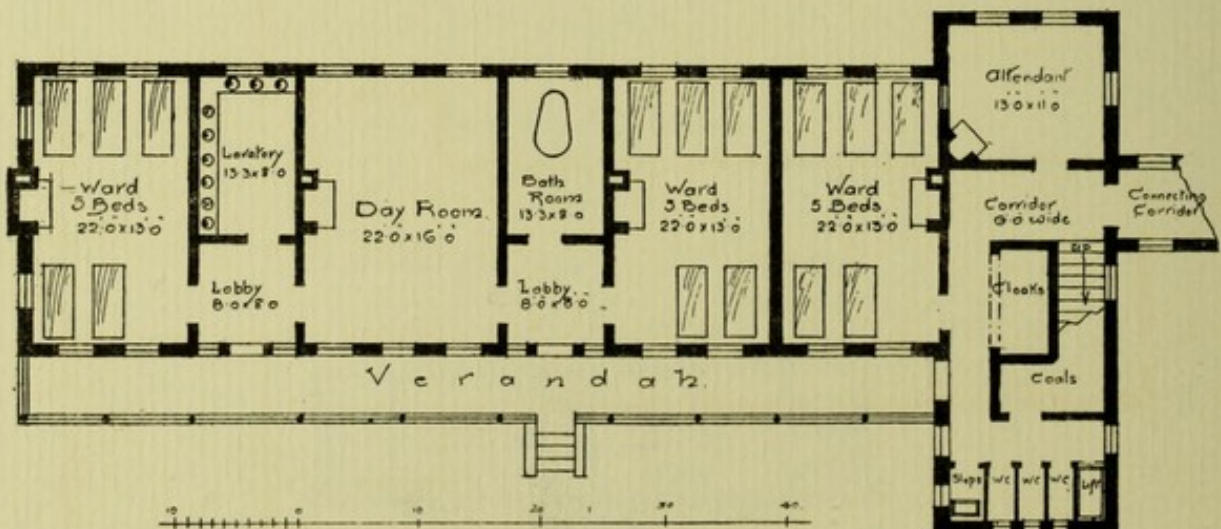
LADYWELL WORKHOUSE.

INFIRM BLOCK, No. 1.



GROUND PLAN.

HEALTHY INFIRM BLOCK, No. 2.

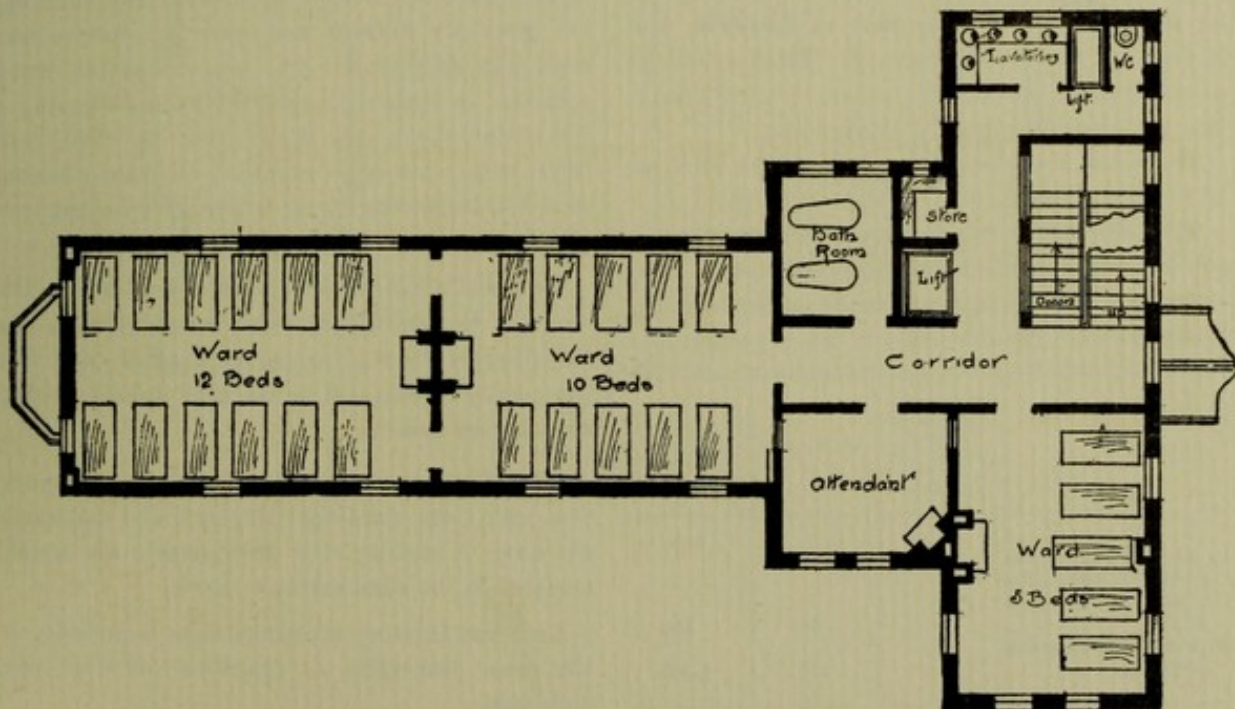
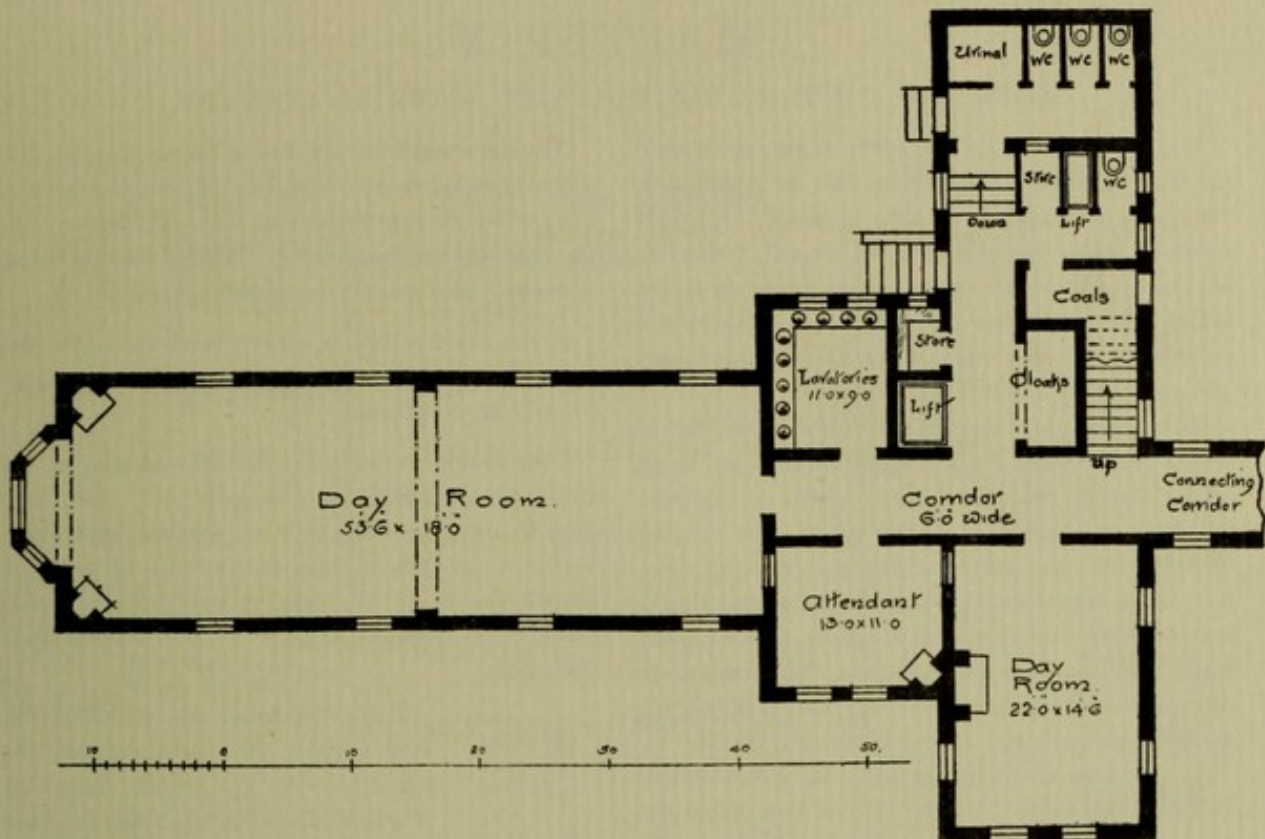


GROUND PLAN.

NEWMAN & NEWMAN,
Architects.

LADYWELL WORKHOUSE.

INFIRM INMATES BLOCK, No. 1.



NEWMAN & NEWMAN,
Architects.

CHAPTER V.

AGED AND INFIRM INMATES, ALSO MARRIED COUPLES.

The apartments for this class of inmate should be made as cheerful and home-like as possible, so that they may end their days in peace, especially those whose circumstances have compelled them to enter the workhouse, but who have previously led moral and respectable lives. Provision should also be made to separate them from those whose habits and speech may cause discomfort.

The system of large wards for day and night should be avoided for the aged and infirm, small wards, having accommodation for five or six beds, will be found much more satisfactory, and be more cheerful for such inmates who are old and helpless. The aged, but not infirm, inmates might be accommodated in dormitories holding ten to sixteen beds. In past years it has been the practice to place as many as thirty to forty, but I think the deserving poor should receive better treatment.

The system of small wards in detached blocks and married couples' blocks erected away from the workhouse proper, was first taken in hand by the St. Olave's Board of Guardians, at Ladywell, and is found to be very satisfactory. There should be complete sub-division of the sexes, as it will facilitate the superintendence of the inmates.

The wards for infirm inmates are from 18 ft. to 20 ft. wide and from 10 ft. to 12 ft. in height.

The following is the minimum amount of space per bed permissible in well-arranged wards. For the amount of cubic space requisite in metropolitan workhouses see circular-letter in the Appendix.

	Wall space, irrespective of that occupied by doors and fire- places.	Floor space.	Cubic space.
	Feet.	Feet.	Feet.
In dormitories occu- pied by infirm in- mates day and night	5	50	500
In rooms for married couples	—	150	1,500

The day-rooms for the use of those inmates who are able to leave their beds should have a minimum amount of 15 superficial feet for each person. In the case of "married couples' blocks" the day-room, when provided, should be placed centrally.

A lift is necessary in every infirm block, for the purpose of carrying up such inmates who are unable to walk up a staircase.

Care should be taken in the construction of the staircases to make the same not only with easy flights but as non-slipping as possible; and there should be a hand-rail fixed on the wall, as upon the balustrade, or in the case of the staircase being constructed between walls then a hand-rail upon both sides.

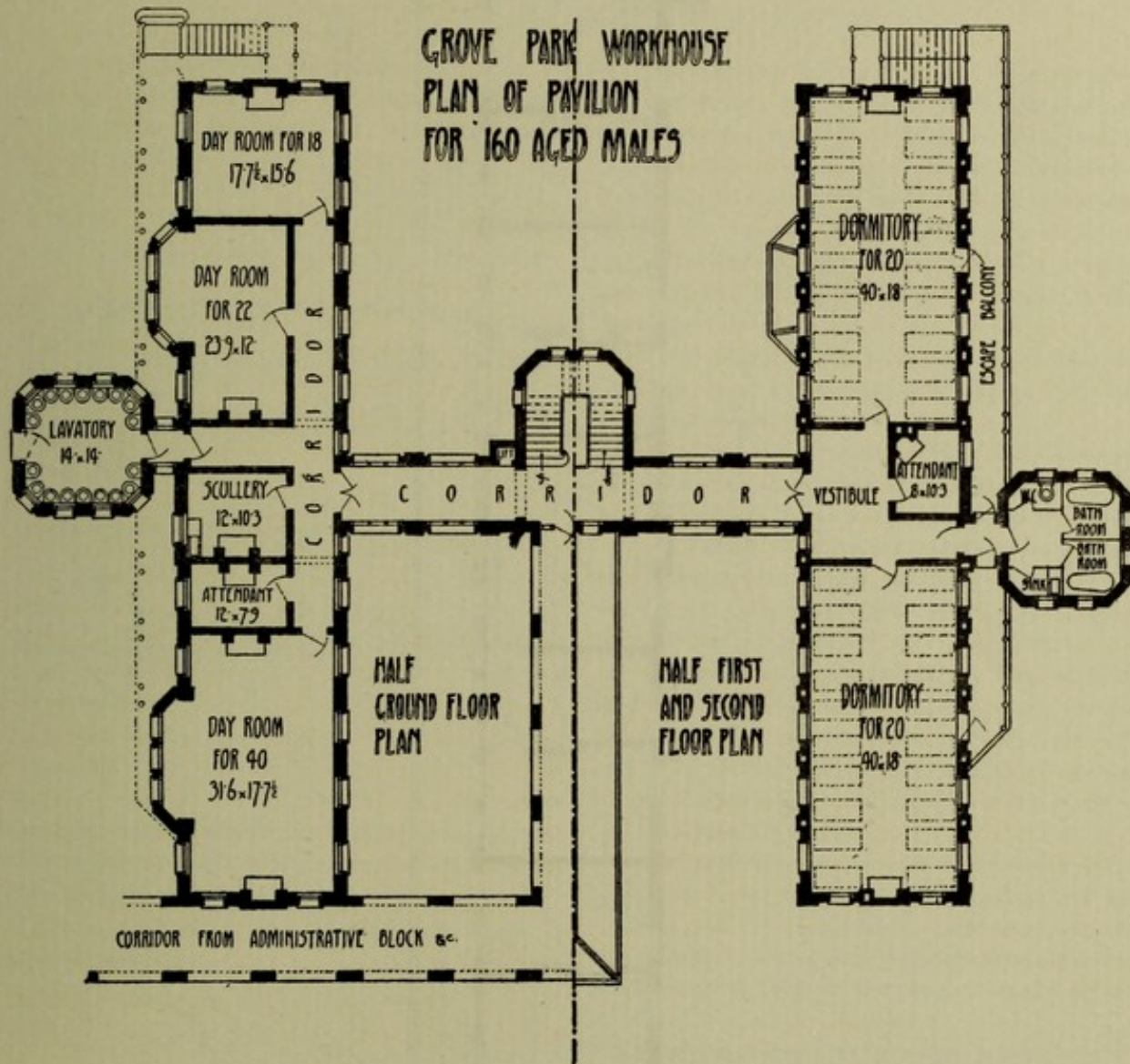
These buildings are provided for married couples who have reached the age of sixty years and have led respectable and moral lives previous to their admission to the workhouse. The buildings are generally isolated and made as private and home-like as possible, the accommodation being arranged in *suite* of rooms, each couple having a bed-sitting room, size about 10 ft. by 15 ft., and fitted with a locker or cupboard for their personal use. The cupboards are more advisable for hygienic purposes.

Verandahs are in some cases provided in the front of the buildings, which form a shelter for the inmates during inclement weather and are thoroughly appreciated by the aged inmates during the summer months.

Attendants'-rooms are not necessary in connection with these buildings; the staff who undertake the duty of looking after the inmates are accommodated in the administrative block.

Bath and lavatory accommodation is provided in the same proportion as described for the other buildings.

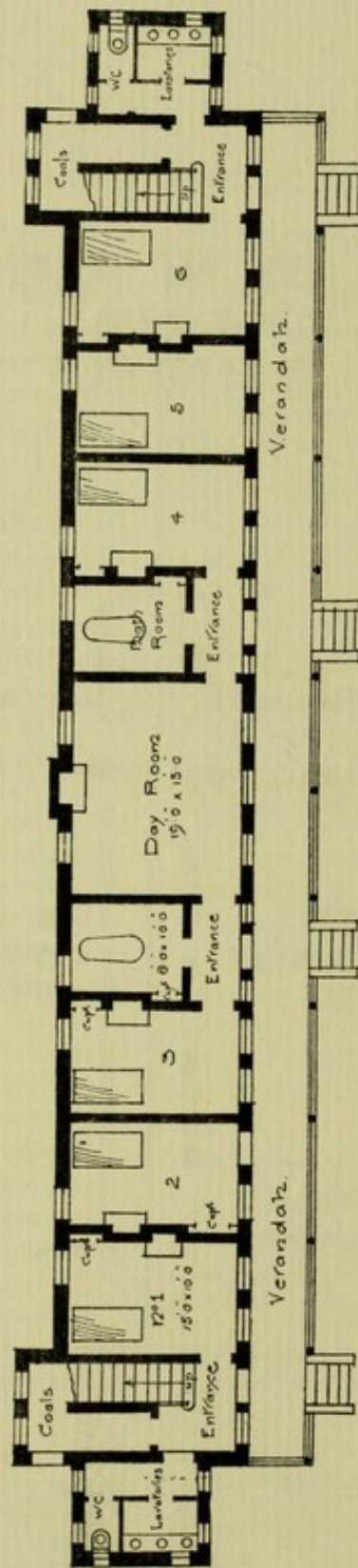
GROVE PARK WORKHOUSE.
PLAN OF PAVILION
FOR 160 AGED MALES



THOS. DINWIDDY & SONS,
Architects.

LADYWELL WORKHOUSE.

MARRIED COUPLES' BLOCK.



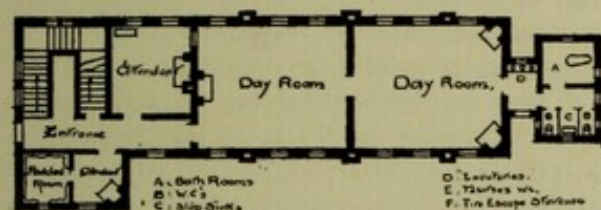
NEWMAN & NEWMAN,
Architects.

CHAPTER VI.

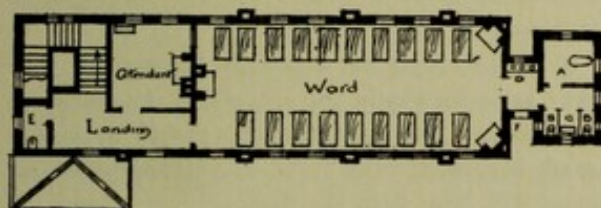
IMBECILE AND SHORT-PERIOD LUNATICS.

Provision is necessary for the accommodation of persons who are alleged to be or who are lunatics, and who may be removed to the workhouse under sec. 20 or 21 of the Lunacy Act, 1890. These persons are referred to as "Short-Period Lunatics."

Dangerous lunatics are not allowed to be retained in a workhouse, but it is necessary that



Ground Plan.



First Floor Plan.

IMBECILE BLOCK.

provision should be made for their keep until such time as the necessary orders are obtained for their removal by the Lunacy Commissioners.

The requisite minimum space per head for this class of inmate is:—

—	Wall space, irrespective of doors and fireplaces.	Floor space.	Height.	Cubic space.
In dormitories ...	Feet. 5	Feet. 50	Feet. 10	Feet. 500
In day-rooms ...	—	20	10	200

The amount of cubic space here prescribed is not applicable to metropolitan workhouses.

The Poor Law Board in 1870 adopted as a

general rule the following scale, subject to such modifications as the peculiar construction of wards sometimes demanded—*viz.*, 850 cubic feet, instead of 500 cubic feet, with dormitories (*see* Local Government Board circular-letter, September 29, 1870). Short-period lunatics may either be placed in a detached building or part of the imbecile block arranged for their reception; the former is the most advisable.

