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EDITORIAL

Visitors to Canada, especially from Europe, have heard of our amazing prosperity and the richness of our resources. No more tangible evidence of our prosperity could be found than the post-war program of schools and hospitals which continue, in 1952, to be built in nearly all provinces. From the point of view of the architect who numbers schools or hospitals as a major part of his practice, nothing could be happier than continued public pressure for both. Provincial authorities, however, are beginning to "view with alarm" the vast sums necessary even to keep up with need – let alone surpass it.

The school problem, though great, is less complex than the hospital problem. Up to date, we have been building schools to replace obsolescent ones, and to fill a need that grew through depression and war years. The impact of the high birth rate in the post-war years is already making itself felt in a demand for classrooms at the kindergarten and lower grade level. Committees set up to study school planning and costs did an admirable job on the one, and failed on the other. It just happened that the emergence of the brave new schools coincided with high building costs, and a demand on the part of teachers and parents for facilities and equipment that an earlier age would have described as fantastic. The fantastic is now the common place, and one can only wonder what the future holds.

The hospital program is affected less by a rising birth rate, though that cannot be ignored, than by various insurance plans which provide the insured with hospital and, sometimes, medical care. A vast new group of citizens who, previously, would be cared for at home, is now "hospitalized" without strain on the family budget. Free clinics for the examination of chests and the growing popularity of free physical examinations for children at school and workers in plant or office put a further burden on hospital accommodation. As with the school, cost is a factor that depends for its reduction less on construction than on the firmness of the hospital board or governors. Medical professional enthusiasm for departments and equipment can quickly undo the economies of the architect in the structural and mechanical fields.

It always strikes us as amusing that architects, rather than medical specialists, led the way in the improved daylight lighting of schools and in colour. In hospitals, the same is true. To get the medical view on colour or decoration, one has only to read the so-called "definitive" works on that subject by doctors. They are quite twenty-five years behind the times. Similarly, with daylighting. We have yet to hear the medical view though we have sought it often enough. In the meantime, the battle rages between those architects who belong to the Skidmore school of thought with glass from partition to partition, and those who favour the ordinary double hung window. Papers are written in this field on factors like cost, cold, heat, privacy and glare, but, to us, the important element in the whole discussion is the modern average 8:10 day patient stay. Taking that into account, we are inclined to favour the old fashioned double hung window. In saying so, we are aware that we have lost several friends and the respect of most of our students.

FRANK G. GARDINER

HOSPITAL DISCUSSION FOR ARCHITECTS

To WRITE a short article on our Modern Hospital for a Medical or Hospital Journal, one would naturally be thinking of the relationship of the hospital to the medical profession, nursing staff, equipment and technique.

As this is intended for the readers of our *Architectural Journal*, one naturally will confine any remarks for architects interested in hospital planning.

Our modern hospital is so unusual and different from any other type of building that it calls for a high annual maintenance and operating cost which is of vital concern to the hospital board and their administrator.

For this reason every hospital architect should be fully acquainted with the most suitable materials, finishes, etc., which they may incorporate in the erection of any hospital, such items as repairs, repainting, depreciation and operating cost by careful selection and knowledge will considerably reduce the annual cost of upkeep and depreciation.

Today we are more inclined to enter a recent and modern hospital, with a feeling that we are admitted for the purpose of receiving the best of expert treatment and recovery from illness. For this reason it is important that the designer provide a quiet environment as possible, a homelike and pleasing scheme of decoration together with harmonious furnishings.

Every hospital on completion will possess a certain personality, it can be pleasing, comforting and to a certain degree cheering, whilst in other cases it can be depressing, cold and forbidding, giving one a feeling of apprehension and fear on entering, so whatever impression one receives either as a patient or visitor will in some degree be the result of the architect's vision.

For this reason it would be well for every member of the hospital board and their administrators, to allow their architect to give fair play to his understanding of those tokens of human sensitivity and appreciation – he will be able to combine these with economy and utility, and produce, both outside and inside of your hospital, the colour, warmth and friendliness, or in other words, a personality of quiet beauty and inspiration, which will be appreciated by the patients and those who have to staff, operate and administer the hospital every hour of each day.

Hospital planning is and rightly so, becoming more recognized as a specialized branch of our profession, the architect who has made a study and specialized in this class of work, will have gained a vast amount of information in good planning, choice of materials, etc., and other expert knowledge that can only be obtained by actual experience.

Both the experienced and unexperienced architect in hospital planning are fortunate in being able to obtain a fund of illustrated information on the very latest ideas on hospital planning, and other information which is available by applying to the Division of Hospital Facilities, U.S. Public Health Service, Washington, U.S.A. – these books should be in every architect's library for reference.

If one could examine the plans of our recent hospitals, you would probably notice many changes and improvements that did not exist in the hospital of just a few years ago.

With the phenomenal advance and rate which new methods are being introduced in medicine, equipment and technique, it is certain these changes will continue to increase, to the hospital planners who can make the most accurate judgment of what tomorrow's functions are likely to be such as television of operations from operating room to class rooms of school of nursing, etc., will make the best job of hospital planning today.

To accomplish this is an exceedingly difficult task, and it would be well to be responsive to the judgment and opinion of specialists, doctors and representatives of the latest equipment, as your judgment over the latest advances cannot be expected to prevail over theirs.

Of first importance to any hospital, are good medicine, good surgery and good nursing service – the comfort of the patient has to be considered, for this reason quietness, essential services, and a cheerful scheme of decoration for each ward should be provided. If it is necessary to sacrifice anything in a new hospital for the sake of economy, it should only be what we call unnecessary luxury and frills, always bear in mind, however, that the cheapest in cost of installing elevators, heating, plumbing and electrical equipment will prove a great mistake and likely prove costly in maintenance and criticism of the architect.

It is not proposed to take up the question of hospital planning, this is left to the architect and his consultants and the excellent information available as previously mentioned.

For the large and small hospital there are certain features that the architect should bear in mind when planning and writing the specification, the following being a few of the most important.

Acoustic Treatment

All corridors, main lobby and waiting rooms, nurses' stations, utility rooms, diet kitchens, nurseries, labour rooms, general offices and cafeterias and dining rooms should have the ceilings provided with acoustical treatment.

Door Bucks and Frames

It is now common practice to install a combination door buck and frame having rounded corners at corridor and other room entrances, made of 16 G. rolled steel, mitred at angles and so designed to form key for plaster finished flush at sides and top, no wood casing or other projections should be used.

Door Widths

All hospital door widths should be determined by the type of traffic passing through – they should be ample for their use, excessive width should be avoided. For all wards a width of 3′ 9″ is the minimum – for utility rooms, diet kitchens or where there is carrying traffic, a width of 3′ 0″ is recommended.

Doors

All interior doors should be of the flush panel or slab type – no door casings or other projections to collect dust are necessary, by the use of the steel door bucks.

Double-acting doors should be provided into utility rooms and kitchens, work rooms, having a clear glass upper panel.

All ward doors should be provided with a small obscure glass panel, this allows a nurse to enquire why the room may be lighted up during sleeping hours.

Door Hardware

Doors to all patient rooms and wards should, if funds will permit, be equipped with friction hinges, to prevent door from slamming as well as to permit leaving the door open in any position for ventilation. Arm hooks used with roller catches should be used in preference to door knobs to all wards to facilitate carrying of trays and articles. Every ward door, and in fact all other doors, should be provided with rubber door silencers to prevent noise of slamming. The question of providing locks and keys to ward doors is questionable – phychiatric units, naturally, will require lock and key on outside only – certain rooms, such as pharmacy, x-ray, linen, storage, etc., should all have dead locks all master keyed.

Floor Finish

Floor surfaces should be selected for durability, economy of maintenance. For this reason it has been my endeavour to install terrazzo floors throughout – they are rich looking and require no waxing or polishing, soap and water is all that is required and the longer they are washed the better they improve in looks.

Some administrators consider terrazzo floors are noisy, and hard on the feet, but this is really a fallacy.

Terrazzo floors should be a first choice of funds will permit.

Rubber tile floors are favoured by many – it is true they are quieter, but as rubber tile has to be laid on top of a half cement sub floor, trowelled perfectly level and smooth to receive the rubber tile, there is practically very little saving over terrazzo floors, whilst they have to be kept waxed and polished, adding considerably to cost of maintenance.

Asphalt tile flooring is also an acceptable material and can be obtained in a pleasing range of colours – cork tile flooring is popular, but its appearance is rather monotonous – requires waxing and polishing. It is probably the quietest type of flooring, the cost, however, is about the same as terrazzo.

Operating and Case Room Floors

As it is essential that all operating and case room floors be laid with a spark and static conductive type of flooring this should be given serious consideration.

Cement terrazzo with brass strips spaced not less than six inches apart both ways and grounded to either heating or water pipe has been and is still being used.

Oxychloride terrazzo is now being used extensively and has proved by government tests to be an excellent conductive flooring. It has all the appearance of cement terrazzo and does not need to have the brass strips, it should prove a little cheaper to install and quite satisfactory.

Base

Coved bases are indispensable for ease in cleaning and referring to cove bases, always insist that all recessed radiators be raised to rest on top of base, this prevents the possibility to sweep dust under any radiator.

Windows

The type of windows for any hospital is a problem generally left to the architect–he must, however, have a knowledge of the area of glass required for each ward. The most popular type of window is the double hung type having reversible sash, to enable both sides of window to be cleaned inside the room. In the recent modern style of elevations, metal casements, or metal double hung windows are becoming very popular. In regard to the metal casement type of window, there is a problem of installing fly screens, which in certain locations are considered necessary, and these should be of the roller blind type, fixed inside the room.

Glazing

In very cold regions, where zero weather is general in winter, it is almost necessary to install double glazing to all windows – they are expensive, but over a time they pay in saving of fuel.

All upper and lower sash of all bath and toilet rooms, lower sash of all operating case rooms, x-ray, etc., should have obscure glass.

Ward Lockers

Every ward should be provided with a small locker, 20 inches square, having hanging pole, hooks and shelf over. Lockers made of wood are preferable to metal owing to the less noise caused in operation. Locker doors should have a vent top and bottom in each door – allow for furring down from ceiling to top of all lockers, to obviate a ledge to collect dust, also keep lockers at top of floor base height and continue base at foot set back to allow for toe space – this applies to all other built-in fixtures that do not go to ceiling.

Work Counters

To provide the maximum storage space in an orderly manner, it is desirable to furnish as many cabinets, drawers and open shelves below and above work counters as possible. Drawers should be fitted with quiet-operating channel or ball-bearing supports and guides. Metal doors should be of the hollow type, filled with sound-absorbing insulation. Movable shelves will permit adjustments to accommodate varying sizes of utensils, and will also facilitate cleaning the interior surfaces of the cabinets. The edges of metal shelves should be rolled at the front and turned up at the rear. Stainless steel shelves are recommended as being more durable, sanitary and easier to keep clean.

Work space in utility rooms, floor pantries, nurseries, flower rooms, and other nurses' work areas should preferably have stainless steel counter tops approximately 20 inches wide and 36 inches above the floor. These tops should have welded and smoothly-ground joints, rounded corners, coved intersections, and integral backs to protect walls. Dish washers, hot plates, and other equipment may be built integrally with such metal tops.

Instrument cabinets in smaller hospitals may be located in the operating room, delivery rooms, or adjacent corridor, but the larger hospitals should have separate and individual instrument rooms. Instrument cabinets should have glazed dust-tight doors. Adjustable glass shelves with a one-inch space between the shelves and the back of the cabinet are desirable to permit air circulation. It may also be necessary to provide separate locked sections for the storage of individual surgeon's instruments. Pharmacy cabinets should be arranged to store many small items of varying sizes in an easily accessible manner. Cabinets designed for such use are available from several commercial equipment manufacturers.

Doctors' Call System

In smaller hospitals it is a good plan to place the telephone switchboard near the information desk, so that in off hours the operator can perform the duties of the information clerk and the doctors' in-and-out board will be visible to the operator.

In large hospitals an electrical-controlled system having a panel with a list of the staff doctors – this panel is placed at entrance of the doctors' room, where they can signal their arrival and departure from the hospital. A similar panel is at each nurse's station and also at telephone operators to advise if and what doctor is in attendance.

Nurses' Call System

The nurses' call system which is controlled by the patient, switches a light over the bed and over ward door in corridor and also lights buzzer in nurses' station. This system is generally more popular than the direct speaking from patient to nurses' station, though it is admitted there is a saving of time and steps for the nurse.

Lighting Fixtures

Much has been developed in recent years to improve general lighting in hospitals – the old method of large indirect fixtures hanging in the centre of wards and private rooms is gradually giving way to newer and better methods. A further improvement particularly in 4-bed wards, 2-bed wards and private rooms, eliminates ceiling lights entirely, and substitutes a new type of light over each bed – where the patient or nurse can control the light for reading or throwing the light rays to the ceiling – it has been found that a steady light over the patient's head has proved tiring. In addition, standing lamps are in favour – especially in private wards.

Night Lights

Night lights of the louver or diffusing glass front type are essential to each ward, on separate switch – corridor fixtures can be so wired to give a small watt lamp for night use, this light naturally would be on a separate switch.

The rest of the hospital lighting fixtures in general should be easy to clean and maintain and it is true economy to control all lighting fixtures by switches.

For all patient's rooms mercury switches should be insisted on, as the noise of snapping on and off of ordinary switches may disturb and waken the patient.

Other electrical outlets should be provided for examination lamps, radio at bedside, and plugs for vacuum cleaners should be spaced and provided on all corridors, etc.

Wall Tiling

All bathrooms, toilets, back of slop sinks, all sterilizers should be tiled, however, if this tiling has to be eliminated, the back and two sides of all baths should be tiled to a height of at least 2′0″ above rim of tub, having combination soap holder and grab, and an additional grab over for safety of patient.

Showers naturally require to have walls and floors tiled, with two grabs as suggested for baths.

Operating and case rooms, if funds permit, should have walls tiled at a minimum height of 4′6″ above base – with window sills and returns to window frames tiled, a green mat glazed tile is most suitable – the use of vitrolite glass tiling should be discouraged owing to its high reflection found to be very disconcerting during operations.

Bed Curtains

Bed curtains in 2 and 4-bed wards are necessary to screen the patient, the best way is to hang the curtains on chrome-plated rods suspended from the ceiling by hangers which allow the curtains to be run around corners to completely enclose the bed.

Painting

The days when it was thought that a ward, to be sanitary, must have glaring white or muddy buff coloured walls, a white ceiling and curtainless windows have long since passed.

It is now the trend to treat all wall and ceiling surfaces in pastel shades of attractive colours – there are numerous good washable wall finishes on the market that are suitable. I would like to stress at this point, never use a flossy finish on any corridor and ward room wall and ceiling, as no matter how good a plaster job, a glossy paint is bound to bring out and show the slightest unevenness in the plaster.

All lavatories, bath rooms, utility and diet kitchens, etc., should be finished in a good gloss enamel paint which will permit of repeated washings.

In the use of several colours in wards, remember that on the sunny exposure, you can use shades of greens, blues, browns, etc., or in other words, colder colours; on north and east exposure warm colours are more suitable, and in all cases it is recommended that the ceilings be painted the same shade. It is also permissible to paint two sides of a wall in one colour and the other two sides in a different shade, this, however, is more applicable in the administration, such as general office, board room, doctors' cloak and retiring and library.

Window Curtains

It is quite in order to have washable chintz curtains in all wards, if they are made to pull over and screen the window – there is no need to use blinds of any kind, however, Venetian blinds are now frequently used for both wards and private rooms. It is a matter of opinion if they are really satisfactory, except for general offices, etc.

Plumbing

The cost of plumbing installed in any hospital, is a costly item and should therefore be laid out as simply and economically as possible, with special inspection to avoid the possibility of cross-connections between supply and drainage.

All fixtures wherever possible should be of the vitreous china type, in preference to enamelled cast iron, and should be hung on wall brackets.

All lavatories and sinks should have open drains, with strainers, eliminating use of pop-up wastes. Combination faucets and blade handles for elbow control are preferable to mixing valves with knee control. Each ward should be provided with lavatory basin fitted with hot and cold taps and so arranged that a small hand basin can be fitted for use at bedside. All toilets should have flushometer in preference to china tanks.

The question of supplying a toilet off each ward unquestionably is a convenience for the ambulatory patient, however, the use of these toilets for bed washing is not altogether popular with the nursing staff. A combination bedpan washer and steam sterilizer should be provided near each general bathroom.

Copper piping must be used for all hot and cold water supplies and all plumbing fixtures must have a shut-off valve on each supply line to fixture, to enable repairs to be carried out without shutting off water from adjacent fixtures.

Heating

Heating by hot water or steam is generally determined by the size of the hospital, in a large institution steam heating is practically necessary, in smaller institutions up to 100 beds, hot water heating is preferable – it can be controlled by motorized valves which control heating to the colder or warm side of the building, thus ensuring even temperature throughout.

Radiators

For both hot water and steam, the concealed type of radiator is preferable, it has movable fronts that are flush with wall and can be easily removed for cleaning. If cast iron radiators are used they should be of the wall type – fastened to the wall, the bottom should be 5″ to 6″ above floor level – the same applies to the concealed type.

Generally, the interior finish throughout a hospital should be carefully studied from the standpoint of hygiene and economy. All unnecessary projecting surfaces, moldings, etc., that would harbour dust and are difficult to clean should be eliminated.

Rounded internal angles of rooms, at one time considered essential, are now not considered necessary.

All external angles, such as window reveals, column angles, and all other angles should be protected with giant metal corner beads, wherever possible dispense entirely with wood, window and door casings, picture molds, etc., always bear in mind the added cost of upkeep and replacement is the first consideration.

In conclusion – Every new hospital from the smallest to the largest institution presents a different problem in design. You will not likely find two hospital buildings alike, you will have to ascertain, or already will know, the sizes of the different wards, width of corridors, stairways, fire exits, the number and size of all the other numerous departments, etc., with all this information, you will endeavour to produce a workable plan, avoiding unnecessary distance from the patient to the nurses' station and other services necessary for the administration, medical and nursing staff.

For the hospital architect this should prove a most interesting and painstaking job, by patience and a good knowledge of the technique and operation of the hospital he may be designing, he will be rewarded by lack of criticism and a client who is well satisfied and pleased at the confidence that was placed in him on his appointment.

