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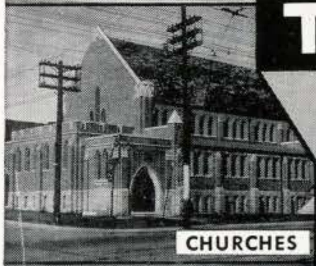
TRANE



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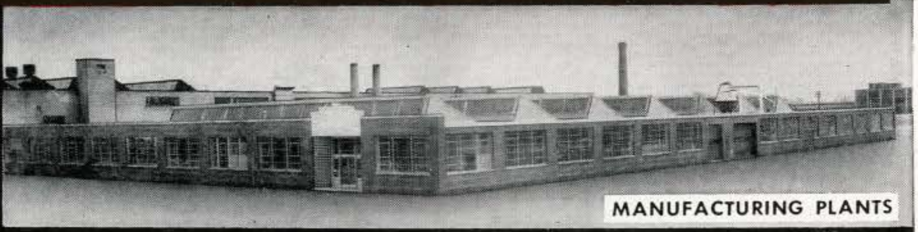

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Toronto November 1951 EDITORIAL AND ADVERTISING OFFICES, 57 QUEEN STREET WEST, TORONTO 1

EDITORIAL

BY HAPPY CUSTOM, this page is occupied in December by the Chairman of the Editorial Board, and in January, by the President of the RAIC. This, therefore, is our last performance in 1951, and our last opportunity to wish our readers a very Merry Christmas and a Happy New Year. As we look back over the year, we are conscious of the many architects who have contributed to the success of the JOURNAL. Firstly, we should like to thank the members of the Toronto Editorial Board who meet monthly to advise or direct the editor, and who, between meetings, collect material and generally keep the editorial wheels in motion. There are, of course equally active, Editorial Board members in other places, and at least one committee (in Vancouver). These are the people who make us, in the East, feel the job is worthwhile. They also make us feel that the JOURNAL contributes in a real way to that vague thing – the unity of the profession in Canada. In that regard, we have no more loyal supporter than Mr Cecil Burgess of Edmonton, whose monthly letters to the *Provincial Page* have continued, without interruption or loss of interest, for as long as we can remember. We are all indebted to him. By any other name, the *Institute Page* would smell as sweet, but we sometimes have a feeling that provincial news, which is the life blood of the JOURNAL, was more provincial when it was called the *Provincial Page*. It is the dream of the publisher that some day and, for a whole year, all provinces will be represented under the *News from the Institute*. If Editorial Board representatives in the silent provinces were to send the publisher news in however scrappy a form – even in pencil, if legible, we guarantee to knock it into shape.

We recently attended a meeting of American and Canadian School officials at which a most pernicious practice was recommended to us. Several universities, it appears, have school planning services which are offered gratis to school boards. The school board receives a plan of their school which, to scale, is passed on to their architect as an almost unchangeable thing. The lecturer was gracious enough to suggest that the architect was competent to wrap the plan in one of a variety of suitable wrappers. He indicated that, for the fall of 1951, Colonial was a very popular one. While no State seemed invulnerable from such a service, it is to be hoped that the many Canadian officials who heard it praised, will see it as the disservice which it really is.

From another speaker, we learned, with pleasure, of the growth of Park Schools. Many officials were able to testify that their school sites were fifty acres and over, and, to our pleasant surprise, we found that Montreal is among the first half dozen cities in the world experimenting with the Park School idea. In the school building issue of the JOURNAL next April, we shall show by text and illustration what Montreal is doing.

It has been definitely announced that the Massey Medals competition will not be held in 1952. We heartily support the decision of the Committee for several reasons. The first competition showed that, to bring as many as possible into each class, more notice had to be given. For that reason, the Committee should declare, as soon as possible, that the second competition will be in 1953 or 1954. It should also name the classifications for which medals will be given. Doubtless, the former classifications will be examined with care in the light of the comments of judges and others, but we would hope that the Committee will not be tempted to prune too heavily. The Massey Medals will not lose dignity by the presence of categories that, at first sight, might seem unworthy. The idea behind the medals is surely to draw attention to what is good among those buildings which the Canadian sees while he is at work or play, at school or place of worship. In some European cities, even the furniture of a city – kiosks, news stands, telephone booths and bus shelters – are not considered beneath the approval of the highest architectural authorities.

The time may come when the work of the engineer may also be included. Was it Lord Tweedsmuir who said the noblest work of man was a bridge? The singling out of a fine bridge by the award of so estimable a prize would draw its merits to the attention of those highway engineers for whom sculpture and an absurdly high factor of safety are the principal elements in the design of a bridge.

By the time we appear once more on this page, we shall be thinking of Vancouver in April. The very thought of it will make February and March, in Toronto, more tolerable. We would remind old friends that there was some talk of wetting a line when the more pressing business of the Assembly was over.

THE BANK OF NOVA SCOTIA BUILDING

A. S. MATHERS

THE BANK OF NOVA SCOTIA Building at the northeast corner of King and Bay Streets is the largest office building in Toronto. Its volume is 7,815,500 cu. ft and the gross area of its twenty-eight storeys is 513,270 sq. ft. Of this 83,340 sq. ft or 35.6 per cent is accounted for by walls, elevators, washrooms and other non-revenue producing areas, leaving 64.4 per cent of the gross or 330,930 sq. ft of usable or rentable floor space. Above ground the building is twenty-six storeys in height and measures 322 feet from pavement to top of roof parapet. Below ground there are two basements and a pipe gallery occupying the entire site down to the rock level, forty-five feet below the street.

Three full storeys, the sub-basement, fifth and twenty-sixth, are non-revenue producing and house the various building services such as store rooms, shops, mechanical equipment and facilities for the operating staff of the building. On typical office floors the ratio of rentable to gross area varies from 81.5 per cent to 85 per cent, all isolated interior columns being included as rentable area.

Almost five years were spent in construction and it is interesting that government controls were in effect when the work was started in the autumn of 1946, and had been reimposed before it was completed in September of this year. In the interval shortages of materials and one prolonged strike seriously hampered progress, to the extent that at least a year longer was required to complete the work than had construction been undertaken in prewar times.

The building was originally designed by the late John M. Lyle, and a contract had been entered into for its construction over twenty years ago. The collapse of the stock market in 1929 and the ensuing depression so adversely affected the market for office space that the project was indefinitely postponed before a start on the site could be made. When in the spring of 1946 the Bank finally decided to proceed, death had taken not only Mr Lyle, but also his structural engineers, Andrew Harkness and Chas Hertzberg and his mechanical engineer, Walter Armstrong. Death and retirement had also removed all of the Owner's principal officers except Mr George Speirs, who had been the chief representative of the Bank at the beginning and who continued in that capacity throughout the whole undertaking. As a result of this situation the Bank appointed Mathers & Haldenby as architects with instructions to select a contractor and to supervise the erection of the building in accordance with the original design. Because of their long connection with the Lyle office Messrs Beck and Eadie were appointed Associate Architects. Messrs Wallace and Carruthers were selected as structural engineers and Armstrong's partner, Dr Karel Rybka was engaged as mechanical engineer.

Needless to say a review of the Lyle working drawings and specifications revealed in a startling way, the tremendous changes that had taken place in the previous fifteen years in all phases of building technique, mechanical services and architectural design. Faced with the necessity of almost completely re-designing the building in so far as its construction, finish and mechanical equipment was concerned, it was considered advisable to re-consider the whole concept of the design. The studies made in this direction proved the soundness of Lyle's planning and as a result the Lyle plan in its fundamentals was accepted as the best solution of the problems created by the site and the Owner's special requirements.

Lyle's massing of the superstructure had been influenced to a large extent by the thinking of pre-depression days and the set back regulations then being adhered to in American cities. His scheme for setting back the upper storeys on the Bay Street face some twenty-five feet from the street line was for the purpose of creating a more open feeling in the street and to remove offices away from the street noises. He had not been able however to set back any part of the King Street face without seriously impairing the efficiency of the plan and the economics of site and structure.

With the basic plan settled consideration was immediately given to the vast subject of interior detailed planning and choice of materials and equipment. The Lyle design was of the 1930 vintage and made no provision for acoustic treatment, air conditioning, under floor electrical distribution, high intensity lighting, or those other things that have come to be necessities in today's office buildings.

Since it would be impossible to incorporate all of the new things in any building, the selection of those most desirable became a real task. In this the architects obtained advice from the Planning Service of the National Association of Building Owners and Managers, whose planning-team of experienced building managers freely gave their opinions and advice on those aspects of buildings which, in their experience, had a bearing on revenues and costs of operation and maintenance. The conference with these men clarified and rationalized the thinking regarding the basic features of the design and enabled the architects to make decisions based upon facts of economics and utility.

One of the decisions influencing the external appearance was that concerning fenestration. Because of the necessity for the maximum flexibility in locating interior partitions abutting exterior walls on rentable floors, single windows rather than continuous sash were used. These are double glazed, double hung aluminium ash, internally insulated to prevent inside frosting in cold weather. They are each 4 ft, 4 ins wide and spaced horizontally at a uniform distance centre to centre of 9 ft, thus leaving a 4 ft, 8 ins wide pier between adjoining windows.

The architectural problem created by the uniform spacing of windows in the long Bay Street façade, was that of overcoming the optical illusion of the "outward leaning wall" produced by the tendency toward stratification of the fenestration in the horizontal sense. Correction of the optical illusion was accomplished by recourse to the Greek principle of the *entasis,* which was approximated by the set backs in the upper storeys, and by killing the horizontal stratification by means of strong vertical pilasters between windows.

Ornament was sparingly used and where employed was concentrated for emphasis of certain elements in the design. The sculptured panels surmounting the large lower windows on the Bay Street front and the sculptured soffits of the doorway openings, are the work of Mr Fred Winkler, well-known Toronto sculptor. The subject matter chosen from classic mythology however is secondary to the main purpose of the sculpture which is intended to produce a strong effect of interesting light and shadow at these definite points in the composition.

In line with present day emphasis upon economy of maintenance, all exterior ornamental metal work is in stainless steel, which does not corrode under weather conditions, and requires no laborious polishing to keep it up in appearance. With the exception of the window muntins, which are constructed of sheet, stainless steel items generally, were milled to size and formed out of solid material.

All exterior faces of the building are faced with Indiana limestone from the P.M. quarry at Bedford. The street faces below the first set back are select buff stone and above are standard buff. All other faces are in rustic buff stone. The base course of the building and the spandrel facings at the fourth floor level are polished grey and green granite respectively, both from the Scotstown quarries in Quebec.

The principal feature of the interior is the Main Banking Room on the Ground Floor. This is a monumental room occupying the entire north wing and lit from windows on both flanks. It is 196 ft long, 83 ft wide and its height of 35 ft, 6 ins carries through three storeys. The public space occupies the central bay of three, flanked by structural columns and the counters, and is planned symmetrically about the main north to south axis of the King Street entrance.

Architecturally the room is simple in design and depends for its effect upon three dominant decorative elements opposed to the simplicity of the remainder. These elements are the illuminated ceiling, the sculptured north wall of the public space and the full height stainless steel and glass screen marking the entrance at the south end of the public space. On these three features has been concentrated all decoration in the room, except for minor treatment of balustrades to the stairs which lead down from the Public Space to the Basement Safety Deposit Department.

The walls of the room are faced from floor to ceiling in Roman Travertine, the lower ten feet of which are polished and the upper parts hone finished. The

The Site

The Cawthra House at the corner of King and Bay Streets. Built in 1852. Joseph Sheard, Architect.

The Canada Life Building adjoining the Cawthra House on King Street. Built in 1889. R. A. Waite, Architect.

FROM THE CANADA LIFE ARCHIVES

floor of the Public Space is Tennessee marble in three shades, laid in a simple geometric pattern. Facings for isolated columns, counter tops and fronts, cheque desks, and door architraves are in polished Brecia Rosata, a stone harmonizing in colour and tone with the Travertine, but faintly marked with garnet and grey. The sculptured *bas relief* on the north wall of the public space and is carved in Hauteville marble, a hard French stone of light cream colour. The carving was executed by Temporale Brothers from full scale models designed and supplied by the Sculptor, Miss Jacobine Jones.

The ceiling is in plaster including the coffers which are pyramidal in form. At the apex of each coffer is installed a high powered incandescent spot light which illuminates the sides of the coffer as well as throwing light downward to the floor. Coffers are painted light cream. The field of the ceiling over the public space is painted a medium shade of garnet, picking up the markings of the column marble, and the fields of the ceiling over the flanking working areas are painted a greyed shade of cobalt blue. The grilles for ventilating and ribs between coffers are gilded in gold leaf.

From the Public Space two stairways leading down to the Safety Deposit Department have balustrades of stainless steel panelled in 1 in. plate glass on which ornamental devices of a marine character are sandblasted. These glass panels provide spots of colour on the floor of the public space. Behind the counters in the working spaces however, all furniture is in a soft shade of turquoise with light greenish grey linoleum tops to all desks. The floors of the working areas are of natural rubber in a colour harmonizing with the Tennessee floor of the public space.

The Main Entrance Lobby which connects the two King Street entrance doorways is floored with Tennessee marble similar to the Banking Room. Walls are faced with polished Botticino and the ceiling is plaster decorated with a geometric design of classic motif and painted in rose terracotta and deep cobalt blue with accents gilded with gold leaf. A feature of this Lobby is the incised and gilded inscription on the north wall which is surmounted by the great seal of the Bank carved in Botticino, and below which are carved the seals of the four banks which have been absorbed by The Bank of Nova Scotia. On the east and west walls conventionalized carvings in Botticino relieve the simplicity of the walling.

The Main Elevator Lobby on this floor also floored in Tennessee marble has walls faced with Botticino marble and a plaster ceiling in which is incorporated a high intensity installation of indirect fluorescent lighting. This ceiling is painted light turquoise blue.

Elevator hatchway doors and all other doors in the Elevator Lobby, Main Entrance Banking Room are of stainless steel in matte finish with mirror finished decorations.

Opening off the Main Banking Room the Toronto Branch Manager's suite consists of a private office panelled in African mahogany and a conference room and secretary's room both panelled in rift sawn white oak.

Also opening off the easterly working space in the Banking Room is the general office space of the Toronto Branch. This is a utilitarian room with plastered walls and sawtooth skylight roof over.

Reached by two open stairways from the Main Banking Room is the Lower or Basement Banking Room and the Safety Deposit Department. This lower Banking Room handles stock and bond transfer business with brokers and investment houses. The Safety Deposit Department includes the large Safety Deposit vault entered from the Lower Banking Room through a control room, the walls of which are built of large sheets of bullet proof glass 2 ins thick. The customers' conference rooms and coupon booths are to the east of the vault and are reached from it. All are panelled in rift sawn oak, floored with rubber tile, have acoustically treated ceilings and are lit with flush fluorescent lighting.

Below and conforming with the Safety Deposit Vault in size is the Bank's Main Vault in the sub-basement. In the sub-basement is also the Night Vault, accessory working space and numerous work shops, store rooms and locker and wash rooms for the operating staff of the building.

The vaults are of the latest riot-proof design and are amply protected with all modern warning and safety devices.

The Bank also occupies those parts of the second and third storeys which are not consumed by the height of the Main Banking Room and Main Entrance Lobby.