Each ward should be large enough for at least two beds, to enable a person in charge to be in constant attendance.

The amount of floor space should not be less than 100 superficial feet and 1,200 cubic feet for each bed. Wards of this kind are fitted with strong window frames, with vertical swing sashes 6 in. wide extending for nearly the whole height of the window, and glazed with small panes of stout plate glass, and hung upon pivots at top and bottom.

I have seen cases where the ordinary window openings have been formed having sashes of the ordinary sick ward description, and wrought-iron bars fixed on the outside, but should not recommend their use, inmates being able to break these and do themselves harm.

The attendant's-room should command a view of the ward and day-room by a small inspection window; and it is advisable to arrange the access to all wards and dormitories from the attendant's-room, as it will prevent the possible escape of an inmate.

If provision is made for imbeciles in a two-storey building, the upper floor should be constructed of fireproof material, and the staircases built in short flights with hand-rails on both sides, and encased with brick walls to prevent inmates throwing themselves down.

The staircase should be situated adjoining the attendant's-room, so as to be under his entire control.

Padded-rooms.

The padded-rooms are arranged to procure a superficial area of about 63 superficial feet, exclusive of the padding; 9 ft. by 7 ft. or 8 ft. by 8 ft. are suitable dimensions, and they should be at least 10 ft. high and have top light. These rooms should be placed adjoining the attendant's-room, and, if possible, with the entrance from his room. A roomy approach, free from any awkward angles or projections, is a most important desideratum for a padded-room. The doors are about 3 ft. wide, and two are hung

the wall, in order to afford no hold to a destructive occupant.

The padded-room is heated by means of a small radiator fixed in a recess in the wall and having a small iron grating fixed flush with the padding to admit the warm air. Fresh air is admitted by means of a strong grating in the lower 3 in. of the door and by means of a window or skylight at the top of the room.

The fastenings of the doors should be snap-locks, with bolts near the top and bottom of doors commanded by a single handle. It is also desirable to arrange a supplementary drop-bolt in such a manner as to allow of a partial opening of the door for ventilation and inspection.

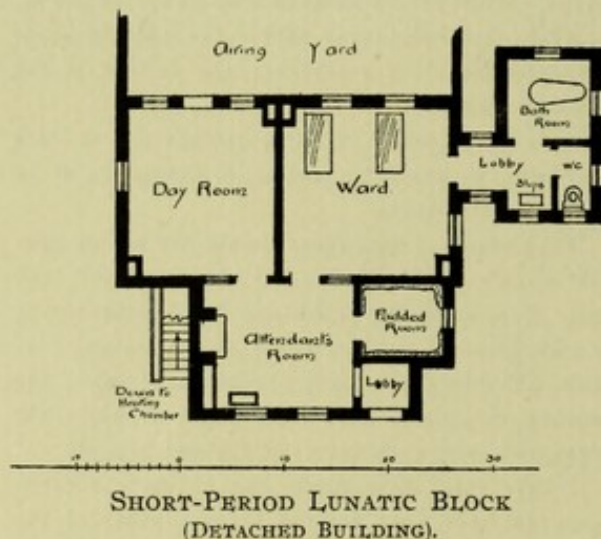
Two inspection slits, the upper one vertical and the lower one horizontal (being for a lantern to light the floor where the gas-jet may fail to illuminate it), are necessary in the door, and should be protected by strong plate glass sunk so as to be beyond reach of a blow from the fist of the occupant.

A gas-jet, fixed on a jointed bracket, to turn away as to be wholly out of sight of the occupant, is necessary; and near the same should be fixed a small borrowed light from the attendant's-room, about 8 ft. 6 in. from the floor.

All fireplaces in the dormitories and wards of the imbecile blocks should be protected by strong fire-guards to cover the whole of the fireplace, and be securely fixed, all sharp or projecting angles being avoided.

As regards the sanitary and bathing accommodation, all such fittings should be fitted with loose keys and under the supervision of the attendant, the w.c.s in all cases being automatic seat-flush action and the cisterns encased.

This class of inmate often being unable to control their habits, although they may be in sound bodily health, necessitates suitable provision being made to cope with such cases.



in the entrance to open outwards to their full extent, so the padding on the internal door will not diminish the clear way, and be so hung as to prevent danger of crushing a hand or foot when the door is being closed. The internal door is constructed with an "inspection hole" and the outer door formed solid.

The padding is formed of cocoa-fibre or other suitable material at least 4 in. in thickness, and covered with india-rubber, the padding extending to at least 7 ft. 6 in. from the padding of the floor, and be capped with a strong wood capping made to slope sharply at an angle of about 30° from

CHAPTER VII.

SICK, ISOLATION AND LYING-IN WARDS.

The accommodation for the sick, whether provided in a workhouse or infirmary, is arranged and governed, with regard to the heating, lighting, ventilation and general classification of the patients, as that of a hospital.

Extra-large wards are sometimes divided into a number of small wards by means of glazed screens fixed across the wards and having sliding doors in the centre for access from one ward to another. This form of sub-division is far from satisfactory, for the following reasons: (1) The patients have to go through the different wards, (2) the supervision is bad, (3) the necessary bathing and lavatory accommodation cannot be placed to serve two wards successfully.

The offensive, itch and syphilitic patients must be provided with separate wards, and have bathing and lavatory accommodation distinct from the other patients.

When a separate institution is erected for the sick, it is advisable to place these cases in a separate building, quite apart from the other sick cases. With regard to infectious cases, these are entirely isolated.

No single infirmary should be arranged for more than 500 to 700 inmates.

By placing a large number of patients in one establishment it necessitates a large nursing staff, and the means of administration is made more complicated.

The arrangement of beds in a ward depends upon the number that can be efficiently nursed, and the wards must be calculated to ensure free circulation and change of air and facilities for nursing.

In large infirmaries the ward blocks or pavilions, when placed on either side of the administrative building, permit of the sub-division of the sexes—the male being on one side and the females on the opposite.

When the whole number of sick in an infirmary

does not exceed eighty to 100, they may all be placed in one block, arranged so that the wards for male patients are on one side and those for the females on the opposite side, the centre part forming the administrative departments (*see Illustration*).

Covered corridors connecting the ward blocks and administrative building are necessary. These corridors should only unite the ground floors, and be so arranged as to interfere as little as possible with the light and air between the pavilions. It is inadvisable to unite parallel wards units, which consist of two or three wards of floors, by corridors on each floor. A staircase, when placed in the connecting corridor to serve two ward pavilions, is a defective feature in the construction, both for the reason of removing patients in case of fire and for administrative purposes.

Each pavilion should have an independent staircase fixed in the entrance, having a lift in the well-hole large enough to allow of a patient being carried up on an ambulance or bed-chair.

If a covered corridor unites the ends of the pavilions with the administrative building, then the same should be ceiled in at a height of not less than 9 ft., windows being placed on each side to ensure thorough cross-ventilation, and have doorways leading into the grounds at certain positions.

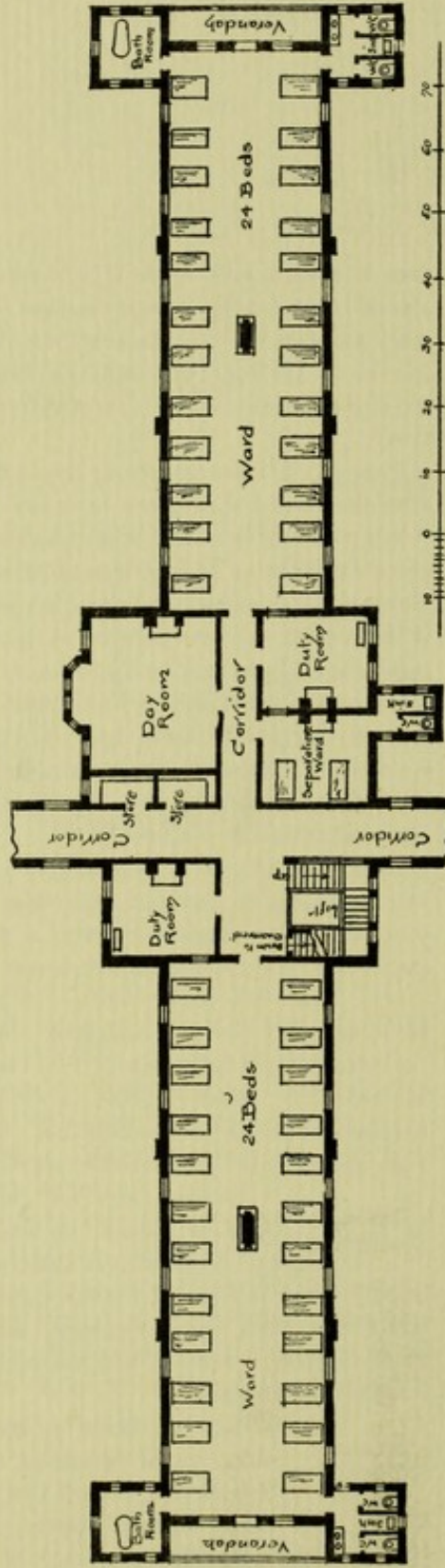
Wards provided for epileptic patients should be placed on the ground floor level, this class of patient being subject to fits. If these wards were placed on an upper floor, and any patient be seized with a fit while going upstairs, the consequences would probably be serious.

*Epileptic
Wards.*

*Amount
of Space per
Patient.*

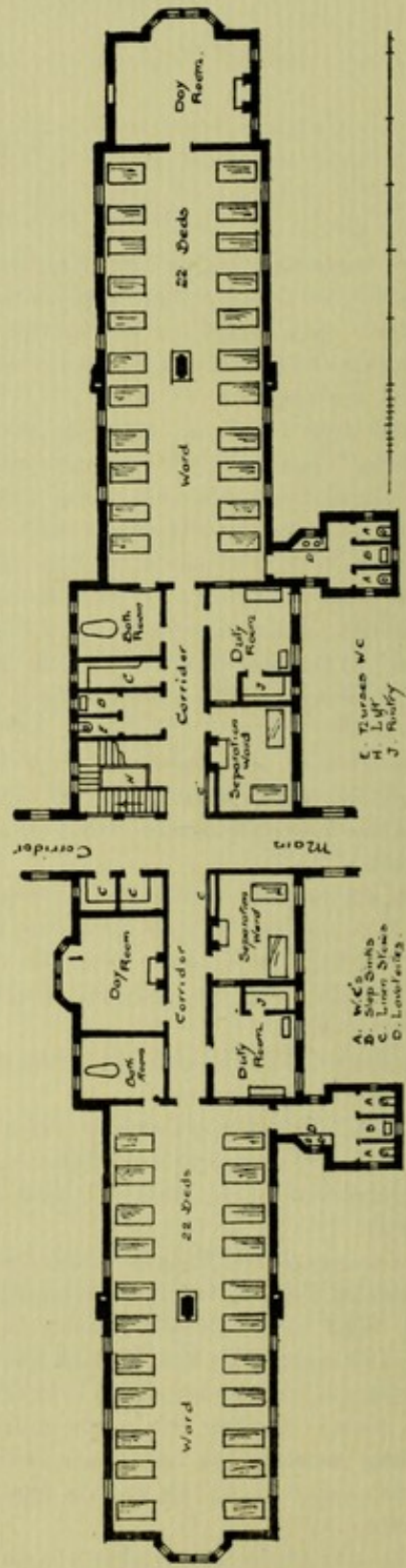
The sick wards, as far as practicable, should permit of the sub-division of the patients of each sex into the following classes: *A*, Ordinary sick—(1) Medical, (2) Surgical; *B*, Dirty and

INFIRMARY BUILDING, No. 1.



GROUND PLAN.

PLAN OF SICK WARDS, No. 2.



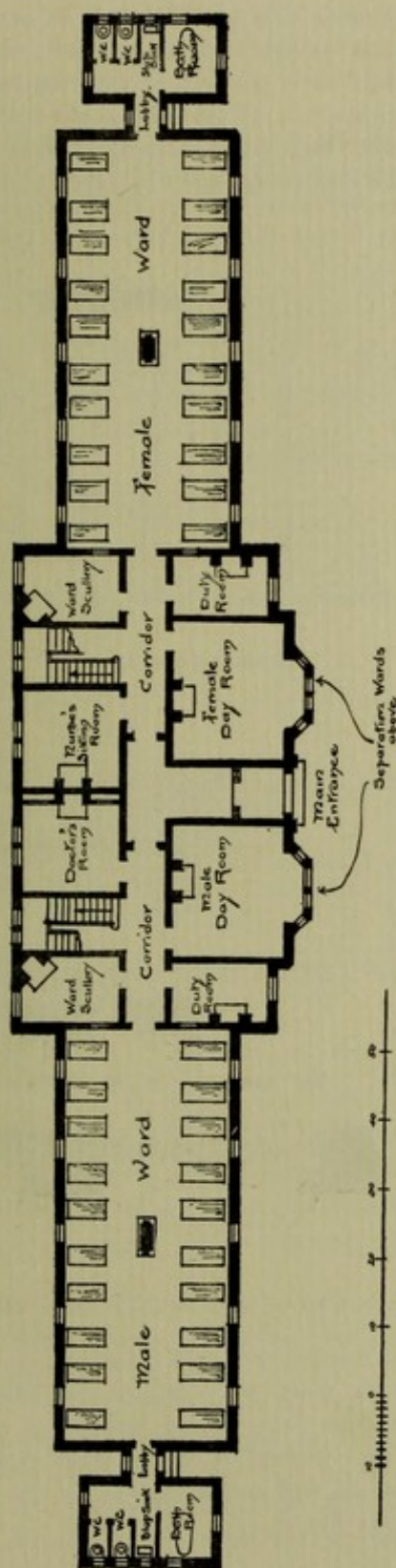
- A. W.C.
- B. Sleep Sinks
- C. Linen Sinks
- D. Lavatories

- E. Nurses W.C.
- F. Light
- G. Railing

PLAN OF INFIRMARY

TO ACCOMMODATE ABOUT 84 IN TWO STOREYS.

" " " " 124 " THREE "



Sick, Isolation, and Lying-in Wards.

41

offensive cases; *C*, Itch cases; *D*, Venereal cases; *E*, Infectious cases (*vide* Isolation Wards); *F*, Lying-in women (*vide* Maternity Wards).

	Wall space, irrespective of that occupied by doors and fire-places.	Floor space.	Cubic space.
	Feet.	Feet.	Feet.
Wards for ordinary sick ...	6	60	600
Itch and venereal ...	6	60	600
Offensive cases ...	8	80	960

Sick wards to hold one row of beds only should not be arranged, but in case of already existing rooms being appropriated to the sick they require a width of at least 12 ft., the gangway and fireplace being arranged on the side opposite the beds.

Sick wards with fireplaces in the side or end walls must be at least 20 ft. in width, and where the fireplace or grate is placed in the centre 24 ft. wide is necessary.

The wards are from 10 ft. to 12 ft. in height, but in extra-long wards this height should be increased, the length as well as the width influencing the circulation of air.

Every ward should be provided with a small separation ward, fitted with independent w.c. and slop sink in a building projecting from the main block.

The projecting buildings, which are fitted with the usual sanitary appliances for the use of the patients, should be planned with a disconnecting lobby, having windows on both sides for cross-ventilation, and arranged with at least two w.c.s, slop sink and bath.

In respect to the position in which these buildings should be placed there is a great difference of opinion; some authorities contend they should be placed with an entrance from a central position of the ward, but I consider this is not advisable, as it encroaches upon the floor space and affects the light and ventilation of the ward.

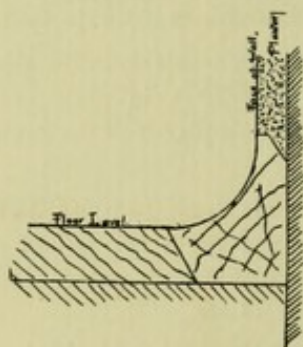
If the disconnected building is arranged at the corridor end of the ward there is a saving in the supply of hot and cold water being near the main

services (which are generally placed under the floor of the main corridor); but this has the same disadvantages as the last mentioned.

The most satisfactory position is at the end of the ward, the bath and lavatories being placed at one side and the w.c.s and slop sink at the opposite, the space between the two projecting wings being constructed into a verandah or balcony, for the use of those inmates in the summer time who are unable to walk downstairs to the airing grounds.

Means of ventilation, apart from the usual means of doors, windows and fireplaces, must be provided, and so arranged that each ward may be brought into constant communication with the outer air.

Adequate inlet and outlet openings must be provided, the inlet ventilation being of such de-



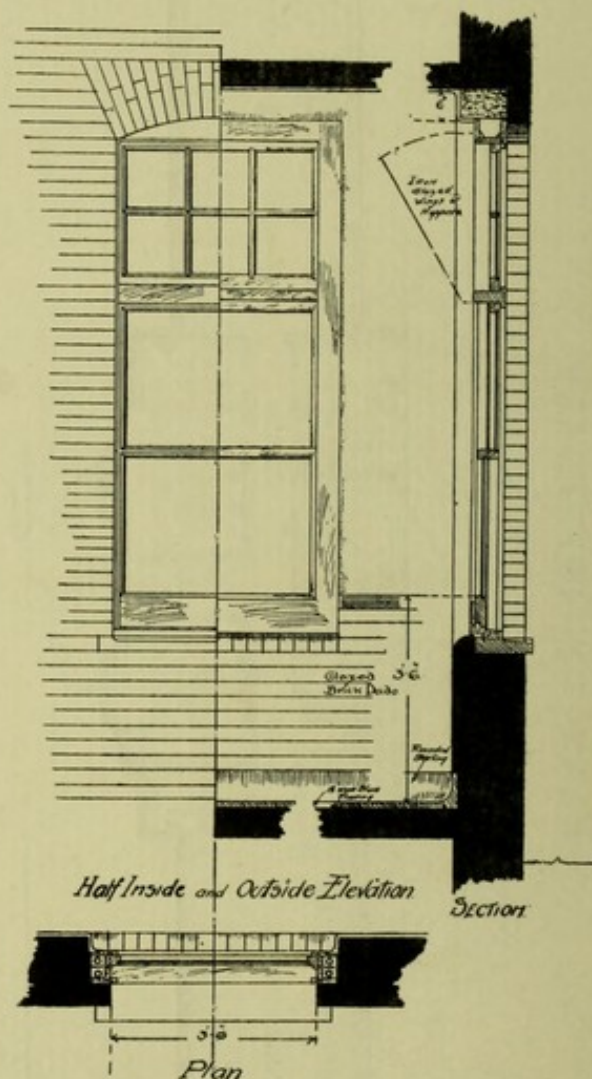
sign as to be under the control of the nurse for opening and shutting and to regulate and maintain an even temperature in the wards during the day and night, and the fresh air being admitted at the floor level and warmed by passing either through hot-water pipes or radiators of a ventilating pattern.

The disconnecting lobby of the projecting buildings should also be heated and maintained at the same temperature as the ward.

The external windows should be fitted with double-hung sashes, with a casement light hung in the upper part to open inwards, fitted with glazed iron fans or wings screwed on each side of the frame or have glazed iron hoppers, to prevent a draught descending upon the patients while lying in bed (*see Illustration*).