MOUNT SINAI HOSPITAL, TORONTO, ONTARIO

KAPLAN & SPRACHMAN, AND GOVAN, FERGUSON,

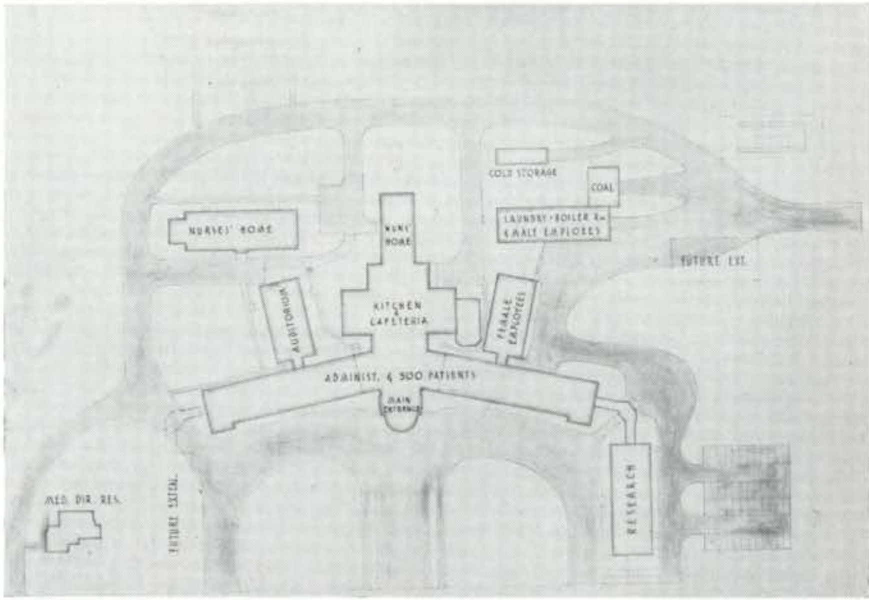
LINDSAY, KAMINKER, MAW,

LANGLEY, KEENLEYSIDE, ASSOCIATED ARCHITECTS

ST. JOSEPH SANATORIUM, MONTREAL, QUEBEC

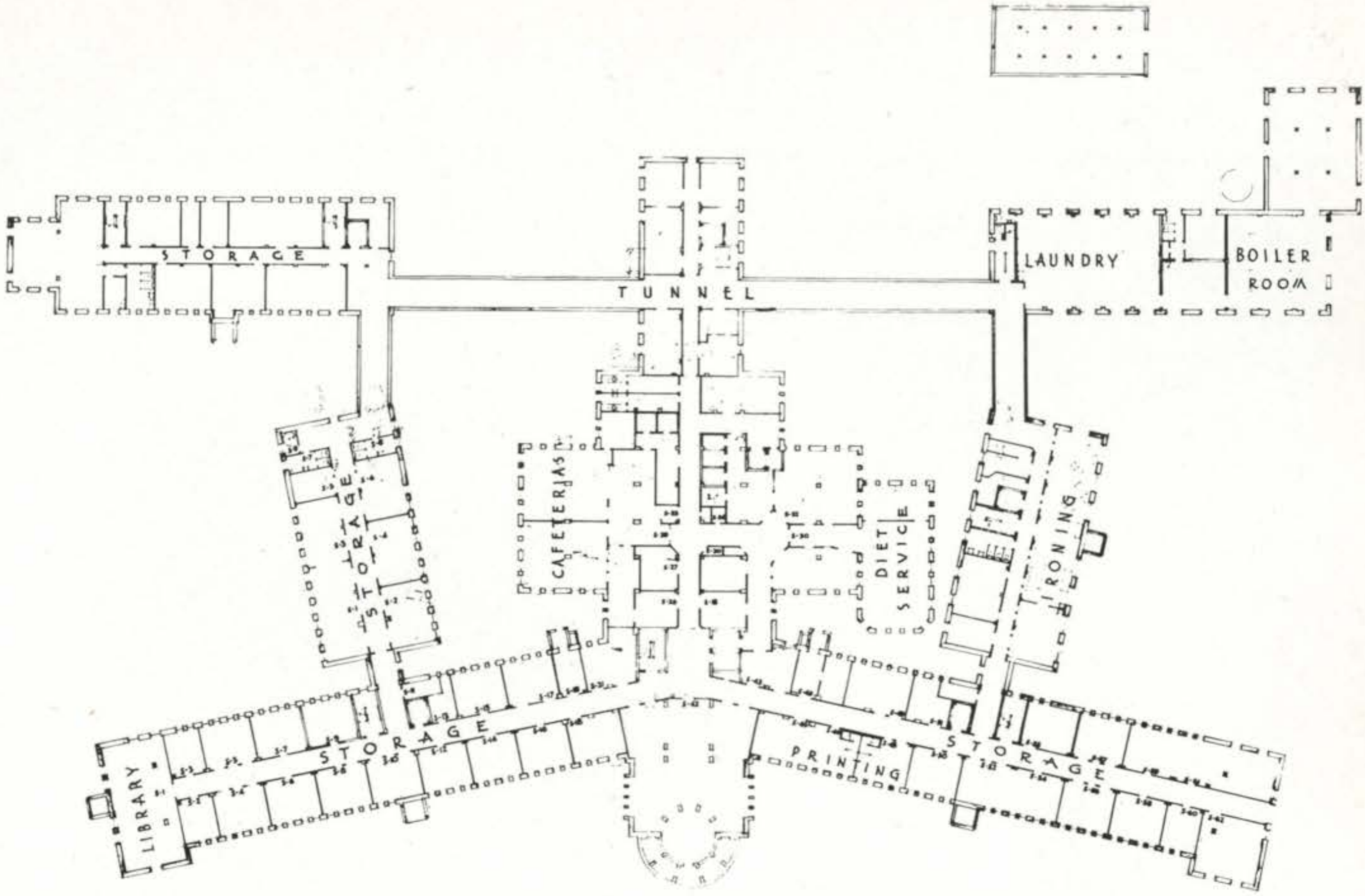
GAGNIER, DEROME & MERCER, ASSOCIATE ARCHITECTS

M. Paul de Guise, Mechanical Engineer
Dansereau Limitee, General Contractors

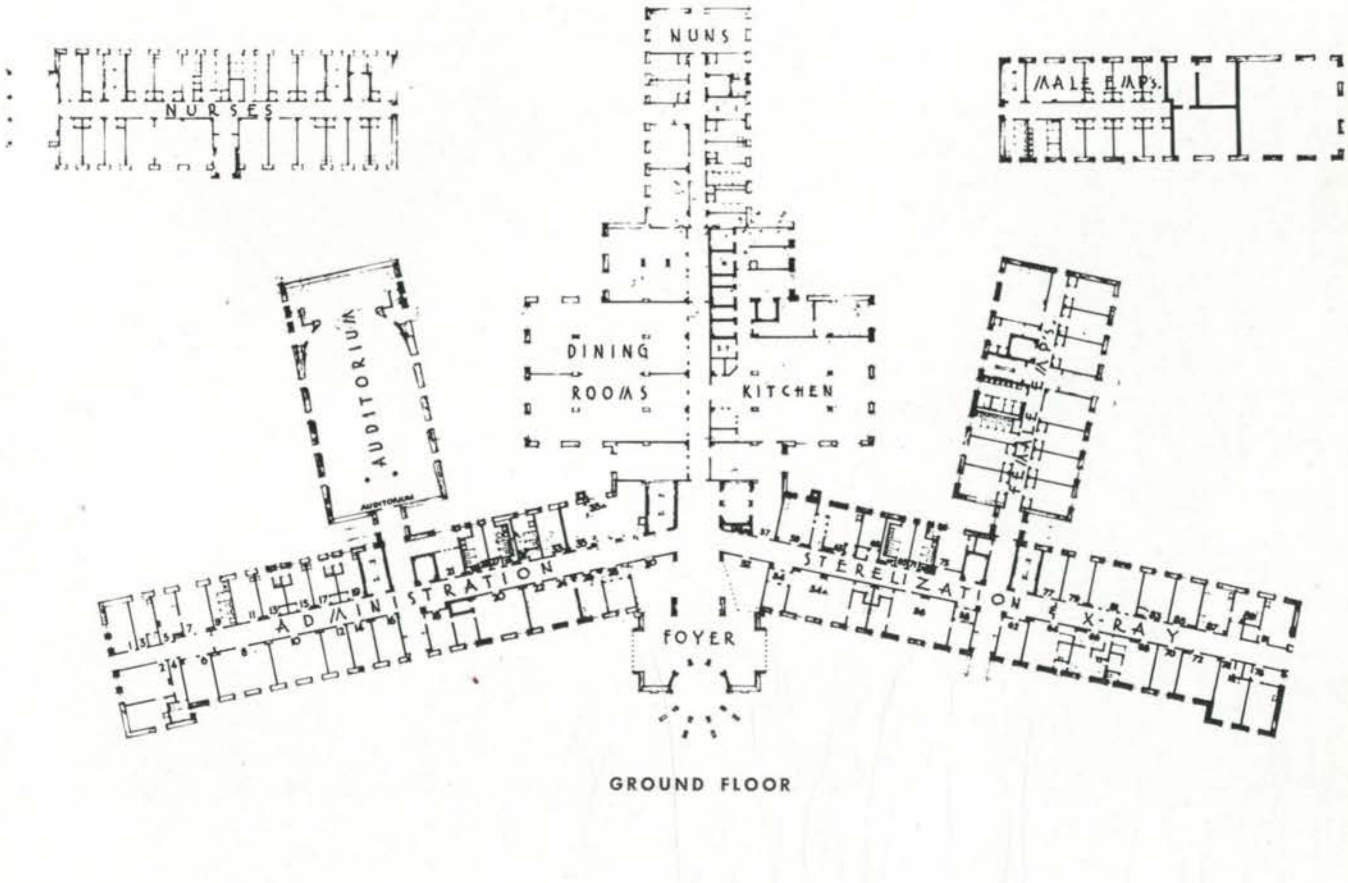


PLOT PLAN

ARNOTT & ROGERS



BASEMENT



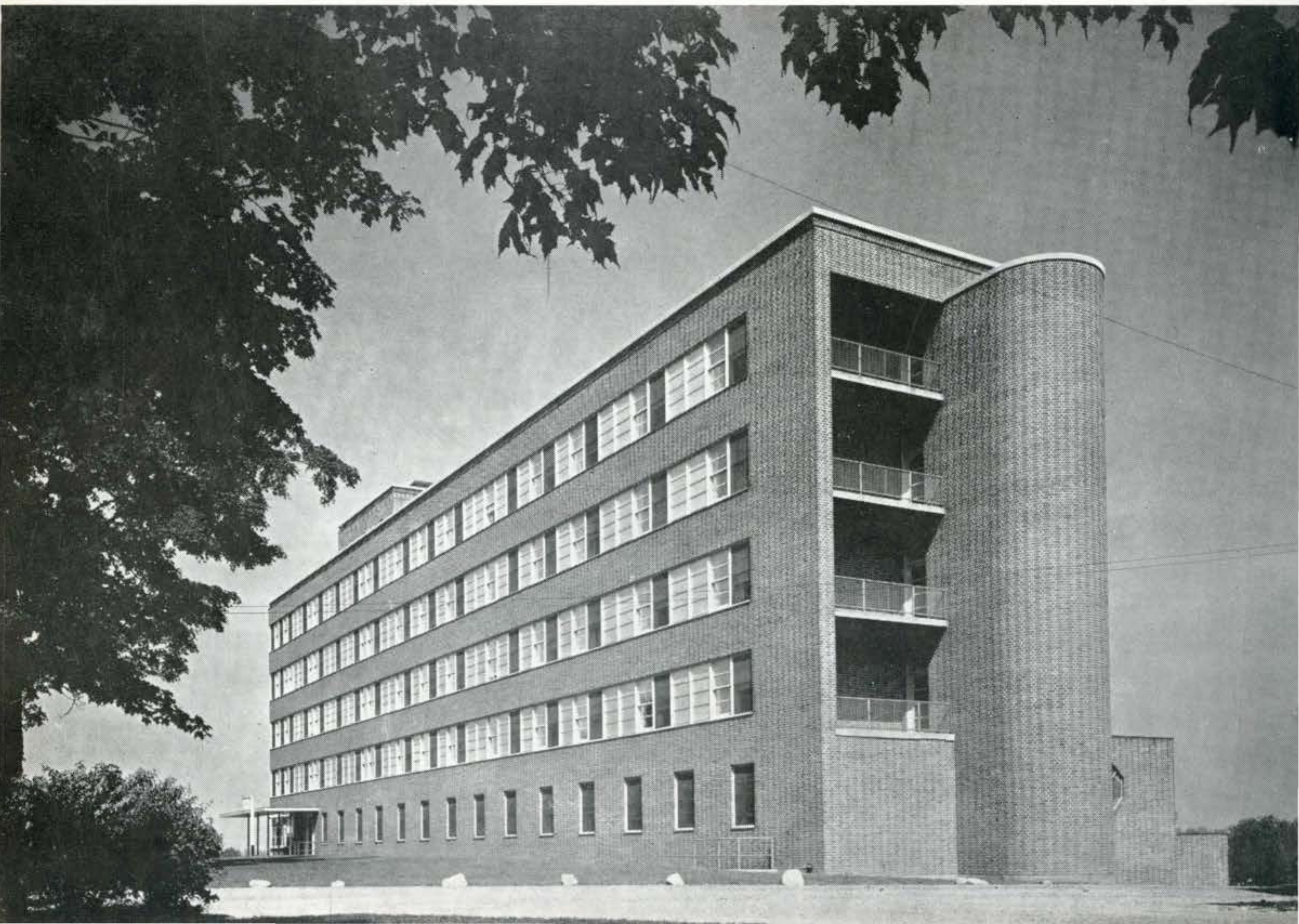
GROUND FLOOR

GUELPH GENERAL HOSPITAL, GUELPH, ONTARIO

MARANI & MORRIS, ARCHITECTS

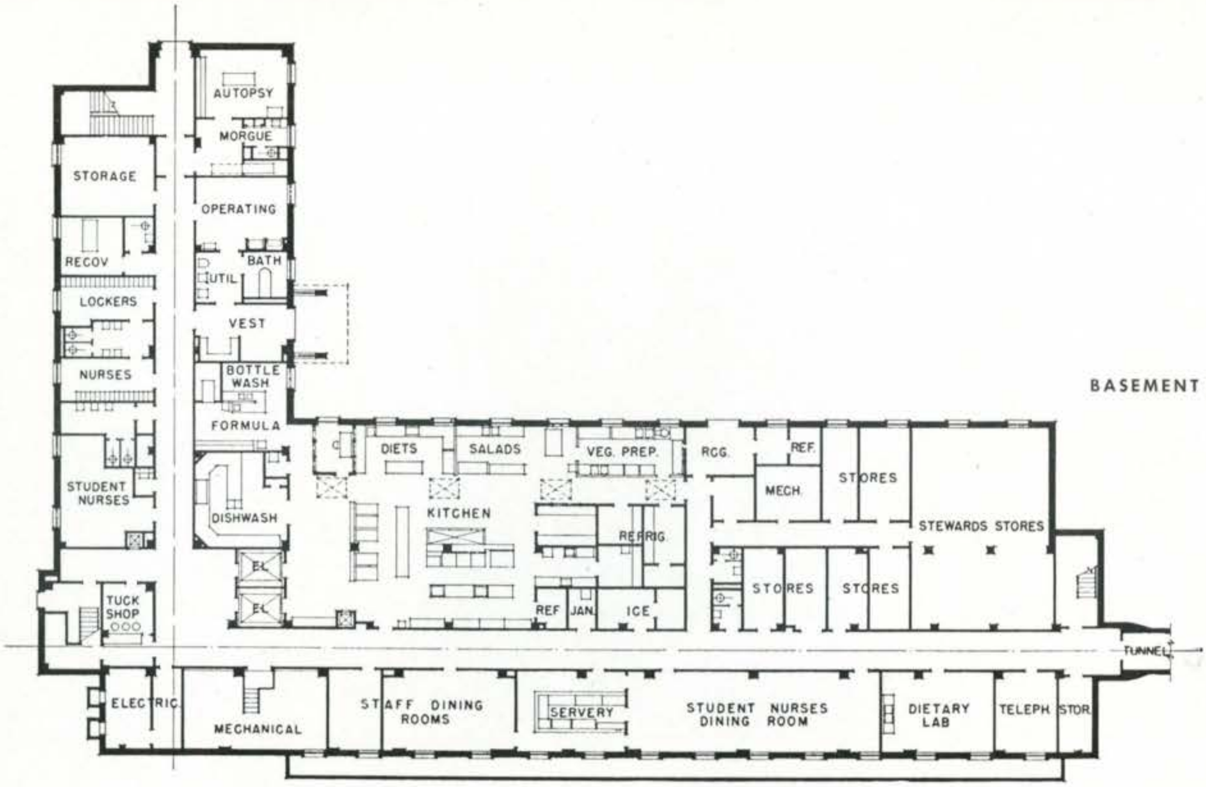
H. H. Angus & Associates Limited, Mechanical Engineers
Pigott Construction Company Limited, General Contractors

WARNER BROS.

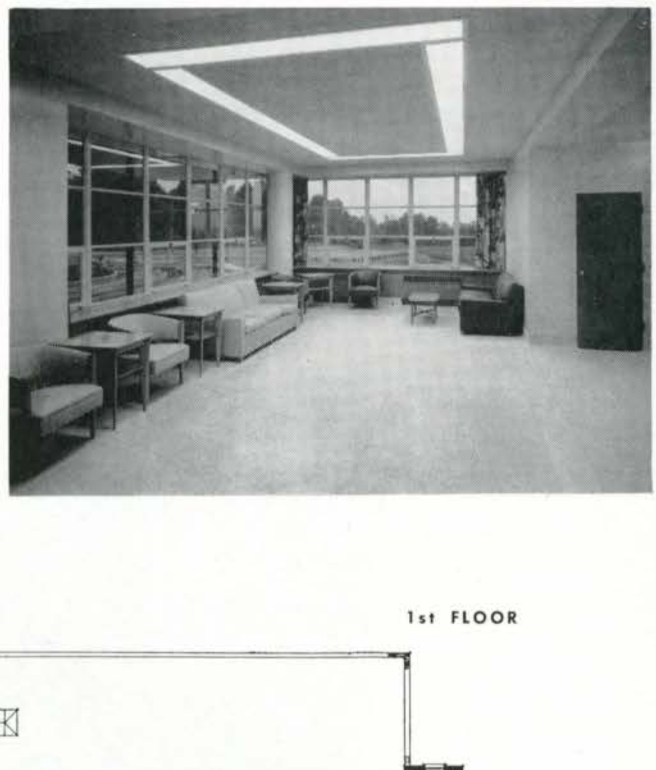


VIEW FROM SOUTH-WEST

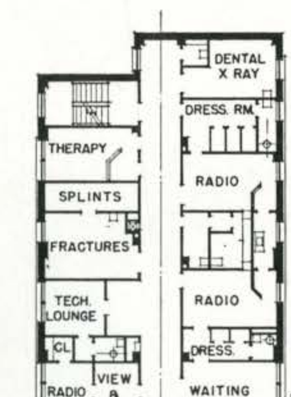
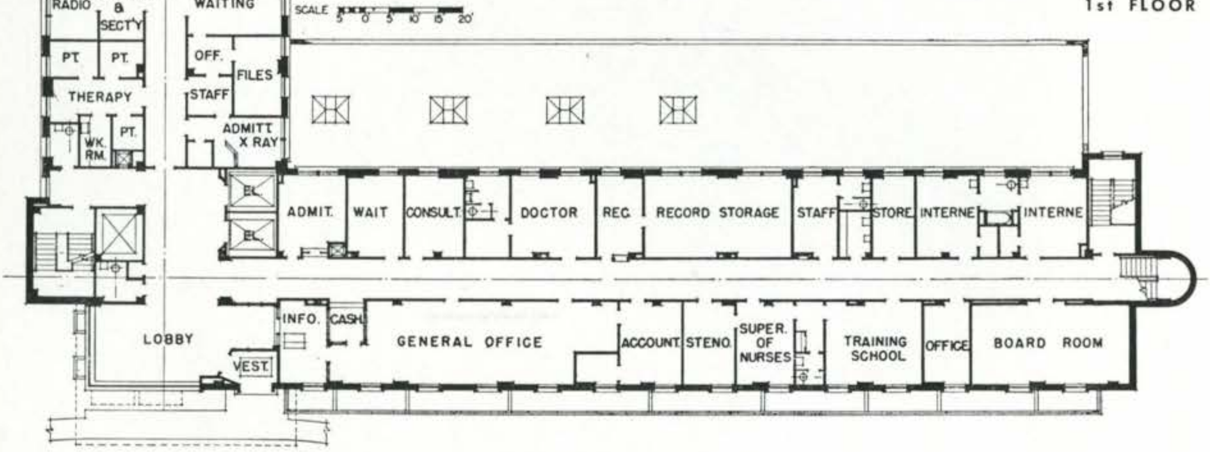
ENTRANCE DETAIL



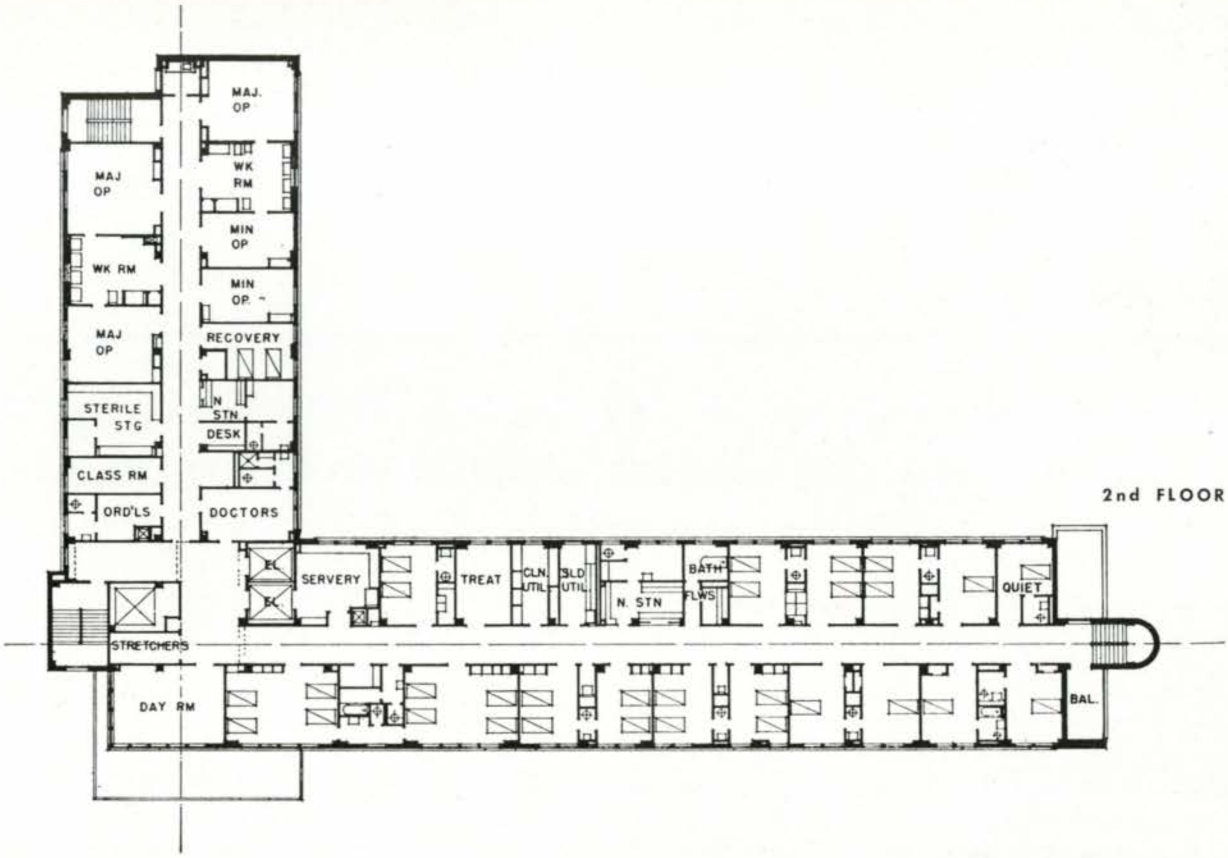
BASEMENT



ENTRANCE LOUNGE

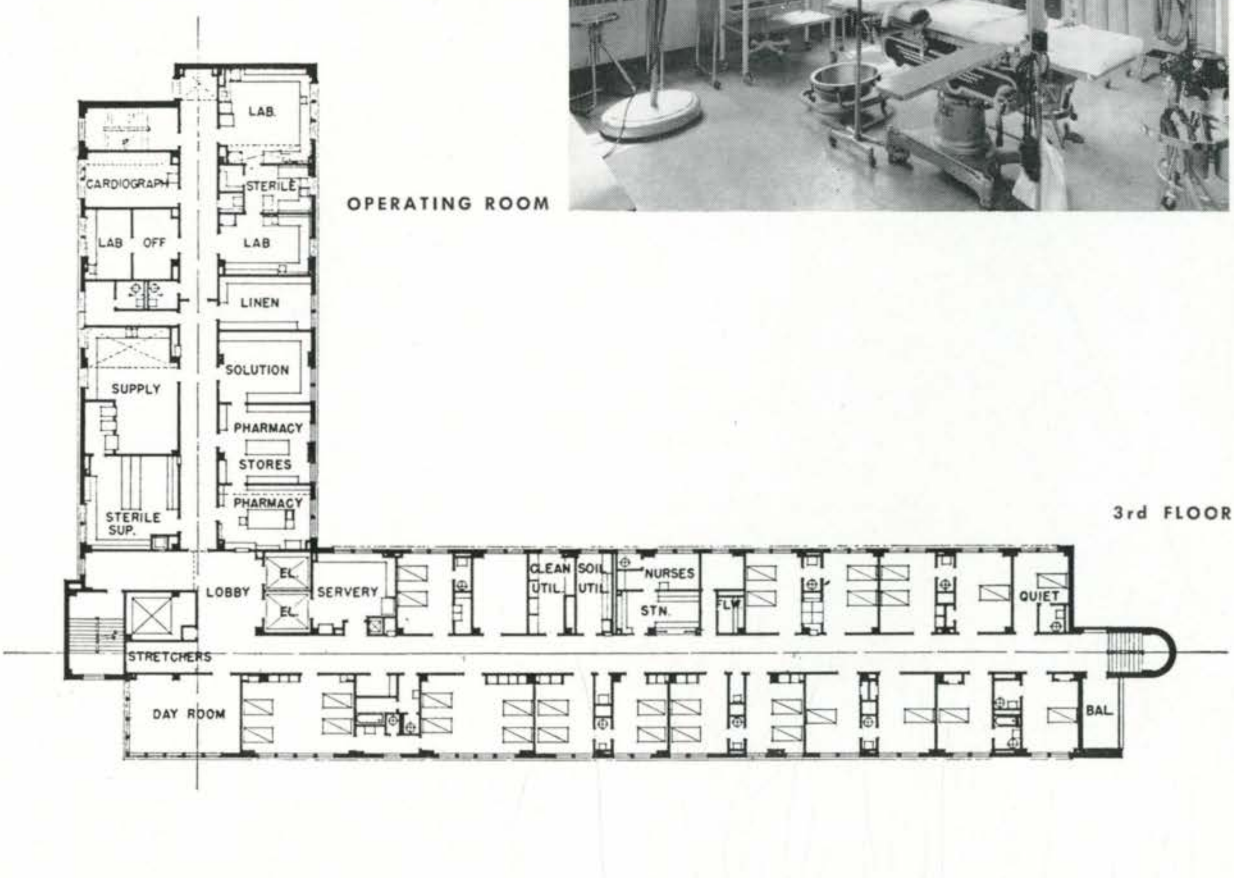



1st FLOOR



2nd FLOOR

OPERATING ROOM



3rd FLOOR

WALTER S. GLYNN

GENERAL DESCRIPTION OF THE SPECIAL STRUCTURAL DESIGN FEATURES OF THE NEW GENERAL HOSPITAL AT GUELPH, ONTARIO

SINCE IT IS the generally accepted procedure to-day for architects to engage the services of professional engineers to prepare the structural, mechanical, electrical and air-conditioning designs to be carried out in close co-ordination with the architectural design, all designers usually gain enough practical experience to enable them to appreciate the functional aspects of the architectural design and the structural form and the mechanical facilities of buildings to be suitable for human occupancy. As a direct result of this close co-ordination there has been developed the slab-band (or flat-plate) type of floor construction to be used in conjunction with a continuous reinforced-concrete structure. One of the most salient features is in the freedom gained for mechanical and electrical facilities and for air-conditioning ducts.

The essential features of slab-band (or flat-plate) floor construction are as follows:—

There is a smooth uninterrupted surface at the underside of the concrete floor slabs except for a shallow break between the thin and thick portions of slab. (see Fig. 1).

The slab-band may be supported on one row of interior columns for apartment houses or similar narrow buildings, or may be supported on two rows of interior columns spaced on either side of the corridor for school and hospital buildings.

The structural design calculations are simplified by exact analyses of continuity in the structural frame determining the maximum moments and shears at the critical points. This is explained in the most recent publications of the Portland Cement Association, and is quite an advantage in proportioning the several parts of the structural frame.

The widths of slab-band and thin-slabs may be varied within reasonable limitations to conform to the architectural treatment of the interior of the building. The overall width of the building will usually govern the relative width of the slab-band and the thin-slabs; this will also determine whether the thin-slab should be a one-way or a two-way slab. However, the longitudinal column spacing also effects the width and thickness of the slab-band.

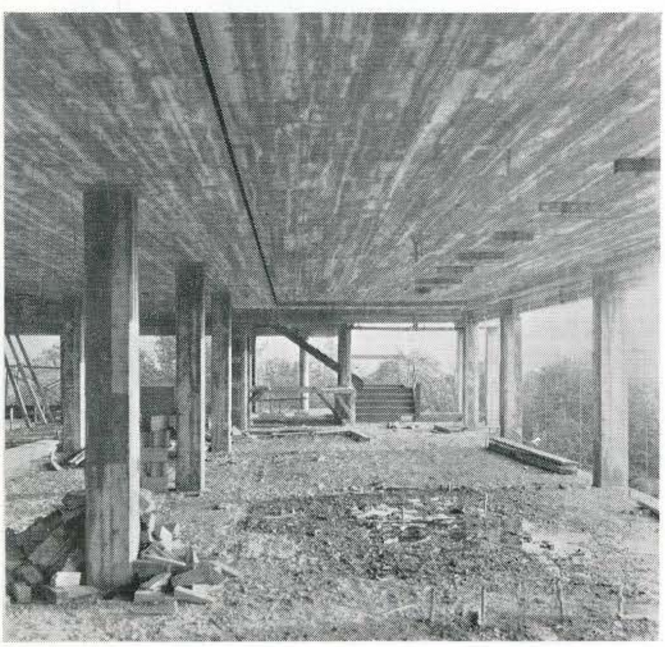


FIG. 1

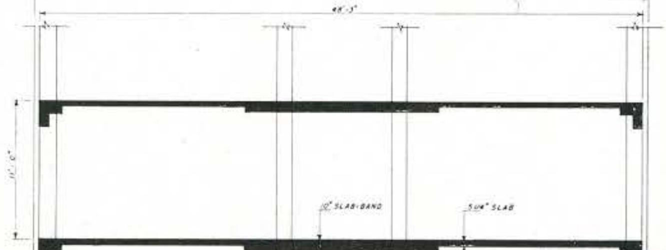


FIG. 2

The spandrel beams may be either of a rectangular section or of an inverted "L" section or of any reasonable combination thereof. (See typical cross-section A/A, Fig. 2).

There is a great deal of freedom in locating interior columns which do not have to be placed on line with the exterior columns. Also, the interior columns on each side of the corridor do not have to be placed opposite one another.

The advantages of slab-band construction are as follows:—

The total thickness of slab-band floor construction is substantially less than that of most other types and this decreases floor to floor heights and subsequent total heights of building and its vertical components.

A great deal of freedom is provided for mechanical and electrical facilities, especially for air-conditioning ducts in the ceiling space over the corridors.

The smooth surfaces of concrete at the soffit of floor slabs presents a pleasing appearance and provides an uninterrupted surface to which may be fastened acoustic tile or other sound-proof ceiling material. In fact, many buildings of slab-band construction have only a painted concrete finish and a few have Limpet asbestos ceilings for sound absorption.

Large openings are generally framed with concrete beams although it is not necessary in slab-band construction to have beams on all sides of openings such as duct spaces, stair and elevator wells; therefore, the trunk line of air-conditioning ducts may be accommodated at a vertical duct space by being brought into it level and turned up without interference from beams.

Small openings in slab-band floor construction may be placed almost at will without interference from the structural frame. However, all openings should be spaced as far as reasonably possible from the interior columns.

As a result of the flexible plan available in slab-band construction there will usually be required fewer columns than for any other similar type of floor construction.

An example of comparisons in cost of floor construction is as follows:—

	TYPE OF FLOOR FRAMING	COST PER SQ. FT.
(a)	Concrete Joint and Slab Construction with Tile Fillers and Plaster Ceiling applied directly thereto.	$1.49
(b)	Slab-Band Floor Construction with Lath and Plaster Ceiling suspended close to the soffit.	$1.22

These are actual estimates obtained from a general contractor late in 1948. Although the actual values do not apply to-day, the relative saving will remain the same. The final structural design is the result of an attempt to fit a structural frame as economically as possible to the architectural and mechanical requirements while keeping floor to floor heights fixed. The space required for air-conditioning ducts above the corridor ceilings and the required head-room in the 8′-0′ wide corridors determined the floor to floor heights throughout. A minimum corridor ceiling height for typical floors of 8′-6″ was obtainable with an 11′-0″ floor to floor height as optimum.

