Suggestions concerning the construction of asylums for the insane : illustrated by a series of plans / by William Dean Fairless.

SUGGESTIONS

CONCERNING

THE CONSTRUCTION

OF

ASYLUMS FOR THE INSANE.

Illustrated by a Series of Plans.

BY

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PREFACE.

The following pages and illustrations are the results of considerable attention to the subject of the construction and management of Lunatic Asylums.

A larger amount of detail has been entered upon, than under other circumstances would have been necessary, still the plans are only presented as sketches and outlines which, before being reduced to practice, will require the scrutiny of the professional Architect, whose vocation I have no wish to invade.

The subject was undertaken chiefly with reference to the Asylum wants of Scotland, but as the principles advocated are of general application to both private and pauper institutions, I have ventured to seek for them a more extended circulation, and the favourable consideration of all who are interested in the well-being of a large and sadly afflicted section of the general community.

W. D. F.

Montrose, November, 1860.

SUGGESTIONS, &c.

The care and cure of the Insane portion of the people of Scotland has of late been frequently brought before the notice of the public, and the efforts of Miss Dix and other philanthropists have issued in the framing and passing, above three years ago, of a liberally conceived Act of Parliament, "For the Regulation of the Cure and Treatment of Lunatics, and for the Provision, Maintenance, and Regulation of Lunatic Asylums in Scotland." As yet this Act has borne scanty fruit. The Board of Commissioners, appointed under it, have entered upon the duties assigned to them with great zeal and perseverance, but their coadjutors, the District Lunacy Boards, under the impression that amendments of some of its provisions are necessary, have not been equally prompt in performing their allotted portion of the great work, and the consequence is, that, with the single exception of the Inverness Board, nothing of moment has been done towards providing the requisite Asylum accommodation for the various districts, three years of valuable time has been lost, and the Boards are nearly as far off from the realization of the great design of the Act as they were on the day when it received the Royal assent. I do not assert that the District Boards have not acted conscientiously in this delay, or that they have not had the interests of the poor sufferers and the general community at heart. I believe the contrary, and I deplore the delay. One cause, and a principal one, of this delay has been the anticipated great extent and cost of these Asylums. I do not propose to discuss one of the

The causes leading to the passing of the Lunacy Act.

Activity of the General Lunacy Board.

Delay of the District Boards.

Result of this delay.

Its principal cause.

questions at issue between the General and District Boards, viz., "For how many patients shall Asylum accommodation be provided in each District?" The task before me is rather to show how efficient Asylums, adapted for a minimum number, capable of simple extension at any time, and adapted for the reception of any class of patients, can be erected at a moderate cost, so that, whether the present statute remains in its integrity, or is altered by subsequent legislation, the great work of providing the Asylums confessedly required may not be further retarded.

The design of these "Suggestions."

Cost of the public Asylums: They may be erected at a less cost.

The majority of the public Asylums have been erected at a cost varying from £150 to £250 ℔ patient; but there is little doubt that by altering the plan of the Asylum, without in the least diminishing its efficiency, nay, rather effecting a decided improvement, a very different result may be arrived at as respects the cost.

The principle of construction in part recommended by the English and Scottish Commissioners.

The principle of construction advocated is substantially the same as that recommended by the English Lunacy Commissioners, in their Report for 1857, as applicable to *additions* required to be made to existing Asylums, constructed on the popular model. I would apply it *ab initio*, make it an integral portion of the design of the establishment, and not an expedient to be adopted merely when the original Asylum is filled with patients. The Scottish Commissioners, however, in their suggestions and instructions respecting the arrangement and construction of Asylums, recommend that detached buildings of a cheap and simple character should be provided for working patients, and for the imbecile and fatuous patients generally, and it is to be hoped that in the erection of the Scottish District Asylums these judicious suggestions will be distinctly observed.

Nothing novel in the design proposed.

After an examination of the annexed Plans, it may be said that I have not produced any thing very novel. Be it so. I do not boast of any originality of idea, I only claim the merit, if such there be, of giving a definite interpretation of my own thoughts on the subject, and of showing, on paper at least, how an Asylum may be constructed on simple and economical principles, for though many have written concerning cheaply constructed Asylums, no one has, so far as I am aware, given detailed plans for the

practical realization of his ideas. I do not profess to be an architect, nor to be possessed of any greater knowledge of Asylum architecture than my brother medical officers generally: we all have some idea of what an Asylum should be, and we hold that as the treatment of the insane is conducted not only *in*, but *by*, the Asylum, so no architect is competent to plan the building, unless he possess some knowledge of the treatment of the inmates. No doubt buildings have been designed and erected under different auspices, but the architects generally have been indebted to their Asylum friends for information, or the frequent and extensive alterations required in the buildings and fittings, to adapt them fully to the wants of the inmates and the views of the Superintendent, show how expensive and unsatisfactory such a proceeding is, and how necessary it is that the architect and the medical officer should always act in concert from the beginning.

Knowledge of the treatment of Lunatics requisite for planning an Asylum

Architect and Medical Officer should always act in concert.

I have been indebted to Mr. William Middleton, Architect, Montrose, who has revised my drawings, and made a calculation of the probable cost of an Asylum built according to the plan proposed. The design is not vaunted as that of a *Model* Asylum, it merely professes to be *a* design for a cheap and, in some respects, improved Asylum; and I quite admit the probability that other architects and medical men, acting together, may improve upon these plans, and produce a better and even cheaper Asylum. I have endeavoured to embody three mottoes, viz.—Simplicity, Economy, and Efficiency, and may have adhered to my text with a too rigid and severe exactness.

Plans revised and calculations made by Mr. Middleton.

Not a "Model Asylum."

The probability of the plans being improved.

Mottoes embodied.

The centre or nucleus of the establishment consists of an Asylum-proper or Hospital, containing accommodation for 78 patients, in equal proportions of males and females, with officers' and servants' apartments, kitchens, store-rooms, amusement-hall, &c., attached; these offices are planned on a scale suitable for an Asylum of 350 patients, that number being the maximum desirable to be gathered under one superintendence, though the principle of construction is applicable to an indefinite number. This Hospital has all the attributes of an ordinary Asylum, minus certain expensive and comparatively useless arrangements; it is adapted for

Nucleus consists of a central Hospital,

having the attributes of an ordinary Asylum,

and suited for recent and dangerous cases.

the residence of any class of patients, but would be specially fitted to become the abode of those suffering from acute mania, and of the noisy and dangerous patients generally, ample facilities being afforded for their classification and segregation when required. We have here then an Asylum capable of holding at the least 78 patients, and in the early days of the institution it might be sufficiently ample for the demand made for accommodation. But how is provision to be made for more patients? The answer to this question unfolds one of the peculiarities of the scheme proposed. A house or building of a less expensive character is to be erected at a comparatively small cost. These houses are complete in themselves, and contain ample day and night room for thirty patients and two attendants. They are designed as the dwellings of the working patients, and of all others of quiet, cleanly, and harmless tendencies, and when the institution attains to its mature proportions, will form the residences of three-fourths of the entire number. Of course they must depend upon the central kitchen and stores for food and other supplies, but otherwise they will be independent. There are three modes in which they might be placed in the Asylum grounds; they may be erected in architectural connection with the Hospital, and would require more care and expense bestowed upon their external appearance; or they may be built in detached rows, crescents, squares, or streets; and, thirdly, the lovers of what is called the "village asylum" system may be gratified by having them scattered up and down the domain. Whichever arrangement is adopted is immaterial, the leading idea is the same, viz., that the house is complete in itself, and does not necessitate any other building or addition, save of course the central Hospital, to insure its efficacy. Let us suppose that the existing space of the Asylum is about occupied, an order is given to erect a house for 30 patients of either sex, an outlay only of £690 is involved, and the managers of the Asylum have the satisfaction of knowing, that while their accommodation keeps pace with the demand, no unnecessary sum has been squandered, nor is the general contour of the buildings defaced by inharmonious, because unforseen, additions. According to

Houses to be built for increase of patients,

i.e., for the quiet and orderly classes.