Arrange one window between every two beds

at each side of the ward, to procure thorough cross-ventilation, fixed about 3 ft. or 3 ft. 6 in. from the floor to the level of the glass, and extending to within 6 in. of the ceiling, the bottom rail of the lower sash being of such a height as to allow of the sash being raised to admit a current of air at



DETAILS OF SICK WARD WINDOWS.

the meeting rail; and for this purpose high bottom beads must be provided (*see* Illustration), the windows being glazed with thick sheet or plate glass. Ground or opaque glass, except for special reasons, will not be allowed by the Local Government Board.

The necessary amount of window space in a ward is 1 square foot of glass surface to about 70 ft. or 80 ft. of cubic space.

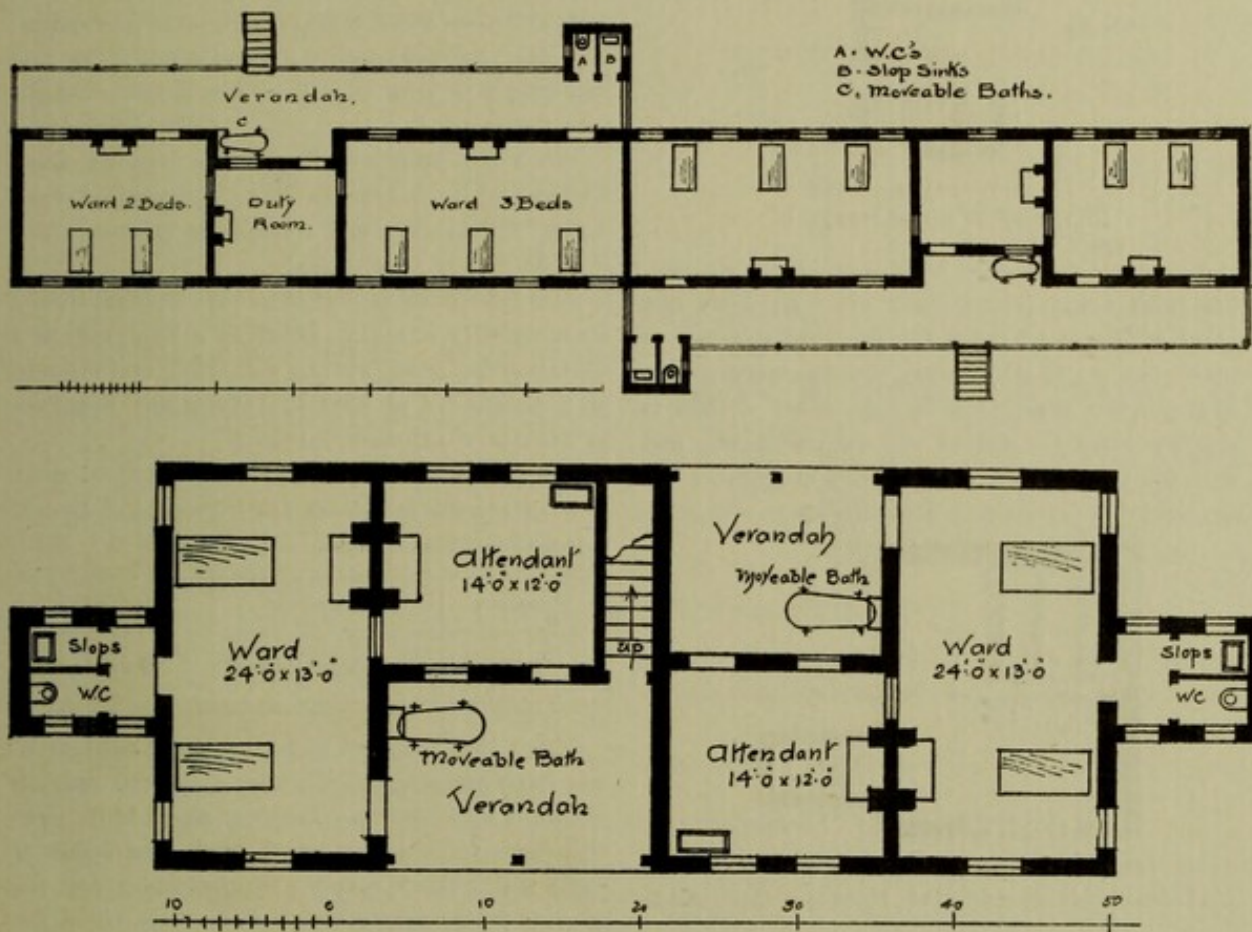
The doors leading from the corridors into the wards should be at least 3 ft. 3 in. wide in the clear, to allow of an ambulance or bed-chair being carried through with ease, and every door should have fixed

be borne in mind, being much more expensive than a painted dado.

Day-rooms for the sick should afford accommodation at the rate of 20 superficial feet of floor space per patient for not less than one-half of those who occupy the day and night wards.

The position of the day-room should be arranged

ISOLATION BUILDING, No. I.



PLAN No. 2, WITH NURSES' BED-ROOMS OVER.

glazed fanlights over. The mouldings in connection with the same should be perfectly plain, in order not to harbour dirt and dust.

The walls of all sick wards should be plastered internally with hard and non-absorbent plaster, and have a painted or glazed brick dado to a height of not less than 4 ft. The latter is the most advisable, being cleaner and more durable; but the cost must

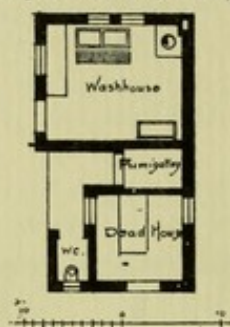
to command a good view of any surrounding scenery and be made cheerful and comfortable, to enable the patient to throw off the depression which generally attends an illness.

The Local Government Board in their regulations say: "If the sick wards are not less than 24 ft. in width the provision of separate day-rooms is not so necessary."

The Planning of Poor Law Buildings.

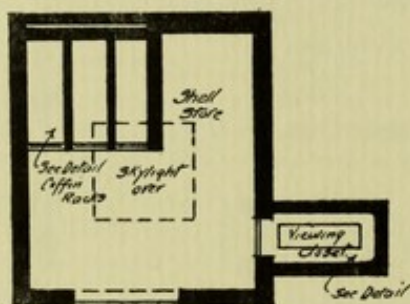
In this case it is advisable to form at the end of the ward a large bay window, verandah or balcony.

In the metropolitan district day-rooms are not usually provided, the wards having a large amount of cubic space prescribed for each inmate (*see Circular-Letter, September 27, 1871*).



PLAN OF WASHHOUSE, &C.

Arrange in connection with each ward a scullery, the same being placed near the duty-room and fitted with a small range for the ward cooking, at which the nurse may warm the necessary drinks and prepare fomentations. A small dresser is also necessary for storing the ward crockery, and be made with a shelf covered with zinc under the dresser table for making poultices upon. In some



PLAN OF MORTUARY IN CONNECTION WITH AN ISOLATION OR INFECTIOUS DISEASE HOSPITAL.

cases I have found the nurses' duty-room made to act as a scullery, but I think the arrangement bad. These duty-rooms should have not less than 110 superficial feet, and in every case an inspection window to overlook the whole of the ward.

Fix outside the duty-room electric bells, lettered "Medical Officer" and "Matron," so at any time the nurse on duty may summon the medical officer or matron. In the latter rooms place indicators to show the respective wards requiring attendance.

The isolation wards should be placed to preclude the possible spread of infection to the other buildings.

Separate wards are necessary for the safe treatment of at least two kinds of infection.

Where the male and female wards adjoin each other the verandahs placed in connection with the same should face two distinct directions (*see Illustration*).

It is advisable to place an isolation building in connection with every large workhouse and infirmary, for the treatment of any suspected or real case that may arise or may be accidentally brought into the institute.

When an infectious hospital is erected there should be provided for its use an independent washhouse, disinfecting and fumigating chamber, and dead-house (*see Illustration*).

It is indispensable that the entire hospital should be completely closed in, either by a brick wall or a close-boarded fence, at least 6 ft. high, and situated at a distance of at least 40 ft. from any boundary of the site or adjoining building.

The following is the minimum amount of space per inmate for infectious cases prescribed by the Local Government Board:—

Wall space.	Floor space.	Cubic space.
12 ft.	144 superficial feet	2,000 cubic feet

If the above amount of floor space is adhered to, the requisite amount of cubic space can only be obtained by adopting a height of about 14 ft.; and this being excessive in small wards, the following table will, I think, give the required cubic area and provide better proportions both for supervision and appearance:—

Floor space per bed.	Height.	Cubic space.
12 ft. x 13 ft.	13 ft.	2,028 cubic feet

Movable baths should be provided, and safes placed outside the wards for emptying the same, with ample supply of hot and cold water (fixed baths are not required). Slop sink and w.-c. accom-

modation is necessary for each ward, the sink and the w.-c.s being divided by means of a dwarf partition about 6 ft. 6 in. high and fixed 6 in. off the floor.

The "duty-room" should not lead direct into the wards, but have inspection windows overlooking the wards.

Nurses' bed-rooms are sometimes provided over the administrative portion (*see* Illustration).

Another point to consider when planning this building is to erect the same about 2 ft. 6 in. above the ground level, with an open air space under the floors, thus procuring thorough ventilation under the buildings.

The wards for maternity cases should be situated to ensure quietude and easy access at all times. Great care is essential in the construction to ensure absolute cleanliness, as lying-in women are susceptible to poisonous emanations.

The following is the minimum amount of space per bed specified by the Local Government Board :—

Wall space, irrespective of that occupied by doors and fireplaces.	Floor space.	Cubic space.
8 ft.	80 ft.	960 ft.

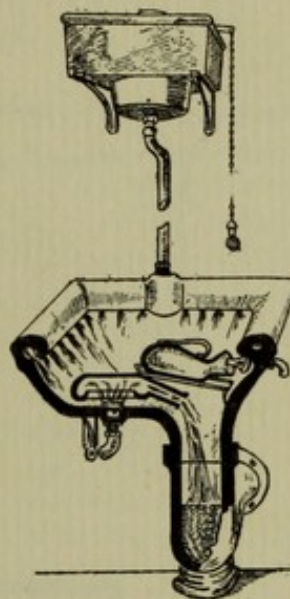
This amount of superficial area is inadequate. I think there should not be less than 100 ft. per bed in a four-bed ward, and in a single-bed ward 150 superficial feet. This space is not only occupied by the lying-in woman and her child, but the nurse washing and dressing the child at the fire. The bed should in all cases be arranged clear of a draught from any door, window or fireplace, and in the case of a single-bed ward not be placed between a door and a window, neither should it be placed in an angle.

A delivery ward is necessary adjoining the lying-in ward, with a door leading direct from the ward, to avoid carrying the patient into any draughty corridors. This ward should be well lighted, and, if possible, a window placed at each side of the bed, and so arranged that a woman in labour has not to pass through the lying-in ward to enter the delivery ward.

A separate scullery for the delivery ward is essential, and should have a sink, with hot and cold water laid on for immersing soiled linen from the beds, and also contain a small range with oven and hot closet at the side.

A separate scullery or ward kitchen is necessary for the lying-in ward, fitted with a sink with hot and cold water.

Sinks and w.-c.s must be conveniently situated, and a slop sink provided for emptying and cleansing bed-pans, also a sink or safe in the floor of the corridors for filling and emptying a portable bath.



DETAIL OF HOSPITAL
BED-PAN AND BOTTLE
SINK.

Fixed baths are not necessary, but there must be the means for filling with hot water a movable infant's bath at all hours and at a moment's notice.

In the case of a workhouse lying-in ward a separate room for the doctor to examine a woman is not necessary; this can be done in the delivery-room, for it is not often more than one woman (except in a large workhouse) is expecting to deliver at any particular time.

Ample linen stores should be provided, and fitted with rack shelving, and heated by means of hot-water pipes to keep the linen constantly aired.

Fireplaces should be avoided in the side walls; a centre down-draught stove is the most desirable, there being a more satisfactory circulation of warm air.

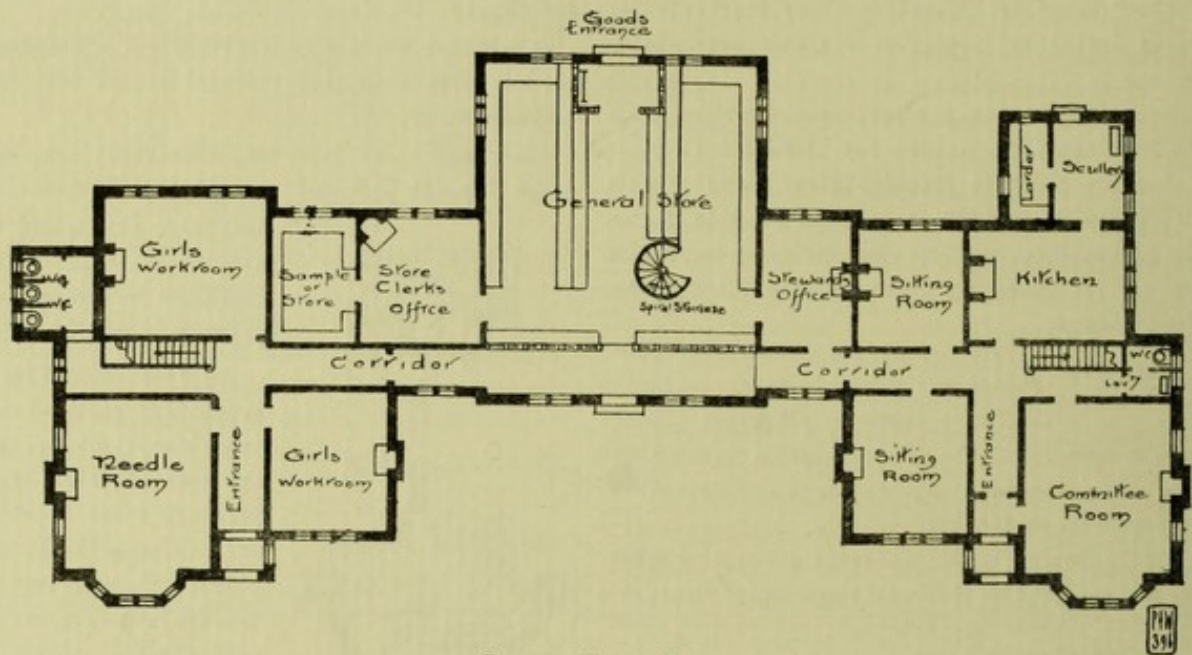
All floors should be of impervious polished oak or teak wood blocks, and the walls finished with parian or other impervious plaster, as the decomposition of dead organic and the recomposition of new organic matter is constantly going on; and it is this fact which makes lying-in wards somewhat dangerous to the inmates.

Fixed baths are not necessary, but there must be the means for filling with hot water a movable

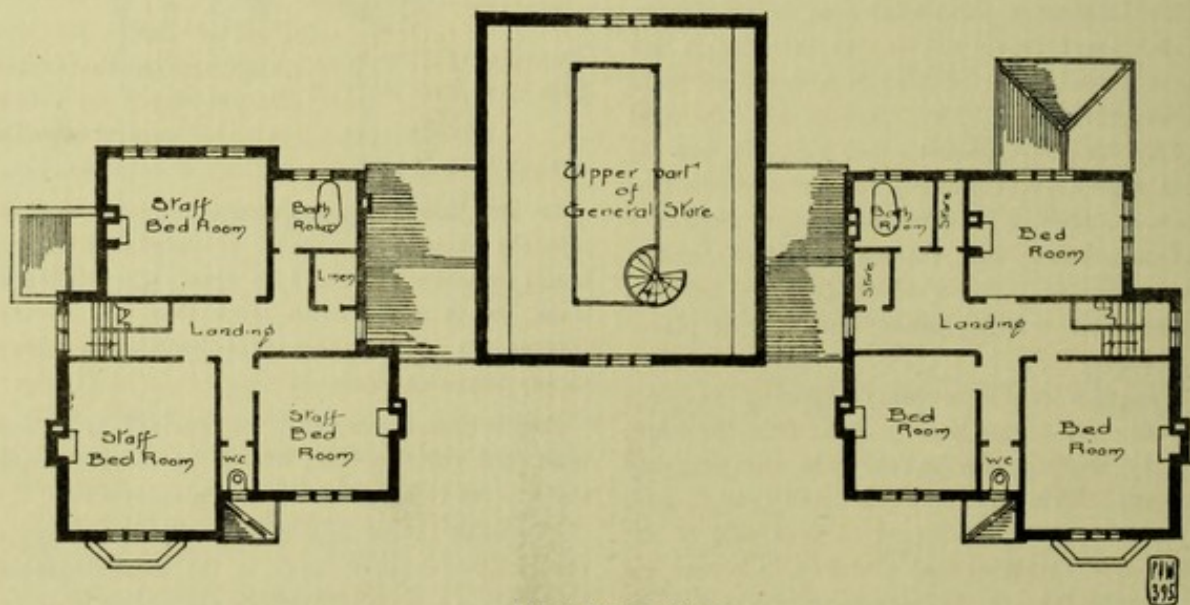
*What the
two men*

WOODSIDE HOMES.

ADMINISTRATIVE BUILDING.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

NEWMAN & NEWMAN, F.R.I.B.A.,
Architects.

CHAPTER VIII.

COTTAGE HOMES FOR CHILDREN.

The great question how to educate and bring up orphans, the children of paupers, to the best advantage for their future welfare is a matter which in the last few years has received no small attention from both the Local Government Board and the boards of guardians throughout the kingdom. The power conferred upon the guardians of the poor to erect "cottage homes," and thus dissociate children from the aged inmates of a workhouse, is a wise plan, as it tends to decrease the pauperism of the country.

When we come to look back at the humanitarian movements of the last half-century we form a higher conception of national charity.

There are three systems of dealing with the children under the care of the guardians: The "Boarding-out" system, "Scattered Homes," and "Cottage Homes."

With the "Boarding-out" system the children are placed with working-class families. This system is found satisfactory where the union has to deal with a small number of children, as they secure at once the advantages of home life; but there is the risk of not finding suitable foster parents who will do justice to the children, for in many cases they are received mainly for the regular maintenance money from the union.

The "Scattered Home" system as nearly approaches home life, and to some extent reduces the official character of the children's surroundings. This scheme is to purchase or rent upon long lease existing houses, and alter and adapt them for the required purpose.

In practice, however, it has been found to have great objections: (1) There is a great expenditure of labour with the homes spreading over a large area. (2) The supervision is as difficult as in the "Boarding-out" system. (3) The educating of the children is a serious question, a separate teacher being required for every home, whereas in the "Cottage Home" building the same teacher would

undertake the teaching in one class of double the number in one particular home. (4) The cost of feeding the children is a great question, there being considerable waste found in some cases. A hundred children can be provided for at a proportionately less cost than twenty.

The most satisfactory system is "Cottage Homes," that of "Cottage Homes." Experimental efforts were made by the Port of Hull Society for Orphan Children at Newland and by other bodies in the kingdom. They were found to have excellent results upon the health and intelligence of the children, and the expenditure on the supervision and upholding of these institutions was also found to be most satisfactory.

The ventilation of the cottages should receive no small attention. I am sorry to say I have found cases where the architect has thought that the ventilation procured from open windows is quite sufficient, and has treated the buildings more like a working-man's dwelling. Admission of fresh air at the floor level is very necessary, to get rid of the heavy exhalations from the body, which are more active in children than in adults.