The actual design procedure and calculations used to determine the sizes and thicknesses of structural members are based on the information provided by the Portland Cement Association in the various publications of their structural bureau.

After several preliminary design investigations using the two-cycle method of moment distribution, it was decided to use a 10″ thickness of slab-band throughout, being 14′-0″ wide in the east wing flanked by 4¾″ slabs on both sides but being 15′-6″ wide in the north wing flanked by 5¼″ slabs. It was also found advisable to use concrete designed to have a minimum compressive strength of 3,000 psi at 28 days of age and to use reinforcing steel good for a minimum of 20,000 psi working stress in tension. Design criterion and permissible stresses conform to recognized building codes. The thicknesses of concrete and areas of reinforcing steel provide adequate strength to resist maximum moments and shears at the critical sections. Haunches near the supports of the flanking slabs both increase the effective depth of the bent-up bars and decrease the positive deflection at mid-span.

The areas of reinforcing steel required were provided by using ½″ round bars at 6″ on centre with alternate bars being bent up from the flanking slab into top part of the slab-band and staggered with ½″ round top bars at 12″ on centre across the slab-band. Lateral stiffening of the slab-band is also assured by use of ½″ round straight bottom bars at 12″ on centre staggered with the straight top bars. The average area of steel required over top of the corridor in the longitudinal direction is provided by 11⅝″ round straight bars and 11⅝″ round bent bars staggered therewith and bent up over the column at both ends for an interior span. Thus the slab-band is reinforced in two directions but the flanking slab is a one-way slab with only ½″ round temperature bars at 16″ on centre in the longitudinal direction of the building.

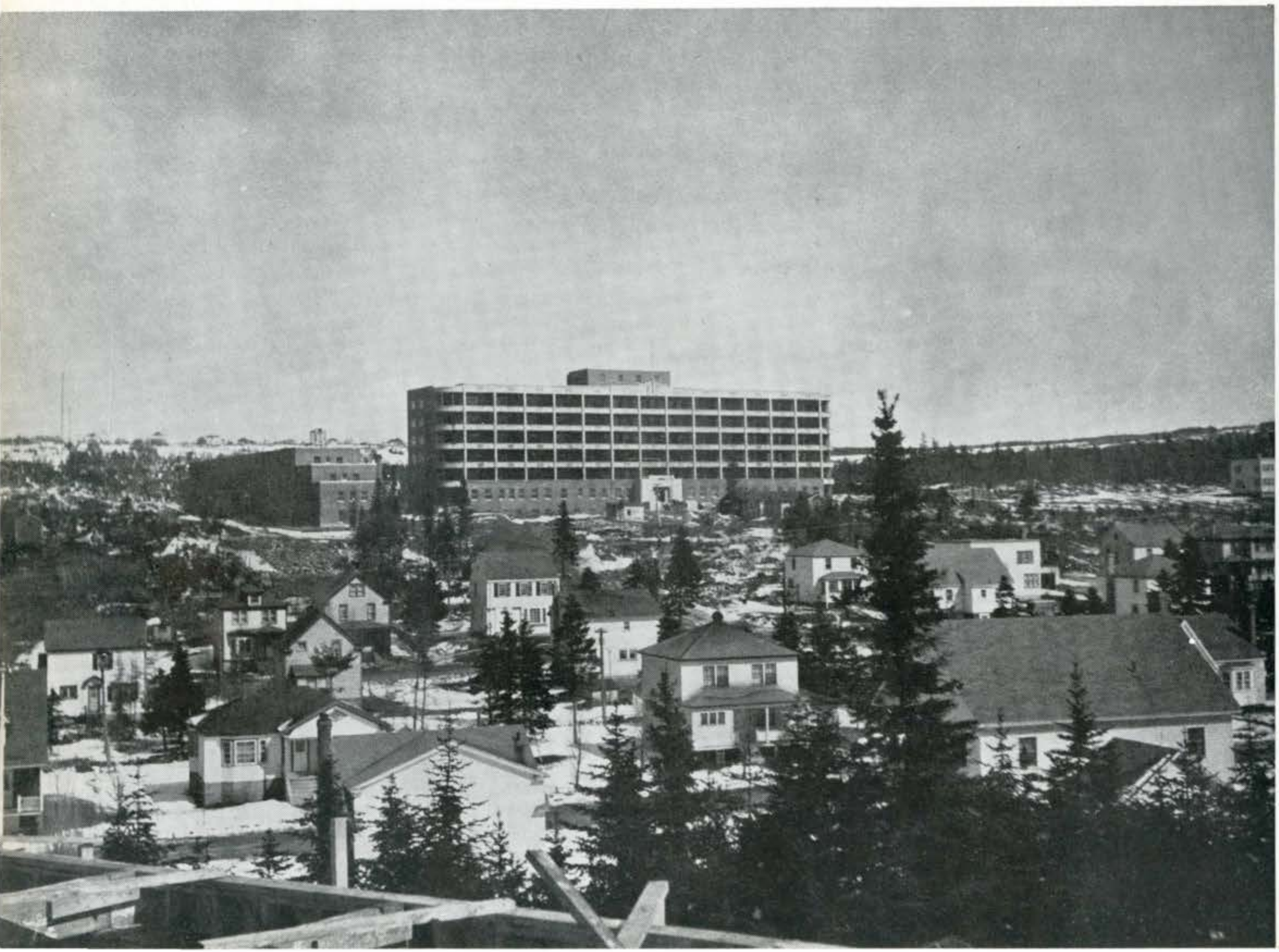
This is only one example of the desire of structural engineers to increase both the flexibility and the efficiency of the structural components of buildings by decreasing the quantity of materials and labour of all components. The most obvious reduction of materials and labour is the result of the simple form work for the slab-band type of floor construction which may be re-used for each floor and for the roof slab. Although the saving in all components as a result of the reduced height is quite substantial, it is not too easily calculated in dollars and cents.

WEST COAST SANATORIUM, CORNER BROOK, NEWFOUNDLAND

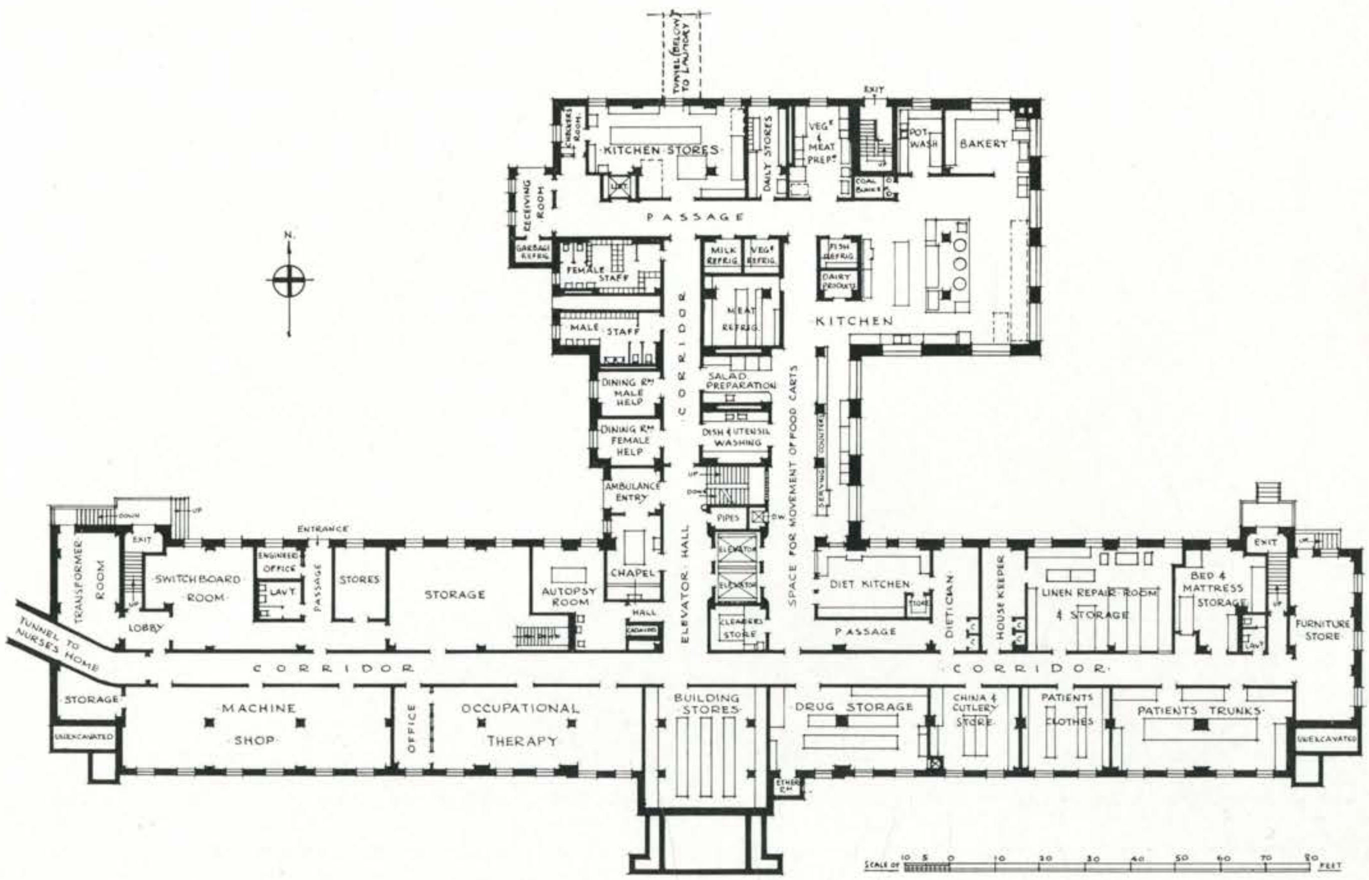
A. J. C. PAINE, ARCHITECT

F. A. Combe and E. A. Ryan, Consulting Mechanical and Electrical Engineers
J. L. E. Price and Company Limited, General Contractors

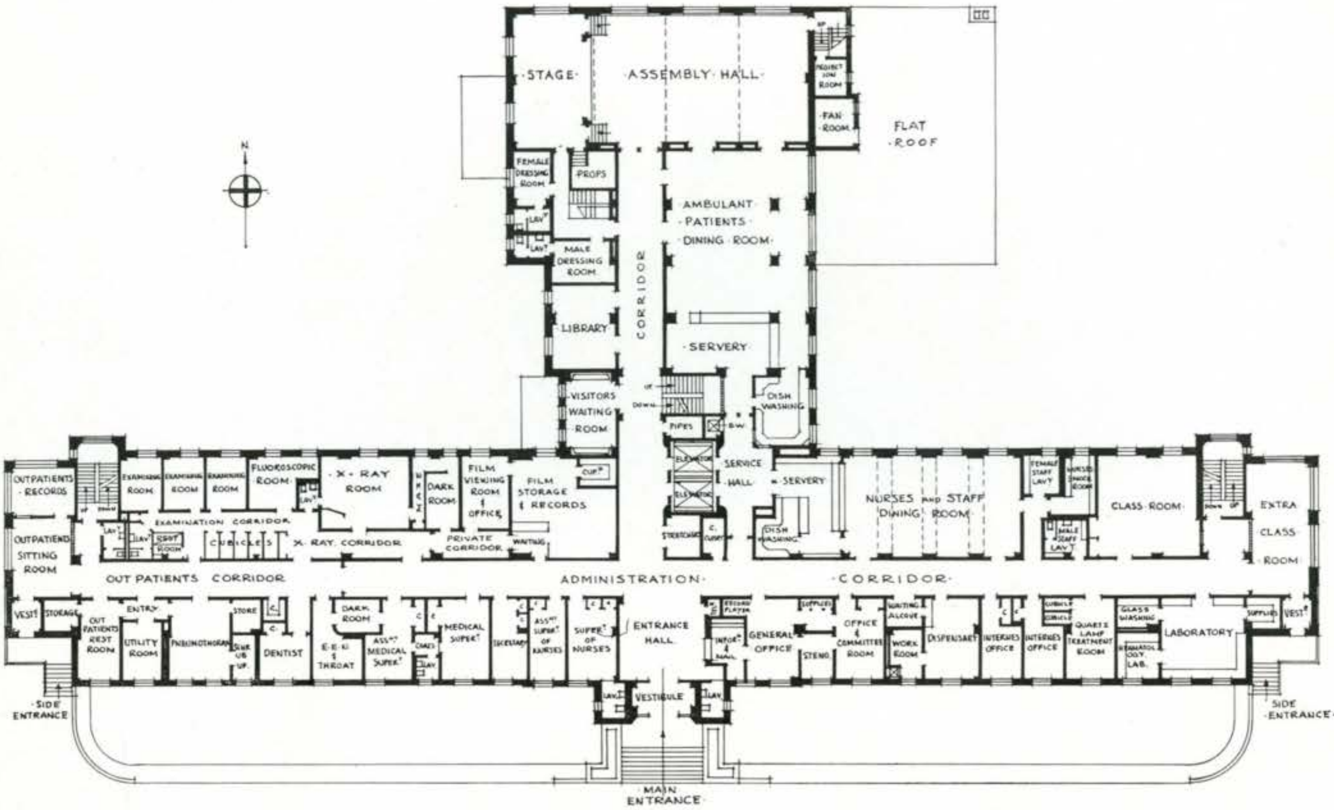
FRONT VIEW WITH THE NURSES' RESIDENCE TO THE LEFT



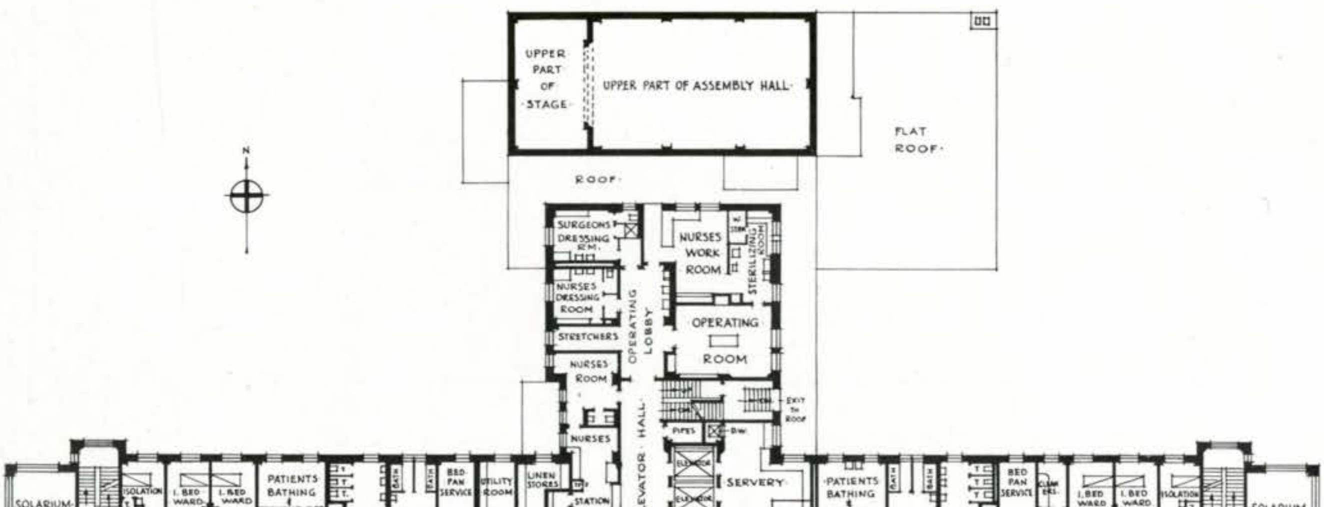
REAR VIEW SHOWING RESIDENCE TO THE RIGHT



GROUND FLOOR



1st FLOOR



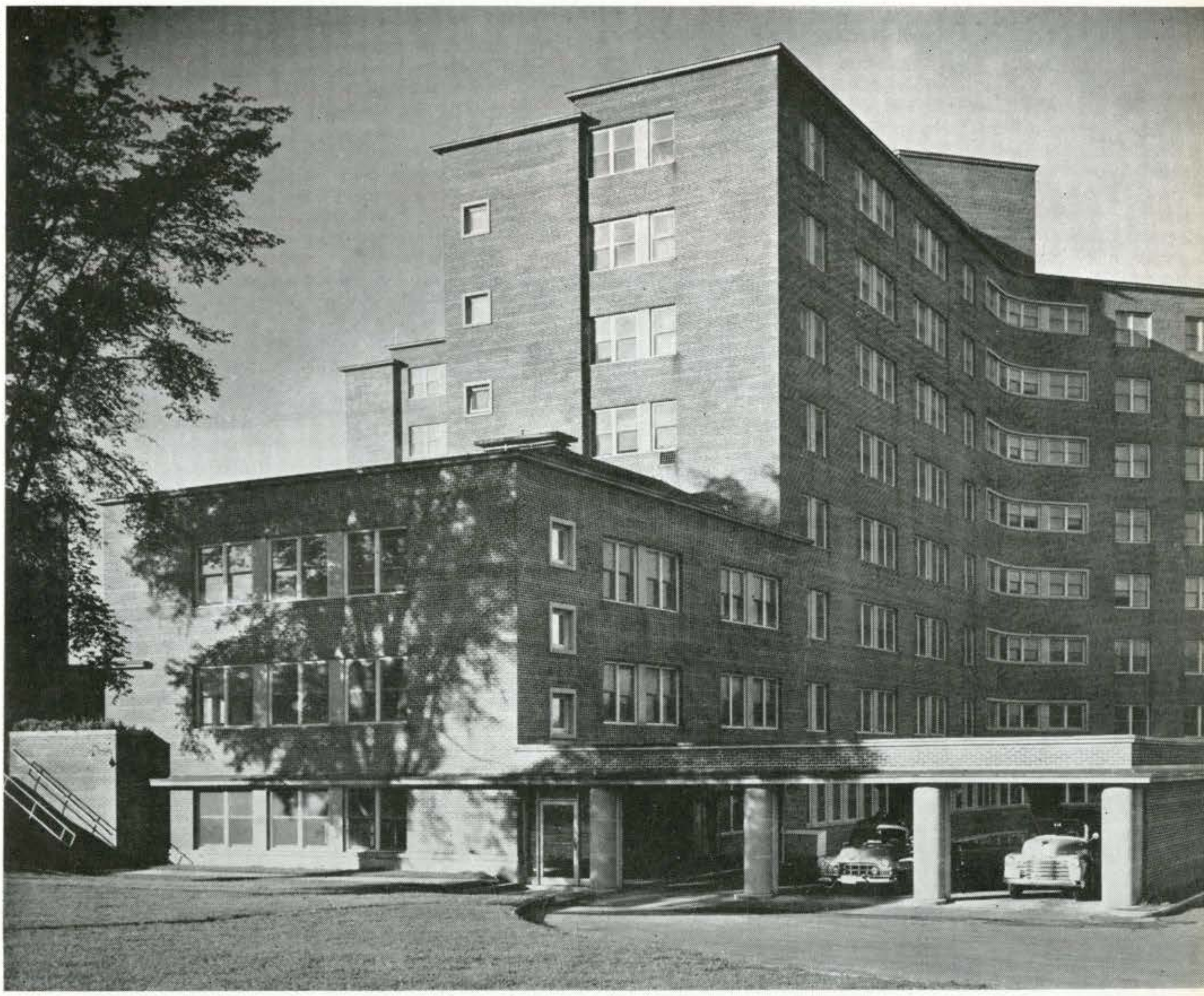
2nd FLOOR

KITCHENER-WATERLOO HOSPITAL, KITCHENER, ONTARIO

GOVAN, FERGUSON, LINDSAY, KAMINKER, MAW, LANGLEY, KEENLEYSIDE, ARCHITECTS

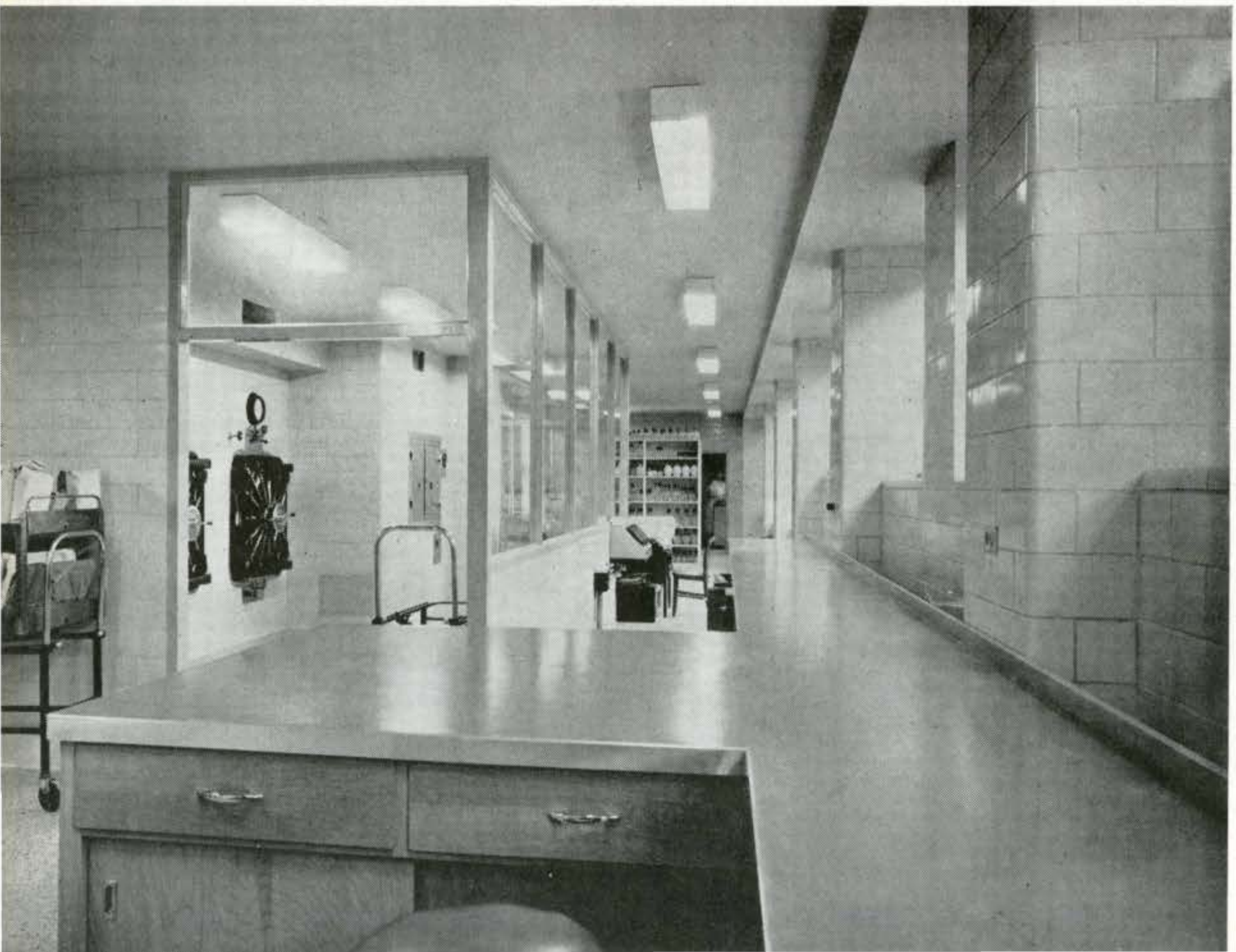
Morrison, Hershfield, Millman & Huggins, Structural Engineers
H. H. Angus & Associates Limited, Mechanical Engineers
Dunker Construction Co. Limited, General Contractors