Three modes of locating the Houses,

which are each complete in themselves,

and can be erected at a small cost.

Houses for males & females may be intermingled.

the prevalent mode of conducting Asylums, the abodes of the males and females would require to be on different sides of the centre building, if attached to it architecturally; but if the street or village mode of arrangement is adopted, I see no reason why the *buildings* at least, devoted to each sex, may not be co-mingled, so as to approach in some fashion to ordinary life.

Airing-courts and gardens for patients.

The Hospital has its special airing-courts, but the house-gardens, tended by the patients themselves, will be the delightful substitute here, and may be made, by the introduction of floral and horticultural exhibitions, to minister greatly to the occupation and amusement of the inmates.

Amusement-hall—it may be used for a place of worship.

From economical considerations, I have designed an amusement-hall in the Hospital building; it would serve also in Scotland for a place of worship, but the devotional feelings of the inmates would be best consulted by the erection in the grounds of a chapel of ecclesiastic design, to which, by the sound of the church-going bell, they would be summoned to the worship of the Great Father of all.

A Chapel recommended.

Detached Infirmary for sick and infirm.

In order to provide for the comfort of the sick and infirm, two infirmaries have been designed. They are buildings of a single story, of a cheerful aspect, with easy access to the garden attached, they ought to be placed in contiguity to the Hospital, for the sake of being near the Physician, but not so near as to be disturbed by any noisy sounds emanating therefrom.

Its location.

Residence of the Medical-Superintendent should be a detached building.

I have not attempted to design a dwelling-house for the Medical-Superintendent, as there is nothing peculiar required about it; the cost need not be more than £800 or £1000, and the residence should occupy a post of honour within the grounds, and have, if possible, an independent communication with the outer world. It is desirable that the house should be separate from the Hospital, both on account of the propriety of separating the private establishment of the Superintendent from that of the Asylum, and of providing him and his family a retreat from the necessary noise and bustle of a large institution.

More particular description of the Asylum.

It will be necessary now to condescend upon a more particular description of the proposed Asylum. No part of the buildings is more than two stories in height, thus,

great thickness of walls, strength of timbers, and other expenses are avoided, and the cleaning and painting of the windows, repairs of the walls and roofs &c., are more easily accomplished. There are very few projections of portions of the buildings, the water-closets, baths, &c., being placed betwixt the day-rooms; gables are saved by many of the fire-places being placed in the back walls; thus, building is economised, and all other necessary outlays reduced to a minimum. With the exception of the infirmaries, and some of the single-rooms, all the sleeping accommodation is on the upper story, which is in every respect a more natural, convenient, and healthy arrangement, than the one generally prevailing in large Asylums. The expensive and unhomely corridors are entirely dispensed with, but in the receding wings of the Hospital, the galleries of access to the single-rooms are made wide enough to render them capable of being used as day-rooms when required.

All sleeping-rooms are in the upper story.

No corridors.

Details of the central Hospital.

The various offices.

Height of general ground floor.

Position and size of the Amusement-hall.

The central dormitories.

The kitchen department. Housekeeper's and servants' rooms.

To begin with the Hospital building; it consists of a central portion with wings and receding wings, extending right and left, for males and females respectively. This centre contains, on the ground-floor, an entrance hall and stair of ample proportions, the Superintendent's office, the Assistant-Medical Officer's rooms, Dispensary, Library, &c., with a passage behind, leading to the corridor of communication. This floor, and the whole ground-floor of the Hospital and other buildings, is 12 feet in height. On the first floor of the central portion, we have, over the entrance and the four front rooms below, the amusement-hall, measuring 43 feet by 32, the walls are 14 feet in height, and to give space and character to the apartment, the open timbers of the roof may be shown; adjoining are two dormitories, each holding 8 beds, owing to their position, there are only two windows in each, but this want is repaired by the addition of sky-lights. The stair-case is also lighted from the roof. Passing beneath the stair, the kitchen department is reached. Here are placed the housekeeper's parlour, servants'-hall, kitchen, scullery, larder, pantry, and stair leading to the floor above, occupied by the bed-rooms for the housekeeper, servants, &c.; the upper-floor here is not so lofty as in the front buildings. There

is no room above the kitchen, which is open to the timbers, in order to promote its coolness and ventilation. Entered from the corridor of communication on each side, is the building at the rear of the kitchen, containing the general entrance for visitors, porter's-room, waiting-room, and steward's store below, with his apartments, &c., above. Returning to the front building, which is uniform on each side of the central block, we have, on the ground-floor of each side, two day-rooms, each measuring 20 feet by 24; and separated by the scullery, bath, water-closets, and passages. These rooms are well lighted, have fire-places in the back wall, and sash-doors, so that the patients may have free communication with the airing-courts in front of the buildings. Beyond, and at the extremities of each wing, are the stairs leading to the first floor, they are easy and roomy, and have the "wells" built up; above them are placed the cisterns for the water supply, the walls being made strong enough to bear the weight. The receding wings are at the extremities and project at right angles from the wings; they are uniform in plan, and contain on the ground floor, the gallery, measuring 37 feet by 10 (to be used as a day-room,) 5 single-rooms, (2 having fire-places,) scullery, bath, and water-closet. The whole of the ground floor is connected with the centre buildings, by a well-lighted passage or corridor of communication. Ascending the stairs, we reach the dormitories and upper range of single rooms with their gallery. On each wing there are two large dormitories, each measuring 20 feet by 26 feet 9 ins., and each containing space for 10 beds; the room for the attendants, and the lavatory and water-closet are situated in the centre. The arrangements in the receding wing, with the exception of there being no scullery and bath-room, which gives an extra single-room and length of gallery, are the same as on the ground-floor. The walls throughout the first-floor are 10 feet 6 ins. in height, and the ceilings are raised so as to give a clear height of 12 or 13 feet.

The general entrance and the steward's rooms and stores.

The front wings.

The day-rooms and their arrangements.

Stairs to the upper floor.

The receding wings.

The lower gallery and single rooms.

Corridor of communication.

The dormitories and their arrangement.

The upper gallery and single rooms.

Height of upper floor.

We come now to a description of the Houses; two plans have been designed for them. Plan A contains, on the ground floor, two day-rooms, measuring 20 feet by 24 feet,

The Houses.

Plan A—the day-rooms and offices.

separated by a stair, underneath which is the water-closet, and having each, on the opposite side of the room, a scullery and room for stores, bath and lavatory. The entrance into the corridor of communication is common to both, and each have sash-doors opening into the gardens in front.