The Fourth Floor immediately above the Banking Room contains the Cafeterias, Dining Rooms and Kitchens for the staff and executive officers of the Bank and its principal tenant, the Prudential Insurance Company of America. The Cafeteria is divided into two parts by an accordian type fabric covered partition separating the staffs of the Bank and the Insurance Company. Service to the Cafeteria is provided by two separate serveries, one for the Bank staff and one for the staff of the Insurance Company. All food preparation, dish washing, etc., however, is taken care of in the common Kitchen.

Also on the fourth floor is the Bank's Board Room suite consisting of an Ante Room, Private Dining Room, Board Room and accessory coat and wash rooms. With the exception of the Wash Room which is in marble the walls of all other rooms are plastered and painted.

The Private Dining Room, designed to seat twenty-four, is finished with walls of grey blue. The floor is covered with a plain fawn carpet and the windows curtained in blue and white linen. The ceiling is of cream painted plaster and accommodates concealed fluorescent and direct incandescent lighting. Furniture is in brown mahogany with rosewood trimming.

The Ante Room is finished with pale chocolate walls, jade green and sand coloured window curtains, beige carpet and upholstered furniture in deep rose and turquoise and cream.

The Board Room is a large room measuring 50 ft, 8 ins. by 21 ft, 6 ins. The walls are panelled with strip mouldings and painted grey blue green. The principal feature of the walls however are the six full height mural paintings depicting scenes concerned with the growth of the Bank from its founding in Halifax to the present day. They were designed and executed by Mr Selwyn Dewdney. The plastered ceiling is panelled and decorated in cream, blue grey and gold leaf and in its design are incorporated concealed fluorescent and incandescent lighting units. The floor is carpeted and bordered with travertine. The carpet is a gold coloured hand tufted rug woven to special order by the Wilton Weavers in England to the architects' design. The Board table also designed by the architects is six feet wide by twenty-nine feet long, elliptical in plan with truncated ends. It is in tan mahogany with matched veneered top. The table was made by G. H. Randall Company of Montreal who made the top in one piece.

The chief executive offices of the Bank are on the sixth floor, including the offices of the Chairman of the Board, the President, the General Manager and the Assistant General Managers, a Conference Room and offices for the private secretaries.

The General Manager's office is panelled in tan mahogany and specially designed desks, etc., are in the same material. The curtains in this room are jade green tapestry and the floor is carpeted in broadloom of the same colour as the curtains.

The President's Office is panelled in limed white oak and desks and other furniture are in tan mahogany. The floor is carpeted in a medium shade of blue broadloom and the curtains are hand blocked linen in a pattern in which blue predominates.

The office of the Chairman of the Board is a painted room with walls strip panelled and beige coloured. Desks and other wood furniture is in tan mahogany and the floor is carpeted in fawn broadloom. Curtains are hand-blocked linen.

All other rooms in this group are finished with painted plastered walls. Floors are carpeted and window curtains are hand-blocked ratinè.

The general office areas for the Bank and tenants generally are finished in the same general manner with plastered walls, rubber tile floors, acoustic ceilings, flush fluorescent lighting and flush anemostats for the air conditioning. Base boards are painted wood, door frames are pressed steel and all doors are mahogany veneered. Ceilings are generally 9 ft, 3½ ins in clear height and are free of all projecting beams. The acoustical ceilings are of the removable perforated metal pan type clipped to a steel grid to which are also clipped all lighting units and anemostats. The ceilings and floor coverings were installed prior to the erection of non-permanent partitions with the joint lines of both ceiling and floor tiles conforming with, and plumb over, each other. Lighting units are connected to the main conduit system by means of long flexible armoured cable and similar attention was paid to the connections between anemostats and duct work. The flexible connections to lighting and air inlet fittings and the conformity between ceiling and floor pattern makes changes in partition layout possible with the minimum of disturbance and without waste of time.

Generally walls in the office floors of the building are painted warm grey with isolated columns painted in brighter colours, such as pale blue, pale yellow, or pale rust. The use of the brighter colours was for the purpose of relieving the sombre effect of large areas filled with steel furniture in the well-known battleship grey colour.

Elevator services is provided to all floors from the sub-basement to and including the twenty-fourth. The twenty-fifth floor which is an office floor and the twenty-sixth a service floor, are both reached by stairways from the twenty-fourth.

Fourteen elevators are provided, six of which are high rise elevators operating express to the thirteenth floor and local from there upward. One of the high rise group is equipped with an oversize cab for alternate use as a freight elevator. This elevator can if desired be operated to stop at all floors. The other eight elevators are in the low rise group, three of which serve exclusively the floors occupied by the Prudential Insurance Company. Two others provide service from the Main Entrance Lobby to the floors occupied by the Bank. One other operates within the Bank's working areas and serves all floors from the sub-basement to the eighth floor inclusive. One small slow speed elevator gives service from the public space in the Banking Room to the Safety Deposit Department, and the freight elevator gives service to the sub-basement, store rooms and the kitchen on the fourth floor from the ground floor receiving entrance at the rear of the building.

With the exception of the slow speed passenger elevator and the freight elevator which operates at 500 feet per minute, all elevators operate at 800 feet per minute, on an interval of not over 26 seconds. Typical passenger elevators measure 5 ft deep by 7 ft wide over the platform, and are equipped with wooden cabs finished in figured American black walnut matched veneers with prima vera inlays. Each passenger cab is supplied with three rugs to permit replacement while undergoing cleaning. Special space and equipment for cleaning elevator cab carpets and door mats is provided in the sub-basement.

Toilet accommodation is provided for both men and women on each floor. All washrooms are finished in grey structural glass wall and grey and white ceramic tile floors. Ceilings are plastered and painted light yellow. Plumbing fixtures are white. Special dispenser and disposal units for paper towels are provided in all washrooms. These are of stainless steel and are built in flush with wall faces. Drinking fountains are provided in the entrance vestibules to all washrooms.

Special attention was paid to the needs of the cleaning staff. Large and well-equipped janitors' closets are located on each floor. All are finished with ceramic tile walls and floors and in each the slop sink is set flush with the floor to facilitate the dumping of wash water. On the Ground Floor two large janitors' closets open off the Main Entrance Lobby, one of which is used for the storage of the mats necessary in dirty weather. Large and well-appointed rest rooms, locker rooms and washrooms are provided for both the elevator operators and the cleaning staff in the Basement.

On the Basement is also a large Barber Shop complete with shoeshine stand, manicurists' tables and newsstand. This room which can be reached from a stair down from the Main Entrance Lobby is panelled in oak.

In the design of a building of this size and importance it is impossible for the Architects to detail and to specify much more than that which is customarily supplied by the ordinary building trades, and he must therefore delegate to varying degree the business of designing many special items, especially with respect to furnishings. In this building the Architects were entrusted with the selection of all furniture and furnishings from standard office desks to the ash trays on the desks of the executive officers. In this task they were ably assisted by many people who had special knowledge as to sources of supply and talent in design. Amongst these the Architects express their gratitude to:

Miss Freda James, for her work in decorating the Cafeteria and in designing the furniture and decorations for the Bank's Executive Dining Room.

Miss Sybil Croll, who performed a similar task with respect to the Recreation and Rest Rooms for the women members of the Bank staff.

Mr Edwin Porter, for his indefatigable efforts in unearthing beautiful and unusual fabrics for draperies and upholstering and for obtaining the Board Room carpet on time.

Mr Sidney White, for the design and making of the furniture for the Directors' Private Dining Room the Ante Room and the Executive Reception Room.

Mr R. N. Irvine, of the Thornton-Smith Company for designing and making the furniture for the Toronto Branch Manager's Suite and the Assistant Branch Manager's section of the Banking Room.

Mr J. Paterson, of Canadian Office and School Furniture Limited for designing the furniture for the Chief Executive Offices.

Mr André Bonard, of G. H. Randall Company for his efforts in connection with the making of the Board Room table.

Mr Frank Jeffreys, who was retained in a consulting capacity with respect to the finishing hardware, and who was of the greatest help in the design of special and unusual hardware.

Mr Arthur William Dana, who designed the kitchen and serveries.

Mr D. Chisholm, who decorated the Recreation Room for the men staff of the Bank.

THE BANK OF NOVA SCOTIA BUILDING, TORONTO, ONTARIO

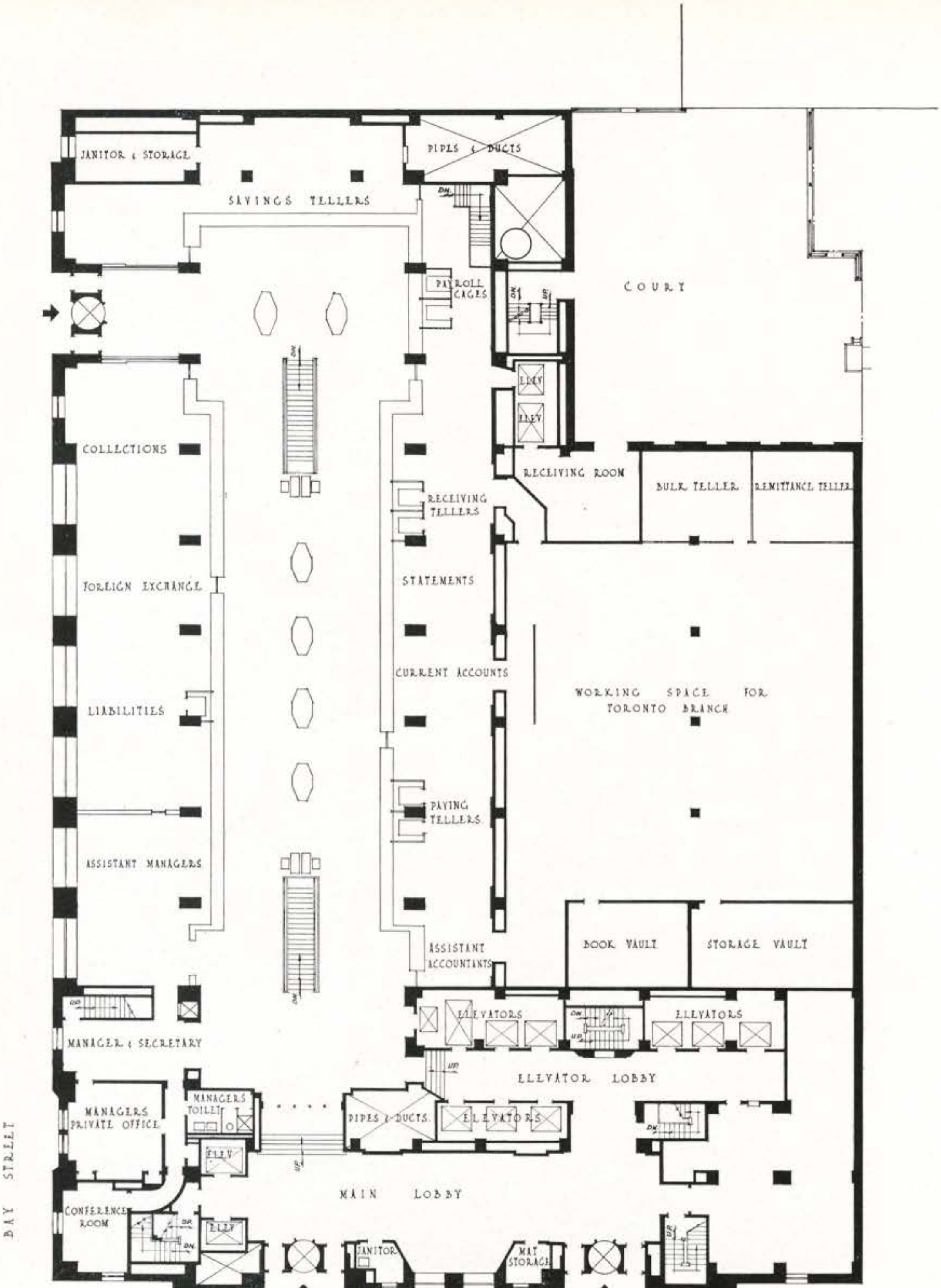
MATHERS AND HALDENBY, ARCHITECTS

BECK AND EADIE, ASSOCIATE ARCHITECTS

Wallace, Carruthers and Associates Limited, Structural Engineers
Karel R. Rybka, Mechanical Engineer
J. L. E. Price & Company Limited, General Contractors

Exterior view from Southwest

The fourth floor is the lowest storey visible. The decorations under the fourth floor windows are the crests of the Provinces displayed for the Royal visit.