THE BELAIR STUDIO

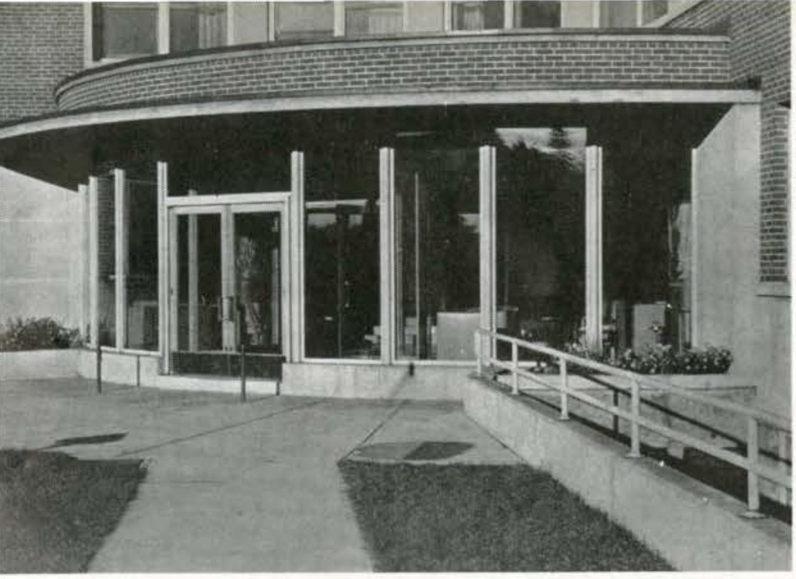


ROY PURKIS

LOBBY



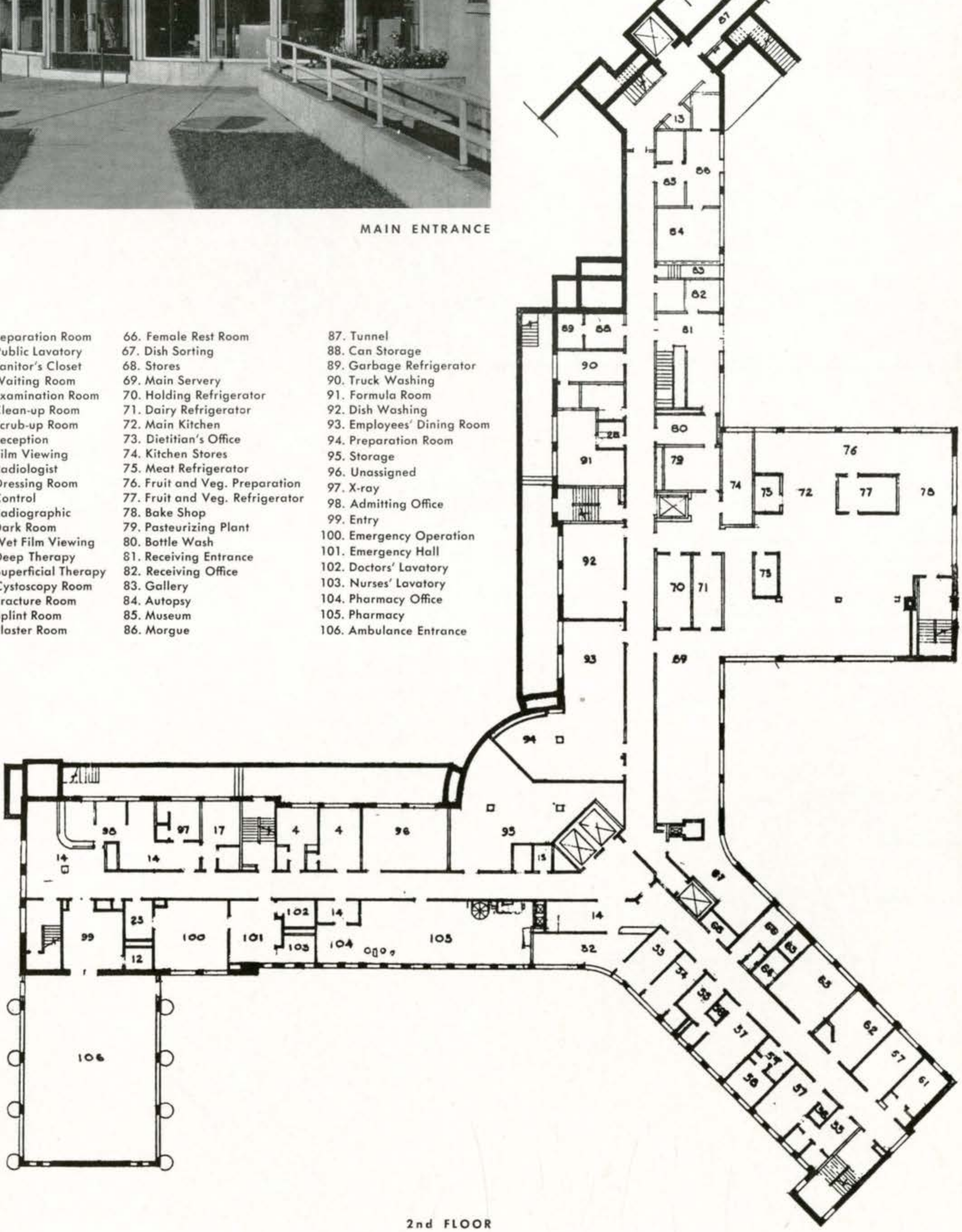
CENTRAL STERILE SUPPLY



THE BELAIR STUDIO

MAIN ENTRANCE

4. Separation Room
12. Public Lavatory
13. Janitor's Closet
14. Waiting Room
17. Examination Room
25. Clean-up Room
28. Scrub-up Room
52. Reception
53. Film Viewing
54. Radiologist
55. Dressing Room
56. Control
57. Radiographic
58. Dark Room
59. Wet Film Viewing
60. Deep Therapy
61. Superficial Therapy
62. Cystoscopy Room
63. Fracture Room
64. Splint Room
65. Plaster Room
66. Female Rest Room
67. Dish Sorting
68. Stores
69. Main Servery
70. Holding Refrigerator
71. Dairy Refrigerator
72. Main Kitchen
73. Dietitian's Office
74. Kitchen Stores
75. Meat Refrigerator
76. Fruit and Veg. Preparation
77. Fruit and Veg. Refrigerator
78. Bake Shop
79. Pasteurizing Plant
80. Bottle Wash
81. Receiving Entrance
82. Receiving Office
83. Gallery
84. Autopsy
85. Museum
86. Morgue
87. Tunnel
88. Can Storage
89. Garbage Refrigerator
90. Truck Washing
91. Formula Room
92. Dish Washing
93. Employees' Dining Room
94. Preparation Room
95. Storage
96. Unassigned
97. X-ray
98. Admitting Office
99. Entry
100. Emergency Operation
101. Emergency Hall
102. Doctors' Lavatory
103. Nurses' Lavatory
104. Pharmacy Office
105. Pharmacy
106. Ambulance Entrance

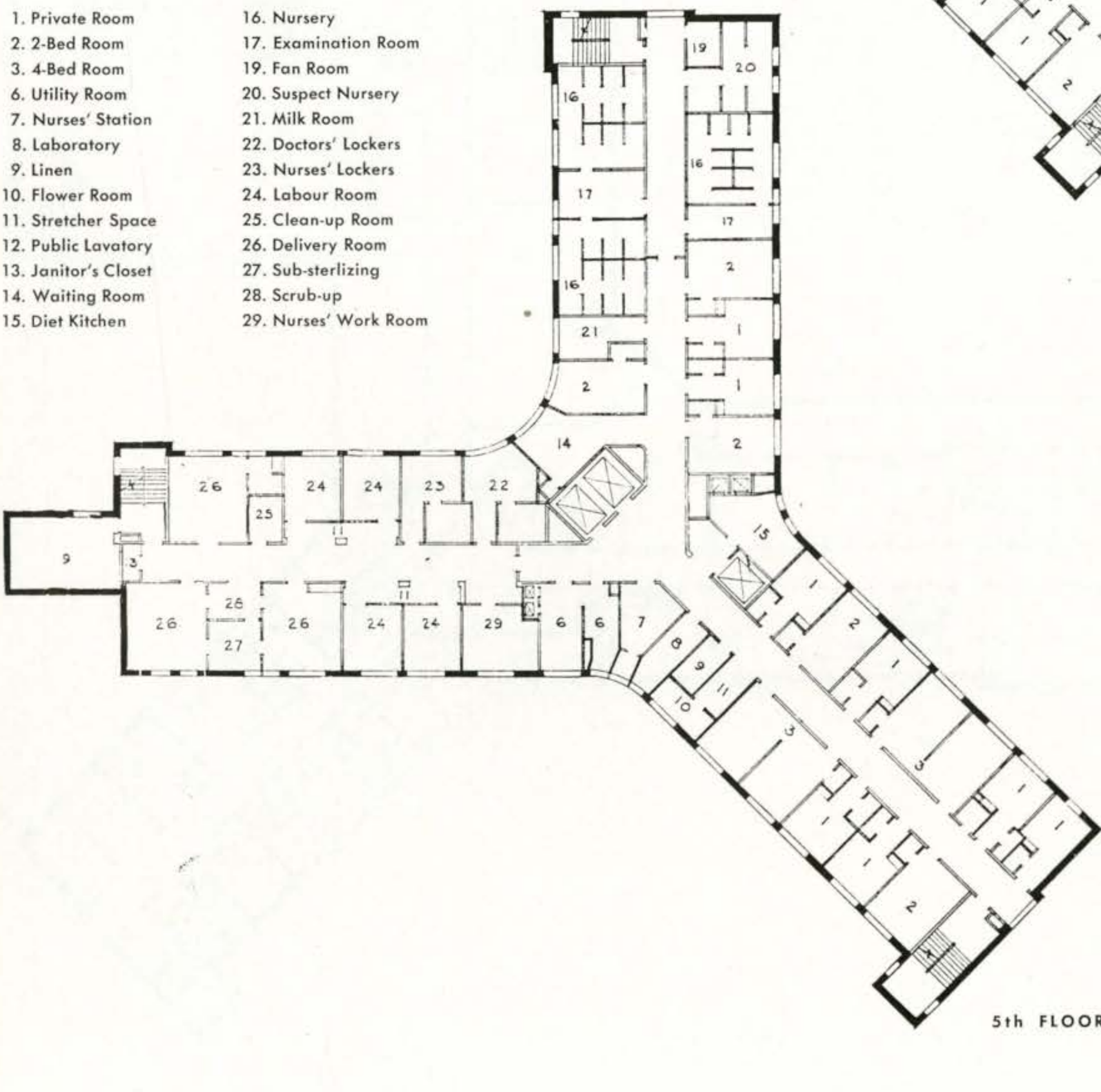


2nd FLOOR

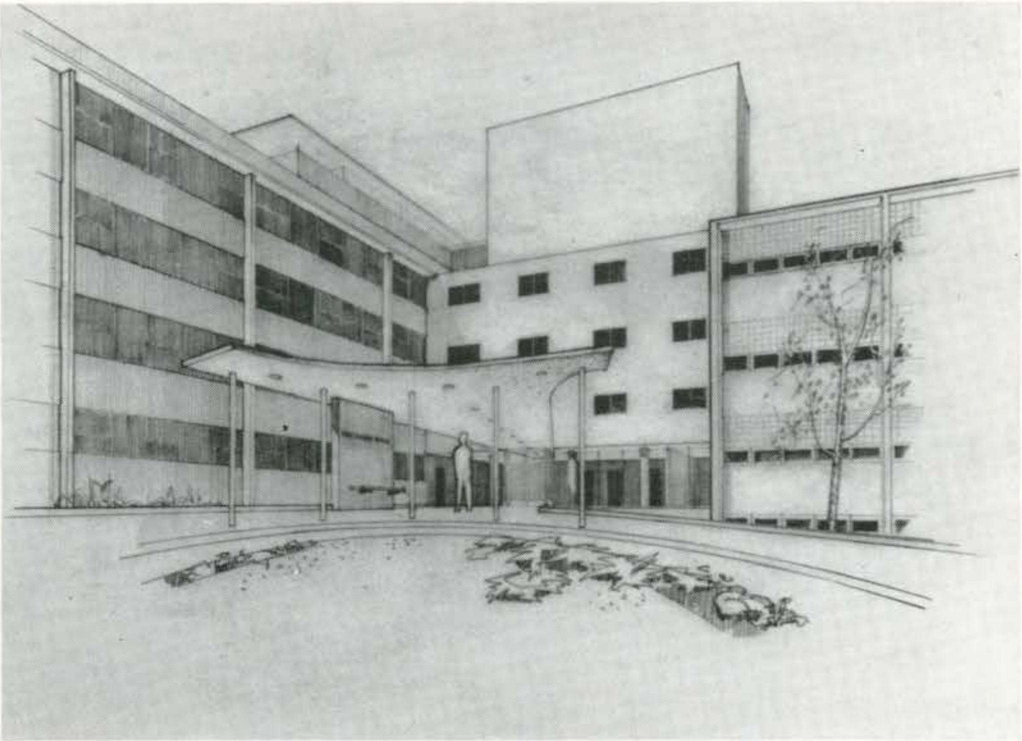
1. Private Room
2. 2-Bed Room
3. 4-Bed Room
5. Special Private Room
6. Utility Room
7. Nurses' Station
8. Laboratory
9. Linen
10. Flower Room
11. Stretcher Space
12. Public Lavatory
13. Janitor's Closet
14. Waiting Room
15. Diet Kitchen
22. Doctors' Lockers
23. Nurses' Lockers
25. Clean-up
27. Sub-sterilizing
28. Scrub-up Room
29. Nurses' Work Room
30. Recovery Room
31. Anaesthetic Storage
32. Bed Storage
33. Major Operating
34. Minor Operating

4th FLOOR

1. Private Room
2. 2-Bed Room
3. 4-Bed Room
6. Utility Room
7. Nurses' Station
8. Laboratory
9. Linen
10. Flower Room
11. Stretcher Space
12. Public Lavatory
13. Janitor's Closet
14. Waiting Room
15. Diet Kitchen
16. Nursery
17. Examination Room
19. Fan Room
20. Suspect Nursery
21. Milk Room
22. Doctors' Lockers
23. Nurses' Lockers
24. Labour Room
25. Clean-up Room
26. Delivery Room
27. Sub-sterlizing
28. Scrub-up
29. Nurses' Work Room

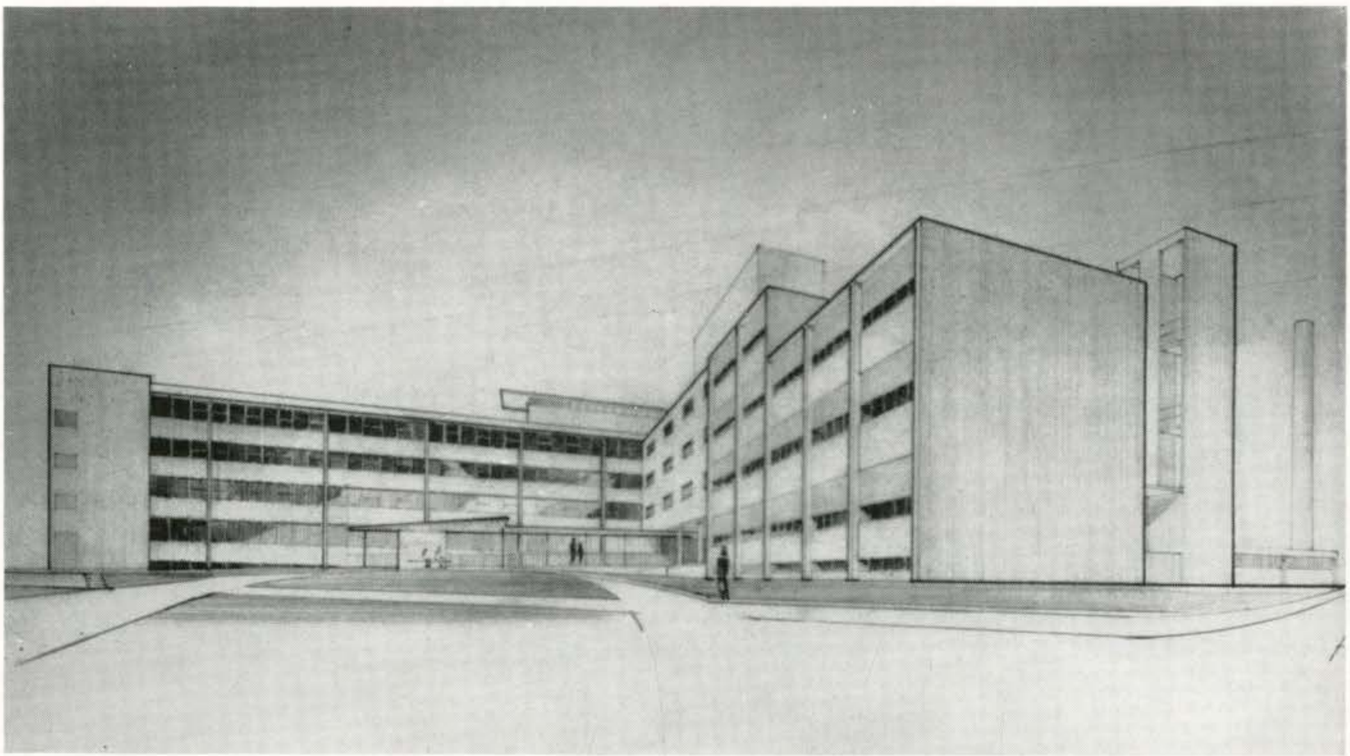


5th FLOOR



TRAIL-TADANAC GENERAL HOSPITAL, EAST TRAIL, BRITISH COLUMBIA

SHARP & THOMPSON, BERWICK, PRATT, ARCHITECTS

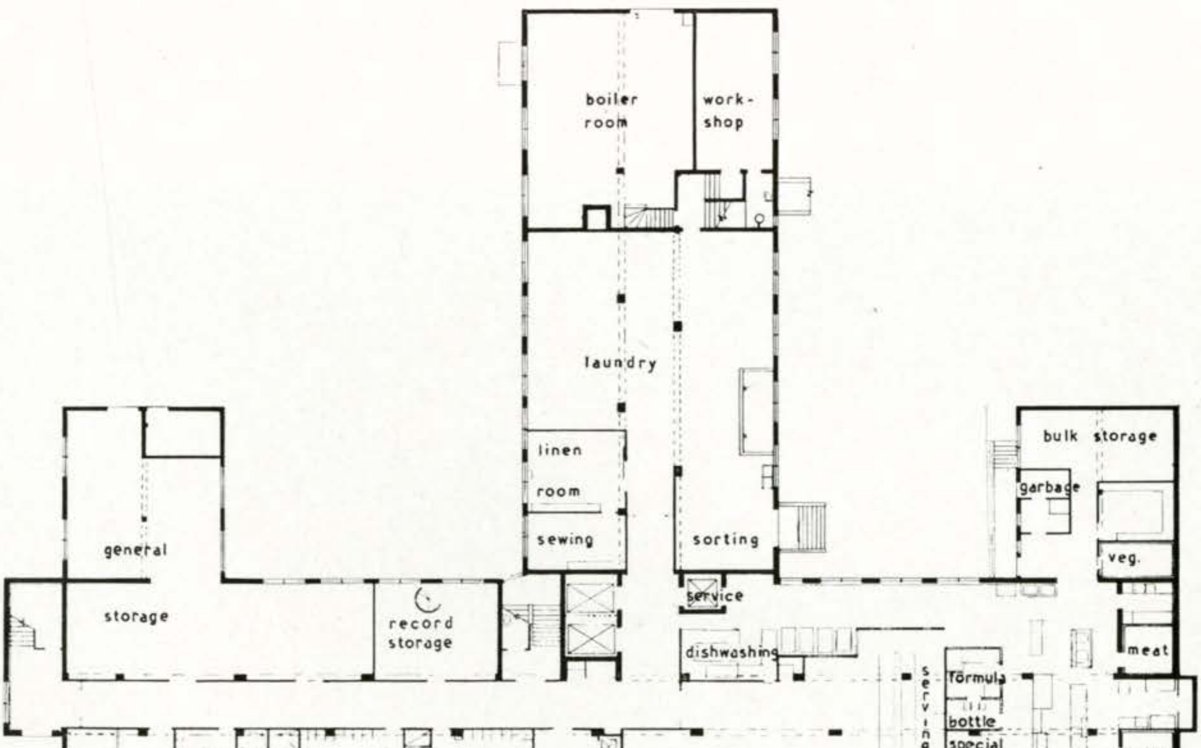


DOMINION PHOTO CO.