If tubes to admit fresh air are inserted at, say, 6 ft. above the floor level, the area below that height gets no ventilation except what is obtained by diffusion.

Opthalmia and ringworm have been the great bane of Poor Law schools, and their frequent outbreak in the case of the London institutions has caused great trouble. I am of opinion that so long as the ventilation and habits of the children are not more carefully considered these evils will continue.

The usual allowance of cubic space (300 ft. per child) is based upon the recommendations of the Cubic Space Committee of 1867; but according to the report of the Poor Law Schools Committee, which was appointed by the Local Government Board in 1896 to inquire into the system for the

Ventilation

The Planning of Poor Law Buildings.

maintenance and education of the children, the space allowance was considered insufficient.

The Local Government Board, in the memorandum issued in September, 1891, fixed the following amount of space per bed in children's* (including infants') dormitories:—

Wall space, exclusive of that occupied by doors and fireplaces.	Floor space.	Cubic space.
4 ft. if the dormitory is 15 ft. wide; 3 ft. 9 in. if the dormitory is 18 ft. wide	36 ft.	360 ft.

In calculating the amount of cubic space it is the practice to disregard the height over 10 ft., and a floor space of 36 ft. per child gives a cubic space of 360 ft. Dr. Down says: "The amount of cubic space to be allowed in dormitories should depend largely on the number of children sleeping in the ward, and with a small number of children in a dormitory the space laid down by the Cubic Space Committee may be tried; but if the number were increased I would increase the proportion of cubic space, and go up to 50 ft. of floor space for a very large dormitory." At the same time he objects altogether to large dormitories, on the ground that the greater the number of children who are brought into contact with one another the greater the chance of extending disease.

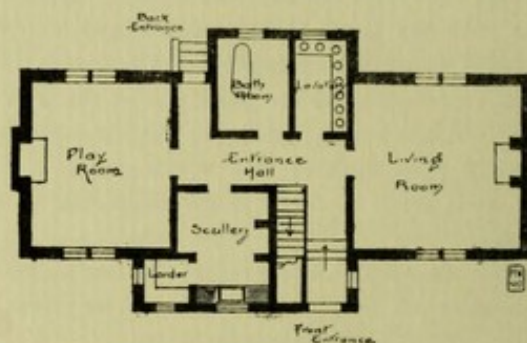
In the past the schools were built more upon the barrack plan; that is to say, the dormitories were in some cases large enough to accommodate as many as 190 beds. Among many of this class of schools may be mentioned Leavesden, Forest Gate, Sutton (which has since been somewhat altered), and Hackney.

The "Cottage Homes" are arranged on each side of streets, which should run the entire length of the site, the cottages being detached. In a central position, commanding a full view and supervision of the whole of the buildings, should be placed an administrative block, with general stores, steward's (or superintendent's) house, and committee-room if thought advisable or necessary. At

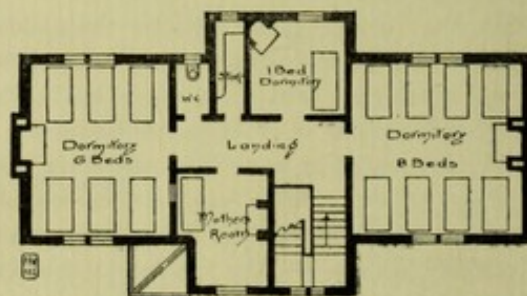
* The space for the children is throughout subject to special consideration when a very small number of children, say ten to twelve, are placed in a separate house.

the rear of the site provide workshops and laundry buildings, and in some cases a gymnasium and swimming bath are also provided.

With a view to the development of family life in the cottage, the children are so divided as to secure in each home children of varying ages. The infants (boys and girls) are distributed throughout the girls' homes, the little boys being removed at



Ground Floor.



First Floor.

PLAN OF COTTAGE.

the age of seven to the boys' homes. The girls are taught to wash, iron and starch in the ordinary way, and, with the exception of the heavier articles, the washing is done by the girls of each cottage in a detached wash-house situated at the rear of the cottages. The industrial training of the boys is carried on in separate workshops, to which the boys from all the cottages are admitted, and every effort made to teach them their trade in a thorough manner.

The boys are taught tailoring, boot-making, carpentering and joinery, and such other trades as the guardians shall decide.

In mentioning the industrial training of the children it is my idea to convey to the mind of an architect who may plan such a building the necessary provision that should be made for the training of the children and workshops for their use.

The grounds should be divided centrally by means of either a low boarded fence or iron railing, for the separation of the sexes.

Having observed the evil results of overcrowding the homes and cottages, it becomes quite clear that to preserve good health among the children they should be divided into small numbers and placed in separate buildings.

The cottages for the reception of the children should be either double or single detached buildings, placed in such positions that the view of one is not obstructed by an adjoining cottage or by its outbuildings. Each cottage should be arranged to accommodate fifteen children and a mother who undertakes their charge and who teaches them (in the case of girls) the duties of housekeeping and does the necessary cooking.

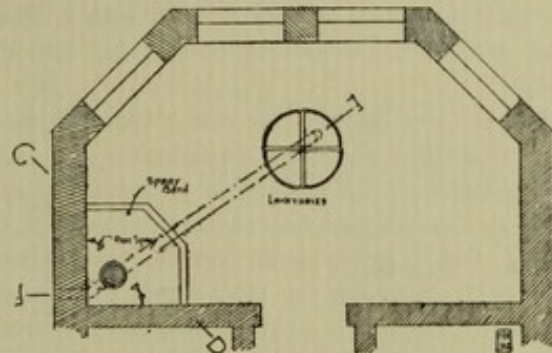
When double cottages are erected there should be arranged on the first floor a door communicating with the two cottages and leading from the dormitories or staircase, this door being used only in such emergency as an outbreak of fire.

Provision is necessary on the ground floor for a play-room, living-room, bath-room, lavatory, scullery and larder. It is also advisable to provide a cupboard, if possible, under the stairs, for storing brushes and the like.

The cooking for the children in the cottages is generally done in the living-room, a cooking range being fixed in the fireplace for that purpose; in the range should be fixed a "boot" or other such boiler, for the supply of hot water to the sinks, bath and lavatories.

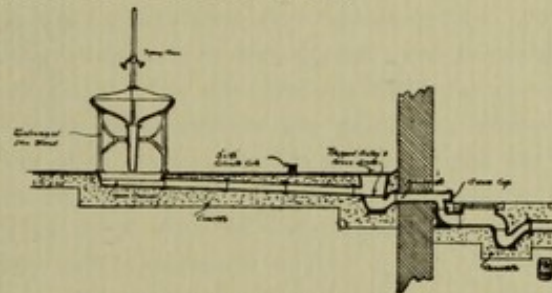
On the first floor arrange the dormitories for the children, one being over the play-room and large enough to accommodate six beds, and one over the living-room for eight beds. There should

also be provided a separation ward for one bed, which is generally used by the eldest child in the cottage or for one who is in feeble health.



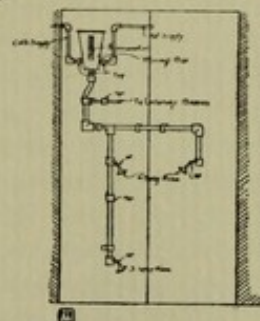
PLAN OF SPRAY BATH AND LAVATORY.

The mother's-room should be placed centrally, for supervision, and have an inspection window to overlook one of the dormitories.



SPRAY LAVATORY AND DRAINAGE.
SECTION ON LINE E F.

It will be seen, when planning the cottages, that the sizes of the living and play rooms are governed by the number of beds to be placed in the dormitories directly above.



SPRAY BATHS.
ELEVATION ON LINE C D.

A store is necessary for the safe keeping of the blankets, sheets, and such goods in use in the

cottage. This store should be on the first floor, and should be well lighted and ventilated.

Arrange on the first floor a w.c., for the use of the children during the night, fitted with a lift-up seat, so that the slops may be emptied into the closet.

The form of lavatory for this class of building is a matter upon which opinion differs much. Some authorities advocate the use of a "jet or spray" lavatory in every case for the use of children. Of course with a jet or spray lavatory no two children are able to use the same water for washing purposes, therefore the risk of ophthalmia or ringworm is to a great extent prevented. With the ordinary range of basins a more home-like appearance is retained, but the habit of children using the same water twice frequently communicates these diseases.

The "jet or spray" lavatories adopted are constructed of deep sloping slate or glass slabs resting upon a porcelain channel, the slab being fixed to prevent splashing and overflowing of water on to the floor, and the channels to act as a waste for carrying off the water. This form of jet lavatory has been superseded by such forms as the "Clarifont range." The illustration here given is of the system of spray lavatories and baths fixed at the White Oak schools and at the Brentwood schools for the Metropolitan Asylums Board. The scheme was carefully thought out by the architects for the respective buildings, and appears to have overcome many of the difficulties encountered in the construction of this form of lavatory. In these cases a range of four white-glaze lavatories, with open wastes, is fixed in the centre of the room upon galvanised-iron stands, the waste from each basin entering into a central waste pipe carried from the underside and discharging over an open channel in the floor, the waste being carried to the outside and connected with a syphon trap. As will be seen, ample means are provided for both cleaning the wastes and intercepting any rags or tow which the children might otherwise pass into the drains.

The spray baths are arranged in the corner of the room, the floor being sunk about 3 in., lined

with asphalte, and finished with a marble curb; and in the centre is fixed a 2-in. teak foot-board, for the children to stand upon. On the walls are fixed two 2-in. spray roses, for washing the upper part of the body, and at the bottom a 3-in. spray rose, for washing the feet.

The hot and cold water supply is connected with a copper mixing-box having a thermometer, and on each service is fixed a valve to regulate the supply.

Windows should be placed in the external walls at each side of every room, to procure thorough cross ventilation, and suitable inlet ventilators provided to admit a constant supply of fresh air, with exhaust ventilators at the ceiling to carry off the gasses and foul air.

Unless the ventilation is considered there will be found that objectionable smell which is commonly known as the "institution smell."

The warming of the dormitories can be carried out by the simple and inexpensive method of fixing in the fireplaces of the rooms directly underneath warm-air ventilating grates, warm air being carried up from the ground floor grates in ducts to discharge radiant heat into the dormitories above.

The same system can be carried out from the cooking range in the living-room. This system of warming has been adopted at the Woodside "Cottage Homes" of the St. Olave's Union, at Shirley.

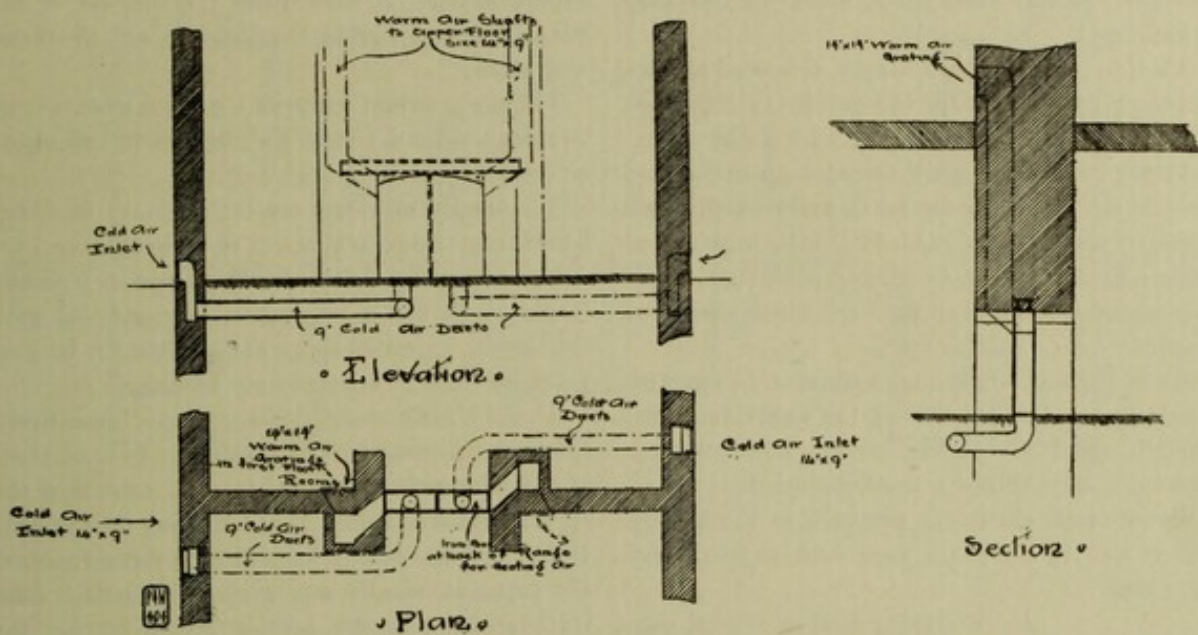
The lighting of the buildings, whether by gas or electric light, must be so arranged that the "mother" has full control of the lighting, gas brackets or pendants being fixed in positions beyond the reach of the children, and all lights being protected by means of wire globes.

The walls internally should be plastered and have a painted or salt-glazed brick dado about 4 ft. high. The latter is the more suitable, although the first outlay is larger.

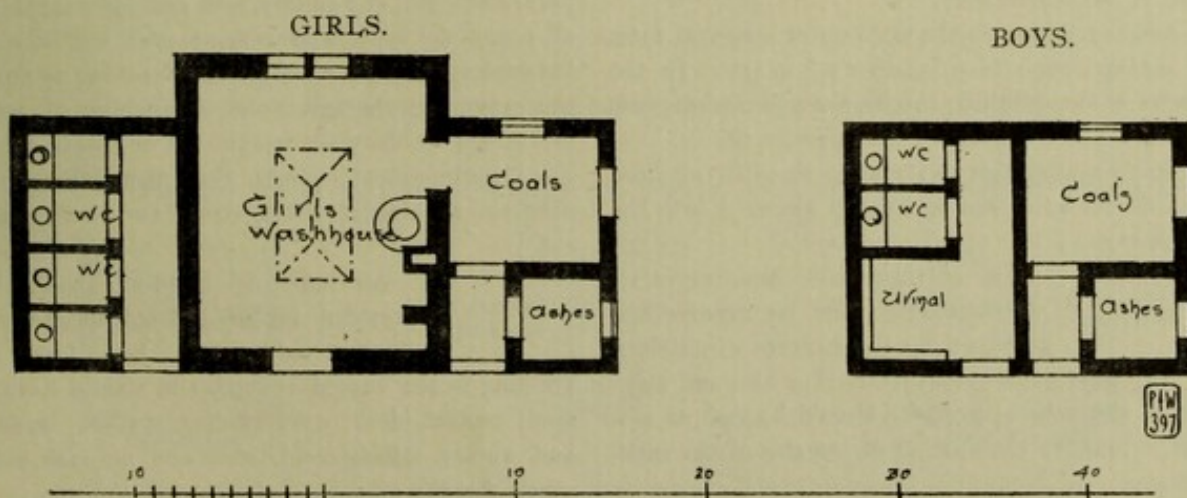
The staircases should be constructed at least 3 ft. 6 in. wide of stone or hard wood.

The height of the living-rooms and dormitories will have to be considered, otherwise the cubic area will be increased and entail extra expense. A height of 10 ft. for the ground floor and 9 ft. to the first floor will be found adequate.

DETAIL OF RANGES, WITH WARM-AIR FLUES TO UPPER ROOMS.



PLANS OF OUT-BUILDINGS.



The Planning of Poor Law Buildings.

The external walls, according to the regulations of the Local Government Board, must be 14 in. thick; but where the first floor walls are covered externally with rough-cast plaster work the board will sanction them being 9 in. thick for this class of building.*

At the rear of the cottages are erected out-buildings, comprising, for the use of the boys, coal store, urinal, w.c.s and receptacle for ashes.

At the rear of the girls' cottages provide a coal store, w.c.s, receptacle for ashes, and a small wash-house, in size not less than 4 ft., with a height of not less than 9 ft. 6 in. to the top of the plate, and open to the under side of the roof, which should be boarded.

Fix in the roof an exhaust ventilator, to carry off the steam and foul air. Fit up the wash-house with a small copper, for boiling clothes, at least three wash-tubs, and tables for ironing clothes.

Water-closets should be provided in the proportion of one to every six boys and one to every three girls.

A "Receiving Home," placed near the entrance, is necessary to keep the newcomers in quarantine for a certain number of days, thus preventing the communication of any infectious illness, however slight, to the rest of the children in the institution.

This provision is made in some cases by erecting an extra double cottage, and using it for the reception of newcomers only.

Another system is the erection of a special form of cottage, with the "mother's" quarters in the centre of the building, the boys' accommodation on one side and the girls' on the opposite side.

When a newcomer is found to be suffering from any illness he or she is directly removed into the infirmary.

The administrative building in its accommodation and requirements is governed by the number of children to be placed in the institution. The size and number of stores to be provided should be such as will suffice to serve the number of inmates of the institution.

Administrative Building.

A great many rooms means much cleaning, and, consequently, additional expense, both in the erection and in the upholding in the future.

The accommodation generally provided is for the superintendent, a board-room for the use of the guardians when visiting the institute, and the necessary stores.

The stores should comprise a general store, one or two small stores for meat and vegetables, and superintendent's and store clerk's offices.

The supply of stores for each cottage is distributed from the general stores every week or so.

It is sometimes found necessary to provide accommodation for one or two nurses in connection with this block, unless sleeping accommodation be provided for them in the infirmary building.

At the Middlewood "Cottage Home," near Rochdale, conveniences for the residence of six or more of the elder girls is provided in connection with the superintendent's house, the idea being for the girls to live with the superintendent for a certain period, the superintendent's wife giving the girls a final training for domestic service before leaving the homes.

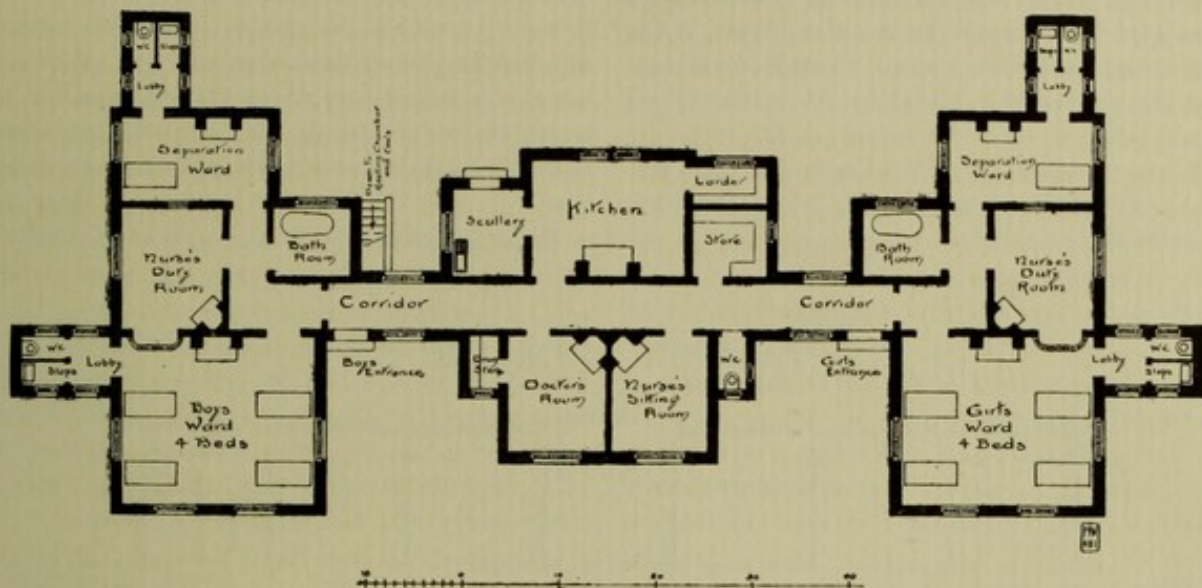
There are arrangements at the Woodside "Cottage Home" for teaching girls needle and other work in a wing adjoining the superintendent's house. The administrative building at these homes comprises in the centre part the stores and offices, etc., the stores being two storeys high, the upper part in the form of a gallery, with rack shelving fixed all round the walls, and with an open well-hole in the centre having a spiral staircase leading up from the ground to the first floor. Branching off each end of the building are wings—the one wing being the superintendent's house, the other comprising needle-room, nurses' sitting-room and bed-rooms, etc.