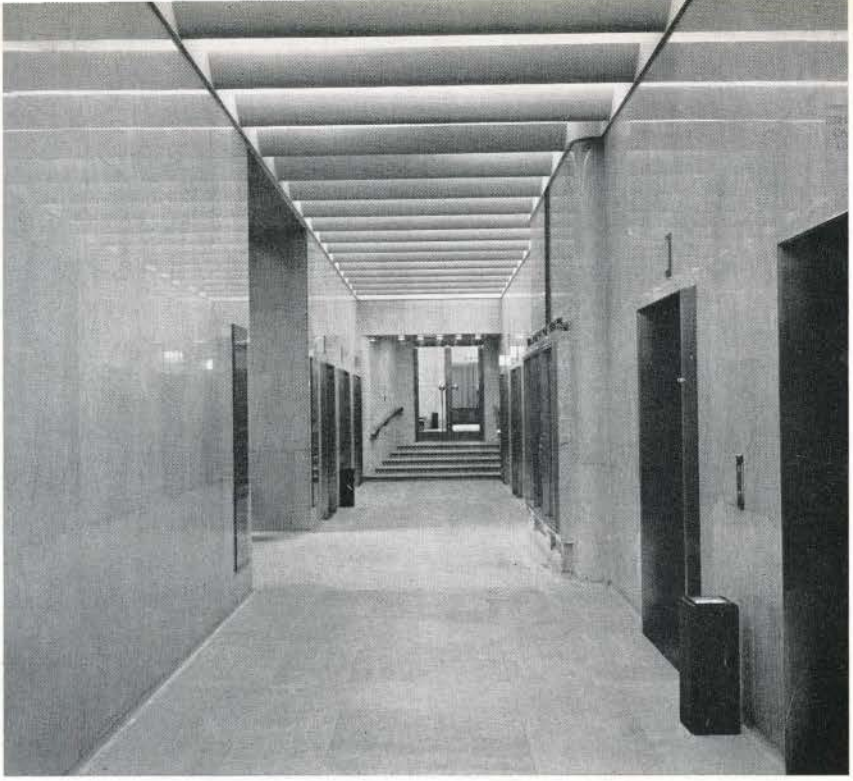
Ground Floor

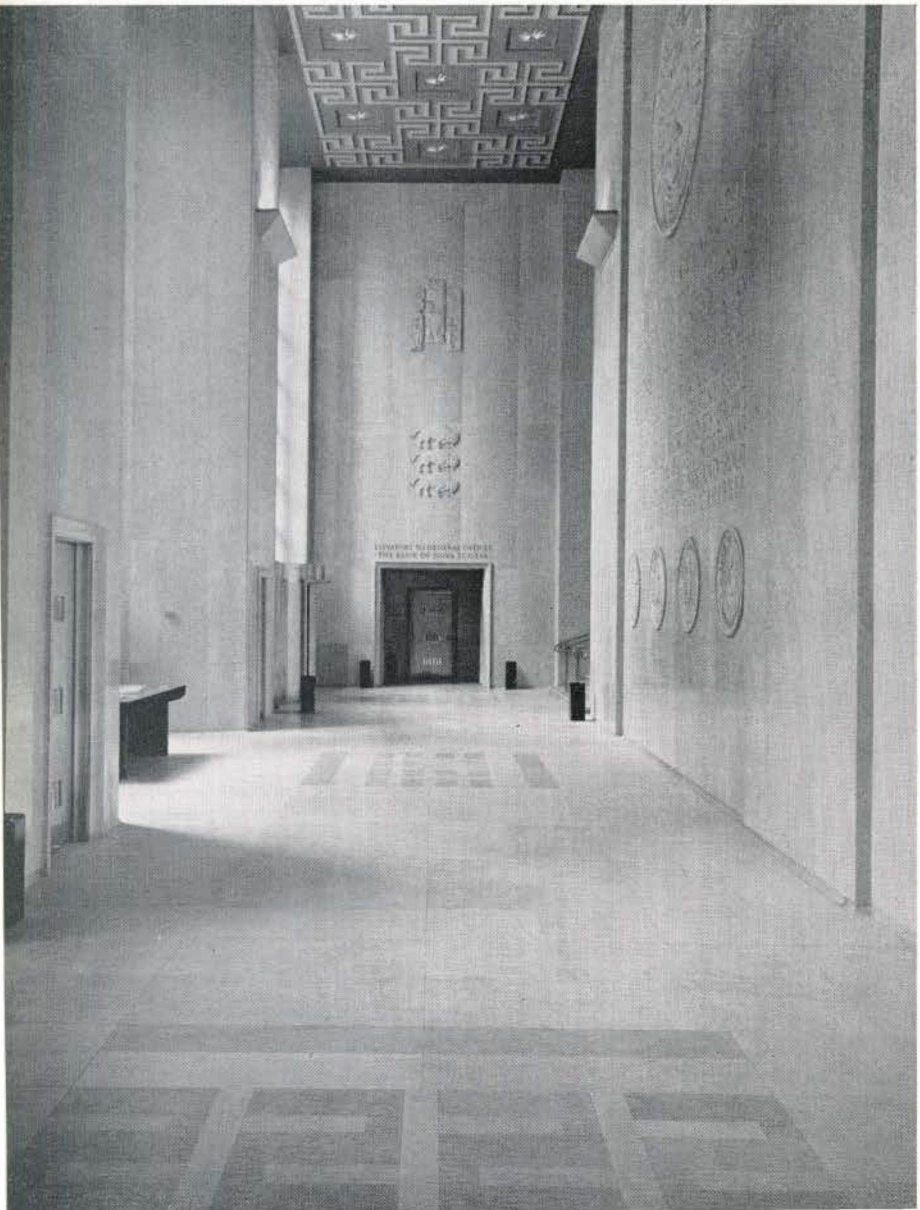
ALL PHOTOGRAPHS BETWEEN PAGES 323 AND 337 ARE BY RALPH GREENHILL & BOB HOWARD

South Entrance of the Main Banking Room

The ceiling of the Main Entrance Lobby beyond can be seen through the window. The window is similar to the street windows in the Main Banking Room and Main Entrance Lobby, and were manufactured by Weatherstone Windows Limited. They consist of heavy extruded aluminum frame, into which the plate glass is fixed. The frame is covered with a v-shaped strip of 16 gauge stainless steel, secured at the intersections with an aluminum-bronze boss.

The Scottish symbols on the window are aluminum-bronze lions and thistles hinged at the sides to facilitate the cleaning of the glass. They were modelled by Miss Jacobine Jones, and cast by the Canadian Ornamental Iron Company Limited. The stainless steel balustrade has etched designs on 1 inch polished plate glass spandrels.





Main Elevator Lobby

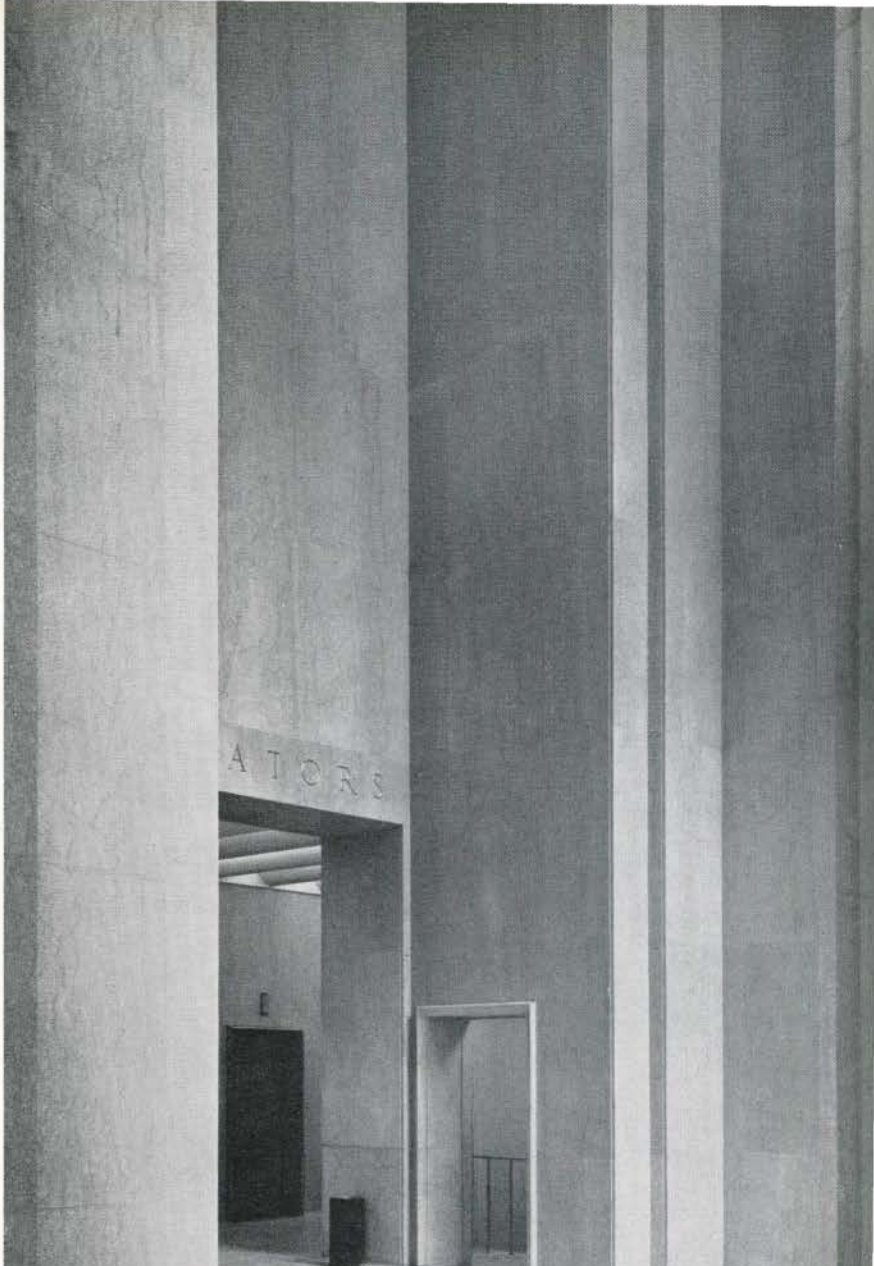
The ceiling is composed of a series of flat transverse barrel vaults with a plaster trough below each rib concealing fluorescent tube lighting.

Main Entrance Lobby

The ceiling is fibrous plaster painted in terra cotta, deep blue, and light beige highlighted in gold leaf.

The wall on the right contains a carved crest of The Bank of Nova Scotia, crests of four other Banks merged with it, and a gilded inscription which reads —

THE BANK OF NOVA SCOTIA
ERECTED 1951 AND DEDICATED TO THE
MEN OF VISION AND INTEGRITY, WHO
IN THE YEAR 1832 FOUNDED THIS BANK
IN THE CITY OF HALIFAX, NOVA SCOTIA
AND TO THOSE WHO THROUGHOUT THE
YEARS HAVE GUIDED ITS DESTINY, SERVED
IT FAITHFULLY AND NURTURED ITS GROWTH
WESTWARD TO THE PACIFIC, NORTHWARD TO
THE FRONTIER OUTPOSTS AND SOUTH TO THE
ISLANDS OF THE CARIBBEAN.



View of the Main Entrance Lobby and the Main Elevator Lobby

The walls are faced with slabs of Botticino marble 1¼ ins thick, in which a certain amount of matching has been possible. The flooring is Tennessee marble slabs in three shades.

The Main Banking Room looking South

The columns, counters and cheque desks, are Breccia Rosata marble, the walls are honed Roman Travertine, and the floor is Tennessee marble. All marble work was carried out by the Ontario Marble Company Limited.

The mural at the North end of the Banking Room was modelled by Miss Jacobine Jones who is shown standing in front of her work. The mural depicts the industries and activities which are in the scope of this Bank's financing.

The panel is carved out of 8 inch slabs of French Hauteville marble and is 29 feet by 19 feet, 5 inches wide.

The Main Banking Room looking North

The Toronto Branch Manager's Conference Room

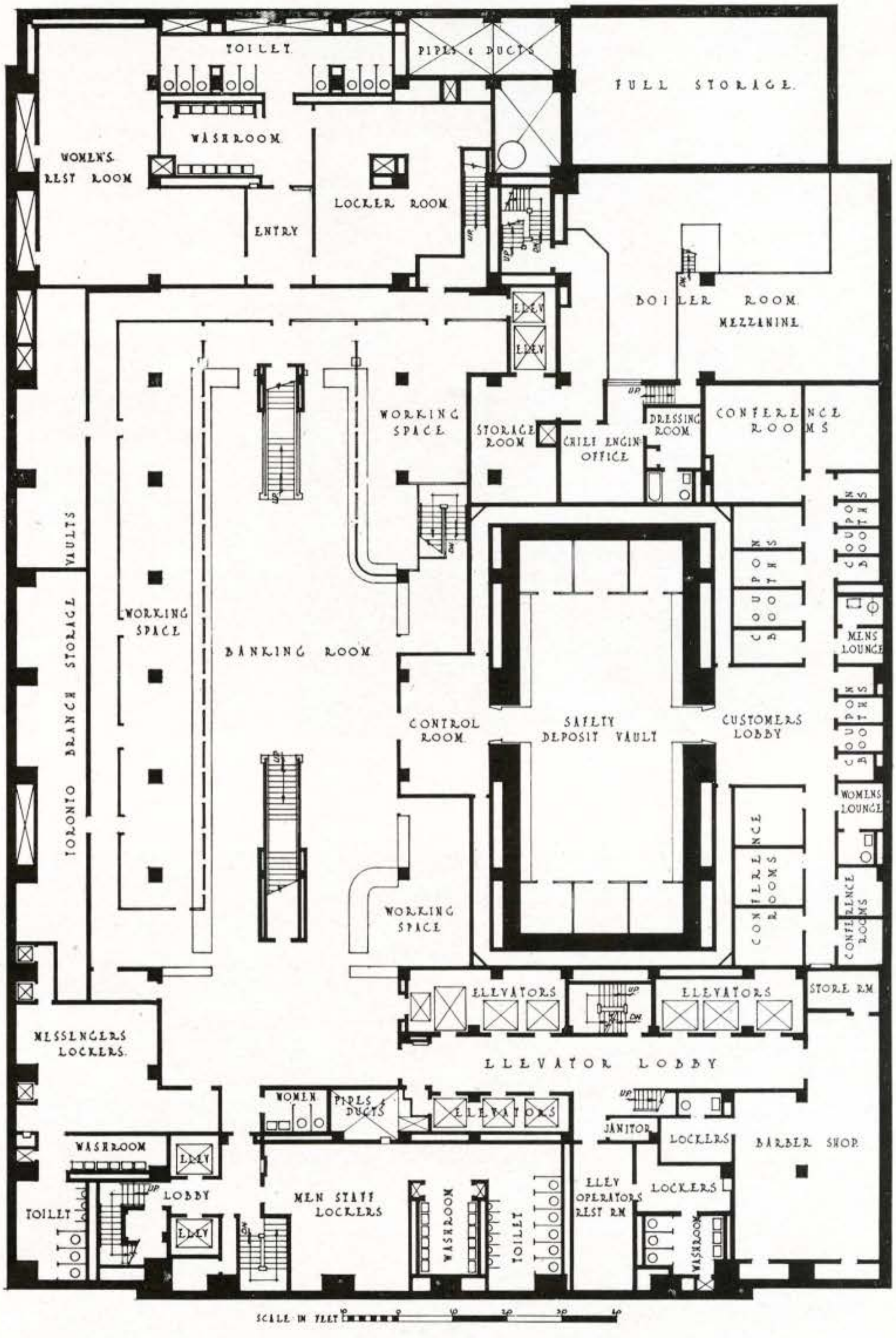
The oak panelling, and mahogany furniture was supplied by the Thornton-Smith Company Limited.
The curtains are of a sheer metal cross stripe material specially made for the Thornton-Smith Company Limited.
The Templeton's chenille carpet is from Glasgow.

Toronto Branch Manager's Secretary's Office

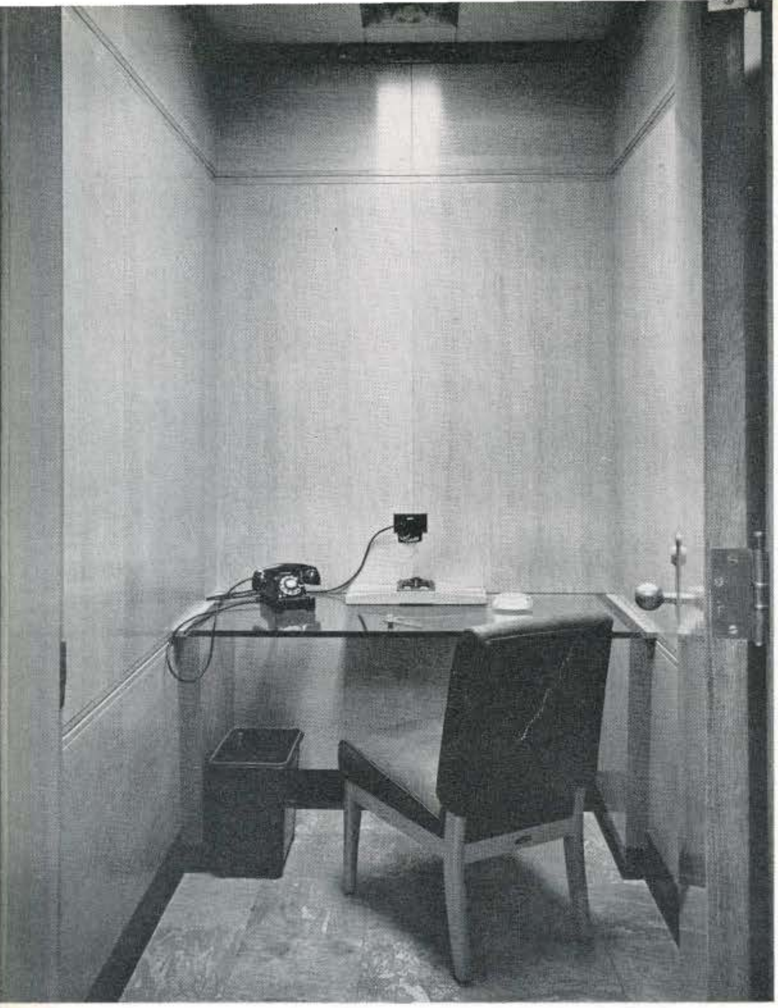
The furnishings are similar to the Conference Room.
The oak panels have one-half inch cross banding set diagonally from the centre lines.

The Toronto Branch Manager's Office

The furnishings and the mahogany panelling was supplied by the Thornton-Smith Company Limited.