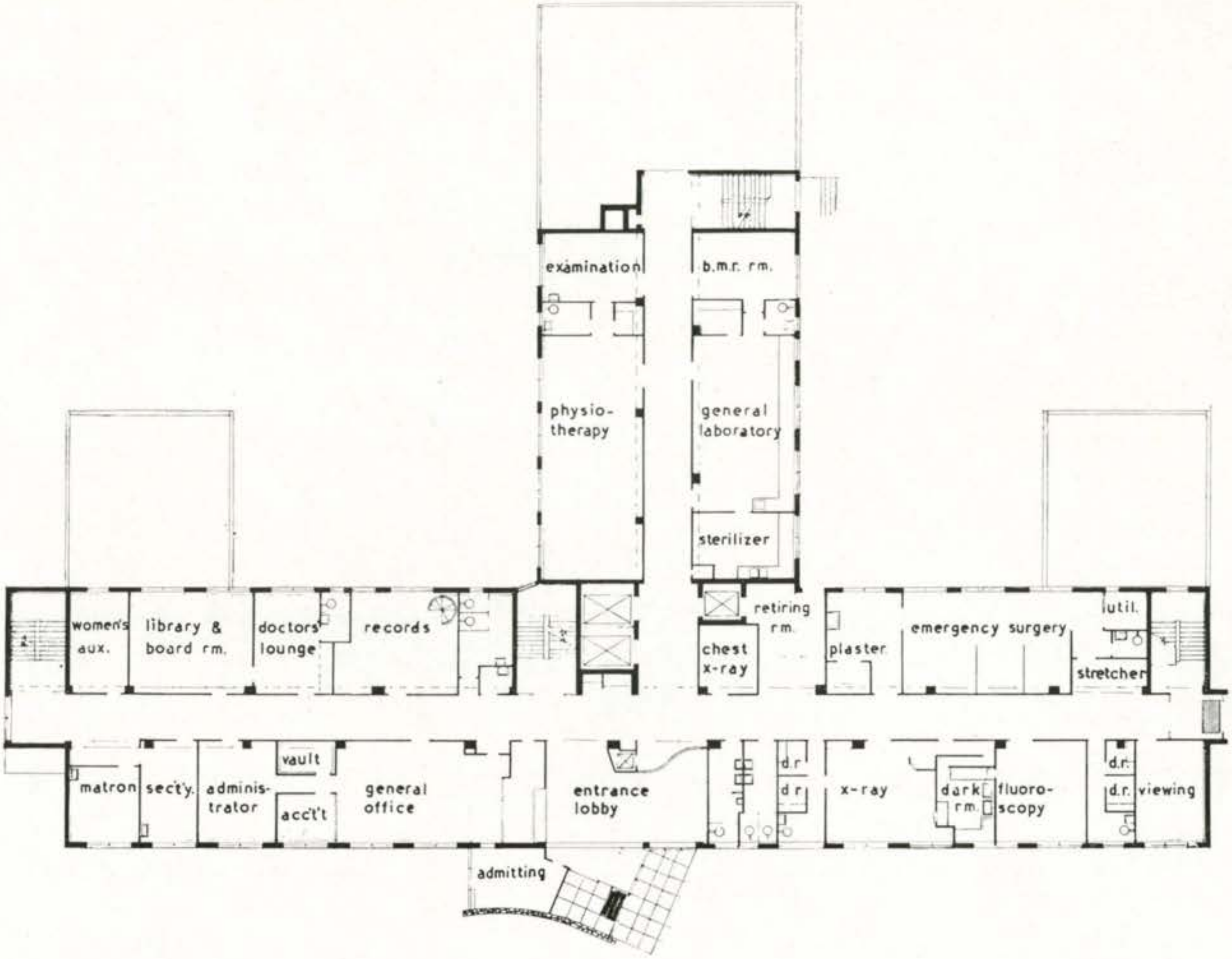
BURNABY GENERAL HOSPITAL, BURNABY, BRITISH COLUMBIA

GARDINER & THORNTON, ARCHITECTS

Smith Bros. & Wilson Limited, General Contractors

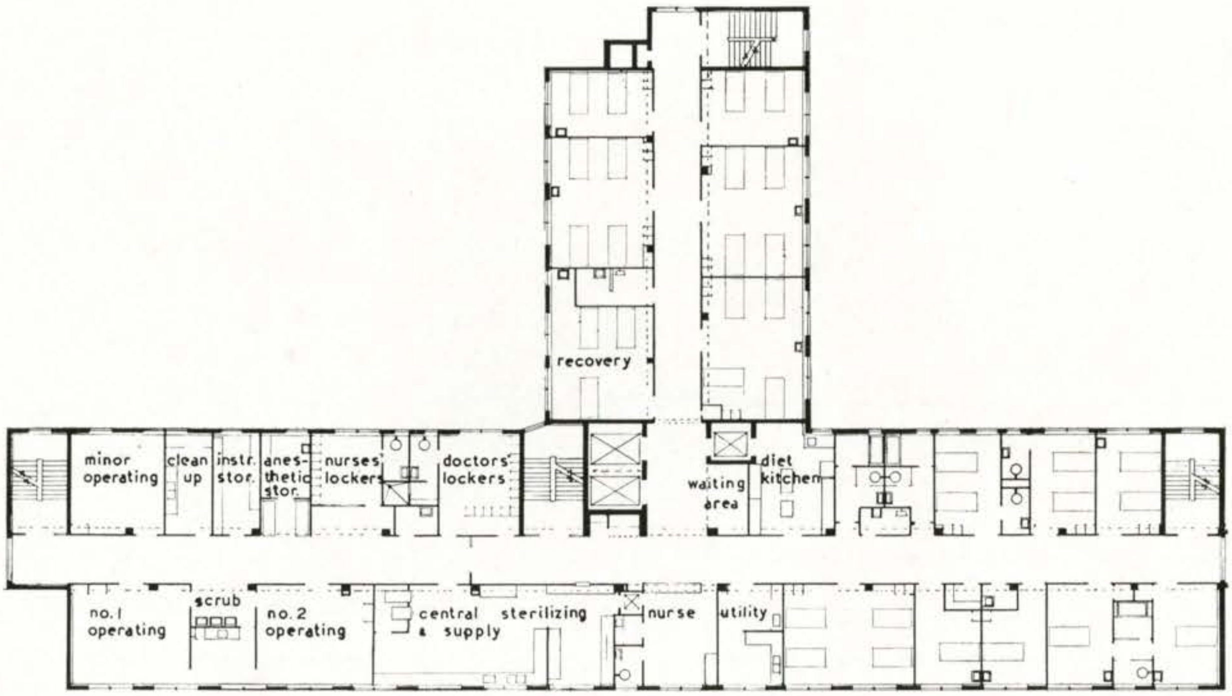


BASEMENT

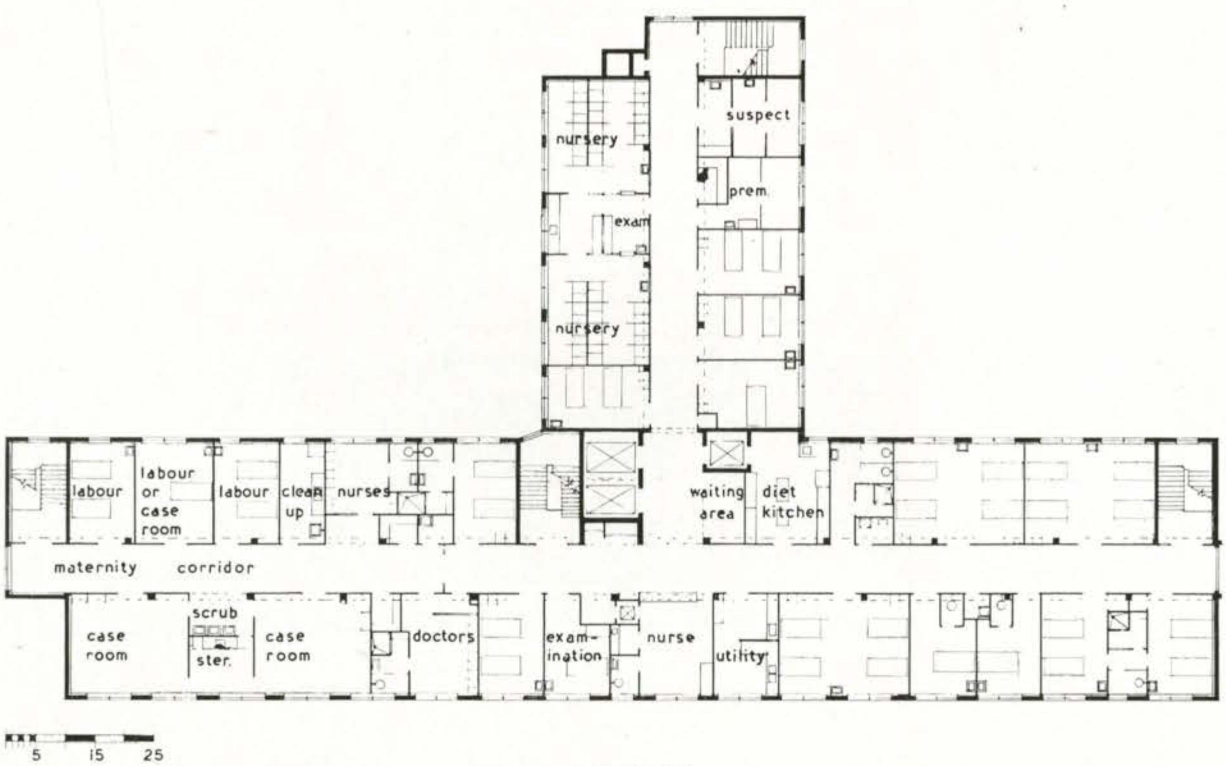


GROUND FLOOR

2nd FLOOR



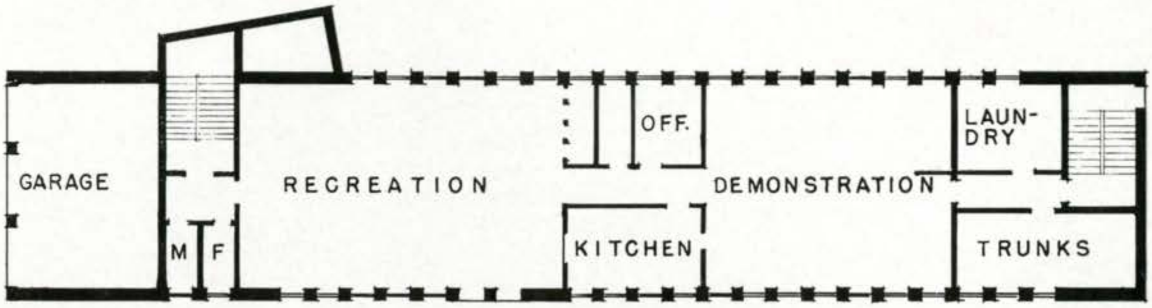
3rd FLOOR



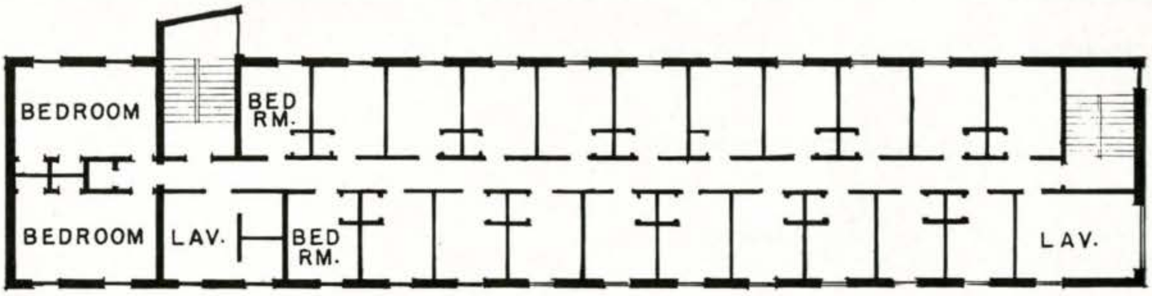
4th FLOOR

STUDENT NURSES' RESIDENCE, ROYAL VICTORIA HOSPITAL, BARRIE, ONTARIO

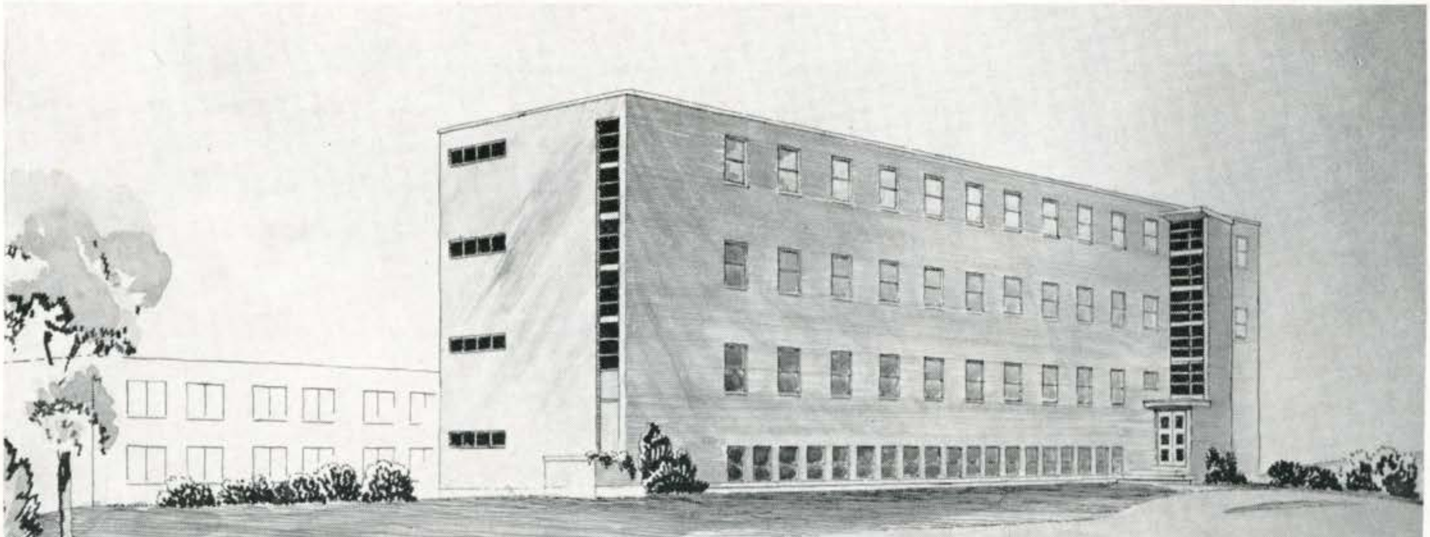
WILSON & NEWTON, ARCHITECTS



BASEMENT



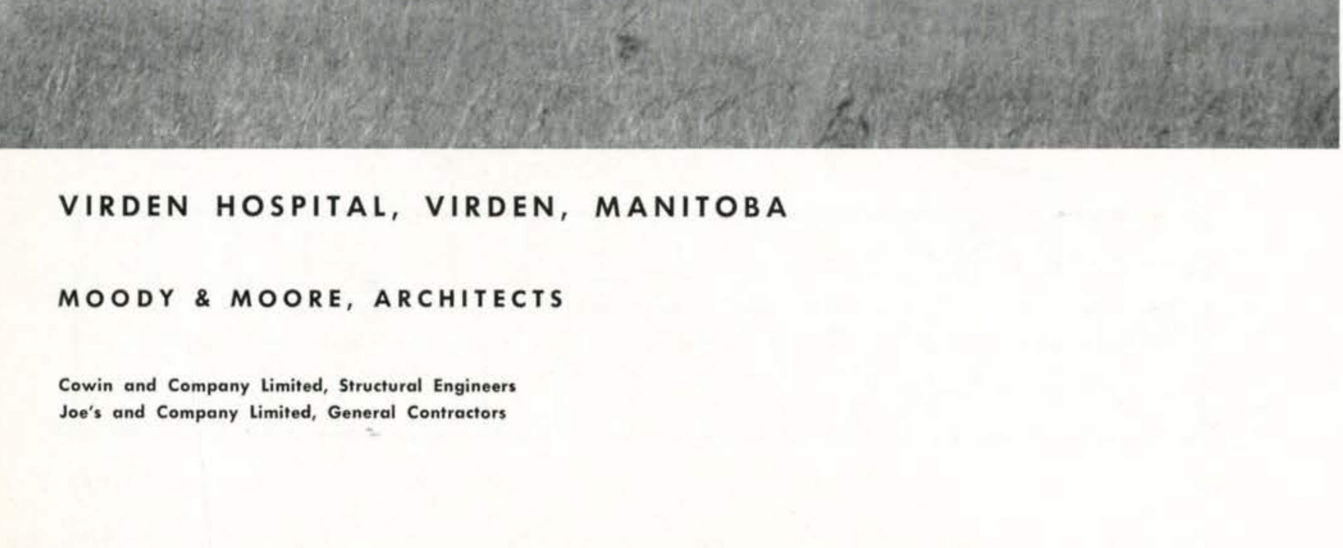
TYPICAL DORMITORY



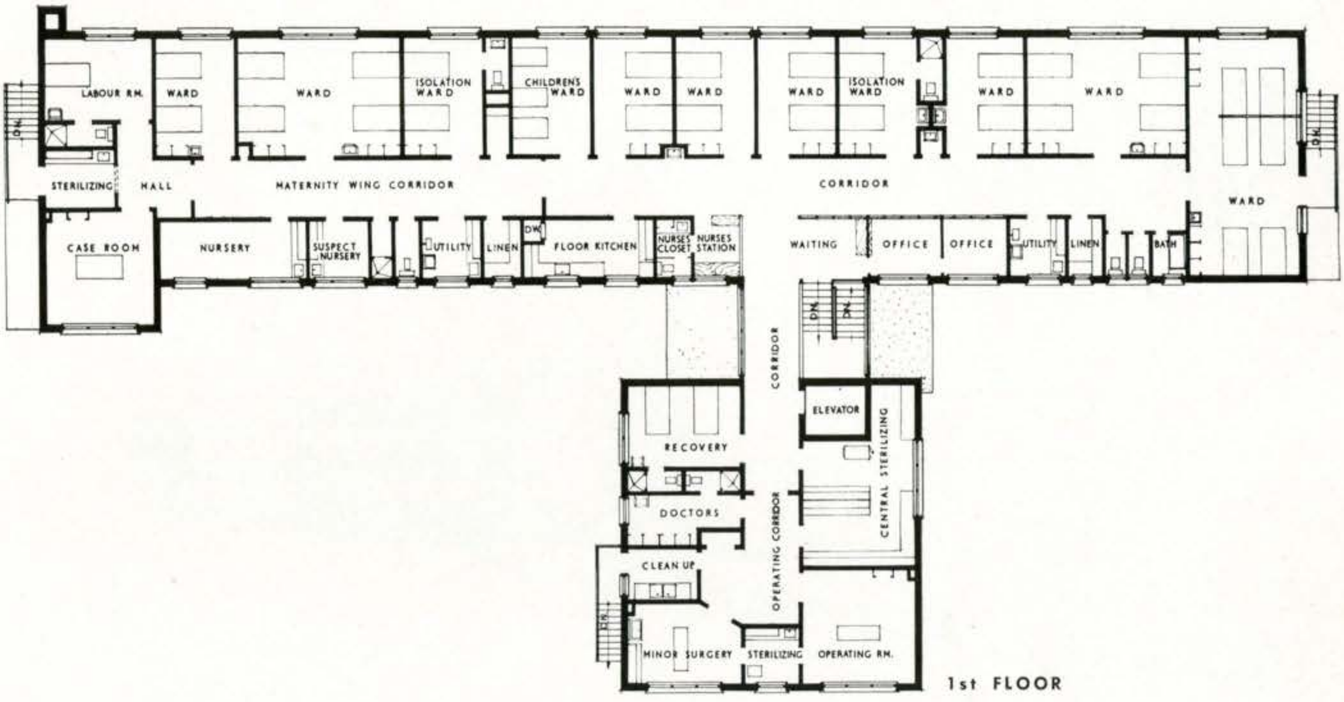
VIRDEN HOSPITAL, VIRDEN, MANITOBA

MOODY & MOORE, ARCHITECTS

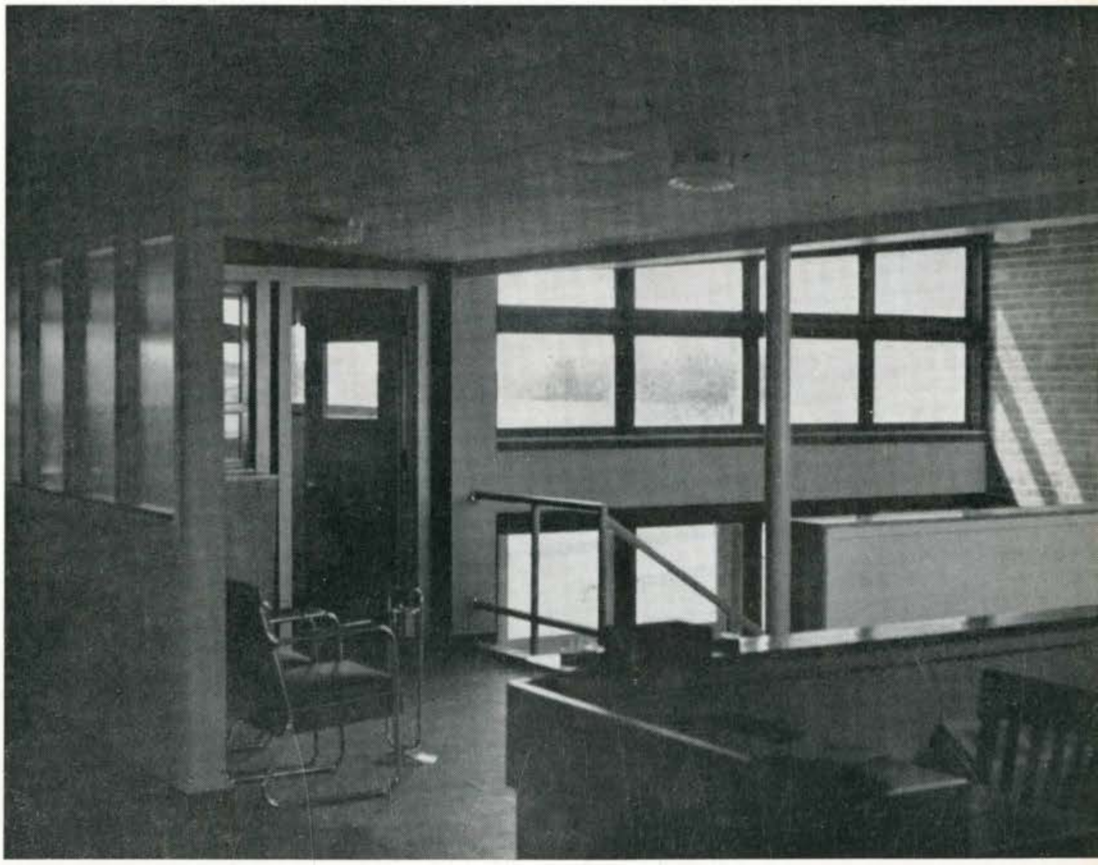
Cowin and Company Limited, Structural Engineers
Joe's and Company Limited, General Contractors



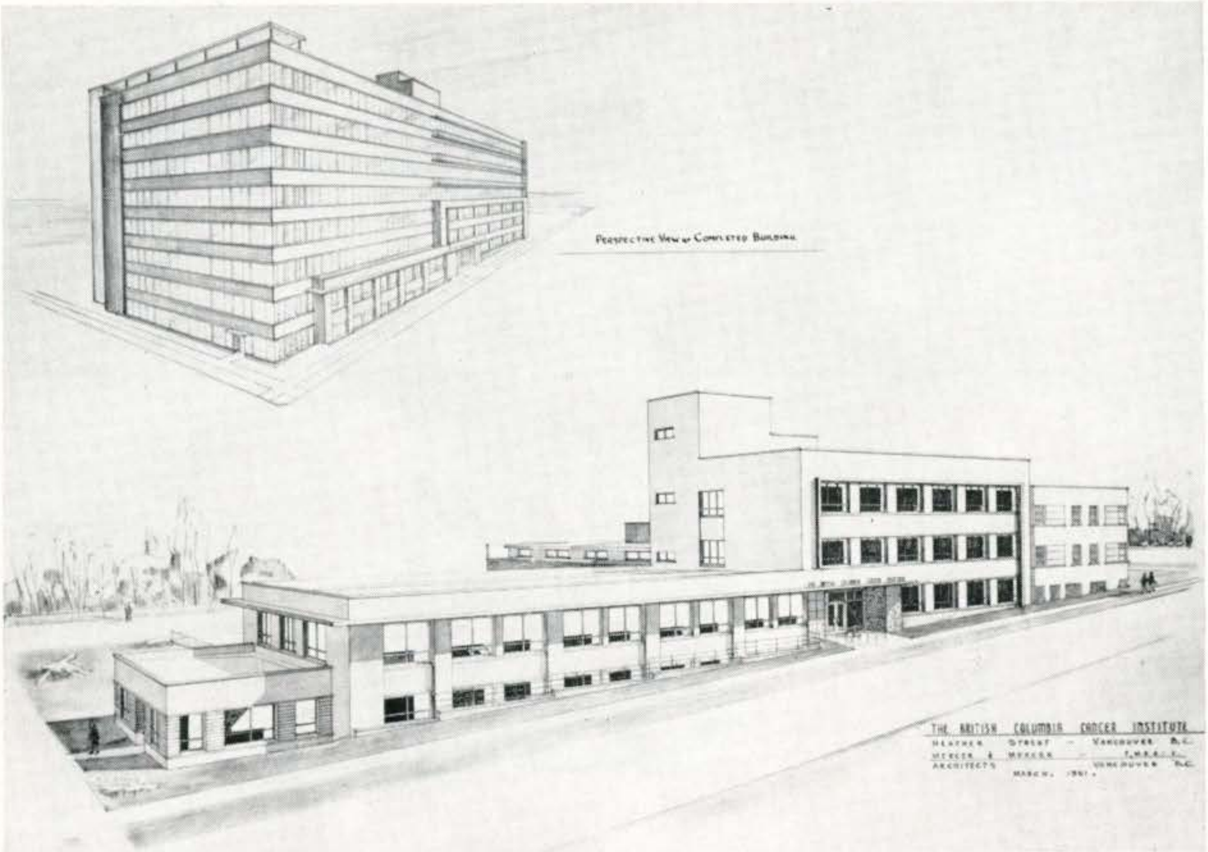
GROUND FLOOR



1st FLOOR



VIEW OF ENTRY FROM NURSES' STATION



INDUSTRIAL PHOTOGRAPHICS

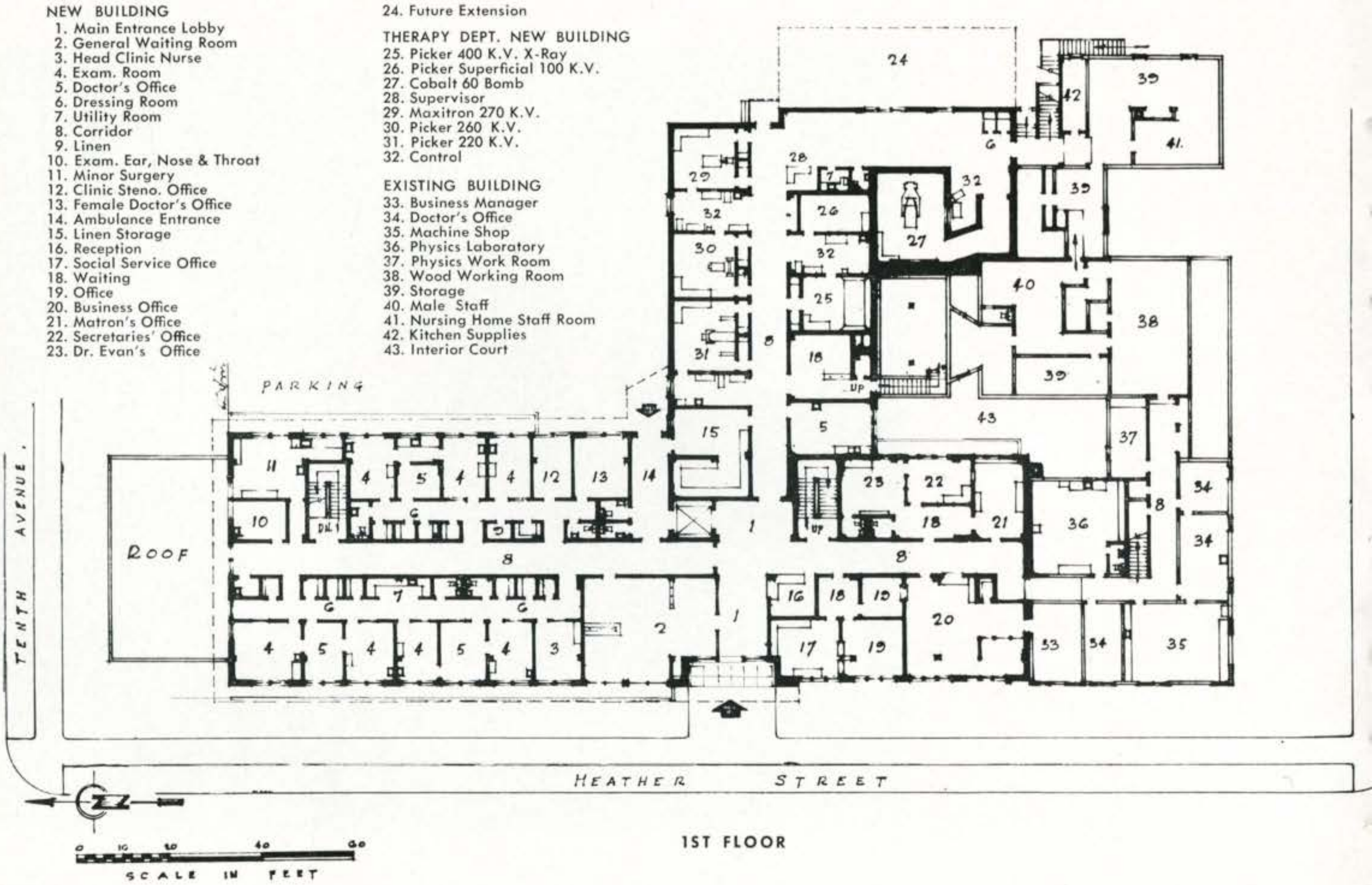
THE BRITISH COLUMBIA CANCER INSTITUTE, VANCOUVER, BRITISH COLUMBIA

MERCER & MERCER, ARCHITECTS

NEW BUILDING
1. Main Entrance Lobby
2. General Waiting Room
3. Head Clinic Nurse
4. Exam. Room
5. Doctor's Office
6. Dressing Room
7. Utility Room
8. Corridor
9. Linen
10. Exam. Ear, Nose & Throat
11. Minor Surgery
12. Clinic Steno. Office
13. Female Doctor's Office
14. Ambulance Entrance
15. Linen Storage
16. Reception
17. Social Service Office
18. Waiting
19. Office
20. Business Office
21. Matron's Office
22. Secretaries' Office
23. Dr. Evan's Office
24. Future Extension

THERAPY DEPT. NEW BUILDING
25. Picker 400 K.V. X-Ray
26. Picker Superficial 100 K.V.
27. Cobalt 60 Bomb
28. Supervisor
29. Maxitron 270 K.V.
30. Picker 260 K.V.
31. Picker 220 K.V.
32. Control

EXISTING BUILDING
33. Business Manager
34. Doctor's Office
35. Machine Shop
36. Physics Laboratory
37. Physics Work Room
38. Wood Working Room
39. Storage
40. Male Staff
41. Nursing Home Staff Room
42. Kitchen Supplies
43. Interior Court

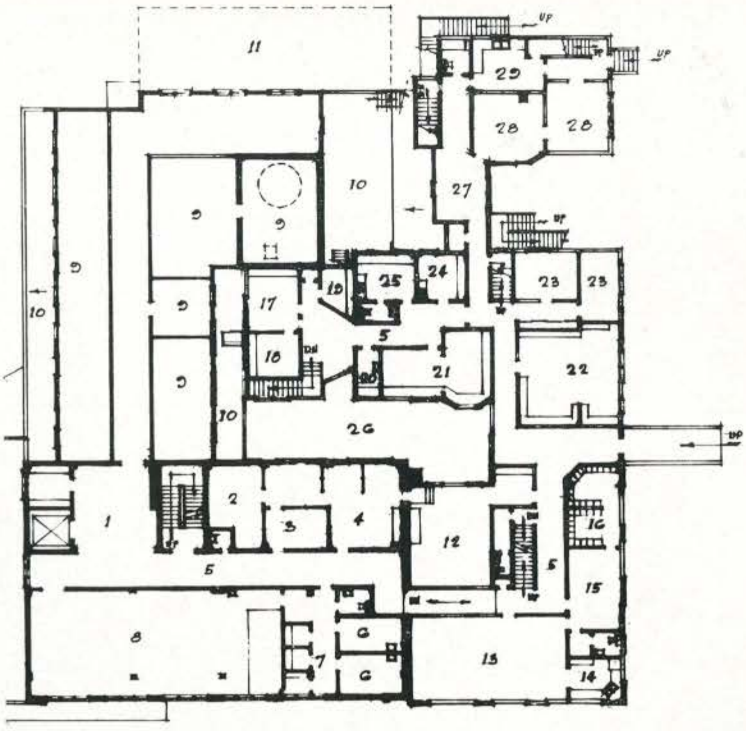


1ST FLOOR

NEW BUILDING
1. Lobby
2. Statistics & Consultation Clinic
3. Medical Records Office
4. Medical Records
5. Corridor
6. Examining Rooms
7. Dressing Rooms
8. Conference Room
9. Machine Rooms
10. Roof
11. Future Extension