An infirmary building should be provided in an isolated quarter of the grounds. The best form of building is the bungalow type, and should have a small central block, with kitchen, scullery, larder, and nurses' sitting-room, etc., and at each side wards for the reception of the sick children, the boys being placed on one side and the girls on the

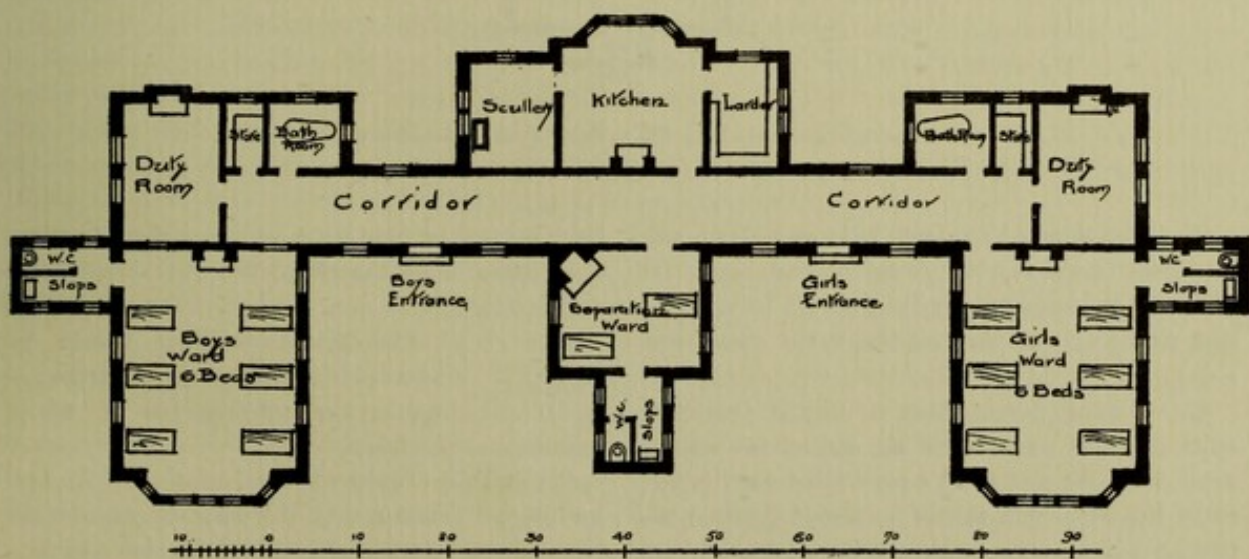
Infirmary Building.

* Sanctioned in the case of Woodside "Cottage Homes," at Shirley.

INFIRMARY BUILDING.



PLAN OF INFIRMARY.



The Planning of Poor Law Buildings.

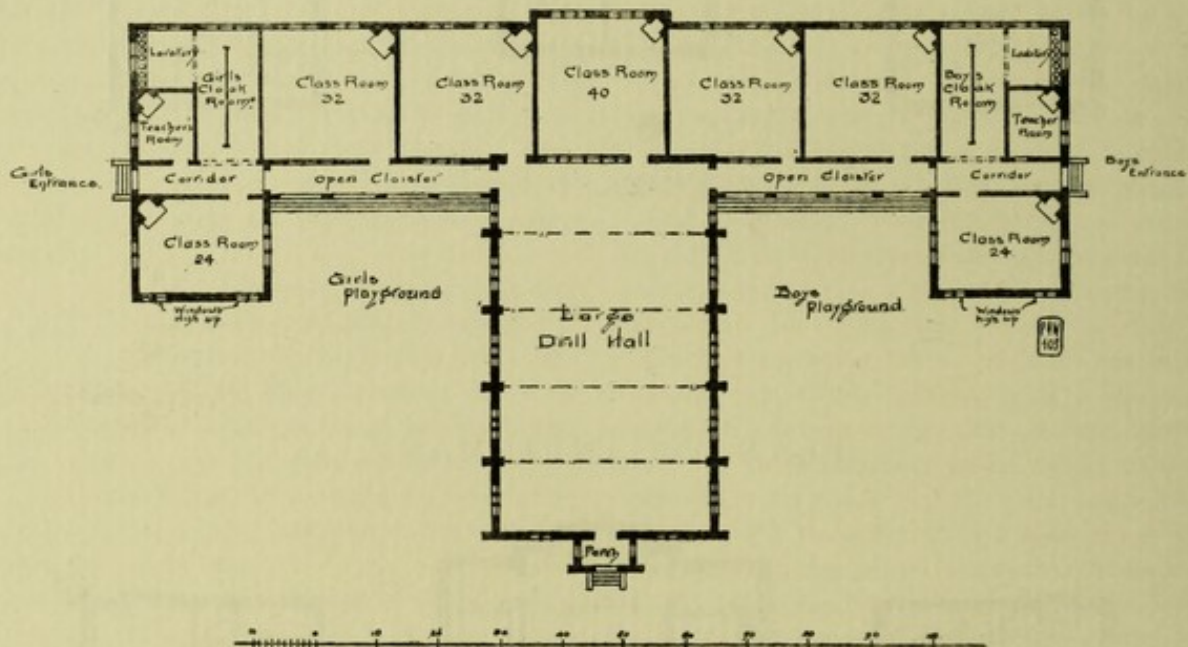
opposite, these ward wings being connected with the central block by means of covered connecting corridors. Each large ward should have a separation ward for the use of an infectious case. When the institution is for a small number of children one separation ward, placed in the central block, would suffice to meet the requirements.

These wards should be fitted with slop sinks and w.c.s fixed in a detached wing with connecting corridor (*vide Sick Wards*).

In some cases accommodation for the nurses is made on the first floor over the central portion of the building, but I consider it great extravagance, sick cases which necessitate removal to the infirmary building being of rare occurrence. When a nurse is constantly employed her quarters can be arranged in connection with the administrative building, so as to avoid extra expense in construction.

The large wards should in no case be planned to

SCHOOL BUILDING.



One bath should be provided for each ward, and be placed in the corridor or in the bath-room. If placed in the corridor the bath should be movable and means for carrying off the waste water provided.

Every ward should have a nurses' duty-room adjoining the ward, with an inspection window overlooking it; and when a separation ward is provided the duty-room should be placed between the two, so that the nurse may have full control of both wards.

hold more than four beds, and they should have a floor space of 60 superficial feet, 6 ft. wall space, and 600 ft. cubic space.

School Building.

The school building should be arranged in as open a manner and as unlike the ordinary run of school buildings as possible.

When I say "unlike the ordinary run of school buildings" I mean that the plan of placing the large centre or drill hall with class-rooms all round it should be avoided. This plan is considered by

School Board authorities to meet the requirements of most cases; but when there is unrestricted land and open space the most should be made of it to make the buildings, and rooms inside, as cheerful, well ventilated and amply lighted as possible, and to obviate the resorting to artificial means of ventilation for the lower part of the drill hall, which is necessary when class-rooms are arranged all round the hall.

The drill hall should be placed centrally, and have a large class-room leading off the end to act as a chancel for divine service on Sundays.

Branching right and left off the drill hall are placed the class-rooms, having in the front an open cloister, which forms a shelter for children during wet weather. Playgrounds may then be arranged on each side of the drill hall, for separating the sexes, in addition to playgrounds at the rear of the building.

Placing the drill hall in a partly detached position enables the windows to be fixed at a lower level and give thorough cross ventilation as well as more light.

This form of school building was first erected in the schools at Swanley for ophthalmic children, under the management of the Metropolitan Asylums Board, and later at the Woodside "Cottage Homes," and has been found to meet with every success.*

Water-closets within the main buildings, except for the use of the teachers, are not desirable and should not be provided. The latrines should be disconnected entirely from the school building and separated for the two sexes.

Each closet must be not less than 2 ft. 3 in. wide in the clear, and not more than 3 ft., the doors of the closets being made to open outwards, fixed to have a clear opening of 3 in. at top and bottom.

The class-rooms should be placed *Class-Rooms.* to seat the children in the best manner for being taught, the shape of the rooms being considered in relation to the kind of desks proposed to be fixed. The number of class-rooms necessary will be governed, of course, by the number of children in the institute.

Class-rooms are calculated at 10 superficial feet per child for the accommodation of not more than sixty children, six rows of dual desks or four rows of long-length desks being fixed. The minimum size of class-rooms is 18 ft. by 15 ft. When desks are placed longitudinally the width should not be less than 16 ft.

Certain class-rooms should be divided by movable glazed screens, to make one large room when required, but excessive use of movable partitions should be avoided. Class-rooms, if ceiled at the level of the wall-plate, must be at least 12 ft. from the floor to the ceiling; when the area exceeds 360 superficial feet, 13 ft.; and if more than 600 superficial feet, then 14 ft. If the class-rooms are ceiled to the rafters and collar beam, they must be at least 11 ft. high from the floor to the wall-plate, and at least 14 ft. to the ceiling across the collar beam.

When they are placed leading off the open cloisters, as shown in the accompanying illustration, cross-ventilation can be secured by placing a dormer window above the roof of the open cloister, and at the same time a special feature may be obtained in the elevation.

The warming of the building should *Warming and Ventilating.* be carried out either with hot water or hot air, easily distributed, so as to maintain a temperature from 50 deg. to 60 deg. Fahr. Apart from the open doors and windows, provision should be made for a copious inlet of fresh air and for the outlet of the foul air. Inlets should provide a minimum of 2½ square inches per child and outlets a minimum of 2 in.

The laundry and workshop buildings should be placed on the boys' *Laundry and Workshops.* portion of the site and in a rearmost position, thus keeping the smoke and such nuisances as far away as possible from the general buildings of the institution. The small articles which require washing and ironing are generally dealt with by the girls in the detached wash-house of each cottage; thus special provision only be made for the washing and ironing of the greater portion of the institution. It is most essential for

* Messrs. Newman & Newman were the architects of these buildings.

The Planning of Poor Law Buildings.

economy that the workshops for the tuition of the boys should be connected with this building.

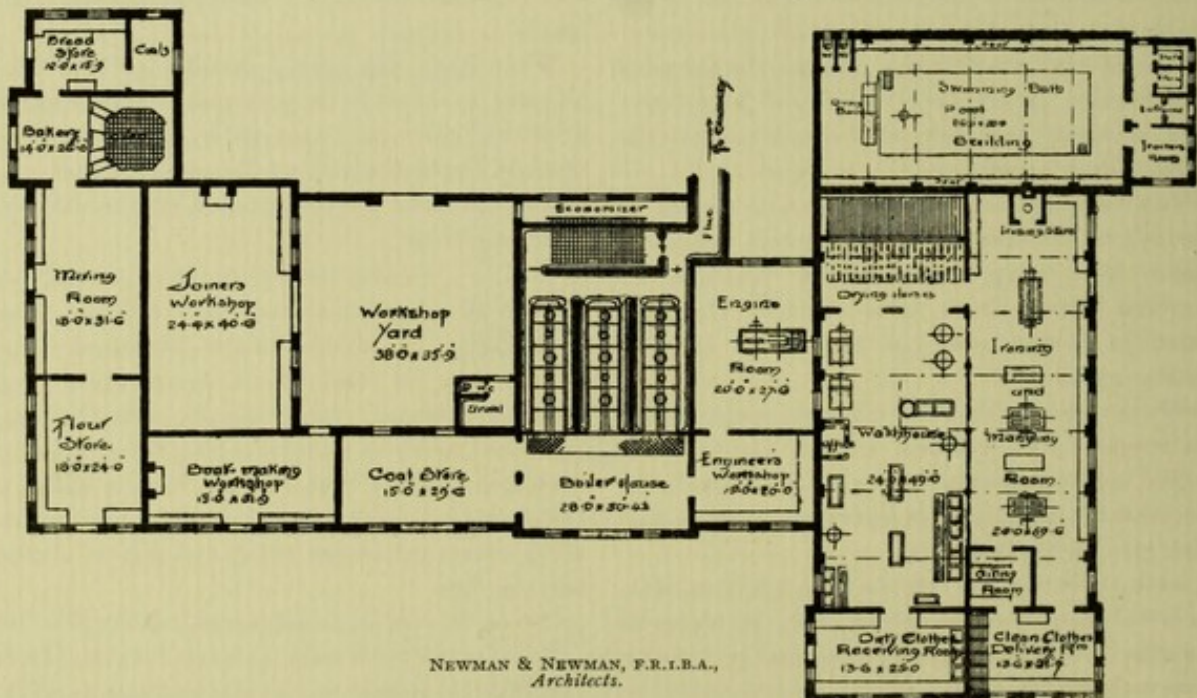
When a swimming bath is provided, it should, if not attached to this building, be in close proximity, thus effecting a great saving in the cost of heating the bath.

The workshops should be well lighted and ventilated, so that the various trades may be taught

under the most favourable and healthy circumstances, and fitted with tables and benches suitable for the respective trades. The amount of space allowed is governed by the particular trade to be taught and by the number of children in a room. A workshop yard, near the joiners' shop, should always be provided for the storage of timber and the like materials.

WOODSIDE HOMES.

LAUNDRY AND WORKSHOP BUILDINGS.



CHAPTER IX.

LAUNDRY, BOILER - HOUSE, &c.

When planning a laundry, the first consideration is the arrangement of the various departments for the receiving of the dirty and the delivery of the clean linen, care being taken to avoid the goods passing through any department twice, otherwise extra labour will be incurred.

It is essential this building should be kept on one floor level and be detached from the other buildings, having a covered corridor connecting the administrative building.

When a bakery is provided in connection with a workhouse, it should be placed in connection with the laundry buildings, and thus avoid the organic gases which arise in baking entering the principal buildings.

It has been the custom in the past to place the bakery in connection with the kitchens in the administrative block, but this I consider detrimental, as considerable dirt and foul gases are continually arising.

A laundry comprises general, foul (and in some cases staff) wash-houses, ironing and mangling rooms, airing-rooms, clean clothes delivery-room, dirty clothes receiving-room, boiler-house, engine-room, engineer's workshops, and coal store.

The buildings should be well lighted, and the wash-house, ironing-room and boiler-house provided with a top light in addition to that procured from windows in the external walls, and ample ventilation provided to carry off the steam, which in the case of the wash-house is charged to some extent with organic impurity.

A disinfecting-room is also necessary, fitted with a suitable disinfecting apparatus. This room is in some cases placed in connection with the entrance buildings, but I consider the best position for it is in conjunction with these buildings, being under the direct control of the engineer. When choosing the disinfecting apparatus the following points should be considered: 1, The expense of the disinfect-

ing; 2, The danger of injury to the clothing; 3, The durability and colour of the clothing after it has passed through the apparatus.

The boiler-house, unless for want of space or by reason of the levels of the site, should not be placed in the basement, as great expense is incurred when a boiler requires moving or a new one fixed. The number, size and make of boilers requisite to generate the amount of steam for the working of the laundry machinery and heating the buildings and cooking apparatus should be placed in the hands of an engineer to decide. It is advisable to make provision for an extra boiler, in case a breakdown occurs to the boiler in general use. A boiler being worked at a pressure varying from 80 lb. to 120 lb. to the square inch is generally found sufficient for the class of engines and machines in general use in these institutes.

I do not propose to enter fully into the subject of the construction and make of engines and machines most applicable, it being beyond the scope of this work. It is most advisable for an architect to place the engineering work in the hands of an experienced laundry engineer, otherwise, were he to experiment with the provision and fitting-up the necessary machinery, and having only a technical knowledge, he might meet with an unpleasant condition of affairs before the building had been working long, and have recalled to his memory the old proverb—"A little knowledge is dangerous."

The wash-house of a workhouse re-
Wash-Houses. quires a large proportion of wash-tubs (which should be earthenware), as the female able-bodied inmates are given this work to carry out. The larger goods are washed and cleansed in washing machines. These machines cleanse linen in about one-third less time and with less soap than with manual labour. The action of the machine corresponds to some degree with the work carried out by a woman in a wash-

provide the gratings in such a manner as they may be easily removed to allow of cleaning the channels (*see* Illustration).

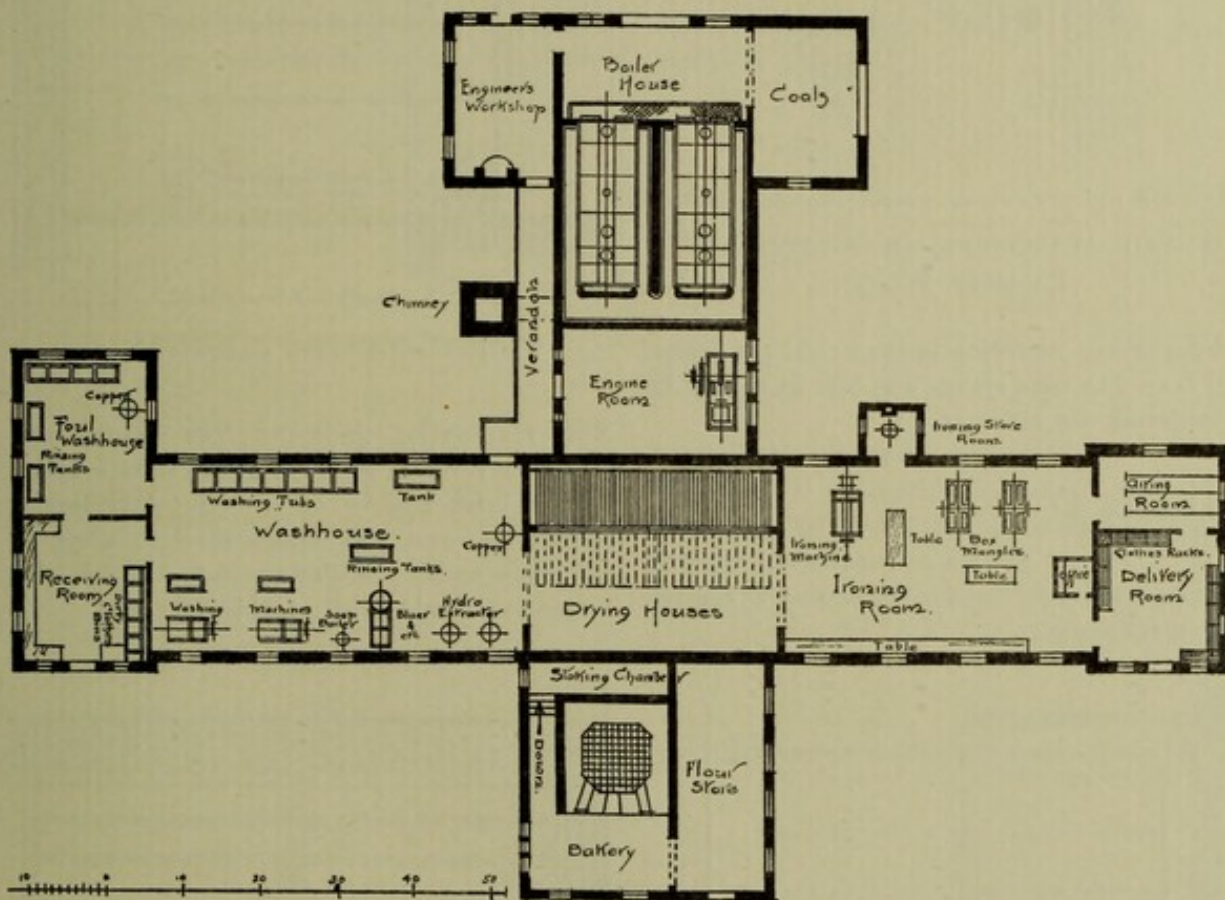
The clothes, after being cleansed, are dried either in airing-rooms or drying-horse compartments. When horses are used they should be placed between the wash-house and ironing-room, so the

and are suspended from L-shaped iron joists, thus leaving the floor clear of any grooves, which are liable to get filled with dust and dirt and to some extent effect the working.