Day-rooms placed in pairs.

The day-rooms are placed in pairs, with a lobby between, to enable the attendants to render each other aid in case of need, there being only one required in each room. The fire-places are in the back walls, and the rooms are well lighted from both sides.

The dormitories and attendants' room.

Above, on each side of the stair, are the dormitories extending over the space below,—they each measure 20 feet by 37 feet, and are lighted from each side; there are also water-closets, and a joint room for the attendants attached, from which room both dormitories can be surveyed.

Lavatories and wash-stands.

There are no lavatories on this floor, as it is desirable that ordinary wash-stands and basins should be provided, and the lavatories below can be used, if required, for morning ablutions, at any rate they will be used by the working patients washing before taking meals.

Arrangement of doors, &c., in reference to the beds.

An attempt has been made, as far as practicable, to place the doors and fire-places in the various rooms, so as to interfere as little as possible with the convenient arrangement of the beds; and the dormitories are designed as parallelograms, so that the beds may not be crowded together, and too much unoccupied space be left in the centre of the room.

Height of rooms

The height of the House dormitories is the same as in the

Accommodation

Hospital, and the number of patients the house is designed to accommodate is 30, or 15 in each half.

Plan B has one day-room and four single rooms.

Plan B differs from the preceding in several particulars. The general building is 10 feet shorter, there is only *one* day-room, measuring 20 feet by 31 feet, for the whole 30 patients, *one* scullery, bath, lavatory, and water-closet, and an addition of 4 single rooms (2 having fire-places) on the ground floor.

Dormitories.

Above, the space is divided into two unequal sized dormitories, for 8 and 18 patients respectively, with *one* water-closet and the attendants'-room; the communication with the garden and the corridor is the same as in Plan A.

Another plan provides for work-rooms.

Another plan, which we may designate Plan C, might have been given. It is externally the length of A, there is one day-room, as in B, but instead of the

single rooms on the ground floor, the space is arranged for a work-room or shop. The space above is divided by the stair into two unequally sized dormitories, capable of accommodating the whole 30 patients, and the offices are the same as in Plan B.

Each plan has its own advantages. Plan A would be most suitable for the more tranquil patients, where one attendant would be able to take charge, with aid however within call. Plan B provides for the whole number being placed in one day-room, under the charge of two attendants; this arrangement would best suit that class requiring a closer surveillance, and the single rooms would prove of use, were it necessary to seclude for a while an occasionally excited patient during the day, and for an infirm or garrulous patient at night. There is also a great saving in the fittings, *two* water-closets and *one* scullery, bath, and lavatory being dispensed with. Plan C would prevent the erection of workshops elsewhere, and would introduce a more home-like appearance, by having shoemakers', tailors', &c., shops dispensed amongst the houses; these rooms could be put to other purposes, such as for library, news or school-rooms, or they could be used simply as dormitories, and so increase the size of the Asylum. I give the preference to Plan B, and have recognized it in the subsequent calculations of size and cost; but in practice the three plans may be adopted, so as to vary the nature of the accommodation.

Advantages of each plan.

Plan B preferred.

There are two plans given for the Infirmaries, one to contain 10 and the other 15 patients, one or other of which may be erected according to the size of the Asylum, provided that not less than one-twelfth of the patients be furnished with "infirmary" accommodation; of course *two* buildings will be necessary, one for males and the other for females, or, if under one roof, the building must be in two divisions. The whole of the apartments are placed on the ground-floor, so that the sick and infirm residents may be saved the fatigue of ascending and descending the stairs, and have easy access to the garden attached. The smaller cottage, (Plan A) has a day-room, measuring 20 feet by 16 feet, having on one side the scullery, bath, and lavatory,

The Infirmaries,

whereof two are required,

are of one story.

Plan A is for 10 patients.

and on the other, the lobby, nurse's-room, and water-closet. The sleeping department adjoining, consists of two single rooms of extra proportions, with a fire-place in each, and a dormitory, 20 feet by 22 feet,—all the walls are 10 feet 6 ins. high, and the ceilings elevated to 12 or 13 feet. The other Plan (B) is differently arranged, the entrance is by a porch, into a gallery or corridor, 50 feet in length, along the side of which are, the nurse's room (in the centre) and four single-rooms, each having a fire-place; at one end of the gallery is the day-room (21 feet by 20 feet), with scullery, bath and lavatory adjoining, and at the opposite end is the dormitory, 34 feet by 20 feet; the water-closets are in the angles to the front. The height is the same as that of Plan A. Of the two, I give the preference to the latter plan, as the most convenient arrangement.

Plan B is for 15 patients,

and is preferred

The wash-house and laundry. Stables and work-shops,

The wash-house and laundry, engine-house and smith's shop are contained in one building, and the stables, work-shops, and bake-house in another; they are of one story, and of uniform external aspect. If the work-shops are provided in the houses, the arrangements of this latter building will require to be modified. As these buildings present no novel features, and will be sufficiently understood by a reference to the plans, no further description of them will be necessary.

present no new features.

The arrangement of the component parts of the Asylum. The "Village system"

We have here then the component parts of the Asylum, the arrangement of which will depend very much upon the nature of the site, and the views of the Superintendent and Architect. No doubt there is a charm about the name and idea of a village, and sweet visions may be pictured of snug cottages embosomed in beauty, where the inmates enjoy the simple blessings of rural peace and comfort. But this picture can never be realized for paupers, it is possible but expensive, and only attainable by the wealthy. Economy demands that a considerable number must reside together, so as to occupy the entire attention of the attendant, if we put 20 or 30 people together under one roof, with space enough for day and night accommodation, the building ceases to be a cottage, and the conglomeration of buildings a village, in the poetical sense of the word. The real question before us is,—How shall we arrange these various

cannot be realized.

The arrangement adopted must secure efficient supervision.

buildings together so as to best secure their efficient supervision? Whether they are built in rows or scattered about, they ought to be connected together, and with the Hospital, by covered passages, so that they may be visited with facility, at any time of day or night, by the medical officers and night watch, and the general intercommunication betwixt all parts of the establishment may be rendered easy.

Buildings must be connected by covered passages.

A block-plan is given, indicating the arrangement proposed for the buildings; but as I have before remarked, this matter must be left very much to the Architect and Medical-Superintendent. I must premise, that the separate departments were designed more with reference to their individual requirements, as isolated buildings, than with the idea of their ultimate grouping, so that probably doors, windows, passages, &c., will require some modification of form or position. The buildings should be placed near the boundary of the grounds, facing the best prospect, and having a sufficient road of approach, to what may be termed the "back" of the Asylum, where the general entrance is situated, as it is most desirable that no roads traversed by visitors, &c., should intersect the grounds devoted to the uses of the patients. A considerable space will be required to receive the buildings, for when they are strictly confined to two stories, they must occupy more ground than if they were in three or more. The Hospital building is placed in the centre, and in a line with its front, on either hand, are the infirmaries; the laundry buildings on the female, and the stables and work-shops on the male side, are placed behind the infirmaries, on each side of the general entrance; while a little in front of the laundry and stables, but beyond the infirmaries, so as to enjoy the landscape, are the houses for the bulk of the patients. These several buildings are united by means of a passage, which may be merely a roof supported by pillars, or by a "corridor of communication," built of stone, wood, or brick, and glazed on the sides and top, so as to freely admit light and ventilation; if made sufficiently wide, it may be used as an ambulatory or cloister walk in bad weather, as it would be heated by the fires in the walls

Block-plan of arrangement.