EXISTING BUILDING
12. Records
13. Nurses' Lounge
14. Kitchenette
15. Lounge
16. Lockers

CLINICAL LABORATORY, EXISTING BUILDING
17. Reception
18. Office
19. Storage
20. Urinalysis
21. Cystology
22. Library
23. Doctor's Office
24. Haematology
25. Bacteriology
26. Interior Court
27. Nurses' Station
28. Wards
29. Kitchen



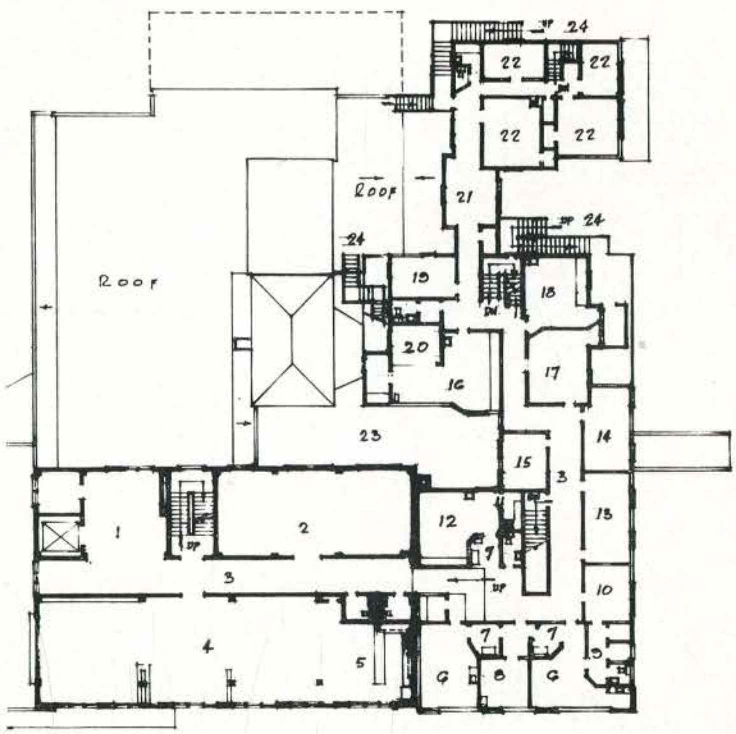
2ND FLOOR

The B.C. Cancer Institute Building, now nearing completion, is the culmination of many years of hard endeavor on the part of the B.C. Cancer Foundation. Incorporated in 1935, occupying their first building, a reconverted house in 1938, the building of temporary quarters in 1948, the Foundation, now in 1952, have a new permanent building as their first step in a long range expansion programme. The new building is of steel frame designed for a future total of nine floors with walls and slabs of reinforced concrete. Basically the new building has been zoned into three functions — examining (out-patient department), treatment (therapy department) and administration. Each zone is capable of expansion without spoiling the overall plan. The out-patient department is capable of handling a maximum of 100 patients per day, depending on the types of cancer encountered. A minor surgery room used principally for biopsy is included in this section. The therapy department consists of five X-ray therapy machines, a Picker Superficial 100 K.V., a Picker 400 K.V., a Maxilion 270 K.V., a Picker 260 K.V., and a Picker 220 K.V. All these therapy machines are housed in lead-protected treatment rooms, some lead being ½" in thickness. In addition to these therapy machines, the Institute also have the new "Cobalt 60" bomb, the third in the world to be in operation (Saskatoon and London, Ont., being the first two). This unit is housed in a specially-designed room of reinforced concrete, three walls being 18" in thickness and one wall 42" in thickness. The administrative section contains the general office, the executive offices, medical records, the social service offices, the photographic department and a lecture theatre. In addition, the new building provides space for the Women's Auxiliary, the Order of the Eastern Star Cancer Dressing Station, the I.O.D.E. Solarium, and the offices of the Canadian Cancer Society. As the present unit does not contain sufficient bed accommodation, a 190'-0" long tunnel to the Vancouver General Hospital is supplied for the convenience of patients going to and from for treatments. The existing temporary buildings have been renovated to contain the diagnostic X-ray department, the clinical and cytological laboratories, the radium department, mould department, physics laboratory, and the machine and woodwork shops. Heat for the Institute is obtained from the Vancouver General Hospital and the ventilation in all patients' rooms is designed to give 18 air changes per hour. The total cost of the building, apart from equipment and various ancillary services, was approximately $670,000.

NEW BUILDING
1. Lobby
2. Unfinished
3. Corridor
4. Solarium
5. Kitchenette

DIAGNOSTIC DEPARTMENT EXISTING BUILDING
6. Diagnostic X-Ray
7. Control
8. Dark Room
9. Dressing Rooms
10. Waiting Room
11. Utility Room
12. Cystoscopy

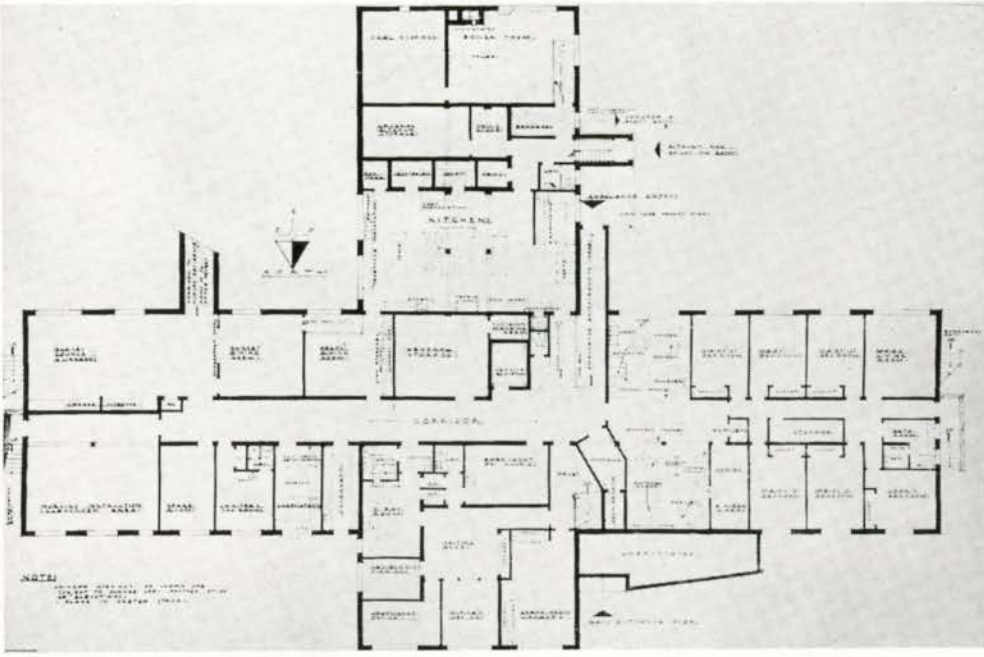
RADIUM DEPARTMENT
13. Examination Room
14. Gastroscopy
15. Retiring Room
16. Mould Department
17. Radium Implant Room
18. Radium Room
19. Radium Custodian
20. Office
21. Nurses' Station
22. Ward
23. Interior Court
24. Fire Stairs



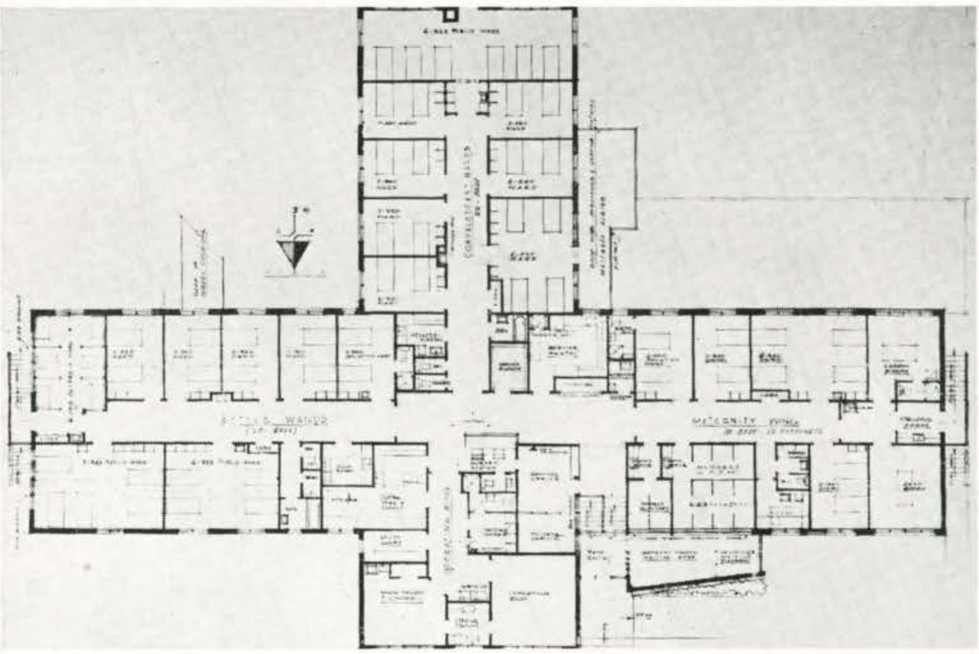
3RD FLOOR

MORDEN GENERAL HOSPITAL, MORDEN, MANITOBA

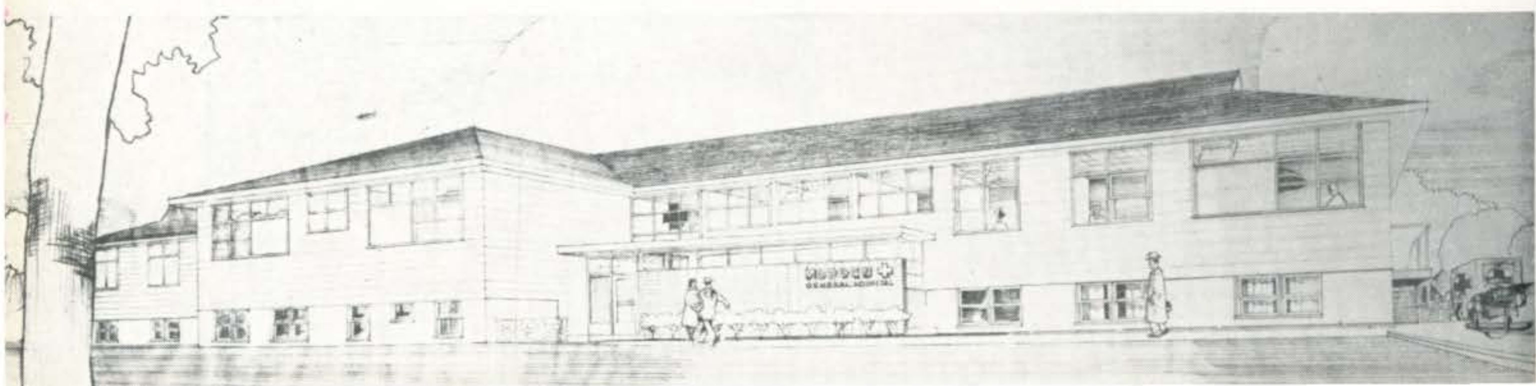
MOODY & MOORE, ARCHITECTS



GROUND FLOOR

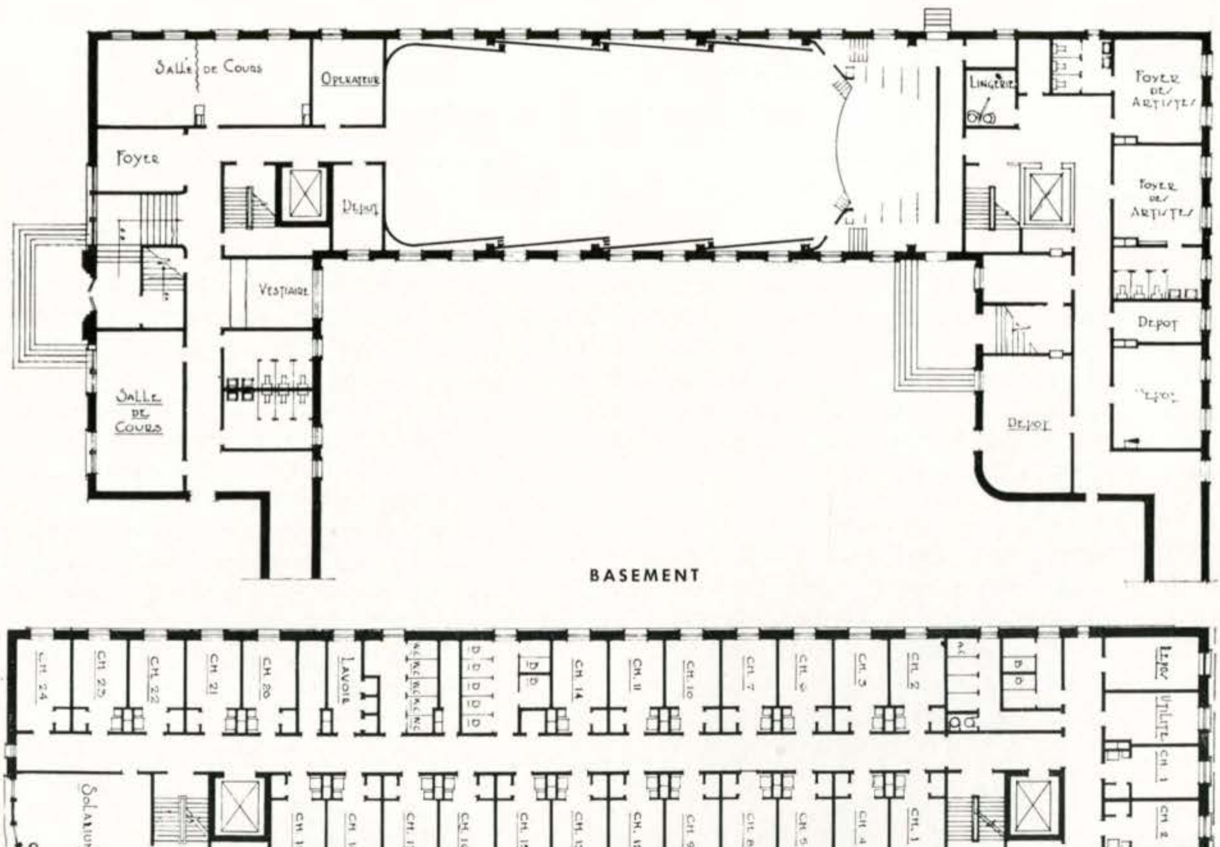


1st FLOOR



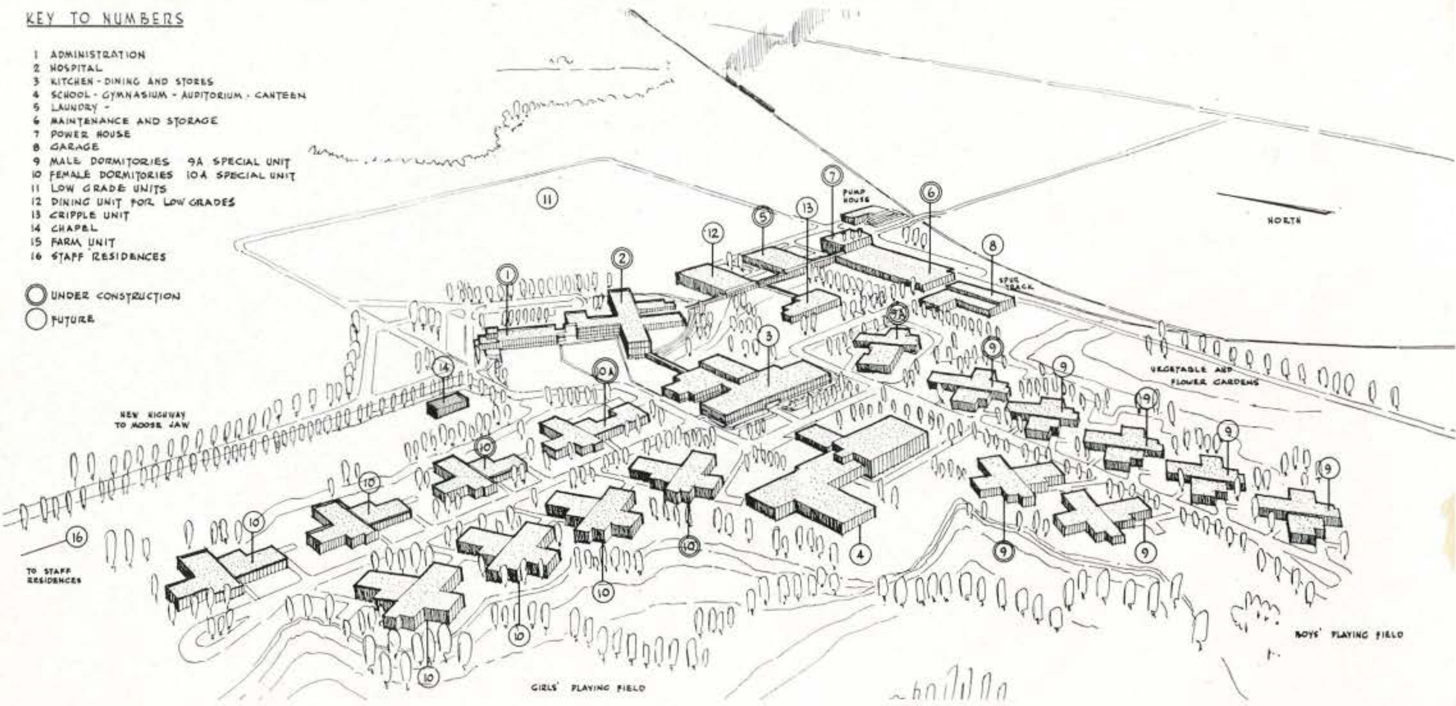
STE. JEANNE D'ARC HOSPITAL, MONTREAL, QUEBEC

GASTON GAGNIER, ARCHITECT



BASEMENT

TYPICAL FLOOR



THE SASKATCHEWAN TRAINING SCHOOL, MOOSE JAW, SASKATCHEWAN

H. K. BLACK, ARCHITECT
R. O. DAVISON, MEDICAL CONSULTANT

Introduction

The Saskatchewan Training School is the future home for approximately 1,500 mentally defective, as distinguished from the mentally ill, i.e., psychotics, neurotics, etc. The future tenants are at the moment housed in converted air force barracks and hangars and the Mental Hospital in Weyburn, Sask. Located on an 800 acre site adjoining the river and the animal park just south of the City of Moose Jaw, the school is a community in itself and is composed of physical facilities very similar to the large psychiatric institution.

Owners

The Government of the Province of Saskatchewan.
The Department of Public Works.
The Honorable J. A. Darling, Minister.
Mr. E. E. Eisenhauer, Deputy Minister.

The Department of Public Health.
The Honorable T. J. Bentley, Minister.
Dr. F. B. Roth, Deputy Minister.

The Units

At the moment the plans call for the following units:

1. An administration unit which houses all the office facilities and an apartment suite for the head nurse and which is placed on the highest point of the relatively flat site.

2. A 200 bed hospital unit which has practically all the facilities of the usual general hospital is provided, but is in the main a place for those patients who are also completely physically handicapped. Complete out-patient facilities are provided and located in the basement are classrooms for nurses in training, sewing room, shoe shop, etc. This unit is directly connected to the administration building.

3. The kitchen, dining and stores building provides storage space for food, clothing, and other small stores in the lower floor and the kitchen proper, the staff, the ambulant patients' dining rooms are located on the main floor. This kitchen unit prepares all the meals for the entire project, and those not able to eat in the dining rooms are served by food carts to the various units.

4. The school consists of four classrooms, home economics room, work shop, two physiotherapy rooms and an assembly room. A combination gym and auditorium with dressing rooms, bowling alleys and a projection booth, complete this unit. A canteen for both staff and patients is another feature of this unit.

5. The laundry unit handles all the laundry and includes facilities for mattress sterilizing.

6. The maintenance unit is made up of workshops for the plumber, carpenters, painters and so on and also provides storage space for the heavy stores not handled in the kitchen, dining and stores building.

7. The powerhouse, unit houses, three boilers, having total capacity of 717 H.P., water softener, stand-by power unit and other service facilities. This unit and the maintenance building is served by a spur track.

8. The garage building will house all the service cars and trucks, ambulance and fire-fighting equipment belonging to the project. A hydraulic hoist, pit and other facilities for minor repair are included.

9. and 10. There are 8 female and 8 male dormitory buildings for the higher-grade patients. A typical unit in-

cludes two sleeping areas of 36 and 24 beds each, a day room, a quiet day room, baths, toilets, linen storage, clothes storage, etc. Each female unit has a small laundry room and ironing facilities. Also each unit has a small treatment room and an additional quiet room for care of a patient that needs attention.

10a. A special unit which includes a beauty parlour, visiting room, office for the head female attendant is attached to one of the cottages. A similar unit (9a.) substituting a barber for the beauty parlour is provided for the males.

11. The low-grade unit or units house some 600 patients and is still in the research stage of planning. But it is intended that the units will be similar to the dormitory units in plan elements, except for the number of beds which will be 40 per unit.

12. A separate serving kitchen and dining rooms will be provided for this group, the prepared food coming from the main kitchen.

13. A cripple unit of 20 to 40 beds is intended for the future.

14. A small chapel will be provided for private services such as funerals, should the parents of the patients so desire. The larger Sunday church services are to be conducted in the recreation building.

15. Barns, silos, etc., and possibly a self-contained dormitory unit (or units) is contemplated for the mixed farm of 600 or so acres.

All units are connected by tunnel or surface passages for use by patients and staff in inclement weather. The same facility is used for power, steam and water distribution.

16. Seven residences for the key staff members are to be built on the site, while the remaining staff will commute from Moose Jaw.

The above make up the building units for the project to date.

General Construction

All foundations are reinforced concrete on spread footings, and, in general, the construction is concrete up to and including the ground floor slabs, and thence steel frame to the roof. The exception is the hospital building which is all reinforced concrete. Where no finished ceiling directly under a roof is required, purlins with rigid insulation on a two-inch wood deck is used while wood joists, lath and plaster is used where finished ceilings occur as in the administration building, and the dormitory units. Flat steel trusses give clear span areas in the laundry and kitchen areas.

Wood sash is used throughout except for the kitchen, maintenance building, garage and other service buildings. A variety of wall materials, cement plaster painted, plywood, exposed brick, concrete blocks, exposed concrete, glazed tile and so on are used in appropriate areas. Acoustic tile ceiling is specified generally in the activity areas.

Since much of the work in the kitchen, laundry, hospital, is done by the patients themselves, many special plan and detail elements were incorporated. Generally speaking, these resolved into the use of a greater openness of plan and use of glazed partitions for better visual supervision, large clearances between pieces of equipment, a careful selection of automatic and manually operated equipment for safety, terrazzo and quarry tile floors, glazed tile, stainless steel for ease of cleaning, etc.

Some Design Considerations

Though there are many interesting engineering, financing and other problems, architecturally, the most challenging arose from the characteristics of the patients and some of the specific requirements for ease of supervision and administration.

While the administration building is placed in a prominent location, the hospital unit, the kitchen and dining are placed centrally, as these are the hub of the project. Visually, the hospital through its size and height and the kitchen and dining unit by its bulk, convey the feeling of their importance while in fact all circulation via tunnel and passage, of food, stores, and other goods and services funnelled through them. The other units radiate from this hub.

Though the patients are lacking in critical expression, they are highly sensitive to their environment. Therefore, in general outlines of the buildings, material used, architectural detailing, etc., tend towards the informal side to suggest the variety evident in the outside world.

Need for economy on the underground tunnel connections necessitated a certain regularity as to the disposition of the various units, which was fortunately in keeping with another requirement. As many of the patients are permitted to roam freely, and are sent on minor errands, it was imperative that the overall plan be kept rather simple so that they may easily find themselves.

The problem of segregation of the sexes and the different grades of patients is accomplished quite logically by placing units such as the kitchen, dining, hospital, school and recreation and others of co-use as dividers. Though the site is comparatively level through grading and planting, it is intended that this segregation will be given a more natural definition.

Complete visual supervision and ease of access by the attendant to the patients, in all units, placed certain restrictions on the plan formed of the buildings themselves. For example, in the dorm units, the attendants station is placed at the hub and other space requirements such as the day rooms, sleeping, bathing, toilet, cloakroom and other facilities radiate from this point. The open plan providing intimate spatial relationship of the different areas has helped to accomplish the requirements for supervision, while not making this feature too obvious.

An interesting feature of the entire scheme is the intended landscaping scheme. Many features, such as paved terraces, rockeries, flower beds, walks, etc., are to be projects for the patients, which not only provide a creative and constructive outlet for the patients' energy, but also permits much scope for landscaping.

These and countless other considerations have provided opportunities for many interesting innovations. It is intended that these will be covered in detail with drawings and photographs at a later date when the buildings are completed.