The horses are made in various widths—12 in., 15 in. and 18 in., and in lengths from 5 ft. to 9 ft.

The most important points to be considered in

PLAN OF LAUNDRY BUILDING.



linen may then pass direct into the dry clothes apartments, and divide the wet linen from the dry. The drying-closets are constructed of a range of draw-out horses; one system is running the horses in grooves and rails fixed in the floor flush with the surface. The other system carries the horses from above (*see* Illustrations), each horse being fitted with large wheels at the top, which run upon

the effectual working of these closets are the heating and the ventilating. They can be heated by a furnace and hot-air flues underneath, by high-pressure steam coils, or by the forced-blast system of heating.

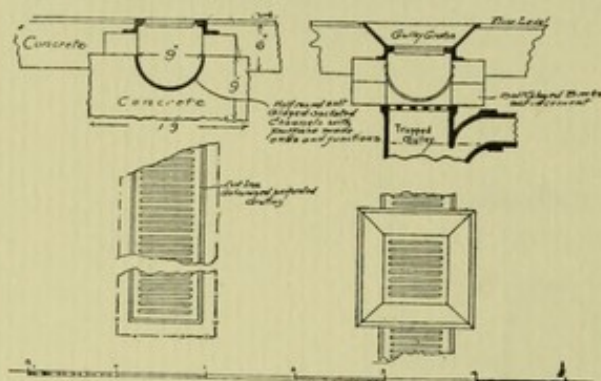
With the latter system, which is the most satisfactory, the "Sturterant" steel-plate fans should be used, as they are specially designed for the

The Planning of Poor Law Buildings.

handling of large volumes of air with the least expenditure of power. With this system a continuous volume of hot air is passed through the closets at the rate of 1,000 to 2,000 cubic feet per minute and at a temperature from 100 deg. to

vanised-iron guards, to avoid possible accidents to those employed in connection with the working; box mangles may be worked either by hand or power, the latter is most advisable.

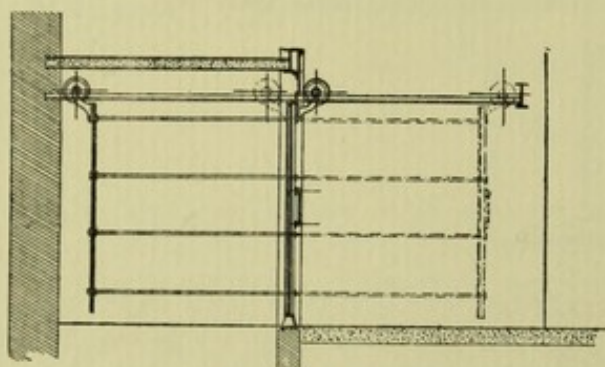
In connection with this room provide an airing



DETAIL OF CHANNELS AND GRATINGS IN LAUNDRY FLOORS.

150 deg. Fahr., according to the size of the heater and fan. The same system may also be applied to open drying and airing rooms.

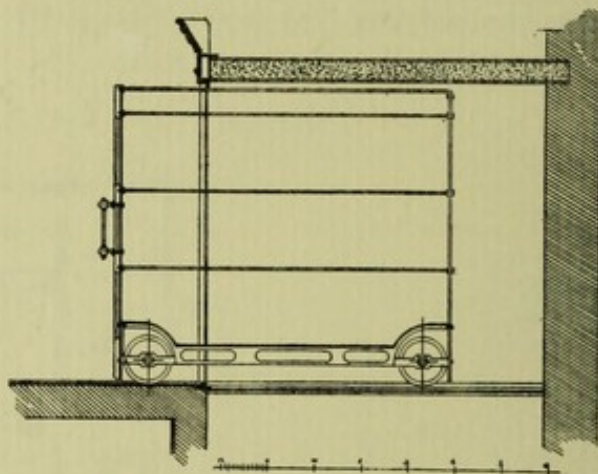
The room where the ironing and mangling of the linen is carried out should be well lighted and ventilated, and provide sufficient space between the tables and machines for the passing to and fro of clothes-waggons.



SECTION OF DRYING CLOSETS, No. 1.

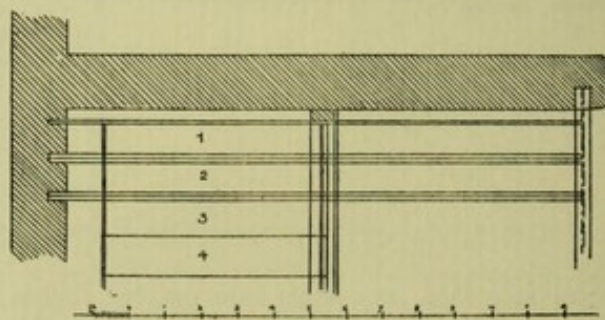
Strong tables are required around the walls and in the centre of the room for ironing clothes upon.

The ironing machines should be fitted with gal-



SECTION OF DRYING CLOSETS, No. 2.

stove for heating the irons. The Factory Act requires all ironing stoves to be placed in a recess, with a brick wall or other fireproof protection around the same, and though these buildings do not come under the Factory Act, I think this precaution should in all cases be adopted.



PLAN OF DRYING CLOSETS.

An office is necessary for the head laundress, and should be situated to command a full view at all times of the whole of the laundry. The laundry store, for the storing of soap, brushes, etc., should

also be provided near the laundress's office, under whose control it is placed.

The receiving-room for dirty linen should be placed at the entrance to the laundry, with direct access to the general and foul wash-house, for the distribution of the clothes; the delivery-room being placed at the rear, leading direct off the mangling and ironing-rooms, for the despatch of clean clothes after they have been sorted, these rooms being fitted with rack shelving, and the dirty receiving-rooms with clothes bins, for the sorting

and arranging of the dirty linen previous to being passed into the wash-houses.

The engine-room, when practicable, should be placed between the boiler-house and the laundry proper, as the position of this room is of great importance with regard to the working of the laundry, the engineer's workshop and store being situated with easy access both to the boiler-house and laundry proper, and having a furnace and suitable benches fixed for carrying out the general repairs.



CHAPTER X.

THE LOCAL GOVERNMENT BOARD'S REQUIREMENTS WITH RESPECT TO PLANS, &c.

The following notes must be borne in mind when designing this class of building. For the information of those who are ignorant on the points to be attended to in the erection of Poor Law buildings, it is well to mention that in designing a new building the plans should be prepared, in the first place, in the form of rough sketches drawn to a scale of 16 ft. to 1 in., and submitted in this form to the architect of the Local Government Board, so that he may consider the same and draw attention to any defects and make any suggestions thereon before any expense has been incurred in the preparation of the finished drawings. Having obtained the formal approval of the architect to the board, the working drawings are prepared to a scale of 8 ft. to 1 in., and comprise such drawings as specified in the Local Government Board's requirements. In the case of alterations or additions to existing buildings, the block plan should clearly show the position of all existing buildings.

A brief description of the works, such as the general system of the heating and ventilation, also an outline specification of the works, should accompany the plans. Copies on linen are required to be deposited with the board after their approval has been obtained.

No work, however small it may be, must be commenced before the approval of the plans by the Local Government Board.

The guardians have power to give orders for work not exceeding £50 without appealing to the Local Government Board, but any amount exceeding such sum shall have the sanction of the Local Government Board previous to any work being commenced, otherwise the guardians are liable to be surcharged for any such amount.

The following is a copy of the schedule of the cost of new buildings and works issued by the Local Government Board for the statement of the

estimated cost, it being generally forwarded to the clerk to the guardians.

It is the practice for the architect to leave the cost of "furnishing generally" and "cost of raising loans" for the clerk to the guardians to fill in. The amount for "contingencies" is generally placed at 5 per cent. on the total estimated cost.

Detailed Estimate of Cost.

	£	s.	d.	£	s.	d.
1, Purchase of land						
2, Cost of structure of new buildings :—						
(a) " " cubic feet, at per foot						
(b) " " works of alterations to existing buildings						
3, " " works of drainage						
4, " " water supply ...						
5, Fittings and fixtures, including engineering works, connected with laundry and washhouse...						
Cooking apparatus and appliances						
Boilers, steam and hot-water supply, and heating apparatus						
Gas making and distributing						
Electric lighting installation						
6, Boundary walls and fencing						
7, Digging and carting; leveling, including road-making and laying-out grounds, stocking, planting, etc.						
8, Furnishing generally ...						
9, Architect's charges ...						
Quantity Surveyor's charges						
Salary of Clerk of Works ...						
Cost of raising loan ...						
Contingencies						
Total	£					

Date _____

Signature of Architect.

CHAPTER XI.

THE PLANNING OF PUBLIC AND HOSPITAL MORTUARIES.

The planning and arrangement of a mortuary, coroner's court, and the necessary contingent buildings, depend to some extent upon the locality in which they are to be erected. It is generally found the site selected for these buildings (having to be central) is restricted, and when enclosed spaces have to be built upon it to a great extent complicates the ventilation and lighting.

Aspect and architectural adornment are matters of small importance; the main provisions to be made are plenty of light, good drainage and ventilation, for when we consider the hours that are spent by a coroner's jury investigating cases they are called upon it is a matter of public interest that suitable hygienic accommodation should be provided. At the present time in London there are numerous coroner's courts in which, on an average, two inquests are held every week, and where jurors sit in a foul atmosphere for many hours, naturally suffering both in body and health. I have found in many towns the provisions made for the care of bodies and the arrangement of *post mortems* is of a very primitive form, with no facility whatever for viewing a body; and remember in one particular case a person wishing to identify a friend or relation would most probably have to pass one, or possibly two, other bodies laid upon a slate slab, which is, to say the least, very unpleasant. The provision necessary in a building of this character being general, the plan here produced will bring the fundamental principles which govern the construction prominently forward. In the case of mortuaries connected with an infirmary, workhouse or isolation hospital, they somewhat vary in their equipment. Those in connection with an infirmary or workhouse provide a dead-house for the reception of the bodies, *post mortem*-room, laboratory and waiting-room, with a portion partitioned off by means of a glazed screen for viewing of bodies, this viewing-closet being connected with the dead-house for the expeditious removal of bodies.

In the case of isolation hospitals this building is generally placed in close contiguity to the laundry building, which provides accommodation for disinfecting clothes (the viewing of infected bodies I will deal with later, under "Viewing-Closets").

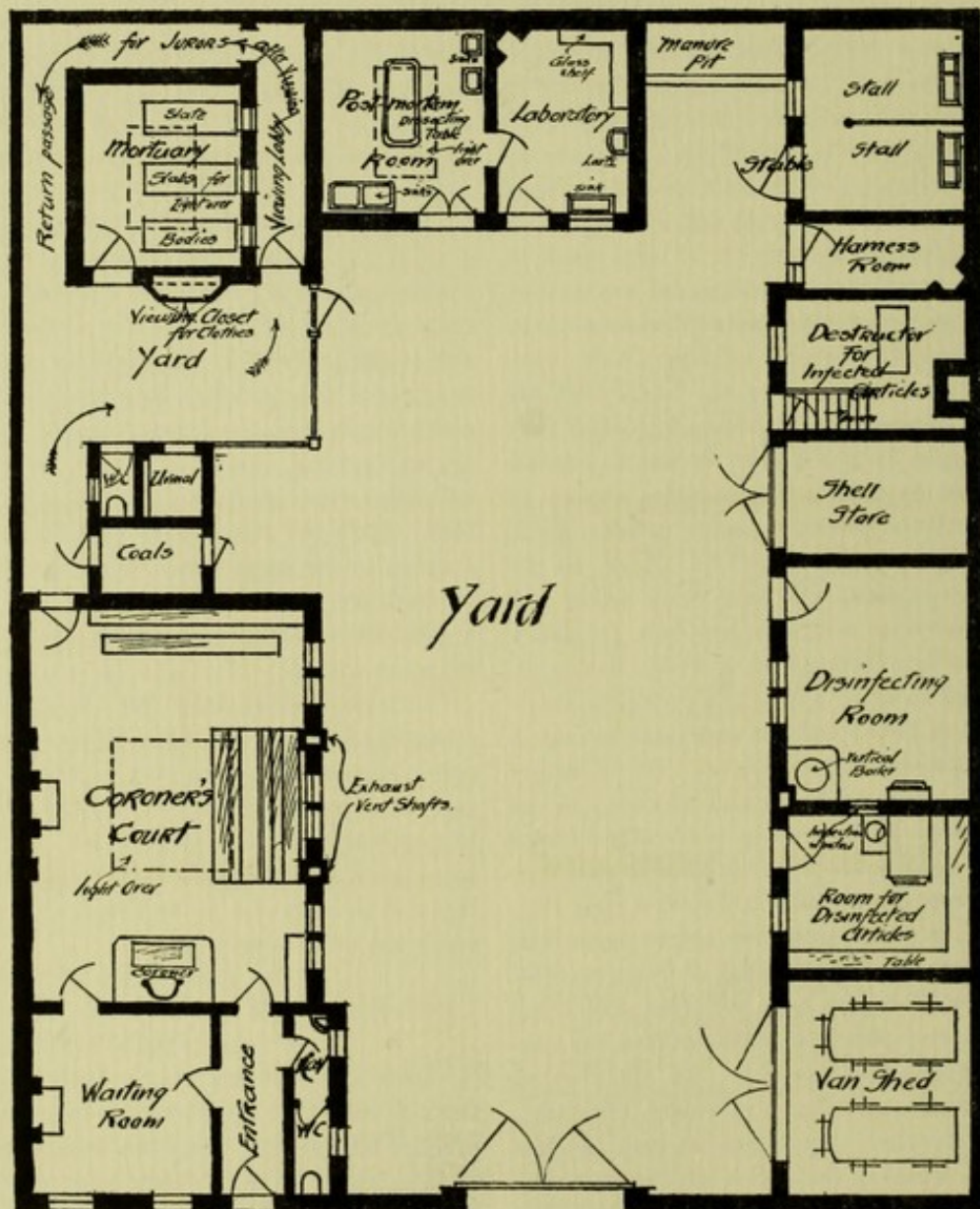
It should be arranged with easy access from the main entrance, and be provided with a waiting-room for

the convenience of witnesses or a prisoner. In some cases an office is arranged for the coroner, but this is not provided in the majority of courts. It is essential the mortuary be arranged at the rear and contiguous to the coroner's court, with a passage way around, so the jury can enter at one end and, after viewing the body, return at the rear, as shown upon the plan. This course I have found adopted in one particular building, and it appears to work very satisfactorily. Lavatory and w.-c. accommodation is necessary for both the jury and the coroner.

Provision is often made for the residence of a coroner's officer or attendant. This can be arranged either in a separate building adjoining the mortuary or above the coroner's court and offices. The former is the course to adopt if the land available will allow of it, as it materially assists the ventilation and permits of a lantern light over the court, which is a great advantage.

The construction of this building should receive special attention, every care being taken to avoid any material in which microbes can exist. It is advisable to line the walls with glazed bricks, having all angles rounded off, the floor being constructed of asphalt or impervious stone, with the intersection of the floor and wall rounded, to prevent accumulation of dust and dirt. The slabs on which the bodies are placed are in most cases of slate, but I should recommend white fire-clay supported upon vitreous enamelled-iron columns, being more adapted to the use. The doors and frames should be made of

PLAN OF A PUBLIC MORTUARY BUILDING.



teak or other hard material, and without any mouldings or projections. The ventilation should also be carefully considered, there being a certain amount of organic matter given off from the bodies. Adequate provision is necessary for the admission of fresh air and the extraction of all vitiated air. The lighting of these rooms, as in the case of a *post mortem*-room, should always be obtained from the roof, either by means of a lantern light or skylight. In the case of isolation hospital mortuaries, and where infectious bodies are laid, a very practical arrangement in the way of coffin-racks has recently been introduced, which is in the form of a series of closets (as shown in the accompanying Illustration).* By this means a continuous current of air passes through gratings in the doors,

are constructed of 2-in. slate, and to each closet is fitted three 2-in. teak or oak rollers, supported on gun-metal bearings, for placing the shells upon. The doors to the front of the closets may be constructed either of slate or hard wood; in any case great care should be taken to make the same airtight and to open with ease.

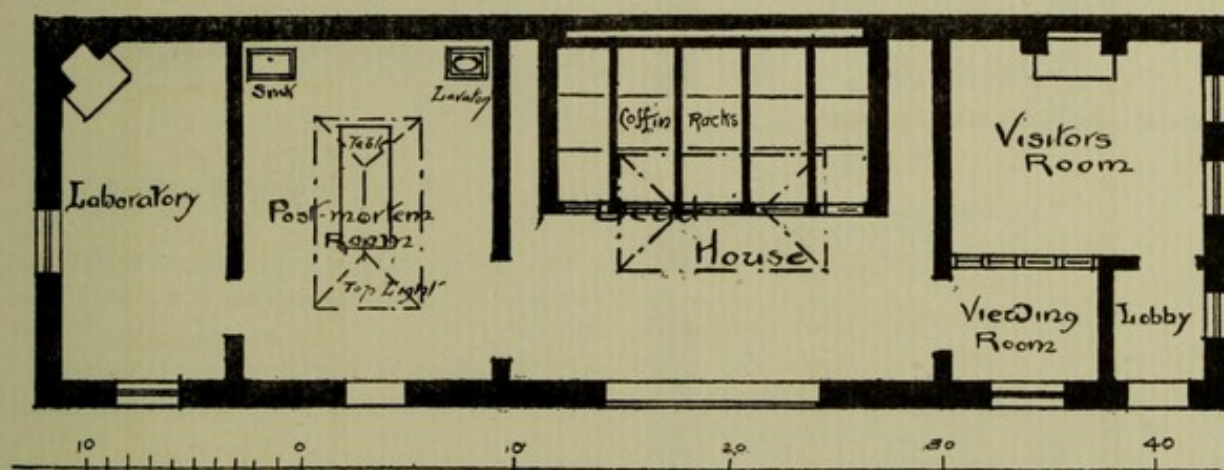
By placing the lower range of closets about 15 in. above the floor a current of fresh air is obtained for ventilating the lower portion of the mortuary.