TOILET
PIPES & DUCTS
FULL STORAGE
WASHROOM
WOMEN'S REST ROOM
LOCKER ROOM
ENTRY
BOILER ROOM MEZZANINE
ELEV
WORKING SPACE
STORAGE ROOM
CHIEF ENGIN OFFICE
DRESSING ROOM
CONFERENCE ROOMS
COUPON BOOTHS
MENS LOUNGE
VAULTS
TORONTO BRANCH STORAGE
WORKING SPACE
BANKING ROOM
CONTROL ROOM
SAFETY DEPOSIT VAULT
CUSTOMERS LOBBY
WOMENS LOUNGE
WORKING SPACE
ELEVATORS
STORE RM
MESSENGERS LOCKERS
ELEVATOR LOBBY
WOMEN
PIPES & DUCTS
JANITOR
LOCKERS
BARBER SHOP
WASHROOM
LOBBY
MEN STAFF LOCKERS
ELEV OPERATORS REST RM
TOILET
SCALE IN FEET

Basement

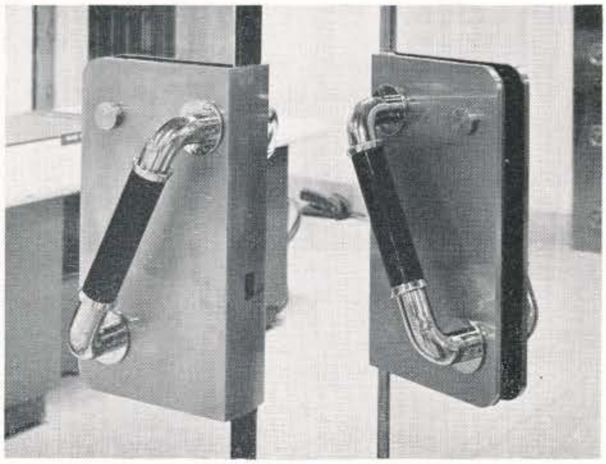


1

1

Coupon Booth

The walls have a patent type of removable oak panelling, made and installed by the G. H. Randall Company Limited, the base is black plastic. The desk is a sheet of 1 inch clear polished plate glass. The flooring is 12 inch by 12 inch by $\frac{3}{16}$ inch English pure rubber tile. The door furniture is cast nickeline. The escutcheons have no visible screws.



2

3

4

2

Door handles to the Control Room

The doors have four laminations of plate glass.

The door handles are polished chromium plated brass with plastic grips, and gold plated annulets at each end of the grip. The escutcheons are stainless steel with a satin finish. All hardware on these doors including the special heavy pivots were made by the Canadian Ornamental Iron Company Limited.

3

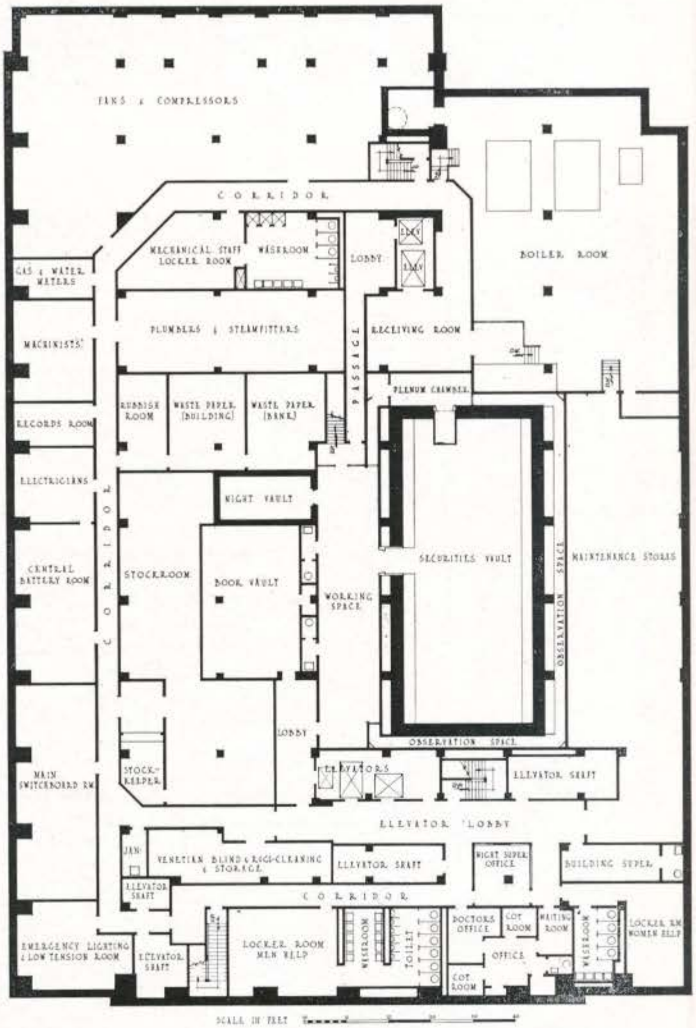
The Safety Deposit Vault Control Room

The armoured glass walls are 2 inches thick. The stainless steel trim and door frame were made by the Canadian Ornamental Iron Company Limited.

4

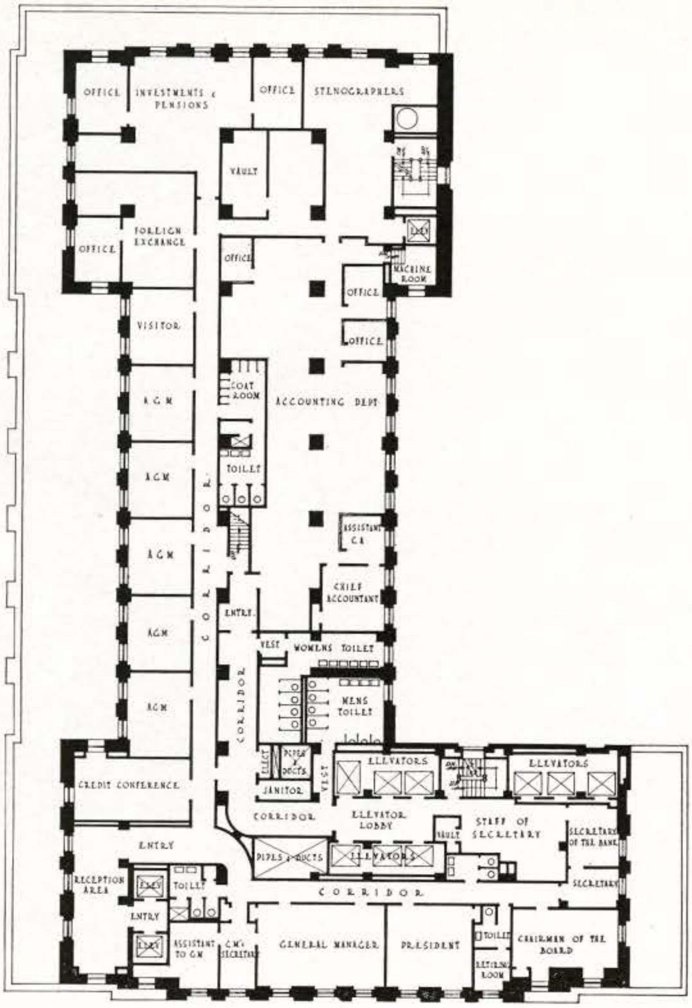
Conference Room

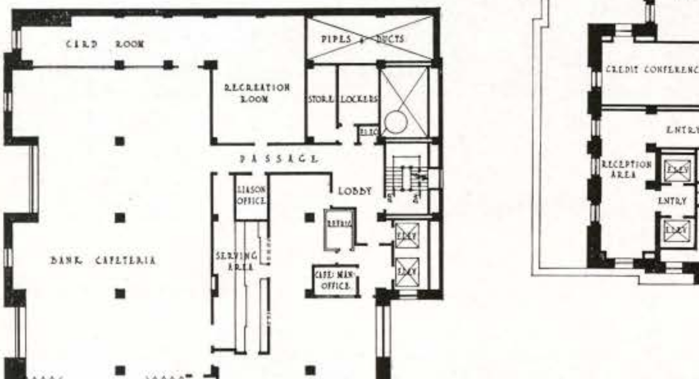
This room is en suite with the coupon booths and is similar in finish.



Sub-basement

6th Floor





4th Floor

1

Executive Reception and Waiting Room

The plaster walls are painted a light putty colour, which is similar to the Scotch Damask curtains by Donald Bros.

The carpet was specially woven by Hardings Carpets in alternate 9 inch squares of Saxony and hard twist pile.

The furniture was made by Sidney White & Son.

2

Office of the General Manager

The mahogany panelling was made and installed by the G. H. Randall Company Limited. The mahogany desks were made by Canadian Office and School Furniture Company Limited. The upholstery material and the curtains of heavy hand-blocked English tapestry are by Lees of Birkenhead. The chenille carpet was made by Templetons of Glasgow.

The fluorescent tube lighting is contained in the suspended mahogany trough and is supplemented by spot lights recessed into the plaster ceiling.


1

2


Employees' Cafeteria

The cafeteria is divided by a sliding screen shown partially drawn back.

The ceiling is a perforated sheet steel pan type of 12 inch by 12 inch acoustic tile, into which are clipped 12 inch by 12 inch anemostats and 12 inch by 48 inch electric light fixtures. For additional air conditioning loads 18 inch diameter anemostats are also used.

The columns are faced with mirrors with a birch dado below.

The flooring is AA gauge linoleum laid on the concrete floor.

The curtains were supplied by Freda G. James.

Kitchen Equipment

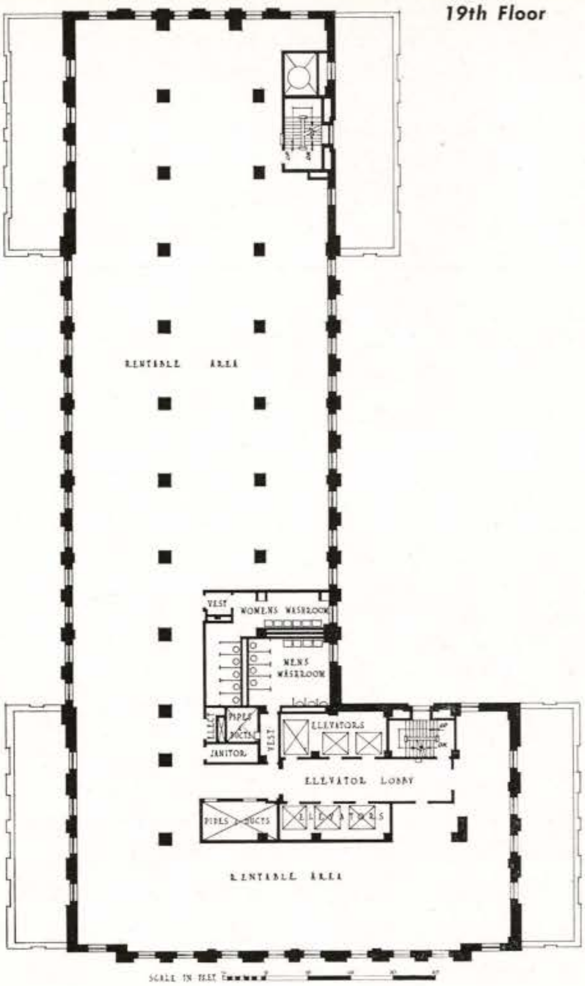
The floor is Quarry tile and the wall dado glazed tile.

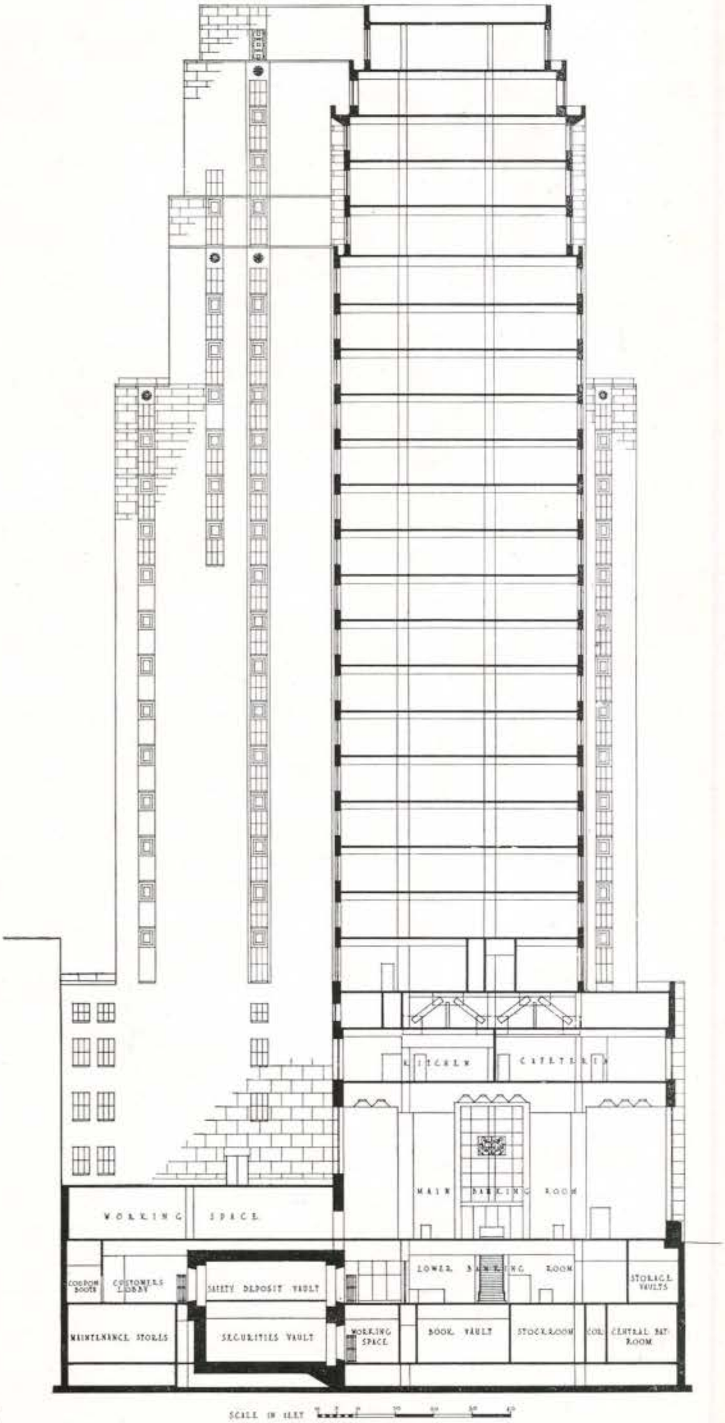
The acoustic treatment on the walls and ceiling are perforated transite panels behind which are grease and steam proof pads.

The Kitchen & Servery equipment was made and installed by Les Accessoires de Cuisine Ltée.

Cafeteria Servery

19th Floor





Cross Section looking South

SCALE IN FEET

KAREL R. RYBKA

MECHANICAL & ELECTRICAL PLANT

Introductory Notes

The first complete plans of the building go back to 1930 but only some four years ago did the Bank decide to proceed with the construction; it was then found that the entire concept of the earlier mechanical and electrical services had to be widely expanded to meet the requirements of present day office buildings. On the other hand, building costs have, in the interim, risen to a level that necessitated revolutionizing all earlier concepts of economy of the installations, to ensure an economic balance with established rental values.