Positions of the buildings proposed,

which are united by the covered passage,

which may be used for exercise in wet weather.

against which it is erected; it should be divided into sections corresponding to the several Houses, and have doors connecting them together, and others leading out into the kitchen-garden behind. This passage or corridor is carried in front of the laundry and stables, and behind the Houses. If the Houses were placed in contact, every second gable would be saved; I have, however, separated them by a space of 10 or 12 feet, which may be put to a variety of uses, such as a sun-screen in front, and a store behind; or, if such amenities are allowable in every Asylum, a green-house may be made by the means of a glass front and roof, and the caloric from the fires in the gables of the Houses. The Superintendent's residence, and the Chapel, if separate buildings as recommended, might occupy opposite sites in front and towards the extremities of the range of buildings. The sites proposed for the airing-courts, bleaching-green, kitchen and patients' gardens, &c., are indicated on the plan, and require no comment further, than to state, that, by this arrangement, the walls enclosing the kitchen garden are made to form part of the boundary wall of the estate, and, together with the walls of the airing-court and patients' gardens, render the essential accommodation for the patients compact, while the fences of the general grounds may be of a less expensive character, as only the more reliable patients would be trusted abroad.

Uses of the space left between the houses.

Position of the chapel and Superintendent's house.

The airing courts and gardens,

enclosed by proper walls.

Though the Hospital is designed to contain 78 patients, I by no means affirm thereby that the exact number such buildings ought to contain is indicated. If the entire establishment is expected to contain from 300 to 350 patients, then about 78, or a fourth part, will require a stronger and more expensive building than the remaining three-fourths. An Asylum, containing from 400 to 500 inmates, would require an "Hospital" capable of holding from 100 to 130 of the number; but if the entire number falls much below 200, I would recommend that the building for the officers, kitchens, &c., (which would require to be on a smaller scale) be erected altogether separate from the patients' abodes, and that one or more of the Houses, be made suitable for the noisy patients; indeed, the principle of the entire separation of the patients' dwellings,

Hospital should contain a fourth of the entire number of the patients.

Separation of patients' abodes from those of the executive.

from those of the officers and servants, might be carried out, irrespective of the size of the Asylum.

No "elevations" given, because it is the Architect's province.

I have not attempted to give the "elevations" of the various buildings, though I have my own idea of what might be suitable, but as the subject comes more within the province of the Architect than the Medical Officer, it is better that it should be left in the charge of the former. The subject is capable of great variety of treatment, and the division of the Asylum into so many separate buildings affords an excellent opportunity for the exercise of professional taste. The designs should be light and cheerful looking, consistent with the site and the purposes of the buildings, not monotonous and uniform, but varied, homely, and snug.

Character of the external design.

Position of the baths and water-closets.

It will be observed, that contrary to the more general practice, the baths, lavatories, and water-closets have not been placed in projections, but within the general range of the building. This is from motives of economy, and is not an essential feature of the design, however, as the great majority of them are placed in the fronts of the buildings, so as not to interfere with the "corridor of communication" running along the back walls, "bays" can be easily built to contain them if desired. I am of opinion, however, that if these offices are kept cleanly, and are well ventilated, they would not be the source of any annoyance, certainly not more than they are in ordinary dwellings.

Bed-rooms only provided for the attendants.

No rooms have been provided for the attendants in connection with the day-rooms, because they offer a temptation to them to retire too frequently from actual contact with their charge, and the sculleries can be used for retirement, if really required. There are, however, bed-rooms adjoining the dormitories, from whence they can survey the patients, if "on duty" at night, but if relieved by the night-nurse, these rooms can be made quite private, by the closure of the shutter of the partition window. There are no bed-rooms specially provided for the attendants of the "receding wings," but beds may be placed for them in the upper galleries, or a part of the gallery may be partitioned off as a room.

The proportions of single-rooms, adopting Plan B for

The ratio of the single-rooms.

the houses and the Infirmary, are 1 to every 3.75 patients in the Infirmaries; 1 to 3.54 in the Hospital; 1 to 7.5 in the houses; giving a general average of 1 to 5.66 over the general establishment.

The distribution and ratio of the baths.

The baths are distributed throughout the Asylum, and are placed in the ground-floors; if a general bath-room is preferred, one could be easily constructed at the end of each "receding wing" for males and females respectively, and would be very conveniently situated for ready access from all parts of the establishment. The proportion of baths is as follows, viz.: 1 to every 25 patients, if Plan B be used for the houses; and 1 to 15.45, if Plan A is selected.

The water supply, its importance.

The water supply is a subject of great importance to an Asylum, as not less than 40 gallons will be required for each patient in the day. I need not enlarge upon the obvious advantage of obtaining for the Asylum a site possessing a good supply of water, and if the spring or supply is in an elevated situation, the reservoir, from which the water would gravitate to the different parts of the Asylum, could be formed on the spot, and be filled without labour and expense; otherwise, large cisterns will require to be placed on the roofs of different portions of the buildings, and whether water be found on the estate, or supplied from the water-works of the adjacent town, (unless *its* reservoir be higher than the Asylum roof,) a steam-engine, to raise the suppply to the cisterns, will require to be added to the expenses of the establishment. The wash-house should have its independent supply of spring or river water, and in addition, it would be very desirable to collect the rain water from the various roofs for its use also. It has also been found to be an economical practice, to supply the lavatories with rain water for the patients to wash in.

The advantage of a spring on the estate.

Water cisterns and the mode of filling them.

Collection of the rain-water.

Varieties of windows.

A great variety of windows have been invented for the use of Asylums, each possessing, it may be, some advantageous feature, with some over-balancing objection. The general opinion now is, that the ordinary sash-window is the simplest, safest, and best. It should be double hung, and be prevented, by lock or otherwise, from opening more than 5 or 6 inches at top and bottom. It should be made strong, without being clumsy, and the panes of such a form

The ordinary sash window the best.

Size and form of the panes.

and size, that no one, after breaking the glass, could escape by the opening; besides, in case of repair of broken glass, the small panes are more economical. Window shutters will not be required in the day-rooms. They should be supplied to all the single-rooms, and to the Hospital dormitories.

Window-shutters.

It is unnecessary in this sketch to say much about the mode of providing hot water for the uses of the Asylum. Two modes are in general use, viz.: that by means of steam, which is conducted to the various hot-water cisterns from a "steam boiler." This boiler may be put to other uses besides, e.g., the motive power of the engine, (if one is required); for supplying caloric to the drying closets of the laundry; for cooking purposes; for the heating of those parts of the Asylum where there are no fire-places, &c. The other mode is the ordinary one of boilers and fires. As all the sculleries and baths are on the ground floors, it will not be necessary to conduct hot-water to the upper floors at all, and as the sculleries and baths are in close neighbourhood, the latter may very readily be provided with hot-water from boilers in connection with the fires of the former; these boilers will also supply the hot-water required for the ordinary scullery service.

The provision of hot-water.