Post
Mortem-
Room and
Laboratory.

These buildings should be placed as near the mortuary as possible, for easy removal of bodies from one building to the other, and constructed in the same manner as the mortuary.

The light, ventilation and fittings necessary for

PLAN OF WORKHOUSE MORTUARY.



which have fixed on the inside galvanised-wire baskets filled with animal or vegetable charcoal. At the rear end of each rack is provided a foul-air extract connected with a main exhaust flue carried above the roof of the building to a suitable height, provision being made in the upper part of the exhaust shaft for assisting the vitiated air by means of a gas-jet, and in the front of the same is fixed a small glazed door for access to the light, the top of the shaft being finished with a powerful exhaust ventilator. The division and shelves of these racks

* A similar arrangement of "coffin-racks" is in use at the Rotherhithe Infirmary.

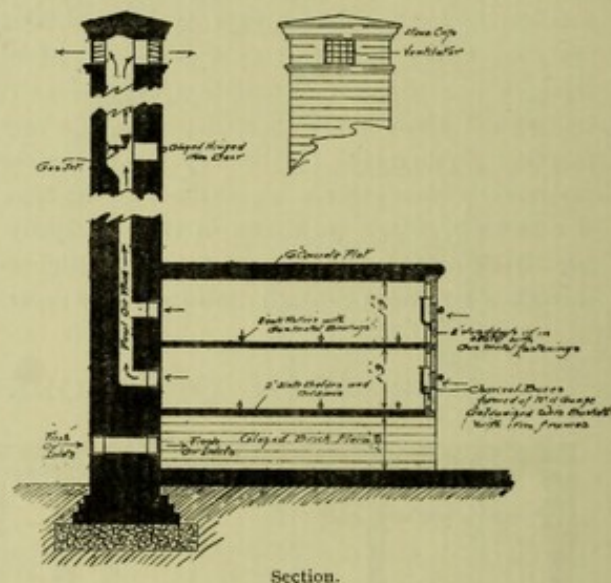
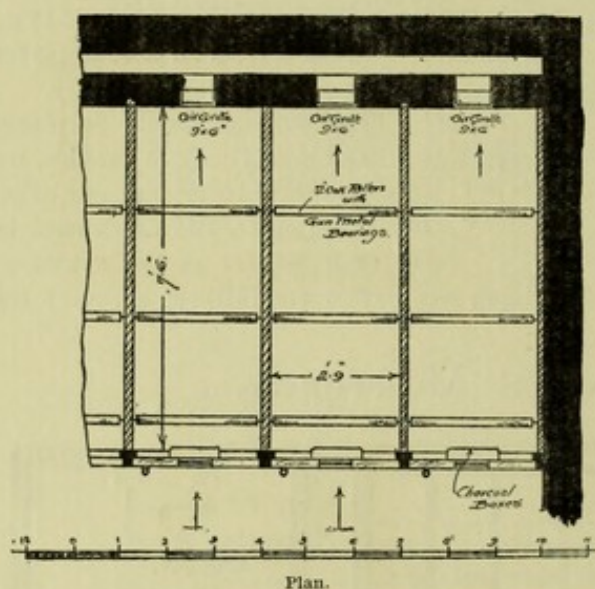
a *post mortem*-room must be looked at from a medical point of view, and expense in the provision of suitable fittings ought not to be considered. The *post mortem* table usually provided is of strong white fire-clay supported on a vitreous enamelled-iron column, the top being made to turn in any direction, and the waste arranged to discharge into an open channel in the floor carried around the base, so that, whatever the position the table and waste may be, it will empty direct into the channel (see Illustration). A sink and lavatory are necessary, and should be of white-glazed fire-clay, with

The Planning of Poor Law Buildings.

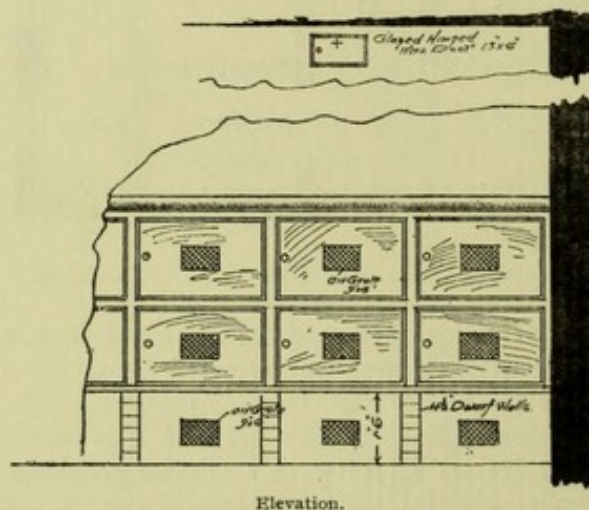
the water supply worked by a treadle action, the waste being also actuated by a treadle.

The hot-water supply is generally obtained by the provision of a geyser. The shelves for the storage of bottles, etc., are of $\frac{3}{4}$ -in. polished plate glass, fixed clear of the wall upon vitreous enamelled-

The provision for inspection of clothing, etc., is generally provided by the arrangement of a glazed closet fixed in a conspicuous position on the external wall of the mortuary building. In the external wall of the mortuary facing the ends of the slabs provide



DETAIL OF COFFIN RACKS.

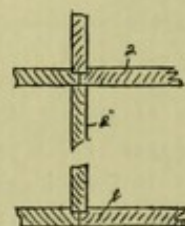


DETAIL OF COFFIN RACKS.

iron cantilevers built into the walls. In some cases the laboratory is not provided, the *post mortem*-room being used for the same purpose. In that case it is necessary to increase the superficial area of the building.

a long, narrow window to overlook each slab, and so placed as to get an easy view of the body when laid out.

In the case of an infectious hospital special precaution is necessary to prevent a person while view-

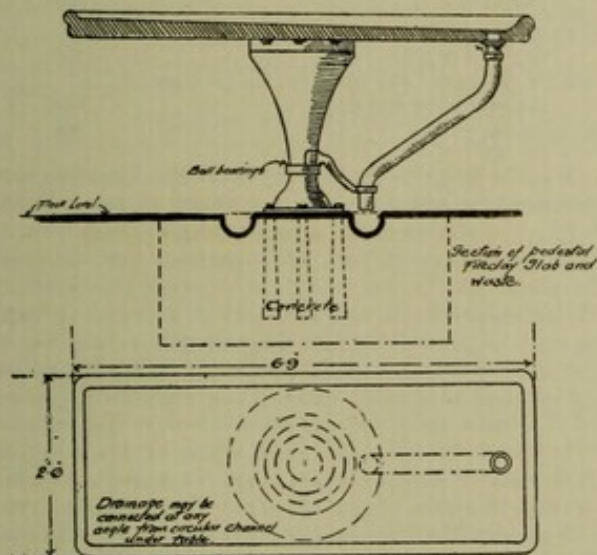


DETAIL OF SLATE SHELF JOINTS.

ing a body contracting any disease. The form of viewing-room provided in connection with the mortuary of the Burnley Infectious Diseases Hospital is similar in construction to the detail here produced, and appears to adequately meet the requirements. It is necessary that the inside of this

chamber be faced with white glazed bricks, and have oak rollers supported on gun-metal bearings (as suggested for the coffin-racks) for the shell to rest upon. The chamber is covered with a sheet of thick plate glass fixed at an incline, and made to overlap the brickwork at the front for the purpose of throwing off the water during inclement weather.

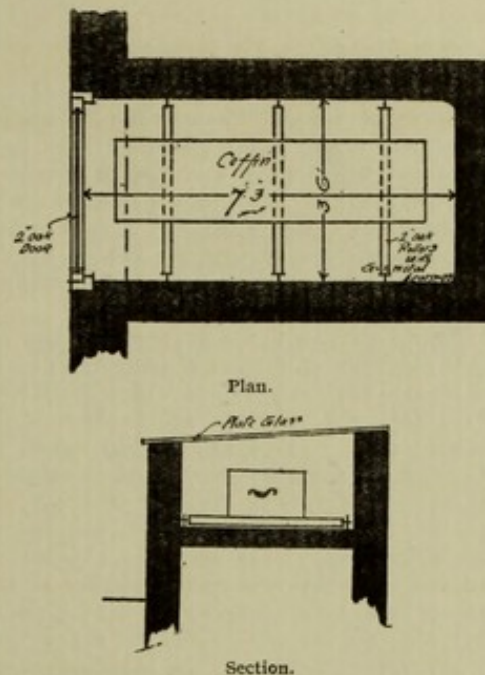
Provision should be made for destroying filthy and infected clothing taken from an unclean body. Means of disinfecting clothing is not in all cases provided; but when provided in connection with a mortuary building it both serves the purpose of disinfecting clothes taken from a dead body and



DETAIL OF REVOLVING POST-MORTEM TABLE.

acts as a public disinfecting station where infected goods—that is to say, bed and other clothing used by a person suffering from some infectious disease previous to their removal to a hospital—may be disinfected according to the requirements of the medical officer of health. A small vertical boiler should be provided for generating steam, and be capable of delivering pure dry steam into the disinfector; or a more convenient form is adopted by

the Cherry Tree Machine Company, which is in two parts—an upper cylinder over the disinfector and a form of saddle boiler placed under and connected to the upper cylinder by two circulating pipes. It requires about 220 deg. to 230 deg. Fahr.



DETAIL OF VIEWING CLOSET.

of steam to penetrate the articles and kill the bacteria, and the time occupied is about twenty-five to thirty minutes; the garments when removed from the machine should be found quite dry. The circular-shaped machine is generally adopted, being the cheaper; but when large quantities of clothing are constantly being disinfected the oval or rectangular shape will more conveniently meet the requirements. It is necessary to provide buildings for the storage of shells and vans, also stable accommodation. These buildings should open direct into a paved yard with provision for carrying off the water used for washing purposes.

APPENDIX.

CUBIC SPACE IN METROPOLITAN POOR-LAW INSTITUTIONS.

POOR LAW BOARD, WHITEHALL.

September 29, 1870.

SIR,—I am directed by the Poor Law Board to draw the attention of the guardians to the "Metropolitan Poor Amendment Act" of last session, which "provides for the equal distribution over the metropolis of a further portion of the charge for the relief of the poor" by making a large part of the cost of maintenance of the in-door poor a charge upon the Metropolitan Common Poor Fund from and after the 29th of September, 1870.

The Poor Law Board are required by the Act to certify the maximum number of paupers to be maintained in each asylum provided under the Metropolitan Poor Act, 1867, and in each workhouse in the metropolis; and "no repayment is to be made out of the Metropolitan Common Poor Fund in respect of a greater number of paupers maintained in any asylum on any one day than will complete the maximum number which such asylum shall have been certified to hold, nor in respect of a greater number of paupers maintained in any workhouse on any one day than will, together with the children under the age of sixteen, if any, maintained therein on the same day, complete the maximum number certified for the workhouse."

It will be observed that in the case of paupers maintained in asylums provided by the Metropolitan Poor Act, 1867, the guardians may claim repayment in respect of every such pauper, WHETHER AN ADULT OR A CHILD, within the maximum number certified by the board, but that in the case of WORKHOUSES they will not be entitled to repayment IN RESPECT OF PAUPERS UNDER SIXTEEN YEARS OF AGE. The guardians will call to mind that children, as soon as they are old enough, shall be removed from workhouses to separate or district schools, where the whole cost of their maintenance is by the Act of 1867 chargeable upon the Common Poor Fund. If boards of guardians retain children in the workhouse they will, as hitherto, lose the benefit of the repayment in respect of such children. The amount which will be repaid from the Metropolitan Common Poor Fund on account of each pauper in respect of whom payment can be claimed is fixed by the Act at 5d. per day.

In order to give effect by the provisions of the Act, the Poor Law Board have engaged in fixing the number of paupers for which each workhouse and asylum in the metropolis will be certified. In doing so they have adopted as a general rule the following scale, recommended by the "Cubic Space Committee," subject

only to such modifications as the peculiar construction of wards sometimes demanded.

Class of inmates.						Amount of space in dormitories. Cubic feet.
Sick	...	...	...	...	...	850
Lying-in women	...	...	...	...	...	1,200
Sick cases of an unusually offensive character	...	...	...	...	...	1,200
Infirm persons occupying the same room day and night	...	...	...	...	...	700
Infirm persons able to leave their dormitories during the day	...	...	...	...	...	500
Healthy persons	...	...	...	...	...	300

For the two last classes day-room accommodation is required in addition to the amount of 500 and 300 cubic feet allotted to them as sleeping accommodation. The guardians will not fail to perceive that, in order to carry out the Act fairly and equitably as between different unions, it was necessary to adopt as uniform a scale as possible in fixing the maximum number to be maintained in the various establishments. If an equal amount of cubic space in respect of every inmate of the same class had not been taken as the basis of calculation in all workhouses alike, unions allotting less than the average space to each inmate would have gained an unfair advantage at the expense of the rest.

The investigation into the measurements and the capacity of the workhouses in the metropolis has again brought out the fact, to which frequent allusion has been made by the board in their correspondence with several boards of guardians in the metropolis, that the day-room accommodation is very insufficient. In the case of many workhouses the numbers for which they will now be certified are considerably less than those which they have hitherto contained. The reason for this reduction is to be looked for, not only in the fact of many wards having hitherto contained more inmates than the number for which the board could properly certify them, but also in the necessity of reserving a certain amount of space for day-rooms. The importance of such accommodation, with a view to the classification, the discipline, and the employment of the inmates, cannot be over-estimated.

The board wish, further, to call the attention of the guardians to the fact that in determining the maximum number for which the certificates should be issued they have of necessity taken into account the average proportion of different classes of paupers, such as able-

bodied, infirm, or sick, received in the various workhouses. The space still appropriated in many workhouses to imbeciles has been considered available for other purposes, as the asylums provided for imbeciles by the managers of the Metropolitan Asylum District at Caterham and Leavesden will render it unnecessary to devote any portion of the workhouses to the reception of inmates of unsound mind beyond such limited accommodation as may occasionally be required for persons awaiting removal to asylums.

As the minimum requirements of cubic space vary according to the class of inmates, it has been necessary for the board, in order to arrive at the maximum number for which each workhouse could be certified, to consider each ward as appropriated to a particular class. In the appropriation the existing arrangements of the workhouses, or such prospective arrangements as the guardians have already agreed upon, have been taken into account as far as possible, the board being desirous not to interfere with the discretion of the guardians more than is necessary to carry out the provisions of the Act.

A detailed statement showing the numbers to be admitted into each ward and the character of its appropriation, will be shortly forwarded to the guardians. The board do not at present propose to fix by a formal order the number to be admitted to each ward, but the guardians will feel that the general distribution of space should not be altered without concert with the board, as any redistribution—such, for instance, as the introduction of a class requiring a greater amount of space into wards designed for a class requiring less space—might wholly vitiate the calculations upon which the maximum number had been fixed in the certificate.

If, in consequence of any change of circumstances or any unusual pressure, the guardians should wish to transfer sick or bedridden persons into rooms assigned as dormitories for healthy inmates, or to make any other alterations which would affect the arrangements which have been assumed as the basis for the calculations, it will be necessary that the circumstances should at once be reported to the board, in order that the accommodation of the rooms may be refixed and the certificate revised. The board, on the other hand, reserve the power to themselves of taking action in

modifying the certificate, either by increasing or decreasing the number, if circumstances should arise which should render such a course necessary.

The maximum number now certified by the board will be found, as already stated, to be in many cases considerably below the number at present accommodated. The board are glad to be able to state that, almost without exception, arrangements for building have been made by the guardians of unions and parishes where overcrowding at present exists; and they desire cordially to acknowledge the efforts now being made by boards of guardians to supply the existing deficiencies. The board are bound to restrict their certificates to the number which the workhouses can accommodate on the scale of cubic spaces given above, but in the intervals which must in many cases elapse before the new buildings can be completed the board are aware that cases may occur where it may be very difficult to observe the maximum. No claim for repayment could, of course, be made in respect of a greater number of inmates than the maximum fixed on the certificates, but where every exertion is made to secure such additional accommodation as may be indispensable the board will not consider the fact of a larger number than the maximum being temporarily retained in the workhouses as falling under the cases which are enumerated in sec. 1, sub-sec. 4, and which constitute a ground for the forfeiture of the sum repayable in respect of inmates up to the number for which the workhouse is certified.

The board wish to point out that it is in all cases most desirable, and in some cases quite indispensable, that the guardians should secure additional temporary accommodation to meet acknowledged deficiencies till the new buildings are completed. When this course is taken the guardians will receive repayment at the rate of 5d. a day in respect of every adult inmate adequately accommodated in supplementary or temporary buildings.

The board direct me to enclose the certificate for the workhouse belonging to you.

I am, Sir,

Your obedient servant,

The Clerk to the Guardians.

The Planning of Poor Law Buildings

[Circular.]

AGED MARRIED COUPLES IN WORKHOUSES.

LOCAL GOVERNMENT BOARD, WHITEHALL, S.W.

3rd November, 1885.

SIR,—I am directed by the Local Government Board to state that their attention has been drawn to complaints, in connection with the enforcement of the workhouse test by boards of guardians, that aged married couples on their admission to the workhouse are separated and required to live apart.

The board therefore deem it desirable to bring under the special attention of the guardians the statutory provisions with reference to the non-separation in the workhouse of husband and wife in certain cases.

The 10 and 11 Vict., c. 109, sec. 23, provides that "When any two persons, being husband and wife, both of whom shall be above the age of sixty years, shall be received into any workhouse, in pursuance of the provisions of the said recited Act" (4 and 5 Will. IV., c. 76), "or of this Act, or if any rule, order or regulation of the commissioners appointed by authority of

this Act, such two persons shall not be compelled to live separate and apart from each other in such workhouse.

The 39 and 40 Vict., c. 91, sec. 10, provides as follows: "When any two persons, being husband and wife, shall be admitted into any workhouse, and either of them shall be infirm, sick, or disabled by any injury, or above the age of sixty years, it shall be lawful for the guardians of the union or parish to which such workhouse shall belong to permit, in their discretion, such husband and wife to live together, and every such case shall be reported forthwith to the Local Government Board.

I am, Sir,

Your obedient servant,

HUGH OWEN,

To the Clerk to the Guardians.

Secretary.

[Circular Letter].

AGED DESERVING POOR.

LOCAL GOVERNMENT BOARD, WHITEHALL, S.W.

August 4, 1900.

SIR,—I am directed by the Local Government Board to advert to the reply which was given by the president to a question put to him in the House of Commons with regard to legislation on the subject of the recommendations made by the Select Committee on the Cottage Homes Bill last year.

The question was as follows: "To ask the President of the Local Government Board why the Government have not brought in a Bill to carry out the recommendations in regard to the Poor Law unanimously made by the Select Committee appointed last year to consider the Cottage Home Bill, and whether the Government would now introduce such a Bill if an assurance were given that the Bill would be considered in an uncontroversial spirit."