Thus, regardless of some added services, such as air conditioning for the entire building, and considerably increased requirements in electrical and other fields, economic considerations necessitated that the original limited height of office storeys be retained, without loss of clear ceiling height. It was also desired to retain, without much enlargement, the small column, beam, and wall furrings, that concealed the mechanical services in the earlier designs, and the added or increased services had to be fitted into these, extremely limited spaces. It is noteworthy that the designs of the mechanical and electrical equipment as finally adopted fulfilled these conditions without detriment to performance and efficiency.

General Building

The building which is described in detail elsewhere in this issue is placed on a lot of about 232 feet by 162 feet and contains two basements and 26 storeys above grade. The basements are the full size of the lot. About half of the lower basement is allotted to boiler plant, refrigeration and air conditioning machinery, mechanical and electrical equipment, stores and workshops. The remainder of lower and the entire upper basement contain vaults, a large banking room, conference rooms and appurtenances.

The ground floor is only slightly smaller than the basements and contains the main banking room and main lobby which extend through large parts of second and third floors. This actually leaves only small areas for office use on the latter two floors. The remaining 23 floors are "L" shaped, forming an open light area to the east. Of these, the 4th floor has been assigned to kitchens, dining rooms and recreational areas. The heavy steel trusses which carry the superstructure of the building and that are set over the wide, monumental span of the main banking room, break up a large part of the 5th floor, and leave only limited areas suitable for office use. Part of this less valuable floor and of the 26th penthouse floor were assigned to mechanical equipment and machinery. This left 20 floors for use as general offices.

Heating and Air Conditioning of Special Areas

In the sub-basement sufficient ceiling height had to be allowed for large mechanical and electrical machinery, and for the main distributing piping. The Basement and Main banking rooms are monumentally treated and allow miscellaneous spaces for pipes and ducts. There are, thus, available on these three floors sufficient wall and ceiling spaces to permit application of the conventional heating and air conditioning that is dictated by their useage. They are centrally conditioned from the sub-basement. There are independent air conditioning plants for the main banking room with its associated spaces, for the large securities and safety deposit vaults, and for the storage areas and workshops. They supply into the spaces large air quantities and recirculate up to 80% of the air. The air is delivered into the rooms through horizontally and vertically adjustable grilles. On the ground floor the air conditioning is supplemented by automatically regulated convection heating under the large windows and skylights.

Individual forced hot air heating units are used in the three public entrances. A fan exhausts air from some of the basement and sub-basement spaces and discharges it into boiler room to provide combustion air.

Heating and Air Conditioning for General Offices

Convection type, extended surface (fin) heating units supplied with variable pressure steam were placed flush with wall face in recesses under the windows, to eliminate window draughts and allows the closing down of the expensive air conditioning when the building is not occupied. For economy, convectors were sized for transmission losses only, without consideration of infiltration, as this is entirely eliminated when the air conditioning is operating. The air conditioning then needs to counteract only the indoor heat gain and it will therefore be cooling all year with correspondingly simpler and more adaptable automatic controls.

The steam supply pressure for convectors, except on ground floor, is controlled from outdoors in two zones to suit the two most extensive exposures – east and west.

In the upper part of building the equipment spaces made available for fans and machinery, forced a vertical sub-division of air conditioning into a lower section served essentially upward from 5th floor and reaching to the 15th floor, and an upper section starting at 16th floor and served downward from 26th floor. Space limitations forced the use of duct risers through the floors, rather than main risers, which would have required extensive horizontal distributing ducts on all floors and would have lowered the ceilings. The limited floor space allowable for ducts and pipes pointed to the use of very small rising ducts which necessitated streamlining of usual concepts of air distribution.

In offices it is customary to distribute air from a central air conditioning plant at velocities ranging from 1800 feet per min. in main ducts to 500 feet per min. in branches and at most 15° to 18° F. colder than room air. Instead, in this building these air velocities are doubled and air about 25° F. colder than room air is supplied in hot weather through "anemostats," that were specially tested and found suitable for this extreme condition. The air ducts thus require only one quarter of the cross section of conventional ducts for removal of a given heat load. Areas of about 200 sq. feet and superimposed on ten floors are thus easily served from a single branch duct that is not larger than the inevitable soil pipes, storm drains or similar pipes.

On the typical floors three major exposures to sun and weather along outside walls ensued on the east, south and west sides respectively and one lesser exposure on the north end of building. A large central area on each floor is too far from the outside walls to be affected by the external weather. This dictated the zoning of the building for regulation of temperatures.

There are five air conditioning assemblies on the 5th and five on the 26th floor. Three assemblies in each equipment room supply the zones along the east, south and west faces of the building respectively, and two serve the large central area. The north face of the building is short, and conditions in it resemble closely the nearest central area, from which it is therefore supplied. An over-riding, automatically controlled damper permits the minor adjustments of conditions in this area that may arise from unusual weather conditions. In addition to air conditioning equipment, an exhaust fan is provided for all washrooms and toilets, one for kitchens, one for the ceiling space over main banking room that houses about 120 kw. of lights, and two for miscellaneous purposes such as exhausting from the odd printing machine, laboratory, or kitchenette that tenants may require. Independent filtered supplies of air are provided for elevator machines on the 15th and on 26th floors.

The air conditioning assemblies and exhaust fans are of conventional design and have been assembled in place.

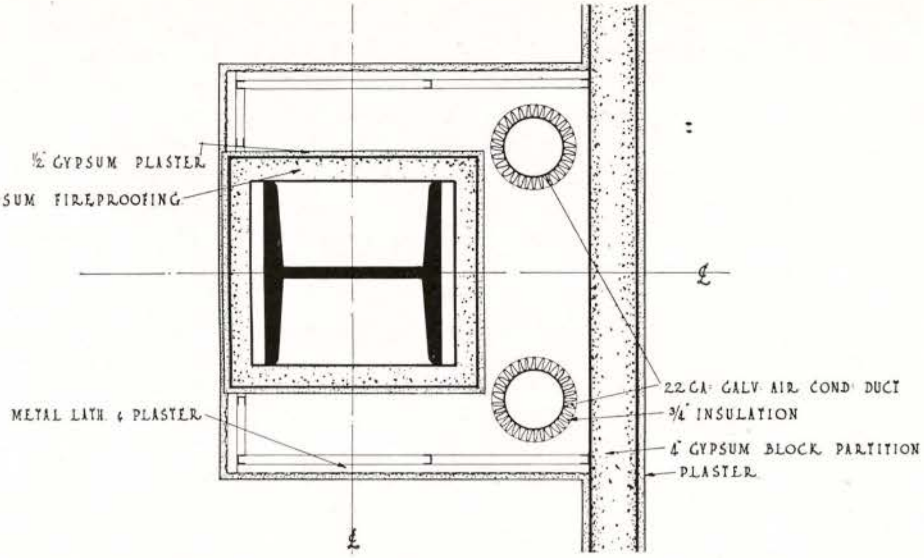
Each equipment room is equipped with a large fresh air intake, common to the assemblies therein. Fresh air for the sub-basement plant and for the equipment on 5th floor is brought in at the 6th floor level, whereas on the 26th floor a couple of large window openings have been assigned for it. Recirculated air is then thoroughly mixed into the fresh air. The air is passed through a system of "paper" filters that consist of several layers of porous paper stretched over wire mesh screens. Although the past performance of these filters in downtown Toronto was excellent, space provisions were left for easy electrification of the filters in the future. Subsequently the air passes through the heating and cooling coils, air washer and fan of the respective "zones" or individual air conditioning assemblies.

The duct risers are readily concealed in furrings around columns that match those needed for other pipes. As electrical junction boxes and telephone boxes, too, had to be provided on some columns on each storey, it was decided to standardize two main rows of columns in a manner that would conceal two duct risers in each. In addition, some risers were concealed in outside walls, in piers, where heating risers were not needed. Ductwork is of galvanized sheet steel of usual gauges and joints in ducts for air conditioning of the general offices were soldered. Ducts for conventional systems and for exhaust ventilation were of customary construction. Air supply ducts are heat insulated and waterproofed on the outside. Parts of the main duct trunks are insulated on the inside with sound-absorbing blanket. Objections of Fire Underwriters and the Municipality arising from the passage of the risers through fire barriers (floors) were solved by thickening of the fire-proof insulation to 1 inch so that the otherwise necessary, but undesirable, self-closing fire dampers were avoided in the entire air conditioning system for general offices. This, in itself forced the reduction of the ducts to a cross sectional size of less than 144 sq. inches. The reduction of air velocities in branches to secure the proper air quantities at diffusers is secured by means of streamlined manual valves designed specially for this installation. Regular throttling devices would have caused some difficulties with air noise and eddies.

Automatic Temperature Controls

The entire system of controls is operated by compressed air. A reasonably constant temperature around 72° F. is maintained in the building during the winter or cooler weather. In order to reduce physiological shock on entering or leaving the conditioned space it is customary to automatically raise, through a master controller the setting of the room temperature controls about one degree for each three degrees that the outdoor weather rises in summer above the 72° F. mark. In the conventional air conditioning systems for the banking rooms and basement spaces, the recirculating air duct carries average air from the controlled spaces, and it is sufficient to place a temperature controller in it and have it maintain the desired temperature. In each of the 10 air conditioning systems for the zones of the general office floors however, the average requirements of five instruments which are strategically disposed through the zone, govern through averaging features the temperature requirements. These controllers open, throttle or close automatic valves in the steam supply connection to heating coils of their systems, and in the chilled water connections to cooling coils. Louvre dampers for the northerly zones are similarly controlled.

Individual controllers can be added in areas where



Plan of column showing air ducts.

particularly desired, which permit maintenance of a temperature different from the general controllers, through throttling, opening and closing of a streamlined, automatic control valve in the air supply to the areas. This valve too was designed specially for this building. Humidity is controlled in the winter only. Summer humidities are usually high and are brought to a generally acceptable level by cooling of the air anyway. The extremely low winter humidities indoors cause most complaint and they are corrected by "washing" the air, which is started and stopped by means of a controller in the recirculated air ducts.

Refrigeration

The refrigeration plant consists of three centrifugal compressor condenser and water chilling assemblies, using Freon as refrigerant; they are powered with 250 HP variable speed motors and have a combined heat removal of approximately 10,000,000 BTU/h. Each refrigeration unit chills a body of water and this is circulated by means of a pump through the cooling coils in the different air conditioning systems. The cooling demand in this building is balanced in such a manner that two of the machines can economically serve the combined equipment in sub-basement and on the 5th floor, the third that on the 26th floor. This assures a simple arrangement of piping and circulating pumps, and avoids high pressure piping, except for the main risers to the upper level.

The removal of the heat from the compressor condensing assemblies would involve a very large quantity of cooling water, and two evaporative water chillers reclaim the cooling water for re-use in the condensers. These are large two-stage air washers which were tailor-made for a limited section of the equipment area on the 5th floor, through which outside air is drawn and discharged again to the atmosphere after having been sprayed with the warm water from refrigerant condensers. These washers handle about 100,000 cfm of air and with as high an outside wet bulb temperature of 73° F., still are capable of removing 7½ million BTU/h from the condenser water.

Boiler Plant

This boiler plant has been designed to serve not only the Bank but also a couple of adjacent buildings to the east and to the north, in order to avoid the troubles arising to Bank tenants and to the building itself, from the smoke that would otherwise issue from the existing two low smoke stacks.

The boiler plant is located under the service court in the northeast corner of the property at the sub-basement level and the main portion of the boiler room is approximately 35 feet in height.

Two main boilers are provided for winter and an auxiliary unit for the small heat requirement in summer. The plant also includes a small incinerator for the destruction of confidential documents and business papers.

Each of the two main boilers can deliver 18,000 pounds of steam per hour at 30 p.s.i. and is of cross-drum straight water tube design, with steel cased fire brick setting and is equipped with "heavy" fuel oil burner. This boiler type was selected because, in an office building, ease of cleaning and tube replacing outweighs the slightly better efficiencies of the newer bent tube boilers. The low operating pressure is used because the increased first cost and higher maintenance cost of a high pressure plant would have been quite considerable and in no way justified; the boilers are intended mainly for heating and air conditioning services which require at the most 10 p.s.i. steam pressure; however kitchen services for the building and for the Club building to the north, determined the selection of the slightly higher pressure of 30 p.s.i.

A pair of Diesel generators provide electric power in case of service interruption and no steam driven stand-by equipment is needed. The type of operating personnel is dictated by the large refrigerating load and no advantage would have ensued on this score from the operation of the plant at the legal "low" pressure of 15 p.s.i.

The auxiliary boiler is of water walled fire-box type and is capable of delivering 5000 pounds of steam per hour; all three boilers are valved that any one boiler or any combination can be used for maximum flexibility. Compressed air operated soot blowers are provided in boilers for the maintenance of clean heating surfaces. The electrically driven air compressor which is required for the soot blowers supplies also compressed air for cleaning of fan motors, elevator machinery and the like throughout the building. The condensate from heating and other services is collected in a tank in the boiler room and two electrically driven boiler feed pumps force it back into the boilers. A similar smaller assembly with a single pump is provided for the low summer load. Each boiler is equipped with a float operated feed water regulator which supplies city water as make-up. In view of the small make-up demand in the plant, a simple system of feed water conditioning is sufficient.

The oil burners are of horizontal, low pressure, rotary atomizing type, for fully automatic modulating fire. They include oil heaters and temperature controls which permit using any available commercial grade of fuel oil. The fuel oil storage tanks of 25,000 gallons capacity are placed in a coal bunker under the court, adjacent to the plant. Should at any time conversion to coal fuel become necessary, the tanks only need to be removed.

The boilers are set in such a manner that the oil burner framework, etc., would not need to be disturbed when stokers are installed in the boilers. The coal feed to the stokers in the future would be by gravity from the coal bunker. A space has also been set aside in a pipe shaft that would permit installation of ash storage and elevator at a later date, without defacing the building.

The plant contains supervisory instruments showing and recording the steam flow, and flue gas flow and temperature of each boiler, also instruments to record steam pressure, feed water temperature, and outside temperature.

It should be noted that, all refrigeration equipment, fans, humidifier pumps and other equipment (apart of a few small, remotely controlled heating units) must be started at the respective motors. This compels the operator to inspect the equipment when starting it. Each item of equipment, may however, be supervised and stopped from a remote control panel located in the fan room in the sub-basement.

Sidewalk Heating

For safety and other considerations, heating panels were placed in the sidewalks along the building. These are operated with a heated, non-freezing liquid, and are placed in operation at the start of a snowfall. They eliminate accumulation of snow on the sidewalks and save considerable labour and annoyance and eliminate the traffic interference arising from snow shovelling, which is particularly undesirable on this, the busiest street corner of Toronto.

Sewerage and Drainage

The municipal sewers in the street are common for sanitary sewerage and storm drainage, but, anticipating that they will be separated in the future, the sanitary drainage was kept separate from the storm water drainage inside of the building. One sanitary and one storm sewer is carried out from the building to King Street – these serve the southerly part of the building, and another set of sewer connections is taken into Bay Street for the northerly part.

The street sewers are above the level of the first basement and the sanitary house sewers and the storm sewers collect by gravity only the soil, wastes and storm water from the spaces and areas above grade. The soil and wastes from the large washrooms and other sanitary facilities in the basements are collected in a sump in boiler room, from which two automatic, motor driven centrifugal pumps of 125 gallons per minute capacity discharge them into the northerly house sewer. The duplicate arrangement is meant for unusual peak loads and also as a standby, should one pump fail. A single pump of 75 gallons per minute output in a separate sump discharges into the northerly storm sewer the clear wastes from boiler plant, equipment rooms, subsoil drains, etc. Three small pumps are provided in the deep elevator pits, in order to avoid the need of cutting deep trenches for drains in the hard shale under the subbasement.