K. Izumi

PENTICTON HOSPITAL, PENTICTON, BRITISH COLUMBIA

MERCER & MERCER, ARCHITECTS

The Penticton General Hospital serving over 20,000 people in Penticton and surrounding Okanagan valley areas will be completed early in 1953. Built at a cost of $1,349,000.00, which works out at a cost of $1.60 per c.f., the plans were developed after much research and work on the part of the architects, Mercer & Mercer, of Vancouver, as well as members of the Hospital Board, who worked in close conjunction with one another. Only after 13 preliminary sketch plans had been made, studied and improved upon did the final plan emerge. It is built in the form of a cross with a central core containing all the necessary services and with four relatively short nursing wings. Each nursing station faces directly, two wings giving exceptionally good control, efficiency, and ease of operation for the medical staff at all times. All the latest hospital techniques were studied and as far as was feasible were included in the planning of the building. Each ward is provided with its own lavatory and the W/C's are each provided with a bedpan hopper attachment. This arrangement allows a sterilized bedpan to be issued for the duration of the patient's stay and to be stored in the ward lavatory, thereby saving nurses' and orderlies' steps and time.

The hospital is built of reinforced concrete so designed to take an extra storey as needs of the community warrant. The accommodation at present is for 121 beds and 32 bassinets. The hospital contains all the usual departments of a general hospital, such as the surgical suite containing three operating rooms, scrub-ups, recovery room, dictation room and the obstetrical suite, containing two delivery rooms, five labor rooms. The surgical and obstetrical suites have been so arranged that the centre sterile supply rooms can serve both conveniently.

The nursery contains room for 32 bassinets, four of which are for premature and three for "suspects". Each nursery section contains nurses' work room, doctors' examination and treatment rooms and a section for the preparation and sterilization of formulas. The nursery is so arranged that there is no direct entry into the area containing the bassinets, from the corridor. The physician enters from the corridor into the examining room, where the infant is brought to him.

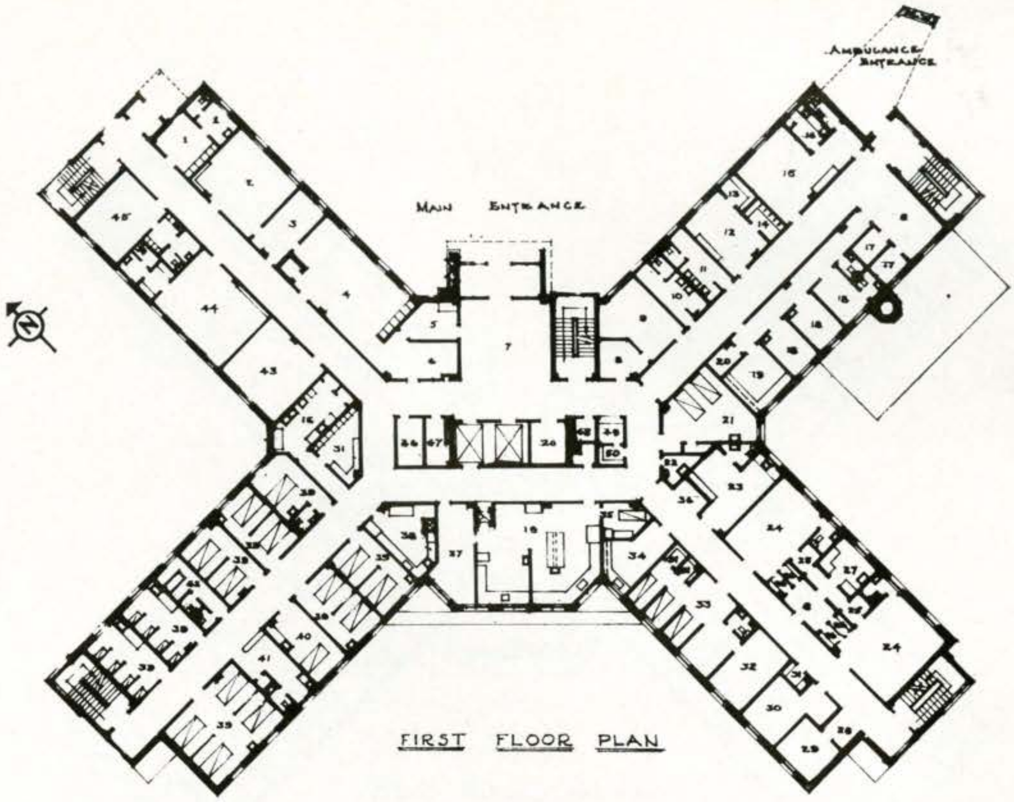
The kitchen, designed for an ultimate 180-bed hospital, is located in the basement and is easily accessible to all floors by a service elevator and a dumb waiter, which connects to diet kitchens on each floor. The staff dining room is situated next to the serving area of the kitchen and is provided efficient easy service. There are four large walk-in refrigerators, store rooms, and a direct entrance for receiving supplies.

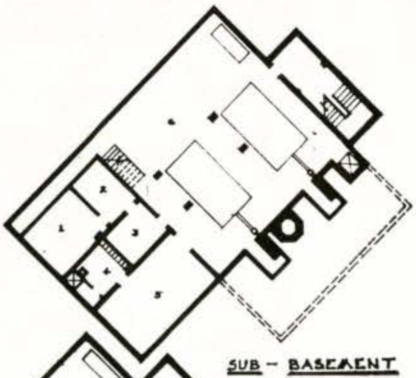
The building is extensively supplied with oxygen and vacuum outlets to more than 70% of the wards.

The site is on a large five-acre tract on the edge of the city with a magnificent view of the surrounding hills and with Skaha Lake in the distance.

INDUSTRIAL PHOTOGRAPHICS

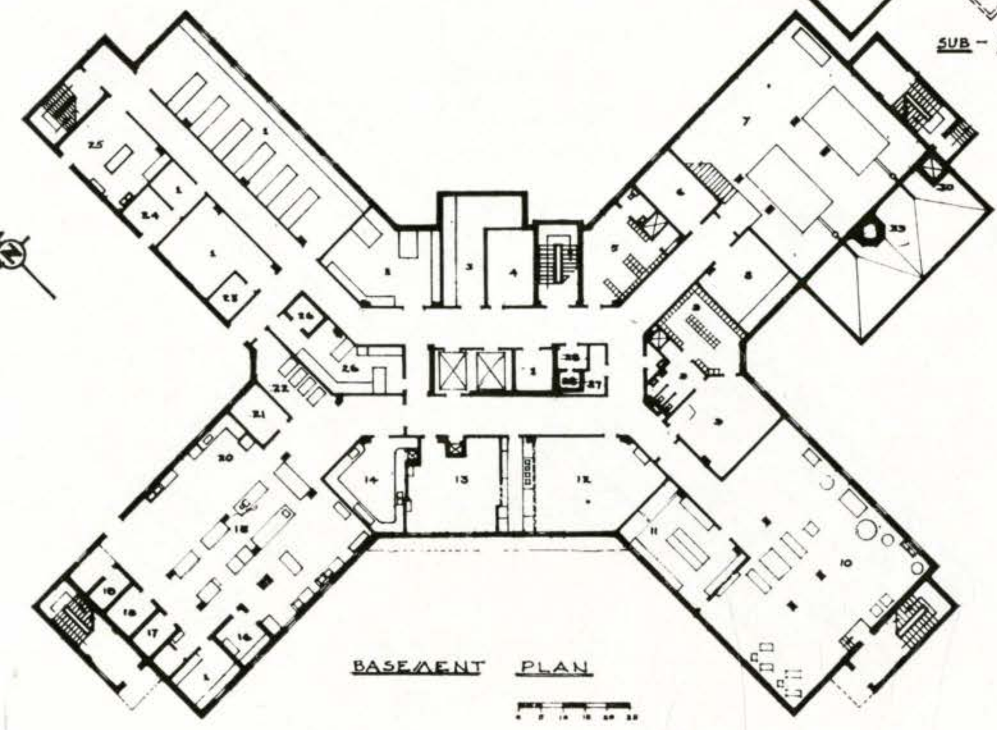
1. Female Staff
2. Administration & Board Room
3. Secretary
4. General Office
5. Information
6. Admittance
7. Lobby
8. Waiting Room
9. Matron's Office
10. Female Lavatory
11. Male Lavatory
12. Fracture Room
13. Plaster Room
14. Splint Room
15. Emergency
16. Utility Room
17. Consultation
18. Examination Room
19. Laboratory
20. Storage
21. E.K.G. & B.M.R.
22. Janitor Closet
23. Cystoscopic Room
24. Radiology
25. Control
26. Dressing Room
27. Dark Room
28. Stretchers
29. X-Ray Viewing
30. Radiologist Office
31. Linen Room
32. Exercise Room
33. Treatment Room
34. Public Health Laboratory
35. Blood Room
36. Mobile X-Ray
37. Pathologist
38. Diet Kitchen
39. Pediatric Ward
40. Treatment Room
41. Nurses' Station
42. Bathroom
43. Records
44. Doctors' Lounge
45. Nurses' Lounge
46. Retiring Room
47. Admitting X-Ray
48. Telephone
49. Concession
50. Stores





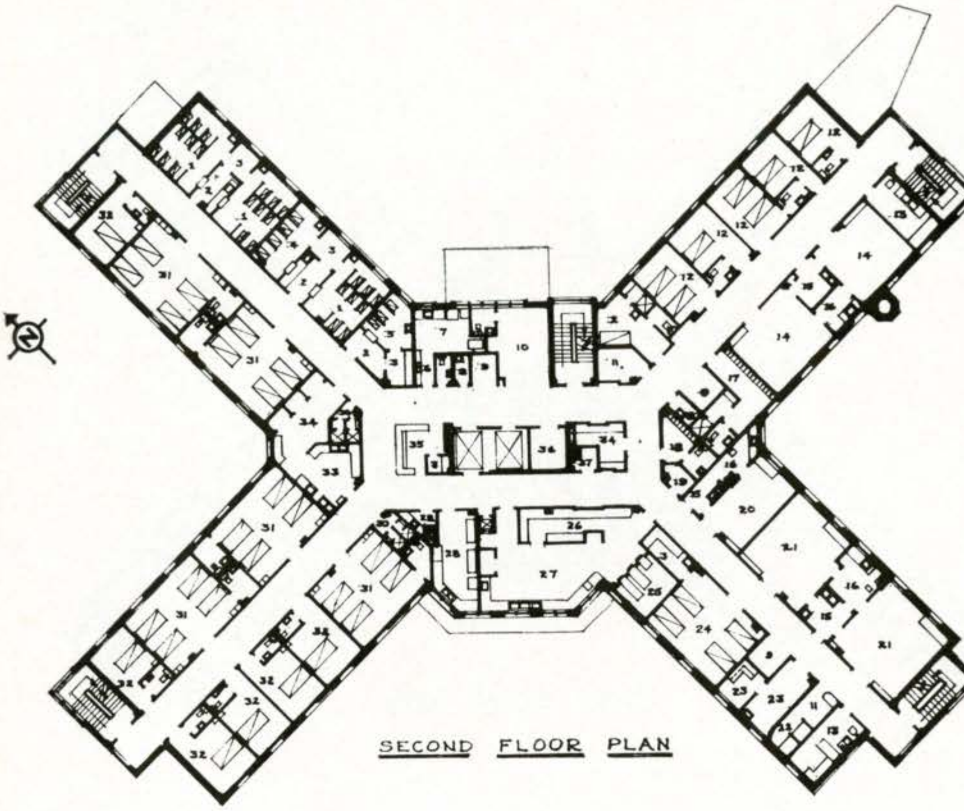
SUB-BASEMENT

1. Transformer Room
2. Low Tension Room
3. Switch Room
4. Locker Room
5. Mechanical Equipment
6. Boiler Room

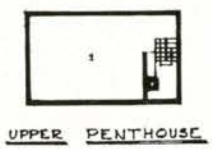


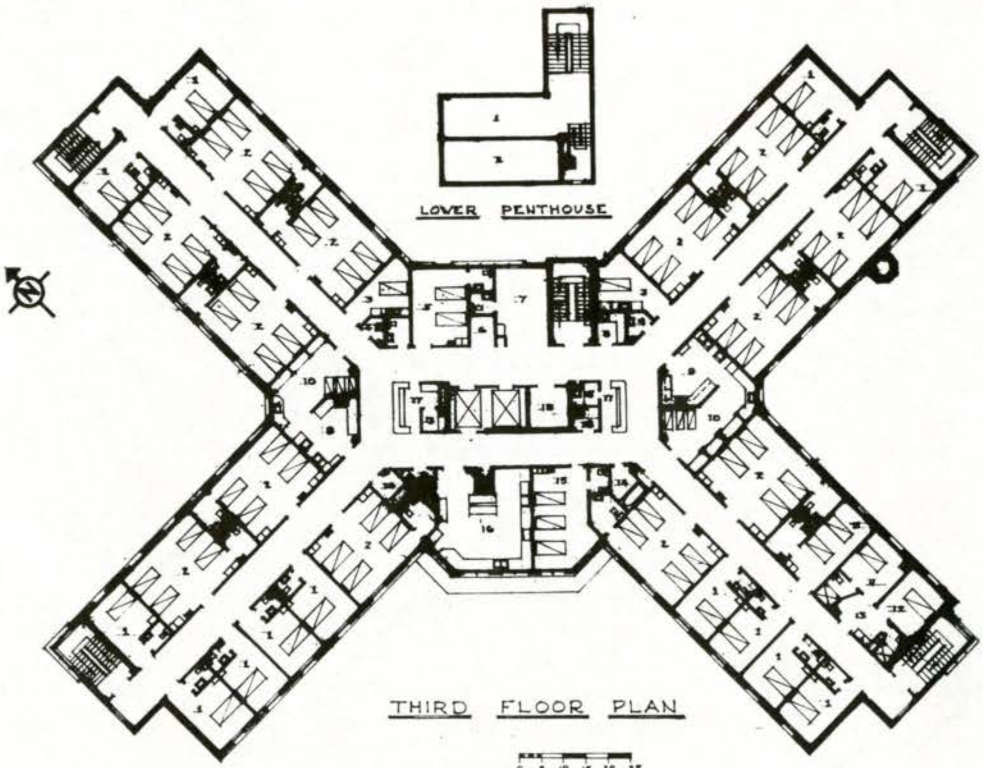
BASEMENT

1. Storage
2. Bulk Foods
3. Furniture Storage
4. Record Storage
5. Male Help
6. Engineer's Office
7. Upper Part of Boiler Room
8. Carpenter Shop
9. Female Help
10. Laundry
11. Clean Linen
12. Staff Dining
13. Doctors' & Nurses' Dining
14. Dishwash Room
15. Kitchen
16. Meat Refrig.
17. Dairy Refrig.
18. Vegetable Refrig.
19. Garbage Refrig.
20. Special Diets
21. Dietitians Office
22. Food Trucks
23. Receiver
24. Oxygen Equipment
25. Morgue
26. Pharmacy
27. Soiled Linen
28. Incinerator
29. Coal Storage
30. Ash Hoist



1. Nursery
2. Examination Room
3. Nurses' Work Room
4. Pre-Mature Nursery
5. Suspect Nursery
6. Bottle Washing
7. Formula Room
8. Janitor's Closet
9. Stretchers
10. Waiting Room
11. Supervisor
12. Labour Room
13. Clean-up Room
14. Delivery Room
15. Scrub-up Room
16. Sub-Sterilizer Room
17. Doctors' Dressing
18. Nurses' Dressing
19. Dark Room
20. Minor Operating
21. Major Operating
22. Dictation Room
23. Anaesthesia Room
24. Recovery Room
25. Autoclave Room
26. Sterilized Storage
27. Central Supply
28. Diet Kitchen
29. Flower Room
30. Shower Room
31. 4-Bed Public Ward
32. Private Ward
33. Utility Room
34. Linen Room
35. Nurses' Station
36. Storage (Future Elevator)
37. Incinerator Closet





THIRD FLOOR

1. Private Ward
2. 4-Bed Public Ward
3. Treatment Room
4. Janitor's Closet
5. Semi-Private Ward
6. Stretchers
7. Waiting Room
8. Flower Room
9. Utility Room
10. Linen Room
11. Isolation Ward
12. 'X' Ward
13. Workspace
14. Bathroom
15. 3-Bed Public Ward
16. Diet Kitchen
17. Nurses' Station
18. Incinerator Closet

LOWER PENTHOUSE

1. Roof Slab
2. Deflector Floor

UPPER PENTHOUSE

1. Machine Floor

From an Address to the American Association of Hospital Consultants, September, 1952

CHARLES F. NEERGAARD

EFFICIENCY RATING OF THE DOUBLE CORRIDOR PLAN

As compared to the Single Corridor and Square Plans

DURING THE WAR, to conserve critical materials, the double corridor plan, with all services in the centre, was developed. For a 38-bed nursing unit the double corridor building is about 62 feet by 140, as compared with 40 feet by 188 for a single corridor structure. The floor area is about 10 per cent larger, which provides needed additional storage space and the cross corridor which save many steps in the care of the patient. Of most importance, the farthest bed is only 59 feet from the nurses' station, as compared to 88 feet in a typical single corridor. The plan is elastic. Men can be accommodated on one side and women on the other. The additional space cost is more than offset by the economy of mechanical installations. Ventilation is simplified; plumbing stacks are concentrated and radiators are unnecessary in the inside section. The plan is equally effective for adjunct facilities, compact laboratories and x-ray departments, surgical and delivery suites. The extra width lends itself particularly to an effective arrangement of the central sterilizing department, the kitchen and the laundry.

Many have long felt that better yardsticks are needed in hospital planning. This appraisal presents a comparison of three nursing units for discussion.

The Building Research Advisory Board (U.S.) was requested by the Federal Defence Production Administration to make a study of ways and means to effect conservation in building. A digest of their report in the July *Architectural Forum* states:

"There is a great need for standardization of standards, and unification and simplification of existing criteria, plus the development of new ones. Since little research exists on space and planning, Chairman Ralph Walker and his panel of design experts feel that there is a basic need for the establishment of criteria for measuring space efficiency – uniform methods of evaluating plans for government and civilian buildings alike. Suggested formula: *Efficiency Ratio equals the usable floor area (net floor area in the case of hospitals) divided by the gross area, which includes exterior walls.*"

The following tabulation aims to apply this efficiency ratio to three types of nursing units – a typical single corridor plan with 40 beds, the square plan of the Euclid-Glenville Hospital, Cleveland, 48 beds, and the double corridor plan of St. Luke's Hospital, Bethlehem, 40 beds, with centred nurses' station and day room. The square plan is self-contained. In the single and double corridor plans there is included one-half of the vertical circulation tower area – elevators, stairs, lobby and floor clerk's station, which serve two nursing units. Solaria are omitted.

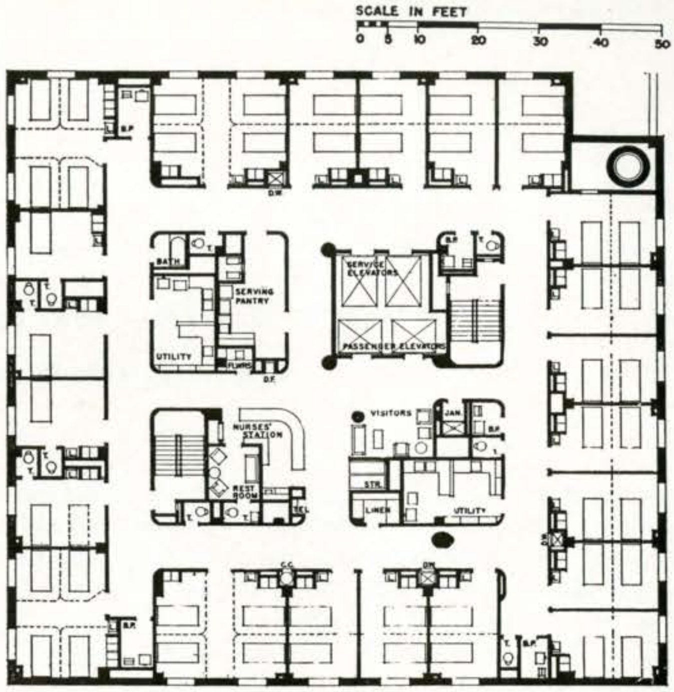
	Single Corridor	*Square Plan*	*Double Corridor*
Number of beds (maximum)	40	48	40
Gross area inside the outside walls	8,008 s.f.	10,314 s.f.	10,200 s.f.
Gross square feet per bed	200	215	255
Elevators and Stairs (deducted)	500	718	510
Corridors and Lobbies (deducted)	1,880	2,695	2,440
Net Usable Area	5,628	6,901	7,250
Net Usable Area per Bed	136	160	184
Efficiency Rating (net usable area divided by gross area)	.67	.65	.73
Periphery of Building	495′	419′	450′
No. lineal feet of exterior wall per bed	12.4	8.7	11.2
Nursing radius–station to furthest room	88′	80′	62′

The Single Corridor Plan has the smallest gross and net area per bed, the longest nursing radius and the most lineal feet of exterior wall per bed. The efficiency rating is .67.

The Square Plan, as compared to the double corridor plan, has less square feet per bed, both gross and net, and less usable area per bed. Its nursing radius is 80′ as compared to 62′. It has the lowest efficiency rating of all three plans. The ends of all corridors are blocked so that no outside light or air reaches the inside area. The typical nursing floor has a potential of 52 beds raising a question of nursing management.

The Double Corridor Plan has an open day room opposite the inside nurses' station, for light and air, avoiding claustrophobia. There is storage space for extra beds to take care of the ebb and flow between single and double occupancy. There is less corridor area than in the square plan, the cross corridors bringing the utilities close to the rooms. All corridors are open to light and air. It has the shortest nursing radius of the three plans which is its major economy.

Mechanical Ventilation: The Euclid-Glenville Hospital as a whole, with large inside areas, requires a large amount of mechanical ventilation. It has seven supply fans aggre-

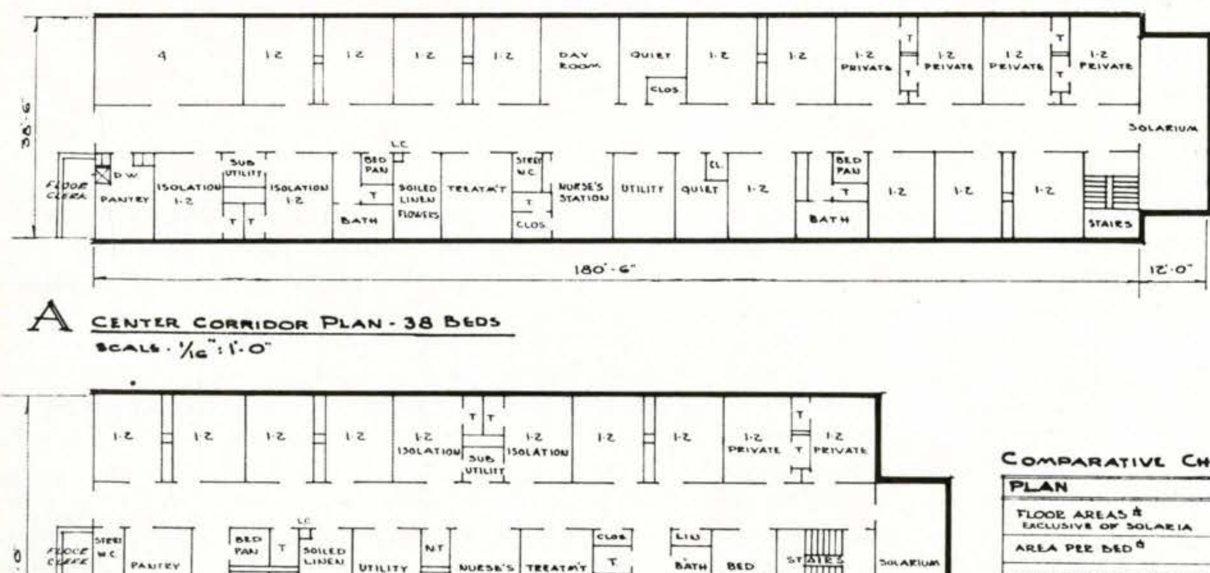


TYPICAL BEDROOM FLOOR

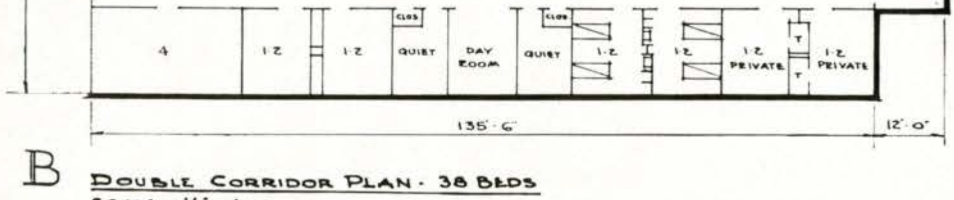
gating 15 motor HP, supplying 38,100 cubic feet per minute of fresh air. From 125 to 150 extra boiler HP are required to heat this air (10,000 cfm needs 40 boiler HP). It has eleven exhaust fans aggregating 12½ HP, removing 44,310 cfm.

The St. Luke's double corridor plan has two roof exhaust fans of 2 HP each to ventilate the center service island. Normally only one is required, the other being held in reserve for use in warm weather. There is no fresh air mechanically supplied.

These comparisons and comments are submitted to the members of the Association with the suggestion that we set up formulae and yardsticks of our own so that hospital plans can be better appraised in the sketch stage.



A CENTER CORRIDOR PLAN - 38 BEDS
SCALE - 1/16" : 1'-0"



B DOUBLE CORRIDOR PLAN - 38 BEDS
SCALE - 1/16" : 1'-0"

COMPARATIVE CHART

PLAN	A	B
FLOOR AREAS * EXCLUSIVE OF SOLARIA	6950	8180
AREA PER BED *	183	214
INSIDE PERIMETER OF EXTERIOR WALLS INCLUDING SOLARIA LIN. FT.	424	355
DISTANCE FROM NURSE'S STATION TO FARTHEST PATIENT'S ROOM DOOR LIN. FT.	88	59
NUMBER OF WINDOWS (EX. SOLARIA) USING SINGLE WINDOWS	29	21
USING 2 PER PATIENT'S ROOM	48	40
NUMBER OF RADIATORS	32	24

THE PUBLIC RELATIONS PROGRAM OF THE ONTARIO ASSOCIATION OF ARCHITECTS

The public relations program undertaken by the Ontario Association of Architects has one purpose and one purpose only. It is to create a climate of opinion favorable to the profession and the use of its services.