By the "steam boiler."

Other uses of the "steam boiler."

By ordinary boilers and fires.

No hot-water required on the upper floors.

With regard to the ventilation, I would be disposed to trust very much to the old plan of opening the windows at the top and bottom, and as the day and night accommodation is almost entirely on different floors, this plan would answer well, when the rooms are alternately empty. But over and above this, provision must be made for the removal of vitiated air during their occupation also; the simplest mode appears to be by the provision of an opening near the ceiling into the chimney, or into a separate air-flue running up by its side; if into the chimney, some contrivance, and there are many in use, will be necessary to prevent the reflux of smoke through the opening. Fresh air should also be introduced into the rooms independent of the windows, this may be done by means of air drains passing from the outside and regulated by gratings, or other contrivances in the floors, skirting-boards, or walls;

The Ventilation by old plans the best.

Openings into air-flues.

Introduction of fresh air into the rooms.

Warming of the fresh air.

or the air may be conducted from the outside to a metal chamber behind the fire, where it is heated in cold weather, and admitted by various openings into the room, thus assisting the heating as well as the ventilation of the apartment.

Mode of "airing" the single-rooms.

In the single-rooms, where there are no chimneys, it will be necessary to conduct the foul air by means of zinc or clay tubes into the nearest chimney; in some large Asylums the proper working of the ventilation is assisted

Extraction of the foul air.

by carrying all these tubes into one shaft, from which the air is extracted by means of heat; if this plan is adopted in the Hospital, the kitchen chimney, where there is always, or nearly always, a fire, might be constructed to serve a double purpose. In the adjunct buildings the treatment adopted to secure good ventilation in ordinary dwellings will be quite sufficient, as they are all separate and distinct edifices.

The heating of the Asylum.

The heating of the Asylum is another important subject, but here again, where it can be adopted, the old plan of

The best grate.

open fire-places is the most simple and pleasant. The most economical grate, is that with fire-brick sides and back, which diffuses the heat very powerfully; there may be more than one provided, according to the size of the room,

Comfort of the fire-side.

for besides the extra heat, a greater number of patients are enabled to enjoy the ruddy glow of the homely ingle.

Mode of economising the heat.

Still, however, it may be necessary to economise the caloric, and heat the room thoroughly by one fire; in order to effect this the warm-air chambers, already mentioned, may be put into requisition. A very useful arrangement is the stove-grate, which combines the heating power of

Heating of the single-rooms.

the stove, with the open fire of the grate. The single-rooms may be easily heated and supplied with fresh air too, by the application of the principles of the warm-air chambers, connected with the fires of the galleries, the air being carried by means of glazed pipes into each room; however, if the steam boiler is required for other uses, it would be preferable to extend its capabilities to the heating of the single-rooms besides.

Artificial lighting,

In the matter of artificial lighting, nothing now-a-days can be tolerated but coal gas; it is at once the safest, cleanest, easiest-managed, and cheapest light. I presume,

that in all cases where District Asylums are erected, the judicious and important recommendation of the Scottish Commissioners, that they should be within a short distance of a town, will be attended to; and if so, then arrangements for a supply of gas from the town gasometer will be practicable; but if a cheap and regular supply is not attainable, then it is my decided conviction that a domestic gas-work is preferable to all the patented varieties of moderateur, sperm, naphtha, and parafin lamps invented.

should be by gas from the adjacent town,

or from a domestic gas-work.

It will be readily understood that I might have noticed a number of important matters connected with Asylum construction and economics, such as the drainage and application of the sewage,—of arrangements and appliances for the prevention of fire,—the best kinds of shutters, doors, and locks,—of baths and water-closets—the provision of furniture, beds and bedding, &c., &c.; but this is no part of my purpose, I only aspire to give a few "suggestions," explanatory of the design and arrangement of the Asylum which I have proposed, and which may be necessary for the calculation of its cost; no doubt if this, or any other design is practically carried out, such questions will require a full solution.

Important matters not noticed

The reason given.

It may be permitted me (before proceeding to space-tables and calculations of the cost), though somewhat parenthetical, to venture a proposition with regard to the treatment of dipsomaniacs, in connection with the "house" arrangement for patients. The law, as it at present stands, will not permit of their compulsory seclusion in an Asylum unless they are in a condition of actual mania, and it also requires their liberation so soon as a calm state of body and mind is re-established; whereas, it is well known that to send them from an Asylum is, in the majority of cases to send them again to temptation, indulgence, and consequent excitement, and so to certainly accelerate their final and complete physical, mental, and moral ruin. What is urgently required, is a place of refuge, where the victims of this undoubted form of insanity may be preserved from the fascinations of the intoxicating cup, till the power of the morbid appetite is conquered; and this may require months or even years for its accomplishment. Might there

A suggestion concerning the treatment of Dipsomaniacs,

not be reared in connection with each Asylum, one or more buildings, similar to the "houses" described, the arrangements and fittings of which would vary according to the class inhabiting them? Not exactly a part of the Asylum, but connected with it; for here, unless the law be extended, a voluntary novitiate must prevail, no "warrant" but that of *need* on the one side, and love and sympathy for the tempted ones on the other, be presented or demanded. This is not the place for details of the mode of conducting such refuges, there are difficulties in the way no doubt, but I feel convinced they are not so great but that they may be overcome by wisdom and determination; and there is every assurance to believe that the friends would gladly send, and the patients themselves, in many cases, as gladly come to such institutions, where, without being actually in an Asylum for the insane, they could enjoy the benefit of its medical skill, and healthy discipline, and, by God's blessing, be returned again to their place in the world, rescued from certain degradation, and restored to a hopeful future.

another for the reception of suspected lunatics,

I must also not omit to suggest, that the system of Asylum construction advocated, would enable ready and suitable provision to be made for the reception of suspected lunatics, who might reside for a definite limited period in a special "house," till their actual condition was ascertained, prior to being set at liberty, or transferred, under the usual certificates and warrant, to the Asylum. It would also afford a place for the residence of convalescents, prior to their discharge, where the discipline of the Asylum would be gradually relaxed, so as to fit them to resume their ordinary avocations.

and a third concerning convalescents.

To return: the night accommodation for the patients is arranged as follows, viz.: Tables of night and day accommodation.

No. of Rooms.	Description of Rooms.	No. of Beds in each.	Male	Female	Total.	Gen. Total.
	HOSPITAL.					
2	Dormitories.....	8	8	8	16	
4	Dormitories.....	10	10	20	40	
22	Single Rooms	1	11	11	22	
						78
	TWO INFIRMARIES.					
2	Dormitories.....	11	11	11	22	
8	Single Rooms.....	1	4	4	8	
						30
	EIGHT HOUSES.					
8	Dormitories.	8	32	32	64	
8	Dormitories.....	18	72	72	144	
32	Single Rooms	1	16	16	32	
						240
						348

The next Table exhibits the day accommodation of the Institution.

No. of Rooms.	Description of Rooms.	No. of Beds. in each.	Male	Female	Total.	Gen. Total.
	HOSPITAL.					
4	Day-rooms.....	15	30	30	60	
2	Galleries (lower).....	9	9	9	18	
						78
	TWO INFIRMARIES.					
2	Day-rooms.....	15	15	15	30	
						30
	EIGHT HOUSES.					
8	Day-rooms.....	30	120	120	240	
						240
						348

In reference to the above Table, the patients in the Hospital can be arranged in smaller numbers if required, as the upper gallery in each receding wing can be used as a day-room. Means of increasing the accommodation during the day.