Water Supply

Water is supplied into the building from the municipal water main in Bay Street through a meter in sub-basement. An unmetered water service for emergency use has been installed from the street main in King Street. The water pressure in these mains is around 80 pounds per square inch, and suffices to serve the plumbing, emergency fire protection and mechanical plant in the lower portion of the building up to the seventh floor. The equipment in the upper part of the building is supplied with water from two 10,000 gallon storage tanks, in the penthouse on the roof, which also serve as a reserve for fire protection. Two pumps of 125 gallons per minute in the boiler plant force water into the storage tanks. In order to ensure reasonable operating pressures on the piping and fittings in the building, only the upper most 10 storeys are served directly from tanks and an automatic pressure governor is provided in that part of the downfeed main that serves the 6th to 15th floors.

Three drinking water cooling plants with circulating pumps, one for each vertical zone of the building, supply drinking fountains.

All pumps are electrically driven.

Hot Water Supply

There are three steam heated 1,000 gallon storage tanks in the boiler room. Two of these are connected to the roof storage tank, and supply hot water to the upper portions of building; cold water mains from the other tank supplies the lower part of the building by City pressure; any two tanks can supply hot water to the entire building when the third is laid-up for maintenance.

Fire Protection

A 6-inch fire protection main connects the two City water services in the basement and is extended with two standpipes through the building; the top of the standpipes is joined and terminates in water storage tanks. The connections to services and to tanks are protected against pollution by means of double check valves. A fire pump in boiler room is arranged to force water from city water service into standpipes, in order to reach the upper storeys in an emergency. It is started whenever an alarm is rung on the upper floors. Two Siamese outlets above sidewalk in face of the building allow feeding the standpipes by means of a hose from a municipal fire pump or from a hydrant of the municipal underground fire main that carries 300 ps. water whenever a fire alarm has been received from the downtown area.

The standpipes supply hose cabinets on each floor, which are recessed in walls. These cabinets contain a hose-reel with 75 feet of hose and nozzle and a chemical extinguisher for emergency fire fighting. In addition they contain a valve threaded for municipal fire department's hose.

In the large public banking area in the basement, in spaces for storing inflammable materials and paper, also in the painters' and carpenters' shops, and miscellaneous storage rooms, automatic sprinklers for fire protection are provided.

Electrical Service

The Toronto Hydro Electric System supplies to the building 60 cycle alternating current of 208/120 volt 3 phase, 4-wire, for motors and for lighting and all other uses. A T.H.E.S. sub-station is placed under the sidewalk immediately adjacent to the point of entrance of the power service into the building. Three sets of heavy, bare copper bus-bars are carried in masonry compartments from the secondary buses in the sub-station to the terminals of the main switchboard in sub-basement. The main switchboard is sub-divided into four sections – with separate metering provisions – one for motor power, one for lighting, one for the Prudential Insurance Co. of America (who rented 7 floors in the building) and one for cooking.

From the switchboard, cables in conduits are run to all mechanical equipment rooms, elevator penthouse, etc., to feed power distributing panels located there. Two sets of distributing cables are carried through all floors for lighting services, one in the south and one in the north end; these feed lighting distributing panels in electric rooms on all floors. A separate system of feeders is carried to the kitchens on the 4th floor.

Emergency Power Supplies

For emergencies, two Diesel engine driven generators each of approximately 100 KW output, have been installed; one is intended for the operation of one elevator, and of the more important mechanical equipment such as oil burners, most pumps, etc.; the other for the provision of a minimum of light in the spaces occupied by the Bank, in equipment spaces, etc., in basements, and some stairs and corridors, elevators, etc. This ensures service during, the recently quite frequent interruptions in the Utility's power supply.

As the Diesel engines are arranged for manual starting, and the electrical circuits must be manually transferred to the emergency plant, a short delay occurs before the emergency power becomes available in the case of an unforeseen power failure. This delay could be reduced by automatic starting of generators, but cannot be entirely eliminated. Even a momentary black-out (particularly if created purposely) might suffice to cause the Bank considerable financial losses. A system of battery operated lights is therefore provided that serves all important spaces occupied by the Bank and basement and sub-basement corridors, elevators, some internal stairs, etc. These lights come on automatically and without delay on failure of the power supply for these areas and ensure reasonable safety until the Diesel engines are started. These lights are either integrated into the regular lighting fixtures, or arranged in an architectural pattern with them, to ensure best appearance.

Lighting

The lighting in the tenanted portion of the building is of fluorescent direct type and consists of troughs in ceiling which contain the lamps and which are equipped with diffusing glass panels mounted flush with ceiling. The lighting fixtures are planned to fit into a space made available by removal of a 12 inch x 48 inch section of acoustic ceiling tiles.

Each fixture is equipped with three fluorescent lamps giving, as spaced, an average depreciated intensity on the work plane of about 35-foot candles. The fixtures and wiring have been planned to permit an increase to about 50-foot candles through addition of a fourth lamp in each unit.

Single-pin lamps were selected to reduce cost of relamping, that – for the 15,000 odd lamps in the building is considerable.

This lighting was chosen mainly for operating economy; the selected fluorescent lighting fixtures cost more than twice as much as simple incandescent lights, but the power saving, coupled with the low capital charges will compensate over a period of years the additional cost.

Considerable architectural treatment of and with light is provided in the spaces used by the Bank, but there, incandescent light is predominant. The main banking rooms deserve special mention. The one on the ground floor has four broad bands of fibrous plaster coffers which are hollow, inverted truncated pyramids and they are equipped with a suitable reflector in each apex that lights the coffers and the work plane. The basement banking room ceiling fixtures are provided with glass panels, behind which, groups of directional reflectors ensure desired light distribution.

Electrical Distribution Systems

The complexity of the miscellaneous services and the need for utmost flexibility to permit easy changes in floor plans whenever desired, necessitated an extensive network for electrical distribution. This is facilitated by the floor construction which is of the type known as "Q" floor that forms a grid of metal channels the full width of the building, that are used for electrical wiring.

The Bell Telephone System

This system contains an automatic private exchange on the 5th floor. The Bell Telephone trunk lines are brought to this point and the distributing cables are taken from there to panels in electrical rooms at the north and south end of the building located on alternate floors and are extended therefrom to the telephone section in the underfloor duct system. This network permits installing telephone outlets anywhere in the building without exposing more than the short connection from the floor fitting to the instrument. These facilities allow also ready installation of small private switchboards on diverse floors wherever they may be required for tenants' convenience. Telephone service in the premises occupied by the Bank is rendered from a large manual switchboard adjacent to the telephone exchange; this handles all incoming calls and some of the outgoing calls.

A house telephone system is provided and serves the needs of the building staff. An automatic exchange is placed on the 5th floor. Instruments are placed in janitor's rooms on all floors and in the diverse equipment rooms, the chief engineer's office and the building manager's suite. This avoids use of tenants' telephones by staff members, who wish to contact an officer. An extensive intercommunication system for Bank premises is also included, which consists of loud speakers in the diverse offices that can be connected with speakers in other areas by the flip of a switch.

The C.P. and C.N. telegraph messenger call system consists of a service cable brought into the building underground from nearest telegraph offices. It is carried through a panel board and from there runs adjacent to telephone risers to panels on alternate floors; wires are extended into the "Signal" channel of the underfloor duct system and call stations may be installed anywhere within the building; on release of a button or crank they will ring in the telegraph office for a messenger. These systems may also be used for "teletype" services that are occasionally rendered by the Telegraph Companies.

The Dominion Electric Protection provides two services. One consists during the day of a hold-up alarm that is manually operable from diverse key points; at night it provides an automatic system of protection for vaults with timing devices, door controls and microphones.

The other service is a watchman's "Check-in" feature which automatically advises the Dominion Electric Protection Company's central when the night watchman in the building has fulfilled the exact requirements of the hourly round of inspection. Connections for tenants' requirements may be added.

The fire alarm consists of two or more break-glass type alarm stations on each floor, which ring on an annunciator in entrance lobby – to direct the municipal fire-fighting crew on arrival – and in the superintendent's and in the chief engineer's offices. Sprinkler systems in storage spaces and workshops are also connected into the alarm circuits. Every signal rings in the municipal fire department to ensure quick response.

A centrally operated system of clocks and time-stamps is intended mainly for the Bank, in order to co-ordinate operations and for the building manager for supervision of maintenance staffs.

In addition to these services, miscellaneous signals such as door bells and alarms required around the building, various buzzers and annunciators in offices of the Bank, protective signals in tellers' cages, customers' booths, etc., are installed.

In some of the tenants' offices separate systems of call bells, buzzers and annunciators are provided to suit individual requirements. Leads from an aerial for reception of radio and television of broadcasts are planned for certain offices. A public address system could be provided later wherever it may prove desirable.

CLARE D. CARRUTHERS

OUTLINE OF STRUCTURE

TAKE 8000 TONS of structural steel, 12,800 yards of concrete, 720 tons of reinforcing steel, 337,000 square feet of "Q" Floor, start combining in a container made by the excavation of 52,000 yards of earth; add together and arrange the proper amounts at the proper time and you will have the structure of the new Bank of Nova Scotia Building.

Let us have a closer look at some of the ingredients and their arrangement.

FLOOR SYSTEM

The floor system is either Q Floor or a concrete slab with "½ Q" above. This depends on the use or the location of the floor.

The Basement, First, Sixth, Twelfth, Eighteenth and Twenty-third floors are concrete slabs with "½ Q" Floor. The Sub-Basement is largely a service floor and is a concrete slab only, as are the fifth and twenty-sixth floors which are equipment or mechanical floors. All other floors are Q Floor Type RK16. This is 3 inches in depth made of 16 gauge steel which is the lightest allowed by the Department of Buildings of Toronto and by the Fire Underwriters. Above this is placed 2¾ inch of concrete fill and below a 1 inch vermiculite plaster ceiling.

The use of Q Floor raised certain problems in fireproofing of the structural steel. Q Floor is a series of tubes spaced 6 inch o.c. and only the bottom of the tubes are in contact with the supporting steel. The Department of Buildings felt that the spaces left between the tubes and the top of the beams should not be left open to fire but should be closed. Precast vermiculite concrete sticks were used to fill this space. The fireproofing of girders spanning parallel to the floor cells was not difficult since Q Floor is not placed over the top of girders. The concrete fill over the Q Floor was carried down to the top flange of the girders. All structural steel was fireproofed with tile with the exception of spandrel beams which were directly behind stone spandrels. These were fireproofed in concrete, usually for the length of stone spandrel only. Q Floors cannot be taken into masonry walls. For this reason there was always a beam just inside the wall to take the end of the Q Floor.

Before passing from the subject of Q Floors it might be well to note some of the advantages and some of the points which require care in the field. Q Floor is easy to handle in the field, it may be erected quickly and provides a working platform in a matter of hours after the steel framework is ready for it. It saves planking by the steel erector. It should be fastened to the structural steel as soon as possible after placing (welding preferred) and all openings should be capped or otherwise sealed at once to prevent dirt and water getting into the cells.

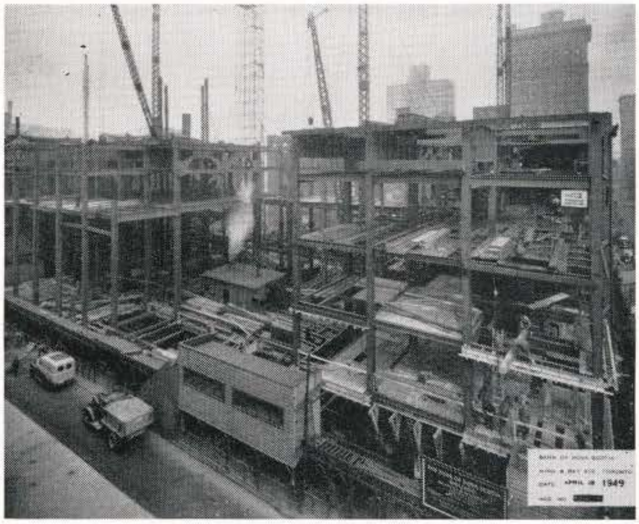
We specified that before handling materials over Q Floors the trough in the floor should be filled with concrete to provide a reasonably even working surface, and to prevent denting of the top of the Q Floor cells, but this was eventually found to be unnecessary when only light loads and foot traffic were passing over the corrugated floor surface.

STRUCTURAL FRAME

The frame of the building is structural steel throughout. The interior columns carry down to concrete pads on rock. The exterior columns sit on top of the foundation walls just below the first floor. Due to setback requirements and architectural features, it was necessary to offset some columns, and one of the interesting conditions among several is the case of certain girders required at the 22nd and 23rd floors. In this instance the columns were offset only 3 or 4 feet. This meant that there were very high shears and comparatively low moments. The depth of the girders was restricted to 28 inch maximum. The problem was solved by building up welded plate girders. Since the shear was high for only a short length the web was made of different thicknesses with a full butt weld between. The heavier section of the web was made twice the distance from the concentration to the nearest end. The heaviest girder was made up of 24 inch x 1⅝ inch web plate for 9 feet with a 24 inch x ⅝ inch web plate for the remaining 23 feet of span. The flange plates were 14 inches x 2 inches for the full length of the girder.

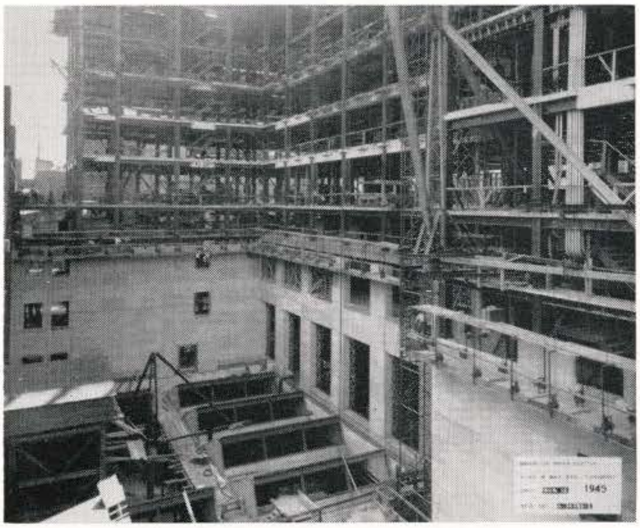
In order to provide the clear space required in the Main Banking Room, trusses were placed between the fifth and sixth floors. These trusses support a column at the centre of their span as well as a hanger to support part of the fourth floor. The column load carried at the centre of the typical truss is 1,750,000 lbs. The trusses are steel H column sections except the top chord which is a channel box girder section built up of plates and angles. The real problem in the design of these trusses was the various connections, particularly those to the columns. The columns supporting these trusses and continuing on up are the heaviest in the building with a maximum load of 3,300,000. The column section is 24 x 20 H section.