In attaining this objective, three secondary benefits are realized:

(1) The improvement of physical environment.

(2) Recognition of the important role the profession plays in society.

(3) More employment and higher earnings for architects.

The present public relations program dates from 1950. In that year, at the annual convention, a budget of $5,000 was approved for initiation of such a project by a special committee of architects, aided by a professional public relations director.

The program and budget were again approved by the 1951 convention. Whereas during 1950, financing was from reserve, in 1951 a levy of $10 per member was made. In neither year was the full $5,000 spent.

At the 1952 convention, the public relations program was deemed to have been given a fair trial, to have proven successful, and to be worth continuing. Its cost was incorporated as part of a long term financing plan for the Association.

Not a New Idea

The O.A.A. has always been conscious of the need for good public relations. For one thing, there is recognition that the Architects' Act, by which the profession is empowered to regulate itself, imposes a heavy responsibility. This legislation is provided by a government elected by popular vote. The favor dispensed is not a God-given right. It can be revoked at any time, at the will of the people. It is therefore essential that public opinion be well disposed to the architect, and well informed as to the nature of his services.

Secondary aspects of the program also deserve mention:

Physical environment. Encouragement of greater appreciation of the importance of good building design reacts to the advantage of architects. Ugly, poorly conceived surroundings are detrimental to the cultural growth of our civilization, to say nothing of the convenience and enjoyment of the public.

Professional recognition. Many architects hold important positions in their communities and have influential connexions in various walks of life. However, the profession as a whole is not sufficiently well recognized. Attention must be drawn to the leadership which architects enjoy in the construction industry, and their contributions to society as a whole.

Better opportunities. As it becomes known that there is no substitute for the architect in matters related to construction, there will be more employment for architects. Younger architects will find it easier to establish themselves; smaller centres, now without architects, will attract members of the profession to them.

Some Opposition

Despite approval by the 1950 convention, some architects – conservative by nature – saw no necessity for the O.A.A. embarking on a public relations program. Also, a group of architects in government employ did not see how publicity for the profession and its services would benefit them.

These potential sources of friction are no longer evident. There has been growing awareness that the challenge of changing times must be met or the profession will suffer. No longer can an architect prosper by hoping for clients who will, by chance, discover his sterling qualities and beat a path to his ivory tower. New and uninhibited sources of competition for his services are springing into being. It is against a background of well informed opinion, created by the public relations program, as to who he is and what he does, that an architect's promotion of new business will be most effective today.

Opposition of architects in government employ has largely disappeared because of the interest taken in their particular problems, changes in income tax regulations, and recognition that whatever benefits the architect in private practice is likely to react to the benefit of the employed architect.

Many Definitions

Public relations has many definitions, one of the best of which is attributed to the child of a public relations consultant who said, "It's the art of getting along with people outside the family."

To succeed, a public relations program must accept the Golden Rule as an operating philosophy. It will not accomplish the desired results on the basis of calculated astuteness. It must be sincere, honest, above-board, always mindful that public interest must be considered ahead of selfish interest.

As an exact science, public relations is still in short pants. Its development is far from being at the push button stage. Too little is known about people, why they think the way they do, and why their doing so often fails to coincide with their thinking. Still, little by little, patient trial and error are producing facts which can be translated into practical techniques.

The O.A.A. program is largely predicated on the findings of an opinion poll, conducted in 1949 by an independent agency, which revealed wide gaps in the knowledge of business men, particularly younger business men, about the profession and its work. The program is administered by a committee of six architects: E. C. S. Cox, Douglas E.

Kertland (chairman, 1950), F. H. Marani (resigned, 1952, but not replaced), W. Bruce Riddell, L. E. Shore, and Harland Steele (chairman, 1951-52).

The committee is well aware that a sound, down-to-earth approach should underlie its efforts. Objectives constantly kept in mind are the necessity of:

1. Emphasizing the pre-eminence of the architect.
2. Helping young architects to establish themselves.
3. Sponsoring projects to benefit all architects.

There is consciousness of the long term aspects involved in carrying on a public relations program. The audience which must be reached, notably the decision-makers in business and industry, is constantly changing. Results cannot be compared year by year, but only in terms of years.

Nature of Program

An ideal method of improving the profession's public relations would be through more direct contact between the public and architects. Unfortunately, the latter are too few in number to make this suggestion practical. In Ontario, there is only one architect per every 10,000 persons. Recourse must be had to other means of disseminating information. All the devices of education, advertising, promotion are utilized, with heavy emphasis on publicity. This major weapon in the public relations arsenal employs the press, radio and other means of mass communication.

Under the heading of publicity, the securing of credit for architects whose work is published is highly important. In the O.A.A. program publications or owners of new buildings who use renderings or photographs without giving a credit line to the architect have the omission drawn to their attention, and are asked to give acknowledgment in future.

Routine events or special projects undertaken by the Association, its Chapters or committees, are occasions for publicity. In such cases, news releases are prepared and sent to the newspapers, wire services and radio stations. The best coverage is usually enjoyed by the O.A.A.'s annual convention, with a press and radio party held immediately before this event. Items like the monthly meeting of the Council of the Association, the opening of architectural exhibitions, presentation of briefs, elections and reports are taken advantage of in order to broaden popular awareness of the architect and his functions.

Outstanding in the "special projects" department is the annual Craftsmanship Award presented to the best all-round building apprentice in the province. It has attracted favorable acknowledgment from contractors, labor leaders and government officials.

Suggestions for editorials and "letters to the editor" are other means of getting the profession's message into print. Sometimes feature articles on architecture and architects are submitted to influential publications, but more often they are prepared on request. The recent *Star Weekly* Dream House promotion, for instance, helped describe the architect's interest in residential design to 900,000 readers. The *Financial Post, Canadian Business,* and *Industrial Canada* have all featured the architect's responsibility for new trends in factory design. *School Progress* and *Canadian School Journal,* in a similar way, have covered architectural contributions to better school planning and building.

One unusual project stemmed from a complaint by an O.A.A. member that free plan services offered by lumber yards were swamping his efforts to interest people in having their new houses architect-designed. This was countered by the preparation of a special article, sent with a mat of an attractive house design to newspapers in all cities of 20,000 population or over in Ontario.

Nothing has been done in the direct mail field. When a folder on the value of an architect's services, proposed but not yet published, is ready, it will be sent to this year's graduates of the business administration courses at the University of Toronto and the University of Western Ontario. Copies will also be available for distribution by individual architects.

Advertising Used

While publicity is something that is earned, advertising has to be paid for. The O.A.A. public relations budget does not provide for a large advertising appropriation, but space is taken annually in the yearbook of the School of Architecture, University of Toronto, the Daily Commercial News Building Forecast, and the Toronto Builders' Exchange directory as a matter of course.

This year, the *Financial Post* and the *Canadian Trade Index* were used as well, in connexion with special industrial issues of these publications.

Efforts to establish an official speakers' bureau did not work out too well, since architects are reluctant to tie themselves down to a schedule of appearances too far in advance. However, interested organizations are assisted in obtaining appropriate speakers on topics of concern to them.

Radio has been used in a limited way to relay the architect's message. Two one-hour panel discussions were broadcast over a Toronto radio station this spring, one on housing costs, the other on housing design.

Films present an unique opportunity because of their visual impact. The National Film Board was approached last year with regard to producing a documentary on modern school design, and was most receptive to the idea. One of the members of the committee on public relations, E. C. S. Cox, is collecting material for a slide film which will depict the training of an architect, plus examples of ancient and modern Ontario buildings done by architects – and others.

Schools Exhibited

Exhibitions are an excellent medium of publicity, but their cost and the difficulty of staffing them are major problems. The only display assembled to date was for last fall's convention of the Association of School Business Officials in Toronto.

A number of investigations have been carried out with the object of improving the O.A.A. public relations program. One of these sought to profit by experience elsewhere in defining and solving public relations problems. It was a survey dealing with the activities in this field by the R.I.B.A., the A.I.A. and some of its Chapters, and the R.A.I.C. and provincial associations other than Ontario.

(continued on page 310)

NEWS FROM THE INSTITUTE

ALBERTA

We are being frequently told now-a-days that engineers have for the past century been the true leaders in building design and that their efforts have, in fact, transformed the whole spirit of architecture and led us into new and better fields. Engineers themselves have not been prominent in making this claim for they are a modest folk. They are naturally and rightly proud of those works which they have handled in novel and satisfactory ways. But as they aimed not at artistic success they have not looked for praise for having achieved that. In one line, however, they have long been quite conscious of having given delight to the spirit of man. In their ships they felt a deep delight and to ensure this had become with them a definite aim. This is especially true of the sailing ships. But I have heard them speak with joy of the old "City of Rome" on whose lovely lines sailor-men would feast their eyes. She was a beauty, perhaps never surpassed, for the slab-sided modern steamship has declined in bodily shape, however much it may be admired for size, speed and luxury. That is another story. It is unfortunate for the engineers that so much of their work outrages the senses. They cut ugly gashes in the landscape and torture it with many a horrid device. A few modern bridges are beautiful, most are brutal outrages on nature.

There is no essential antagonism between architecture and engineering. Both are constructive arts. Our economic system has introduced many artificial and superficial distinctions between them and tends more and more to keep them apart. Each profession is taken up with a mass of minutiae differing widely in the two businesses. A thin admixture of scientific calculation pervades the architect's office and a similar faint odour of emotional appeal hangs about that of the structural engineer. Each has need of the other. The architect has enough to occupy his time without making the many fine calculations required in the various branches of engineering that enter into his works. It may not be so obvious that the engineer has need of the architect. But the fact that the first efforts of engineers in new lines have been clumsy stumbling blocks to their acceptability and that something more desirable is later attained indicates that engineers have need of that influence that leads to successful art. If several past instances of the union of the architect and the engineer have been conspicuous failures, that is due to the fact that the architect has endeavoured to impose upon the work a technique foreign to it.

In earlier centuries the architect and the engineer were one and the same person. The required calculations were not of the finely detailed sort that is now available and is demanded. When the problems were simple and work was done with a great margin of safety there was little to calculate. When the problems were complex, as in medieval vaulting systems, they were solved empirically. The empirical method involved risks of failures. It produced, however, some results that would not have occurred to scientific calculation, such as the fan vaulting system, calculations for which would daunt our modern structural engineers. They would probably suggest a "better way" which would differ greatly from that "immense and glorious work of fine intelligence" King's College Chapel, Cambridge.

The application of a stricter science has led to the use of lower margins of safety for economy's sake and that, in turn, has led us away from the idea of monumentality in building. Amateurs have frequently, in public speeches, assumed and asserted that architecture gradually arose from the slighter buildings required for mere shelter. This is quite contrary to the facts of history. Architecture arose from man's aspirations for immortality. The earliest properly architectural efforts were erected to create that which would last through the ages. Such were the pyramids and temples of ancient Egypt and such were the temples of the ancient Greeks. These were not altogether unsuccessful in the aims they set. They have at least left a mark forever on the minds of men. At the present day some condemn the aim of monumentality in architecture. It is certainly not called for in the routine work of the professional architect. But it is well that the idea of permanence should not perish from the earth, or from the mind of the architect.

Cecil S. Burgess

LETTERS TO THE EDITOR

SIR:

ARCHITECT-ENGINEER RELATIONS

American architects, in their annual meeting assembled last June in New York, were as kindly tolerant of an engineer in their midst as their Canadian fellows have so often proved to be. Being in New York to attend other rather more mundane gatherings, the writer had special pleasure in attending some of the meetings of the American Institute of Architects including the unusual "Reunion of Architects and Engineers" held in the Courtyard of Lever House. (There are some who suggest that the only contribution of engineers to this remarkable structure is the unsightly window-cleaning trapeze; personal memories of the late and great Lord Leverhulme suggest that this is the only part of the building of which he would approve.) It was encouraging to see the Presidents of the A.I.A. and of the American Society of Civil Engineers fraternizing at a microphone and to hear one of the speakers suggest that "reunion" was an incorrect term. It would, most fortunately, be completely out of place at any similar Canadian meeting.

It was, however, a small seminar held at the end of a stifling day which brought most clearly to mind the happy links between architects and engineers in Canada. This was a panel discussion on specification writing, sponsored jointly by the A.I.A. and the Construction Specification Institute, a relatively new organization, with headquarters at 1825 K Street N.W., Washington, D.C.; it publishes a quarterly journal, *The Construction Specifier*. The sponsors thought that they might attract twenty-five people. By the time the meeting got under way, every occupancy regulation of the city of New York must have been violated many times over by the presence of almost one hundred and fifty interested participants. The discussion was informed, appropriately technical, spiced with architectural wit at its best (Genesis XI:7 being one of the quotations cited), admirably directed and most constructive.

Engineering specifications were mentioned pointedly. They seem to provide one of the closest links between the two professions. Recalling such excellent architectural-engineering seminars of your own annual meetings as those at Winnipeg, the writer ventures to suggest that what American engineers can do in New York at the end of a day in the high nineties, Canadian architects might usefully emulate at one of their own more temperate annual gatherings.

Robert F. Legget,
Director, Building Research,
National Research Council.

For the information of members who were also interested in Mr Fleming's articles, we publish below an exchange of letters between Mr Geo. T. Evans and Mr Meredith Fleming.

Dear Mr Fleming:

I enjoyed reading your article, "Supervision Under the Standard Form" in the *Journal*. We should have more of these.

With regard to your article, would you kindly tell me what you mean by "Conditional Sales Contracts", also what is your interpretation of "Substantial Completion".

Geo. T. Evans

Dear Mr Evans:

Thank you for the kind thoughts expressed in your letter of September 8.

I have been very busy during the early part of September due to the opening of the Courts, and I regret that I have not been able to reply to your letter at an earlier date.

The best definition of a conditional sales contract would seem, to paraphrase the definition, in the Conditional Sales Act (Revised Statutes of Ontario, 1950, ch. 61, s. 2) to be as follows: a contract which provides that ownership of goods is to remain in the seller until payment of the purchase money, where possession of the goods is delivered to the purchaser before full payment.

The most common application today of this type of contract is in the sale of automobiles. However, we have encountered conditional sales contracts in the building industry in regard to the sale of such goods as oil furnaces, store fixtures and air-conditioning equipment.

Once such an article as an oil furnace is affixed to the building it becomes part of the real property, and in order for the unpaid seller to protect his title to the article he must register the conditional sales contracts on the title to the land in the property Registry Office.

The term "substantial completion", and its parallel phrase "substantial performance", have been interpreted from time to time in Court decisions. The gist of these decisions is that substantial completion is performance of the contract in the particulars necessary to accomplish the purposes for which the structure contracted for was designed. There still may be substantial completion where variations or omissions from the specifications exist, but where they are inadvertent, insignificant or unavoidable.

With particular reference to Article 16 of the standard form, the date of substantial completion would be the date on which the contractor had performed the contract, apart from unimportant deviations or omissions which he might be required to remedy or complete.

Of course you will appreciate that the practical application of such a term as substantial completion might vary from case to case, and would depend upon the view that a judge or jury took of the particular facts.

Meredith Fleming

THE PUBLIC RELATIONS PROGRAM OF THE ONTARIO ASSOCIATION OF ARCHITECTS

(continued from page 308)

Another survey was concerned with the encouragement of greater appreciation of physical environment on the part of children. It revealed that the Ontario Department of Education believes it is doing a good job on this score by working through the teachers.

The attitude of lending institutions as regards the appraisal of architect-designed building was also looked into. Results were mixed. Some firms said the architect's services justified a higher appraisal. Others declared his services were only of theoretical value. Commonest complaint was that architects were losing work they should have through lack of interest in residential project building.

Continuity of contact with the lending institutions, along with general contractors, appraisers, builders, manufacturers, labor, press and radio people is sought. An annual Christmas card is one of devices used.

Internal Coverage

From the beginning, it was recognized that the O.A.A. membership must be kept informed as to the progress of the public relations program. This is accomplished by an annual report, a monthly public relations bulletin, a weekly column in the *Daily Commercial News,* contributions to the R.A.I.C. *Journal*, and visits to the various Chapters.

Relations with the Institute, the provincial associations, and various architectural organizations outside Canada are excellent. Assistance is increasingly afforded individual architects with publicity problems. Much, of course, remains to be done. One worthy venture would be the publication of a public relations booklet for the guidance of architects in private practice. The way architects conduct their affairs, go after business, and treat the people who work for and with them, all affect the public's conception of the profession.

Of course, the O.A.A. cannot carry the responsibility for making architects better known alone. Members are asked to see that there is a steady flow of newsworthy material from their offices. It is true that they are forbidden to advertise, but there is nothing unethical about them making their work more familiar to the public. Architects are in a better position than most professions to create news. New buildings are of interest to everyone.

To sum up, through its public relations program, the architectural profession in Ontario is identifying itself in the public mind as a positive force. Back of the program is recognition that architectural practice, as it has developed in Canada, is an integral part of the free enterprise system. Only by telling the architect's story, by giving the public the facts about the profession and its functions, can the O.A.A. do its share to avert increased government penetration of business and the professions.

OBITUARY

William Sutherland Maxwell. Due to his long absence abroad in more recent years and his unfortunate illness upon returning home, he was perhaps not too well known by many members of the present generation.

However, in spite of the lapse of time, there are still quite a few active members in the profession who were fortunate enough to come under his influence and who retain appreciation for the benefits derived from the association.

To some, it has been in the form of a prized heritage which has proven its worth, amid the ever-changing tempo of our diversified age.

His extensive travels and studies in France, Switzerland, Italy, England, Asia Minor and Egypt provided him with a broad outlook which was reflected in all his artistic efforts.

His ceaseless activities in the draughting room were an inspiration and his meticulous attention to detail, a not-to-be-forgotten lesson. The effects of this important faculty can be clearly discerned, by the discriminating observer, in all his works.

His great interest in the "Atelier Maxwell", connected with the Beaux-Arts Institute of Design in New York, of which he was the guiding spirit, should be recorded among his professional efforts, along with his enthusiastic activities in the creation of the Arts Club in Montreal.

His devotion to the Institute and its *Journal* in the early years of their development, are matters of professional history.

He was fortunate in the opportunities presented during his day – hotels, railway stations, parliament buildings, schools, art galleries, office buildings, banks and numerous large houses for wealthy clients, etc., etc., all came to his hand and with their many qualities remain today as monuments to his outstanding abilities.

He was a Past President of the Quebec Association of Architects; a Fellow and Past President of the Royal Architectural Institute of Canada; a Fellow of the Royal Institute of British Architects; Vice-President of the Royal Canadian Academy in 1938 and associated with many other Societies related to the Arts.

In his passing, the profession loses a distinguished gentleman and his country a talented son.

J. Roxburgh Smith

CONTRIBUTORS TO THIS ISSUE

Frank George Gardiner, born in Bath, England, the son of an architect with whom he worked and studied architecture. Later practised as Assistant Government Architect in Pretoria, South Africa. Returned to England and came to B.C. and established practice in New Westminster, and in 1918 moved to Vancouver where he has been in private practice since, formed partnership with Peter M. Thornton, ARIBA in 1940.

Work has been for the greater part Institutional and Industrial, with Hospital Design his specialty.

Walter S. Glynn, M.E.I.C., P.Eng., was born and raised in Toronto, attended High School at St Michael's College and graduated from the Faculty of Applied Science, University of Toronto in 1942 with the B.A.Sc. degree. Having written a thesis on Prestressed Reinforced Concrete, he worked with the Preload Company of Canada in Montreal under Mr Eric P. Muntz, M.E.I.C., P.Eng. for a short time after graduation. After two years as an Instructor in Mathematical Problems and Engineering Drawing at the University of Toronto, he worked under Mr J. Morrow Oxley, F.R.A.I.C., M.E.I.C., P.Eng. on the structural design of the Bank of Montreal Building, King and Bay Streets, Toronto. Since 1945 he has been Structural Engineer on the staff of Marani and Morris.

Charles F. Neergaard graduate of Yale University 1897. Ten years in building business erecting over 300 structures. Served as trustee of the Brooklyn City Dispensary, Brooklyn Hospital, Carson C. Peck Memorial Hospital, Neurological Institute (Columbia Presbyterian Medical Center), Flower and Fifth Avenue Hospital, Brooklyn Bureau of Charities.

Life member of American Hospital Association: chairman of its Committee on Hospital Planning and Equipment, 1934-7, member of committees of Standardization of Equipment and Air Conditioning, 1934.

Member International Hospital Association, Charter Member American Association of Hospital Consultants.

Major, American Red Cross, Inspector of Red Cross activities in 22 hospitals of Atlantic Division, organized and directed Red Cross in U.S. Debarkation Hospital No. 5, Grand Central Palace, N.Y., 1917-18. Since 1922 has devoted entire time to hospital consultation, having advised over 300 hospitals in this country and abroad. Lectured on hospital planning and organization at Yale, Princeton, Marquette and New York Universities. Published over 100 articles on hospital planning, equipment and economics in various hospital, architectural and engineering magazines.

Mr. Neergaard is a partner of Neergaard, Agnew and Craig, hospital consultants, New York and Toronto.

John Caulfield Smith, director of public relations for the Ontario Association of Architects, graduated from the School of Architecture, University of Toronto, in 1937. After a stint of architectural practice in Toronto, Sudbury and Montreal, he served briefly in the Royal Canadian Engineers, and on discharge was employed by the Toronto

City Planning Board. In 1945, he became architectural editor for the Maclean-Hunter Publishing Company, Toronto, and resigned five years later to establish his own office as an editorial and public relations consultant. In addition to being a member of the Royal Architectural Institute of Canada, Mr Smith belongs to the National Association of Real Estate Editors (US), and the Public Relations Association of Ontario.

COMPETITION ANNOUNCEMENT

The attention of members is drawn to the Plywood Manufacturers' Association of British Columbia competition for house design. Mr Peter Thornton is professional advisor, and the jury consists of Mr Pietro Belluschi, Professor John Russell, Mr John Armstrong and Mr Gordon Adamson.

For details of the competition which will be held on a regional basis, members should study page 3 in the *Journal* for September, 1952.

The competition has the approval of the RAIC.

CHANGE OF ADDRESS

Mr Peter Dobush wishes to announce that he has opened an office at 1364 Greene Avenue, Montreal, Quebec, for the purpose of carrying out his architectural practice, and would be obliged if manufacturers and suppliers would address catalogues, samples, etc. to the above address.

BOOK REVIEWS

STRUCTURE IN BUILDING by W. Fisher Cassie, PH.D., M.S., F.R.S.E., M.I.C.E., M.I.STRUCT.E., and J. H. Napper, M.A., F.R.I.B.A., A.M.P.T.I. Published by The Architectural Press, London, England. 30 Shillings.

As practising architects and structural engineers well know, the need for consideration of structure, that is of load and stress and of strength and dimension of material, concurrently with design, plan and mass becomes apparent almost at once in the development of a building design. The authors have it that – "Until the student (of architecture) achieves the ability to "feel" how forces act and react in the support of buildings, he cannot hope to apprehend and put into practice the sculptural and volumetric conceptions which form the basis of great architecture."

With this motivating idea the authors proceed, first, to classify the structural forms, pointing out analogies with structural forms in nature. It is interesting to note their comments regarding the limitations on the possibility of complete duplication of the efficiency and beauty of nature, limitations imposed by man's inability to duplicate nature's construction by growth. Succeeding chapters are devoted to an outline procedure for structural design, a study of the loads to be expected on buildings, descriptions of various structural materials and their properties and characteristics, and theories of the behaviour of simple and redundant structures under load. A chapter on foundations follows and then one dealing with recent and current developments in structural materials and forms. The final chapter is devoted to the exposition of an approach to the choice of the structure for various building types, and the book closes with a numerous series of reproductions of photographs of structures ranging from ancient to modern which illustrate a wide variety of structure forms and materials.

The authors succeed admirably in producing a work which goes far towards fulfilling their expressed intention of linking the outlook of the engineer with that of the architect, and of providing the student of architecture with mental pictures of how structures behave. While the book is apparently intended primarily for students as an introduction to structural design, practising architects and engineers will find it a refreshing presentation of the basic factors underlying structural problems in buildings.

C. Hershfield

AN INTRODUCTION TO THE SCIENCE OF ARTIFICIAL LIGHTING by R. O. Ackerley, MIEE, FIES. Published by Messrs. E. & F. N. Spon, Ltd., London, England. Price 12s.6d.

This little volume would make an excellent "nutshell" course in lighting, for the layman preparing to discuss the illuminating of a building with his architect or consulting engineer, or as the lighting equivalent of S. P. Thompson's "Calculus Made Easy" for the architectural student. There is very little here for the graduate architect or engineer with even a one year college course in illumination. As a brief refresher course in fundamental theory and terminology, Part 1 might be useful, but even here the term "equivalent foot-candle" used in place of the generally-accepted unit "foot-lambert" may lead to confusion in over-simplification. The hydraulic analogy to certain lighting quantities and units may be helpful to some.

Parts 2 and 3 on Lighting Design and Practice give brief outlines of the simplest problems and mention most of the fundamental considerations in design. The Canadian reader will note, however, that lighting standards referred to in this book, as recommended by the Illuminating Engineering Society in the United Kingdom, are considerably lower than those of the IES in Canada and the U.S.A., as regards both illumination levels and brightness tolerances. Some application designs are well discussed and illustrated in principle, but the school classroom design illustrated would not be considered tolerable by Canadian standards.

The 32 plates appended at the end of the book, showing good and bad lighting applications, may provide some inspiration for similar projects.

E. L. Dodington