The two following Tables exhibit the superficial contents of the sleeping and day-rooms, giving, it will be seen, about the minimum space of 20 superficial feet to each patient Tables of the superficial contents of the patients sleeping and day-rooms.

by day, and 50 by night in the dormitories, and 63 in the single-rooms, as recommended by the Scottish Commissioners, This space is further increased by the height of each floor being more than 11 feet, the minimum of the Commissioners. So that the cubic measurement is in *all* cases more than the standard.

No. of Rooms.	Description of Rooms.	Dimens.	Superfi.	Aggre. superfi.	Average superfi. ℔ patient.
	HOSPITAL.	Feet. in.	Feet.	Feet.	Feet.
4	Dormitories.....	20by26 9	535	2140	53 6"
2	Dormitories.....	15 ,, 29			
22	Single Rooms.....	10 ,, 7	70	1540	70
	TWO INFIRMARIES.				
2	Dormitories.....	20 ,, 34	680	1360	61 9"
8	Single Rooms.....	12 ,, 9	108	864	108
	EIGHT HOUSES.				
8	Dormitories.....	20 ,, 43	860	6880	47 9"
8	Dormitories.....	20 ,, 20	400	3200	50
32	Single Rooms.....	9' 9" 7' 6"	73 1"	2318 8"	73 1"

No. of Rooms.	Descriptio of Rooms	Dimens.	Superfi.	Aggre. superfi.	Average superfi. ℔ patient.
	HOSPITAL.	Feet.	Feet.	Feet.	Feet.
4	Day-rooms.....	20 by 24	480	1920	32
2	Galleries (lower)....	10 ,, 37	370	740	41 1"
2	Galleries (upper)...	10 ,, 44	440	880	.....
	TWO INFIRMARIES.				
2	Day-rooms.....	20 ,, 21	420	840	28
1	Gallery.....	50 ,, 9	450	.....	.....
	EIGHT HOUSES.				
8	Day-rooms.....	20 ,, 31	620	4960	20 8"

The cost of the Asylum.

We come now to an important aspect of the question, viz. : the cost. I do not require to say that what I have to present under this head, is an approach to the subject, calculated upon the prices of materials and the rate of wages in this locality ; it being impossible to make a positive statement without having actual working plans prepared, because the character of the elevations, and the amount of finish bestowed upon the buildings will materi-

An approximation only made.

ally affect the amount; however, I assume that they are simply and plainly erected, but at the same time in a substantial and workman-like way.

The calculations of the cost.

Mr. Middleton's calculations are as follows, viz. :—The Central Hospital, (including all necessary fittings, water-cisterns, cooking apparatus, &c.), £4560; House B, (with fittings), £690; Infirmary B, (with fittings), £412; Wash-house and Laundry, (with drying-closets and fittings), £824; Stables and Workshops, £650; Kitchen Garden, and Patients' Courts and Garden Walls, £1120; Covered Passage, according to the block plan, £1100. To give a view of the aggregate cost of a well-appointed Asylum, possessing every requisite for the management of 350 patients, with full accommodation for the staff of officers, servants, and attendants, I append the following summary, viz. :—

The aggregate cost of the whole.

The Central Hospital,.....	£4560
The Wash-house and Laundry,.....	824
The Stables and Workshops,.....	650
Two Infirmaries (each, £412),.....	824
Eight Houses (each, £690),.....	5520
Medical Superintendent's House,.....	1000
The Covered Passage,.....	1100
The Garden and Court Walls,.....	1120
Drainage, Engine and Boiler,.....	1000
	£16,698

The average cost ℔ patient.

This sum gives the average cost ℔ patient at £47 14s.; to this we must add the cost of a quarter of an acre of land for each, (which is the quantity recommended by the Commissioners); £20, (or £80 an acre), would be a good price for the improvable land on which Pauper Asylums are generally erected. We have also to add the important items of furniture, bedding, and clothing, and for this I would name £12 a-head. I am aware the outlay has been very much more in other Asylums, but I cannot avoid the conviction that due economy has not been exercised; at any rate, the £12 should supply all indispensible requisites; and additions, in the shape of extra comforts and ornamental articles, can be gradually supplied by the labour of the patients at the mere cost of material. These

The price of land, and of furniture, bedding, and clothing to be added,

to give the entire cost ℔ patient, which is contrasted with that of other Asylums.

sums will make the entire cost of Buildings, Land, Furniture, and Clothing, scarcely £80, instead of ranging from £150 to £250 for each patient; and for this sum we have no imperfect, make-shift Asylum, but an institution as perfect in all its parts, and as fully adapted to the great purpose contemplated by all Asylums, as any of the more costly buildings, and admitting of enlargement, according to the original design, to any reasonable extent, at a cost of only £23 a patient.

The cost of additions ℔ patient.

The cost ℔ week of the lodging of lunatics. The rates of maintenance.

The yearly interest of this capital sum of £80 a patient is, at 5 ℔ cent., £4, or about 1s. 7d. a week for the lodging, to be added to the cost of maintenance and establishment charges, which in the English Asylums ranged, in 1859, from 6s. 8½d. at the Birmingham, to 12s. 8½d. at the Sussex Asylum. The cost of maintenance in County and District Asylums is, to a certain extent, under the control of the Superintendent and Committee of Management, and will vary in some degree according to the bill-of-fare provided, the price of provisions, rate of salaries and wages, &c., but as *no* profit is required, it will prove the duty and interest of all parties concerned, to study that amount of economy, compatible with the efficient and conscientious discharge of the obligations due to the inmates, for the amelioration of whose unfortunate condition the institution is organized.

Duties of Managers and Superintendent

Asylums may be erected on a liberal scale at a low rate.

In conclusion, I think it is abundantly evident that, by the adoption of the principles indicated, our New Asylums for the Insane may be erected on a liberal scale, and yet not cost on an average, including the full amount of land recommended, more than £80 ℔ patient. No Asylum has yet been erected *ab initio*, with furnishings and land, for any thing like the sum named, and the cheapest *additions* made to any Asylum have been to the Devon, at £48, and the Chester at £39 a-head, and which are considered to be marvels of cheapness, and commended, most properly, as examples of what may be effected in the way of reforming our Asylum bills. The experiment is at least worth trying, and if it does not realise *all* my anticipations, I am sanguine that an Asylum will be erected as fully equipped, and at as moderate a cost as any in the kingdom.

The experiment recommended.

REFERENCE TO THE PLANS.

(No. 1.)—Central Hospital. (Ground Floor.)

A. Private Entrance and Lobby.
B. Medical Superintendent's Office.
C. Dispensary.
D. Assistant Medical Officer's Parl.
E. ,, ,, ,, Bed-room.
F. Library.
G. Store.
H. Passage.
I. Housekeeper's Parlour.
K. Kitchen.
L. Scullery.
M. Pantry.
N. Larder.
O. Servants' Hall.
P. General Entrance.
Q. Porter's Room.
R. Visitors' Room.
S. Steward's Store.
T. Day-room (Patients.)
U. Gallery.
V. Water-closet.
W. Bath-room.
X. Single-room.
Y. Corridor of Communication.