ILLUSTRATIONS OF PROGRESS IN THE CONSTRUCTION

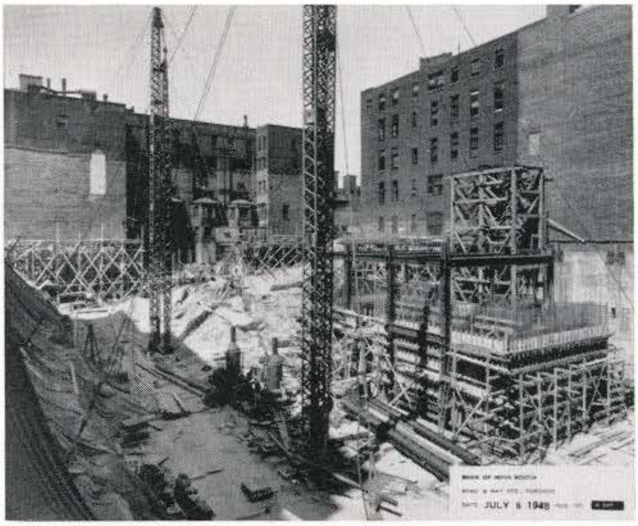


This illustration shows the progress of steel erection up to the sixth floor. This affords a good view of one of the large trusses used, as well as plate girders used to carry some of the smaller columns. The speed with which the Q Floor is erected can be seen here.
13 April, 1949.

This illustration shows the commencement of steel erection between the 19th and 21st floors. A good view is obtained of the cantilever spandrel construction.
K bracing can be seen at the extreme left.
9 September, 1949.



This illustration shows the saw-tooth roof over the Bank's work space on the Main floor. The structure in the left foreground is part of the Truck Hoist. Vertical wind bracing can be seen in the wall beyond. The fireproofing of the cantilever spandrel construction is also shown.
12 August, 1949.



This illustration shows the form work for the Security Vault, along with structural steelwork surrounding the vault.
In the foreground can be seen some of the column base slabs ready for setting. The timber work against the building to the right is the truck hoist. The framing for the underpinning of the National Club can be seen in the background.
15 July, 1948.

Since most of the floors were Q Floors and could not be cantilevered out to support the exterior walls and piers, it became necessary to use steel cantilevered brackets over the spandrel beam with another channel or beam inside to carry the Q Floor and anchor the inner end of the cantilever brackets. These brackets were made of steel beams or channels 5 inches in depth, and are encased in concrete reinforced with mesh. The concrete was held to within 4½ inches of the outer face of masonry walls and piers to avoid the use of spandrel angles which over the years can be an actual detriment on a stone faced building.

Wind Bracing

The wind bracing system was designed using the cantilever method. This is always one of the interesting features of any tall building. In this building, since Q Floors were used the Toronto Department of Buildings ruled that wind shears could not be distributed horizontally more than one bay. This is similar to a ruling on bar joist construction after one building in Toronto showed serious signs of floor cracking attributed to wind stress. It was therefore necessary to use some form of wind bracing in almost every panel. However, some of these are primary and some are secondary systems. To avoid increasingly high wind stresses on all connections as the wind loads were carried down through the building, concrete slab floors were introduced about every sixth storey to act as horizontal diaphrams which would distribute the wind stress to the primary bents, generally bents into which K or diagonal bracing could be introduced. K or diagonal bracing is a much more economical and efficient method of handling wind stresses than split I-beam or T connection, or heavy gusset plates. The total wind shear in the east-west direction is 1,500,000. This was distributed to the various sections of the building and to the various bents in proportion to their stiffnesses. At the slab floors and again at the first floor there was the question of how the wind moments in the columns above would be dispersed. It was decided to consider that the moment from the upper section dropped off by 50 per cent each storey below the slab floor. Since there was also a moment in the section directly below that was gradually increasing this scheme had the advantage of equalizing the moments at all connections of the secondary bents between any pair of concrete slabs. This resulted in many connections of the same design, always a measure of economy if it can be achieved. The use of K or diagonal bracing to take care of the greater part of the wind shears, and the general distribution of wind shear resulted in the primary members being little affected by wind load. In other words the building required only the sections for gravity loads with special connections at joints and a certain amount of K or diagonal bracing.

Foundations

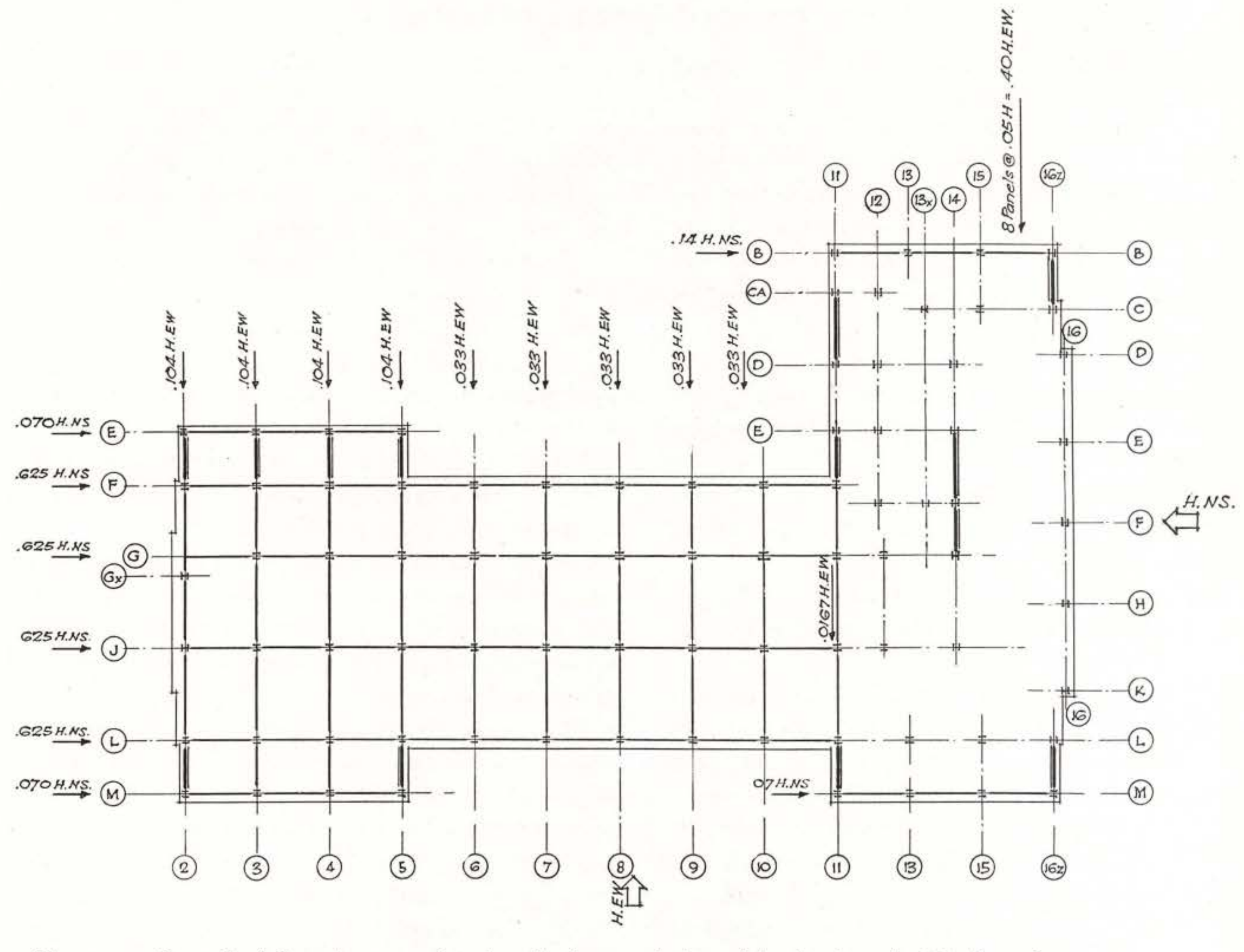
The foundations of the building are all carried down to Toronto rock. An allowable pressure of 25 tons per square foot on the rock was used in the design of the concrete pads under the columns. Holes were drilled 5 feet below the bottom of each footing to prove the rock solid. The pads were about 8 feet square x 3 feet deep. It is interesting to note that the average weight of the building under the highest portion is only 5600 per square foot. Since there was about 30 feet of earth removed weighing about 3000 lbs per square foot the net increase in pressure on the site was only 2600 per square foot of ground area – not as heavy as one might expect for a building of this height.

The base plates under the columns were of a large size, the largest 5′ 8″ x 6′, 0″ x 9″ thick. To set these level and in full contact with the concrete the following scheme was followed. The plates were levelled by means of bolts welded to the base plate. Then the space of about 3 inches between the plate and the concrete pad was filled with dry pack concrete. Several of these bases were lifted for inspection. In no case was there more than a fraction of 1 per cent not in contact. It is an excellent method for the setting of base plates.

Construction

While in general the scheme of construction followed the usual methods there were several interesting features. The excavation was all taken down to rock. On the east and north sides the existing buildings were underpinned to rock.The soil was removed to rock. On the south and west side the soil was left in place to form a berm or sloping bank which would be stable even with the vibratory heavy loads on Bay and King Streets. After the structural steel frame was erected and the concrete slabs poured for the lower floors this berm was removed in sections and the earth bank shored against the steel work for the length of time required to pour the foundation walls. Using this method gave good protection from collapse of shoring, soil and street.

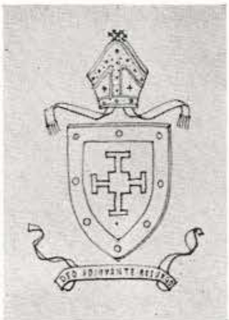
WIND SHEAR DISTRIBUTION AT STIFFENING FLOORS



To remove the soil of these berms and to handle the large quantities of material in this deep excavation, the contractors installed a truck hoist which would handle full size dump trucks from the bottom of the excavation to street level. We had the pleasure of designing this truck hoist and having it work right from the start.

This is a very brief review of a large structural undertaking and of necessity has probably left out many interesting points. The photographs accompanying this article may indicate some of those we have missed.

COVENTRY CATHEDRAL COMPETITION



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THE ASSESSORS' AWARD AND REPORT

(Sir Percy Thomas, Mr. Edward Maufe, R.A., and Mr Howard Robertson, A.R.A.)

We have examined the 219 designs which have been submitted in this competition. Although we consider the general level of the designs is disappointing, yet we are very happy to report our conviction that the competition has succeeded in bringing forth several designs of great merit, and one of outstanding excellence.

We make our award as follows:

First premium (£2,000) to design No. 91. [Basil Spence, O.B.E., F.R.I.B.A., F.R.I.A.S., 40, Moray-place, Edinburgh.]

Second Premium (£1,500) to design No. 202. [W. P. Hunt, M.A., F.R.I.B.A., A.M.T.P.I., 1, Scroope-terrace, Cambridge.]

Third premium (£1,000) to design No. 11. [A. D. Kirby, A.R.I.B.A., 10, Victoria-road, Swindon.]

Design No. 91. — In selecting this design we not only feel that it is the best design submitted, but that it is one which shows that the author has qualities of spirit and imagination of the highest order. He lets the conditions grow under his hand to produce a splendid cathedral, and as the conditions are unusual, the resulting conception is unusual, revealing the author's ability to solve the problem of designing a cathedral in terms of contemporary architecture.

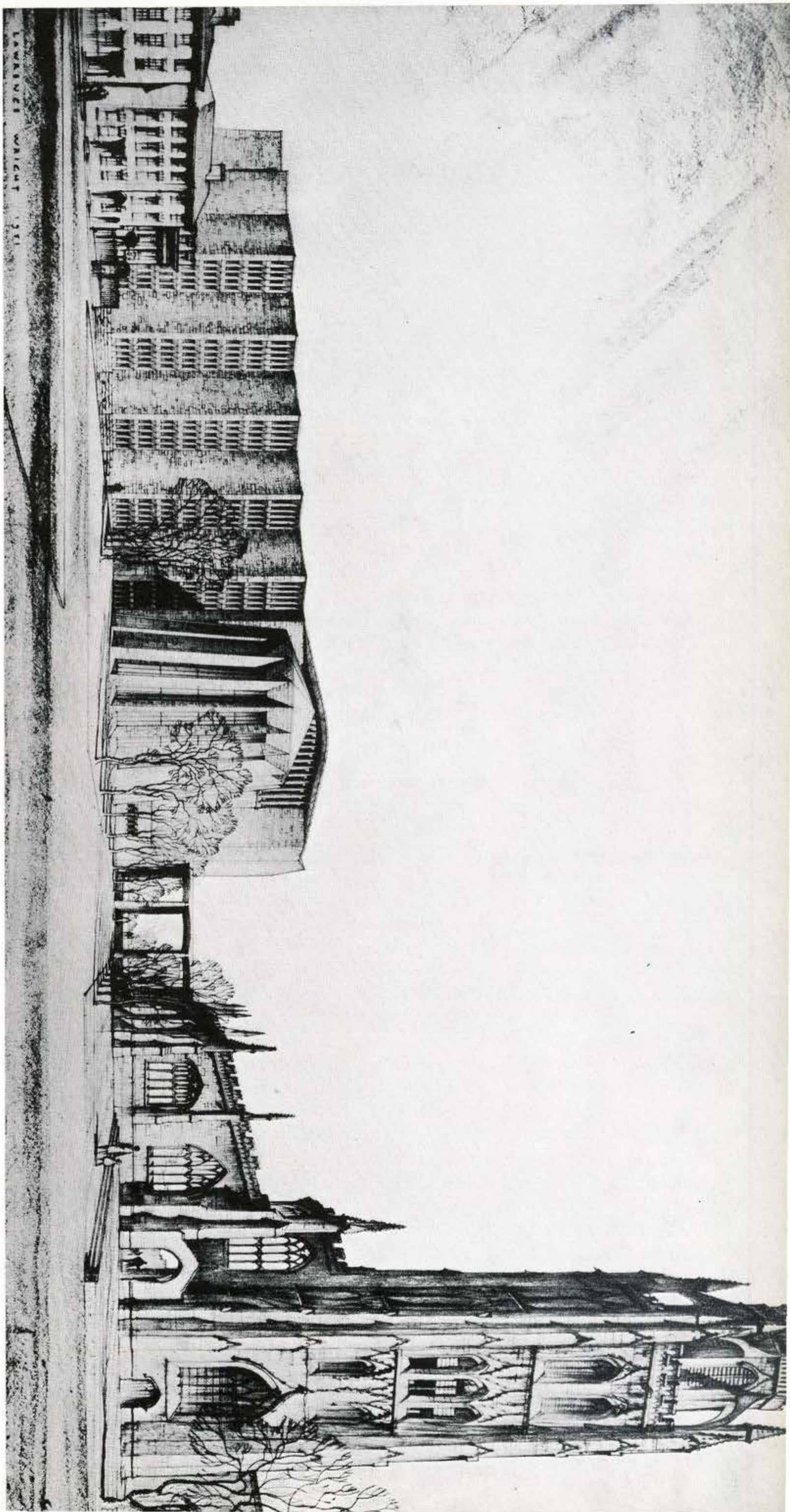
The author in his report stresses the beauty of the existing destroyed cathedral as an eloquent memorial to the courage of the people of Coventry, and states it as his opinion that the major part of it should be allowed to stand as a Garden of Rest, treating it as an atrium to the new cathedral which "should grow out of the old cathedral and be incomplete without it." The interior fully meets the requirements of liturgical movement. The altar is not narrowly confined within the usual chancel but is open on its sides to the full width of the nave. The hallowing places are admirably treated, being recesses canted toward the congregation from the wide passage aisles with lighting which falls only from the side on to beautifully designed sculpture appropriate to each hallowing place, avoiding all glare to the eyes.