The President said: "I have been most anxious to deal with this question this session, but I have been unable to do so. I have prepared a series of new regulations affecting the classification of inmates in workhouses, with a view of securing separate accommodation for the aged and deserving poor. I have also carefully considered the Bill which would be required in connection with these regulations and for the purpose of giving effect to the recommendations of the Select Committee, but my difficulty has been this—that the necessary legislation would require the aid of the Chancellor of the Exchequer; and having regard to the enormous expenses which he has to meet at the

present time, I have come to the conclusion, although very reluctantly, that this is not a fitting moment to make further demands upon him. It is for this reason that the Government have not brought in a Bill on the subject."

Although, as was pointed out, the moment is not propitious for legislation of the kind referred to, the board think that it would be useful that guardians should be informed of their views, so that the hands of the guardians may be strengthened in dealing with these matters so far as existing circumstances will permit. The removal of imbeciles from workhouses was strongly recommended by the Select Committee, and its advisability has been repeatedly brought before the board by guardians and others, but this question is one which must be deferred.

The removal of children from workhouses, which was also recommended by the committee, has been still more strongly urged upon the board. It is a question on which the public opinion is undoubtedly in accord with the recommendation of the committee, and I am directed to urge upon boards of guardians to let no opportunity pass of carrying such an arrangement into effect. The opportunity will frequently arise when there is a question of enlarging the infirmary wards of the workhouse or of increasing the accommodation in some other respect, and when it may be felt that the wisest course would be to provide the

extra accommodation needed by removing the children altogether from the workhouse. In connection with this point the board may observe that, by the provision of cottage homes, by the hire of scattered homes, by boarding-out and emigration, ample means are afforded by which children may be entirely removed from association with the workhouse and workhouse surroundings.

With regard to the treatment of the aged deserving poor, it has been felt that persons who have led habitually decent and deserving lives should, if they require relief in their old age, receive different treatment from those whose previous habits and character have been unsatisfactory, and who have failed to exercise thrift in the bringing up of their families or otherwise. The board consider that aged deserving persons should not be urged to enter the workhouse at all unless there is some cause which renders such a course necessary—such as infirmity of mind or body, the absence of house accommodation, or of a suitable person to care for them, or some similar cause—but that they should be relieved by having adequate outdoor relief granted them. The board are happy to think that it is commonly the practice of boards of guardians to grant outdoor relief in such cases, but they are afraid that too frequently such relief is inadequate in amount. They are desirous of pressing upon the guardians that such relief should, when granted, be always adequate.

When, however, it is necessary that such persons should receive indoor relief, the board consider that they might be granted certain privileges which could not be accorded to every inmate of the workhouse.

The board had intended to issue an order dealing with this matter, but for reasons already stated they have been unable to do so at present. They think it may be convenient, however, if they indicate the heads of the regulations which they had in contemplation. These are as follows: 1, That the guardians should form a special class of inmates of sixty-five years of age and upwards, with regard to whom the guardians, after due inquiries, have satisfied themselves that by reason of their moral character or behaviour or previous habits they are sufficiently deserving to be members of the class. 2, That for such inmates extra day-rooms should be provided, which might, if thought desirable, be available for members of both sexes, in which they would have the opportunity of separation from disreputable inmates, and in which their meals, other than dinner, might be served at hours fixed by the guardians. 3, That sleeping accommodation in separate cubicles should be provided for them. 4, That

privileges should be given them as regards the hours of going to bed and rising. 5, That considerably increased liberty should be granted to them, and greater facilities for being visited by their friends. 6, That for each inmate of this class a locker should be provided; the key would be retained by the inmate, but it would be required that the contents of the locker should be open to proper inspection. 7, That as regards the inmate of this class the provisions in the orders relating to the supply of tobacco, dry tea, and sugar, should be made compulsory.

Boards of guardians are at present empowered to deal with most of these matters, and in some cases they have already done so. The difficulty with which many boards of guardians will have to contend in connection with the extra classification contemplated is the want of room; but it is hoped that where there is room the guardians will not hesitate to take steps to bring about improvements of the kind indicated in the arrangements for the aged deserving poor. In some instances, as has been pointed out, the room required could be provided by the removal of the children from the workhouse; and the board trust that no opportunity will be lost for adopting this course when it is practicable, and that guardians in all cases will give the whole subject their serious consideration, with a view to improving the lot of the aged deserving poor.

The board may avail themselves of this occasion to state that they have received a memorial from members of the council and the executive committee of the National Association for Promoting the Welfare of the Feeble-minded, asking them to take steps to institute an inquiry into the number and condition of feeble-minded persons in receipt of Poor Law relief.

By "feeble-minded" persons the memorialists state that they "desire to describe persons who are of a weak intellect but are not certifiable as imbeciles or insane, and who cannot, therefore, be detained in workhouses or elsewhere except at their own pleasure."

The board would feel obliged if the guardians would state the number of persons in the workhouse who could, in the opinion of the medical officer, be regarded as coming within the above description, and would supply any further information with regard to the condition of such persons which they are able to afford.

I am, Sir,

Your obedient servant,

S. B. PROVIS,
Secretary.

To the Clerk to the Guardians.

INDEX.

	PAGE		PAGE		PAGE		PAGE
Accommodation for able-bodied inmates	29	Cost of buildings	12	Jet lavatories	49, 50	Public and hospital mortuaries...	63
Accommodation for aged and infirm	34	Corridors in vagrant ward	13	Jet baths	49, 50	Receiving wards	20, 45
Accommodation for children's homes	47	Coffin-racks	65, 66	Kitchens	24, 26, 44, 49	Receiving homes in connection with cottage homes	52
Accommodation for isolation wards	44	Cottage homes for children	47	Kitchens in vagrant wards	16	Refractory wards	31
Accommodation for imbecile and short-period lunatics	37	Committee-rooms	24, 52	Knife-rooms	26	Requirements of the Local Government Board	62
Accommodation for married couples	34	Coroner's courts	63	Labour sheds and workshops	13, 31, 56	Refuse	26
Accommodation for maternity cases	45	Cupboards	34, 49	Laboratory	65	Sculleries	26
Accommodation for sick wards...	41	Cubicles for nurses...	22	Laundry	44, 45, 57	Schedule of cost of buildings	62
Accommodation for vagrant wards	13	Cubespaces in metropolitan poor-law institutions	68	Larders	26, 49	School buildings	54
Administrative buildings	18, 44, 52	Day-rooms	29, 34, 43, 49	Lavatory accommodation	16, 24, 34, 38, 42, 45, 50	Scattered homes for children	47
Admission of paupers	20	Dead-house	44, 63	Length of wards	39	Screens across wards	29
Aged married couples in workhouses	34, 70	Delivery - rooms in maternity wards	45	Lifts	34, 39	Searching-rooms	20
Aged deserving poor	34	Disinfecting apparatus	20, 67	Lying-in wards	45	Short-period lunatics	37
Airing grounds	29	Division walls in vagrant cells...	13	Lockers	34, 49	Shelters in airing grounds	29
Appendix	68	Different classes of paupers	11	Lunacy Act	37	Sick wards	39, 41, 52
Arrangement of vagrant and casual wards	13	Dispensary	24	Married couples' blocks	34	Size of doors...	43, 55
Associated wards for vagrants	13	Dining hall	24	Maternity wards	45	Spacing of buildings	11
Attendant's-rooms	44, 52	Double-bed wards	29	Mangling-rooms	60	Spray lavatories	49, 50
Attendant's quarters in vagrant wards...	16	Dormitories for children	49	Master's apartments	22, 52	Spray baths	50
Bath accommodation	16, 38, 42, 44, 45, 50	Drying and disinfecting clothes	16, 20	Matron's apartments	22	Staircases	12, 16, 34, 37, 50
Bakery	57	Drying-closets	59, 60	Mess-rooms for staff	22	Stores...	20, 24, 52
Balconies	42	Drill halls in schools	55	Medical officer's apartments	22	Store clerk's offices	24, 52
Bells	14, 44	Drug stores	24	Movable baths	44, 45	Staff accommodation	22, 52
Boarding-out system for children	47	Duty-rooms	20, 34, 37, 44, 49, 54	Mortuary	44, 65	Steward or superintendent's apartments	22, 52
Boiler-houses	61	Entrance buildings	18, 48	"Mother's"-room in cottage homes	49	Sub-division of sexes	11, 13, 22
Board-rooms	24	Engine-room	61	Needle-room	24, 52	Submitting plans to Local Government Board	62
Casual wards	13	Engineer's workshop	61	Nurses' accommodation	22, 52	Swimming baths	56
Cell accommodation in vagrant wards...	13	Epileptic wards	39	Nurses' duty-rooms	44, 54	Syphilitic patients	39, 41
Channels in laundry floors	60	Fire-escapes	12	Nurses' homes	22	Teacher's - rooms in schools	55
Chaplain's-room	24	Fire hydrants	12, 16	Number of inmates in an infirmary	39, 54	Vagrant wards	13
Classification of inmates	11	Fireplaces	38, 41, 45, 50	Offensive sick cases	39, 41	Ventilation of coffin-racks	65, 66
Class-rooms in school buildings	55	Floors	13, 26, 42, 45, 50	Offices	18, 24	Verandahs	34
Cloak-rooms in school buildings	55	Grills in vagrant ward cells	14	Open spaces under floors	45	Viewing - rooms in mortuaries	66
Clothes stores	20, 45, 50	Grease traps	26	Opthalmic disease	47	Viewing closets	66
Covered corridors	39, 55	Imbeciles	37	Operating-rooms	24	Waiting-rooms	18, 24
Communication bells	14, 44	Industrial training of children	52, 56	Operating tables	67	Wash-houses	52, 57
		Infirmary for cottage homes	52	Outbuildings to cottage homes	51, 52	Washing machines	57
		Inspection windows in wards	44, 49, 54	Outdoor relief	24	Windows	12, 42, 55
		Ironing-rooms	60	Pauper children	47	Work-rooms and workshops	31, 52, 56
		Isolation buildings, distance from boundary	44	Padded-rooms	38		
		Itch cases	39, 41	Porter's lodge	18		
				Position of isolation buildings	44		
				Post mortem-rooms	65		
				Preliminary	11		
				Projecting buildings or wings	41		

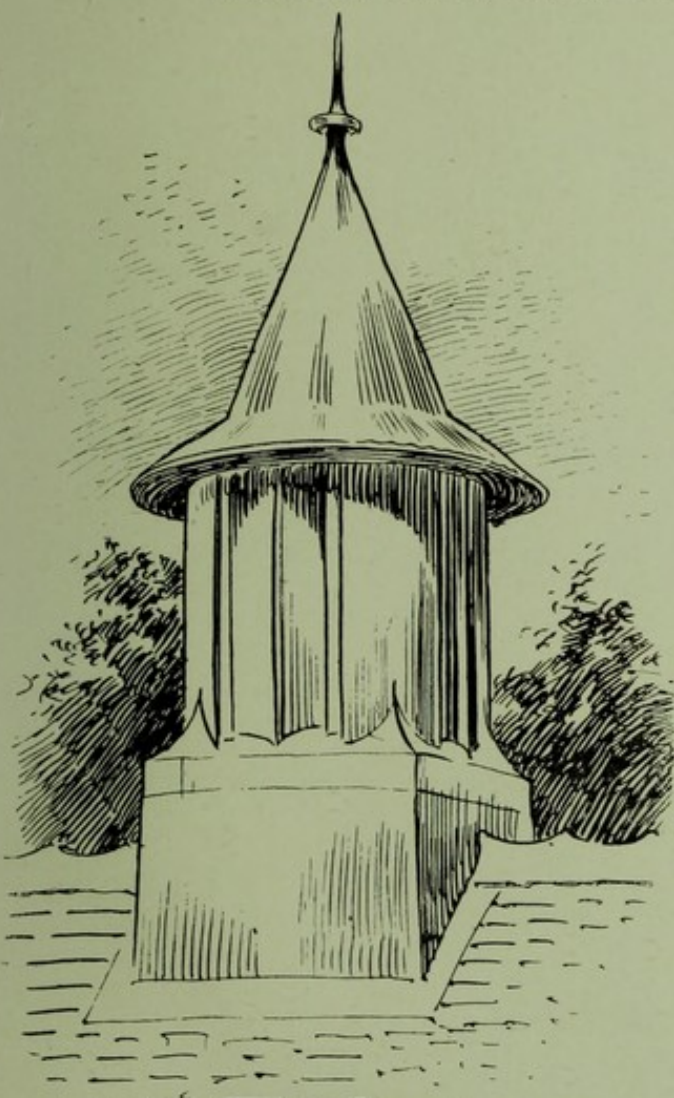


"Boyle" System of Ventilation

(NATURAL).

VENTILATION OF WORKHOUSES, INFIRMARIES, MORTUARIES, AND ALL CLASSES OF BUILDINGS.

The air is continually changed, at all times without draughts, by means of Boyle's latest patent "Air-Pump" Ventilators and Air Inlets. Is easily and economically applied. There is no mechanical movement, cannot get out of order, and requires no attention.



**BOYLE'S LATEST PATENT
"AIR-PUMP" VENTILATOR,**

Design No. 175.

LORD KELVIN.

"I have seen several different forms of Mr. Boyle's 'Air-Pump' Ventilator in actual operation, and have much pleasure in testifying to their efficiency. They thoroughly realise the favourable anticipations which I formed from experiments on models shown to me by Mr. Boyle."

LORD CLIFFORD,

Member of the House of Lords Committee on Hospitals.

"There is a sense of comfort about this Infirmary which will be greatly valued by the inmates. . . . The ventilation seems to be perfect."

SIR HENRY BURDETT, in "HOSPITALS AND ASYLUMS OF THE WORLD," says, respecting the Small-Pox Hospital Ship "Castalia" (which is ventilated with the Boyle System of Ventilation.)

"Altogether the arrangements are very complete and satisfactory."

The Right Honourable

C. SEALE-HAYNE, M.P.

(Late Paymaster General.)

"I believe it (the 'Boyle' System of Ventilation) to be absolutely the best system of airing a public building that is known to sanitary science."

DR. ARTHUR G. BLOMFIELD,

Devon and Exeter Hospital, Exeter.

"I am satisfied with the beneficial results as regards the ventilation."

Extract from Government Report (Blue Book) presented to both Houses of Parliament, with drawing of the "Air-Pump" Ventilator.

"Mr. Boyle's complete success in securing the required continuous upward impulse is testified to by high authorities."

HIGHEST AWARD for VENTILATION:—
PARIS EXHIBITION, 1900;
TWO GOLD MEDALS and ONE SILVER
MEDAL gained by the
BOYLE SYSTEM OF VENTILATION
(NATURAL).

ROBERT BOYLE & SON, Ventilating Engineers,
64 Holborn Viaduct, LONDON, and 110 Bothwell Street, GLASGOW.

Plans and Estimates sent free of charge.

Illustrated Catalogues sent, post free, on application.

PUBLIC WORKS.

Telephone: 1359 Holborn.

Cables and Telegrams: "Municipium, London."

Code: A B C.

CONDUCTED BY THE EDITOR OF

"THE SURVEYOR AND MUNICIPAL AND COUNTY ENGINEER."

PUBLIC WORKS is a high-class magazine conceived on entirely original lines and occupying a unique position in technical literature.

It is devoted exclusively to the description and discussion of Government and Municipal undertakings, and other enterprises that may properly be described as Public Works, in all parts of the world. All articles are written by experts, and the method of treatment is such as must render the magazine invaluable, as a permanent record, to civil engineers of every class as well as to those who are otherwise concerned in the administration of public affairs.

The magazine is liberally illustrated in the best style. It is well printed on good paper, and the page (of the same size as this announcement) is comparatively large, in order to permit of effective illustration. No advertisements, news items or miscellaneous matter is included in its literary pages. The special title heading is printed only on the first page of the first number in each volume, so that, when bound, the separate numbers form a homogeneous volume without that disconnected appearance characterising the bound copies of an ordinary magazine. Each volume is furnished with a copious index, in which numerous cross references are included.

The nearest approach to **PUBLIC WORKS** may perhaps be found in the "Proceedings" of the leading engineering institutions; but even these do not come within measurable distance of this magazine in practical utility, for each set of "Proceedings" is necessarily limited to some particular department of engineering science, whereas **PUBLIC WORKS** covers all branches of engineering work practised by those who devote their services to the public welfare.

The gratifying reception accorded to this magazine by engineers and public officials or the highest repute serves to assure the proprietors that the publication possesses a distinctive sphere of usefulness, and that it is already recognised as a permanent work of reference whose value will increase year by year.

SUBSCRIPTION.

PUBLIC WORKS will be sent direct by the Publishers on the following terms:—

For the United Kingdom and Ireland, 16/- per ann.

Abroad 18/- " "

Post free, including special issues.

Subscriptions are payable in advance, and should be made payable to The St. Bride's Press, Ltd., and crossed "National Provincial Bank of England, Ltd." They should be forwarded to the St. Bride's Press, Ltd., 24 Bride Lane, Fleet Street, London, E.C.

A limited number of copies of Vol. I. (384 pages and 389 Illustrations) and Vol. II. (384 pages and 491 Illustrations) can still be supplied. Bound in green crocodile-hide cloth, bevelled boards, gilt-lettered back, and design handsomely embossed in gold on side.

Price 5s. (post free 5s. 6d.) nett.

**ANOTHER IMPORTANT
ST. BRIDE'S PRESS
PUBLICATION.**

FOUNDED 1891.
EVERY FRIDAY,
Price 3d.
(Illustrated.)

The Surveyor

And Municipal and County Engineer.

THE SURVEYOR is devoted to the work of local authorities as represented by the department of the Municipal Engineer, and deals week by week with the latest phase of such questions as abattoirs, artisans' dwellings, bridges, cemeteries, free libraries, house drainage, markets, mortuaries, municipal buildings, parks, refuse disposal, sewerage and sewage disposal, street lighting, surveying, tramways, water supply, and kindred subjects. In no other journal can so up-to-date a record of these matters be followed.

What Municipal Engineers Think of THE SURVEYOR may be gathered from a letter (dated March, 1894) from the Secretary of the Incorporated Association of Municipal and County Engineers, stating that the Association had decided to be represented by an official newspaper, and that the newspaper selected for the purpose was THE SURVEYOR AND MUNICIPAL AND COUNTY ENGINEER.

What the Press Has Said may be judged from a quotation from *The (London) Daily News*, which wrote of THE SURVEYOR as "a handsomely-printed weekly illustrated journal, enclosed in a wrapper, and has an imposing list of contributors, of whom a considerable proportion are recognised authorities on topics relating to the special field of this publication."

What Colonial Engineers Think of it is testified to by Mr. J. W. Bradley, Assoc. M. Inst. C. E., the City Engineer of Westminster (London), who writes: "May I compliment you upon the fact, recently noticed by me when calling upon several of the principal city engineers in Canada and the United States, that almost without exception I found the last copy of your paper on their tables."

✻ SUBSCRIPTION. ✻

THE SURVEYOR AND MUNICIPAL AND COUNTY ENGINEER may be ordered of all Newsagents, at Railway Bookstalls, or will be sent direct by the Publishers (The St. Bride's Press, Ltd.) on the following terms, post free: **United Kingdom, 15/- per annum; Abroad, 19/- per annum.**

Volumes—handsomely bound in red cloth, with bevelled edges and gilt lettering on back and side—will be sent post free for 10/- per volume (26 weeks), with the exception of those for the years 1892 to 1898, which range in price from 12/- to 21/- per volume.