(No. 2.)—Central Hospital. (Upper Floor.)

A. Amusement Hall.
B. Dormitory.
C. Housekeeper's Bed-room.
D. Servants' Bed-room.
E. Kitchen Roof.
F. Steward's Parlour.
G. Steward's Bed-room.
H. Stores.
I. Passage.
K. Water-closet.
L. Lavatory.
M. Attendants' Room.
N. Gallery.
O. Single-room.

(No. 3.)—House A.

A. Day-room.
B. Scullery.
C. Bath and Lavatory.
D. Water-closet.
E. Dormitory.
F. Attendants' Room.
G. Store.

(No. 4.)—House B.

A. Day-room.
B. Scullery.
C. Bath and Lavatory.
D. Water-closet.
E. Dormitory.
F. Attendants' Room.
G. Single Room.

(No. 5.)—Infirmary A.

A. Day-room.
B. Scullery.
C. Bath and Lavatory.
D. Water-closet.
E. Dormitory.
F. Nurse's Room.
G. Single-room.
H. Passage.

(No. 6.)—Infirmary B.

A. Day-room.
B. Scullery.
C. Bath and Lavatory.
D. Water-closet.
E. Dormitory.
F. Nurse's room.
G. Single-room.
H. Gallery.
I. Porch.

(No. 7.)—Wash-House and Laundry.

A. Reception Room.
B. Wash-house.
C. Drying-closets.
D. Laundry.
E. Distribution-room.
F. Engine-house.
G. Smith and Plumber's Shop.
H. Clothes' Boiler.

(No. 8.)—Workshops and Stables.

A. Stables.
B. Coach-house.
C. Dead-house,
D. Post-mortem Room.
E. Shoemaker's Shop.
F. Painter and Glazier's Shop.
G. Joiner's Shop.
H. Tailor's Shop.
I. Bake-house.

(No. 9.)—Block-Plan.

A. Central Hospital.
B. Infirmary.
C. Workshops and Stables.
D. Wash-house and Laundry.
E. House (for Patients.)
F. Stable Court.
G. Smith's Court.
H. Coal Sheds.
I. Corridor of Communication.
K. Kitchen Garden.
L. Patients' Garden.
M. Kitchen Court.
N. Male Working Court.
O. Bleaching Green.
P. Infirmary Garden.
Q. Airing Court.
R. Road of Approach.

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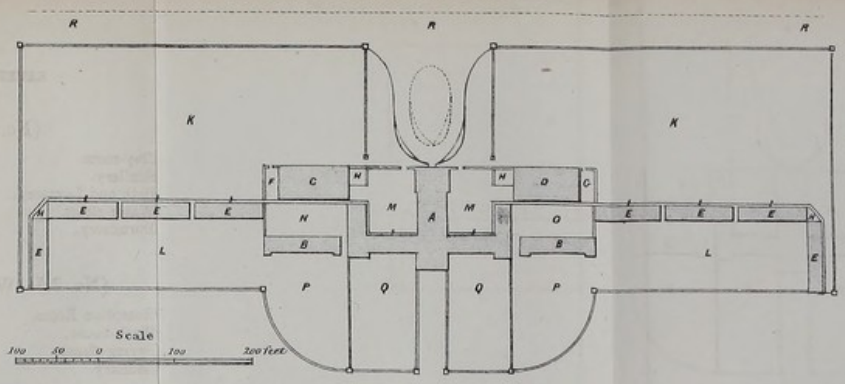
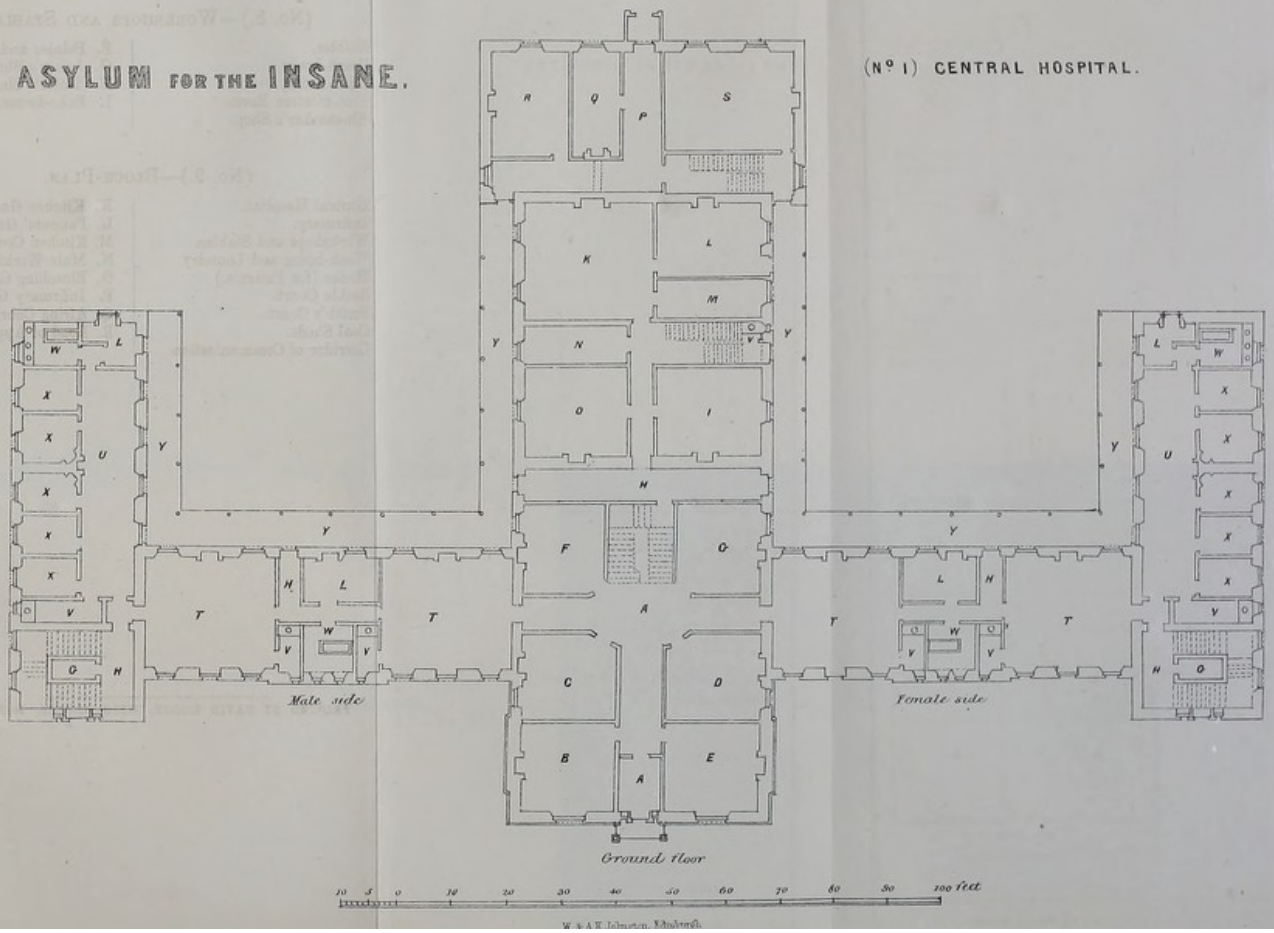
(N° 9) BLOCK PLAN



ASYLUM FOR THE INSANE.

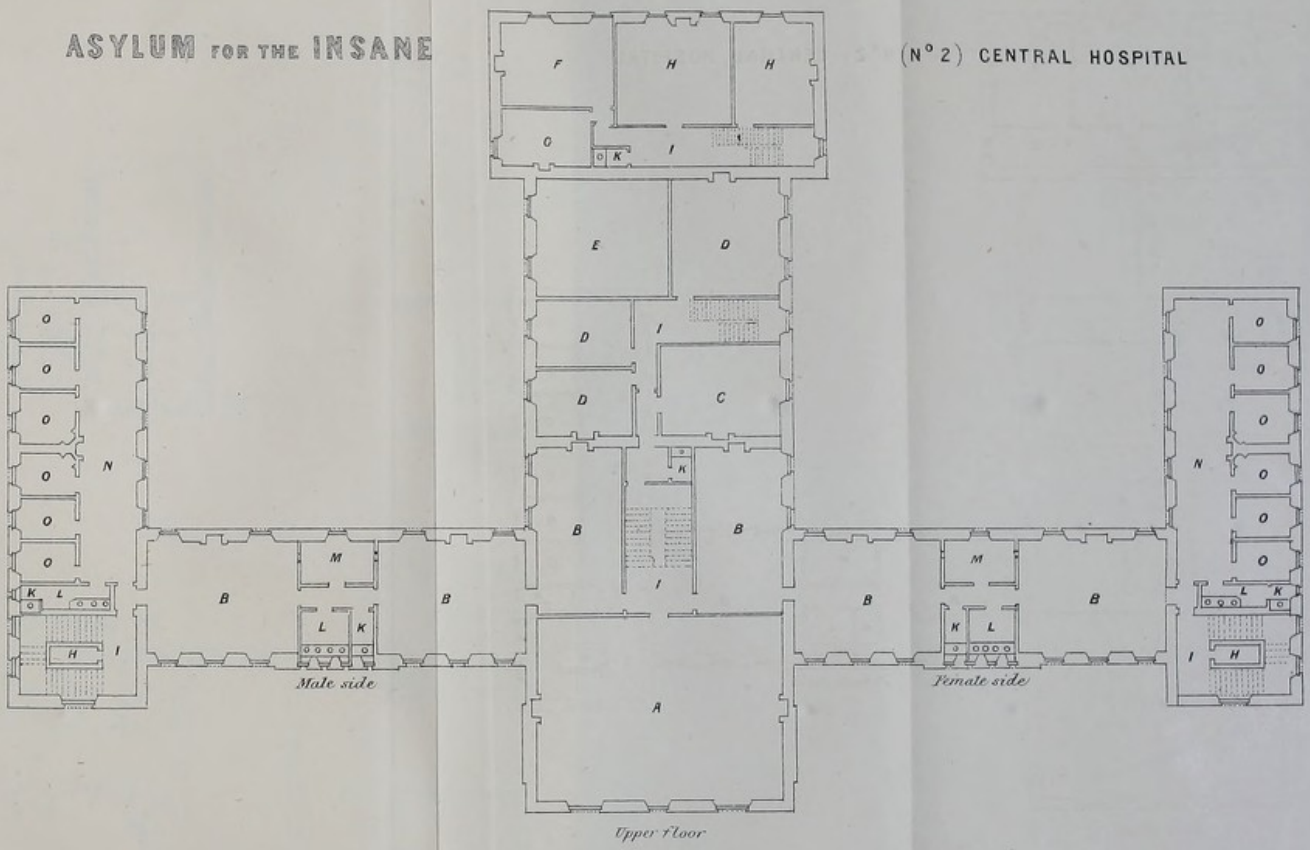
(N° 1) CENTRAL HOSPITAL.



W. & A. K. Johnston, Edinburgh.

ASYLUM FOR THE INSANE

(N° 2) CENTRAL HOSPITAL



Upper floor

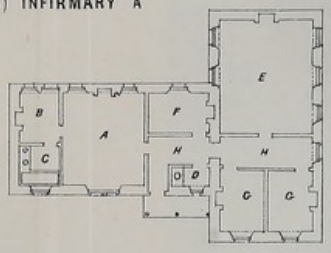
Scale

10 5 0 10 20 30 40 50 60 70 80 90 100 Feet

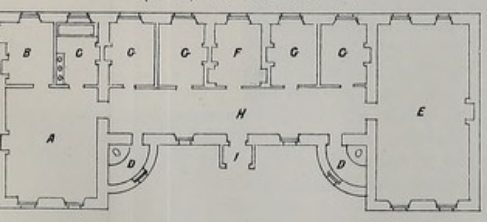
W. & A. K. Johnston, Edinburgh

ASYLUM FOR THE INSANE

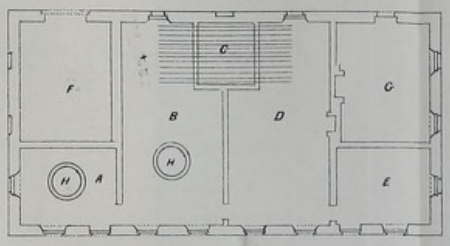
(N°5) INFIRMARY A



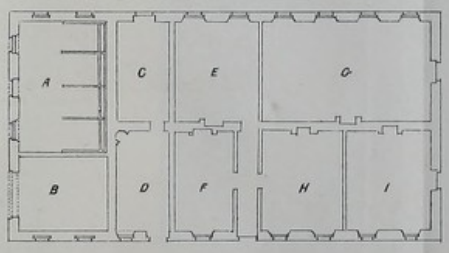
(N°6) INFIRMARY B.



(N°7) WASH-HOUSE AND LAUNDRY



(N°8) STABLES AND WORKSHOPS



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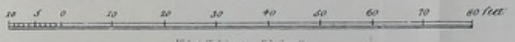

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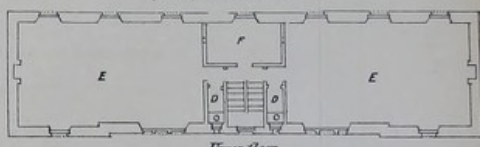
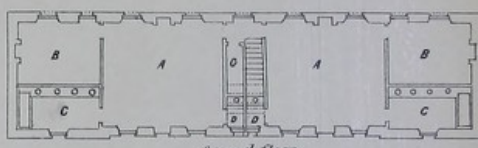
(N°3) HOUSE A

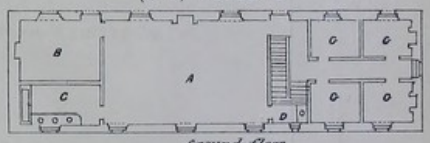


Upper floor

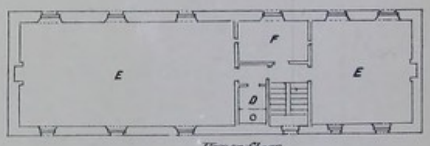


Ground floor.

(N°4) HOUSE B



Ground floor



Upper floor