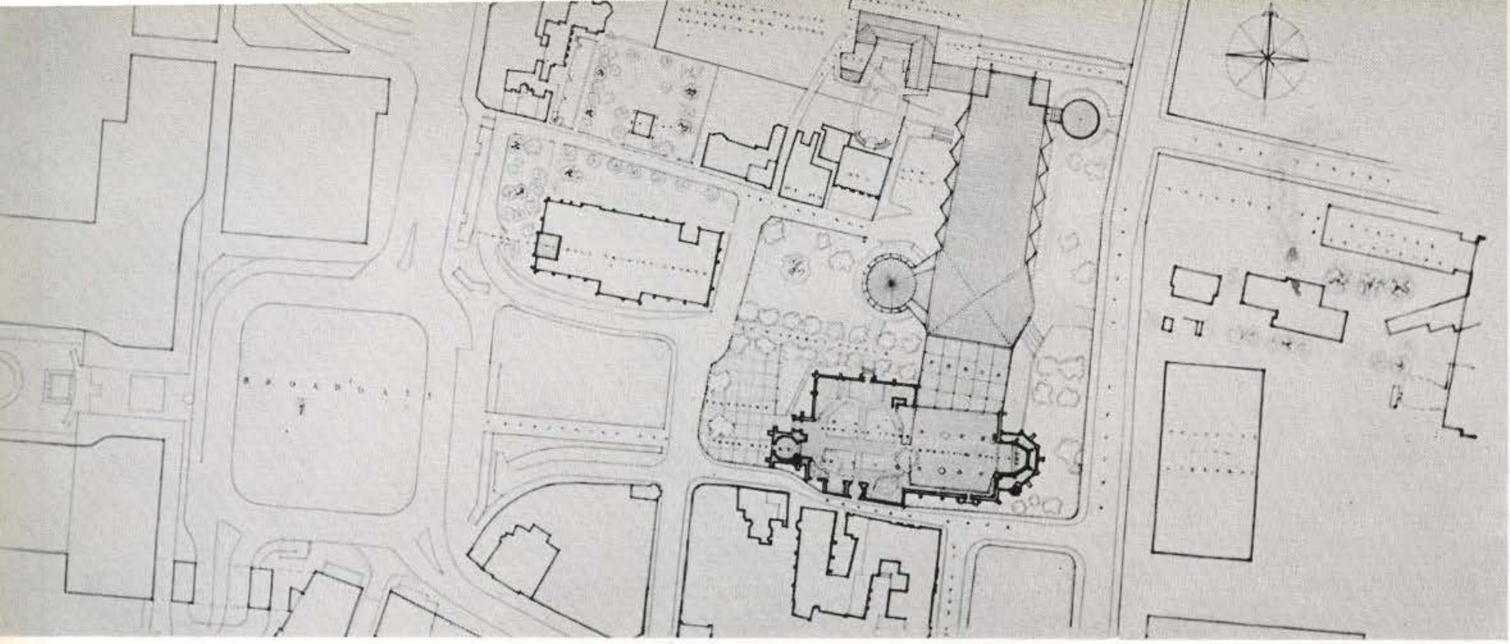
The Chapel of Unity is not a mere adjunct to the cathedral but a building elemental in form and of great significance. It is independent of, yet an integral part of, the Cathedral; separated from the nave only by an open metal screen. The author strongly advocates that this chapel should have its axis on the font, and this is what he has devised, making the font in the cathedral of special importance.

The shape of the new cathedral is impressively simple, the existing tower being an essential part of the design. The vaulting of the interior is of reinforced concrete; the walls externally and internally are of the local pink-grey stone. The half-inch details show that the author is capable of most skilled and sensitive design. The chapter house, the Christian Service Centre and warden's and caretaker's houses have much architectural merit, in keeping with the cathedral itself. The estimate of cost, clearly set out in the able report, is in our opinion reasonable.

The text on the following pages, accompanying the photographs, is extracted from Mr Spence's Report.

The photographs shown on this and the following 5 pages are copyright, *The Builder*, and are here reproduced by permission.





THE SITE PLAN

Through the ordeal of bombing, Coventry was given a beautiful ruin; the tower and spire reveal themselves for the first time in an arresting new aspect from the ruined nave. As the cathedral stands now, it is an eloquent memorial to the courage of the people of Coventry. It is felt that the ruin should be preserved as a garden of rest, embracing the open-air pulpit and stage, and the new cathedral should grow from the old and be incomplete without it.

The altar is the heart of the new building; it can be seen from the ruined nave. The five glass screens dividing the porch from the nave are of clear glass, and, on great occasions and on warm summer evenings, can be lowered so that the cathedral is open. Saint Michael's-avenue, the traditional right of way, remains, except that it passes under the cathedral porch within sight of the altar.

As the life of Our Lord commenced with a star, the first element of the cathedral plan is the Chapel of Unity, star-shaped, and is on the axis of the font. Then, turning towards the altar, the nave is flanked by the hallowing places and the windows shining towards the altar and representing the phases of life. This sequence culminates with the altar built by Mr Forbes after the bombing of the cathedral; it is surmounted by the charred cross, and backed by a great modern tapestry representing the crucifixion.

The Chapel of Unity: *Much thought has been given to the position of the Chapel of Unity in the cathedral plan. It must express unity, and is the Chapel of the Holy Spirit; it has its place in Pentecost, and, if Baptists and Methodists are to worship according to their consciences and with sincerity, it may be wrong to be completely within sight of the altar. The Act of Baptism, however, is another matter, and as unity is a primary consideration, the chapel is on the axis of the font.*

The chapel's shape represents Christian unity; in elevation it is shaped like a crusader's tent, as Christian unity is a modern crusade, and an attempt has been made to use dynamic crystalline forms which are contemporary, yet have their roots deep in the past.

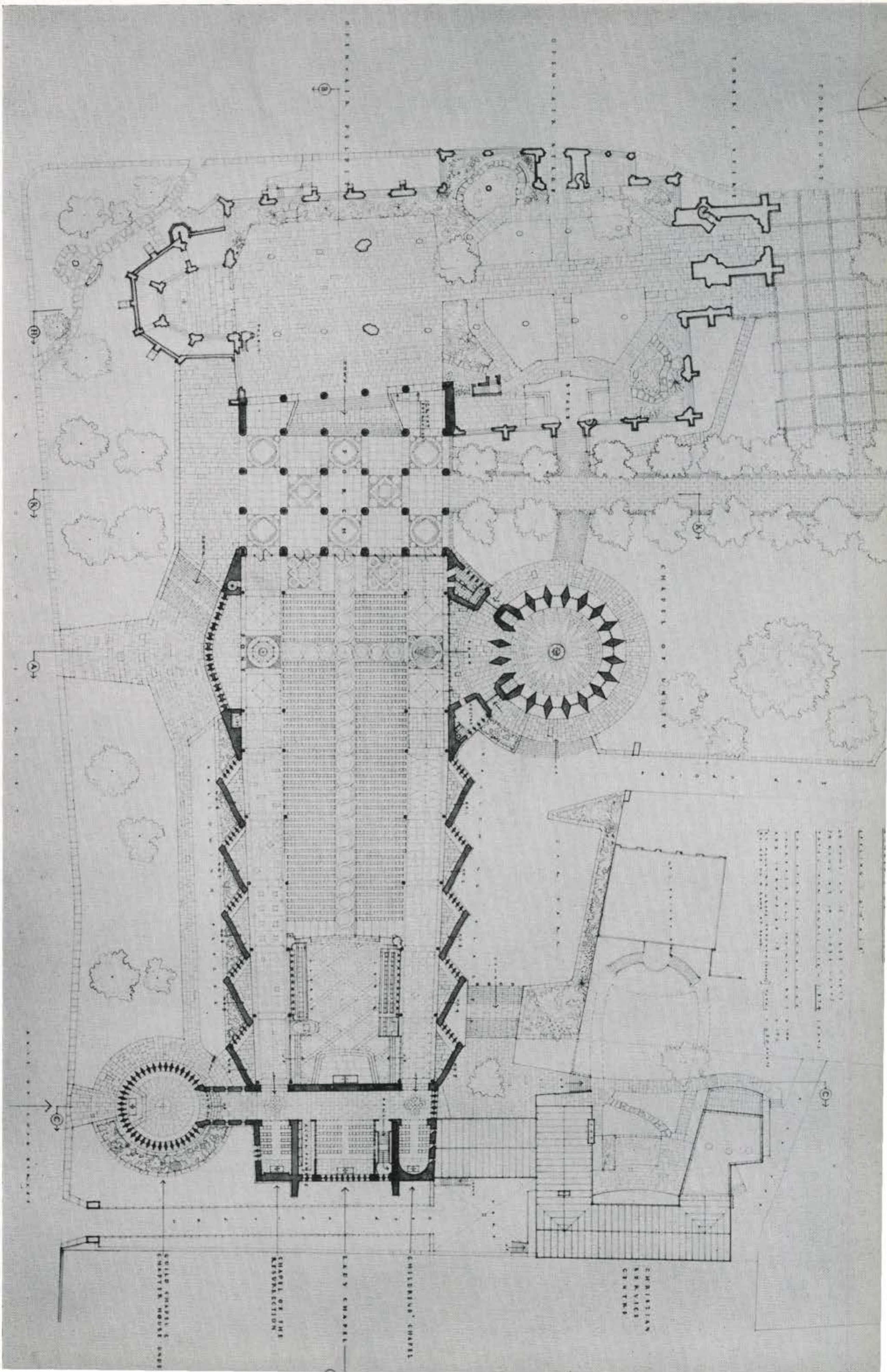
The Font: *Entering from the porch, the first important incident is the axis of the Chapel of Unity and the font. The font cover is conceived in a light steel sheet; a tall tapering form designed after the manner of a fir cone, the parts resembling ploughshares getting smaller as they near the point.*

The Hallowing Places: *As suggested in the conditions, the hallowing places are on the outer walls of the cathedral. These are sculptured recessed with ideal lighting for bold relief.*

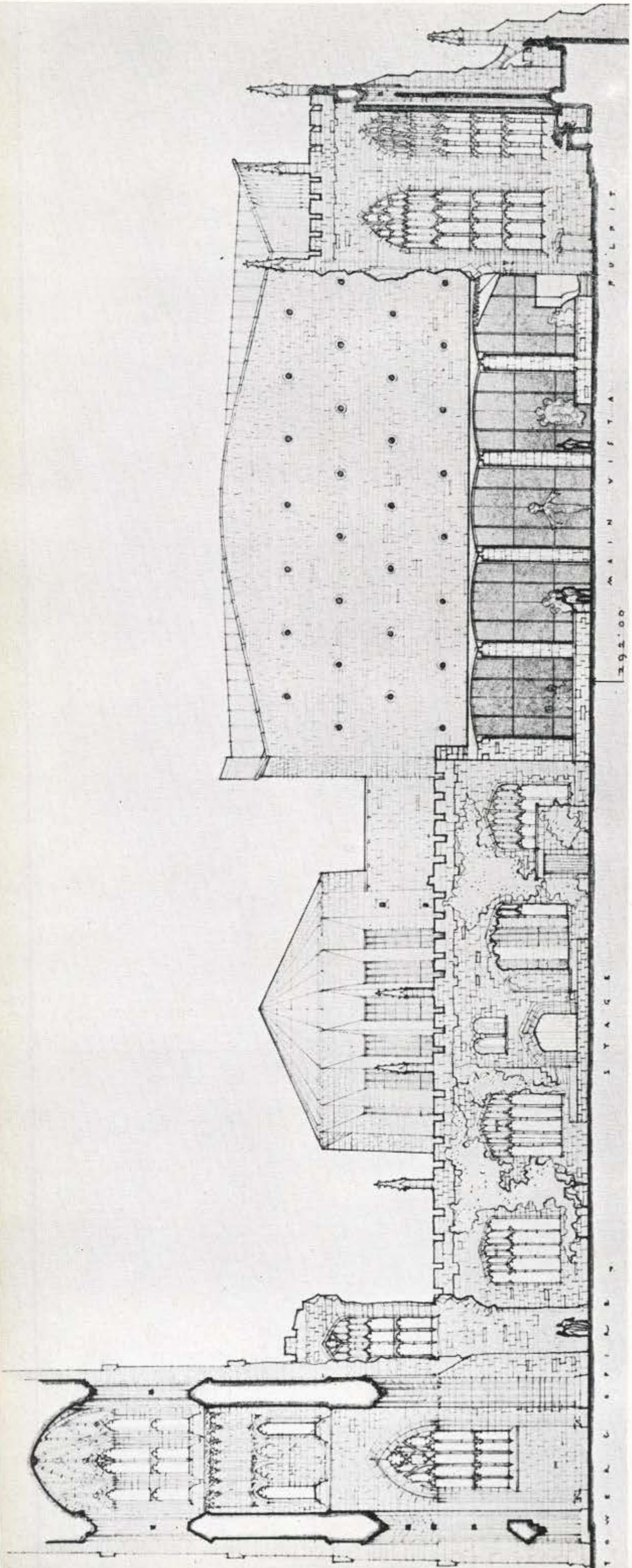
Great importance is given to the stained glass windows; with the exception of the baptistery windows and those lights over the entrance to the Chapel of Unity, all windows shine towards the altar. Behind the font the glass is very pale, almost white, with a slight tint of rose and pale blue, and moving towards the altar, the next windows are composed in tones of green and yellow representing youth. The next pink and red, representing puberty, the next – the age of experience – are multi-coloured, then the age of wisdom – the windows are deep blue and purple – and, finally, the altar windows of golden glass. As in life, the colour of the windows is revealed only as you reach each stage – the past is known, the future is not. Only when the altar is reached the whole range of colour is seen for the first time.

The author of this design does not see this building as a planning problem, but the opportunity to create a Shrine to the Glory of God.

The plan *divides itself simply into four distinct elements: the old cathedral, the cathedral porch, the new cathedral containing the chapel of unity, guild chapel, Lady chapel, children's chapel, and the chapel of the Resurrection, with all the attendant rooms, and finally, the Christian Service Centre group, which includes the warden's house and the caretaker's house. Vehicle access is centrally placed off Priory-row, and the service road leads from Prior-street to a yard which serves the heating chamber and all three kitchens (The Christian Service Centre, the warden's kitchen and the caretaker's kitchen). Foot access to the Christian Service Centre is obtained from both the car park as well as Hill Top. Access to the crypts is from under the cathedral porch.*


CHAPEL OF UNITY
GUILD CHAPEL & CHAPTER HOUSE UNDER
CHAPEL OF THE RESURRECTION
LADY CHAPEL
CHILDRENS' CHAPEL
CHRISTIAN SERVICE CENTRE

SECTION H-H



Structurally, this building is planned on simple lines. A reinforced concrete vault, designed as lightly as possible, supported by tall elegant columns of steel cased in concrete, or post-stressed concrete units. Walls are of solid stone construction pierced with windows. The floor is concrete with a finished surface of patterned stone, and the foundations are of concrete.

Columns: *It is hoped that it may be permissible to use a slenderness ratio of not less than 200 in view of the support obtainable from the walls. Compound stanchions are proposed of heavily plated cruciform sections to provide the required radius of gyration. Should it be necessary to work to a ratio of 150, the diameter of the columns — at present shown as 20 ins over all for a height of 60 ft — will require to be somewhat increased. It is proposed to reuse for all columns, in lifts of approximately 6 ft, a standard metal drum shuttering faceted on the internal faces. The final column finish is to be bush hammering.*

Walls: *The slightly corrugated shape of the stone side walls, and their angled setting to the main roof vault in conjunction with the mesh of stone window heads and cills which connect the ends of bays, produces an immensely strong saw-toothed wall in which the window sections tend to act as integral buttresses.*

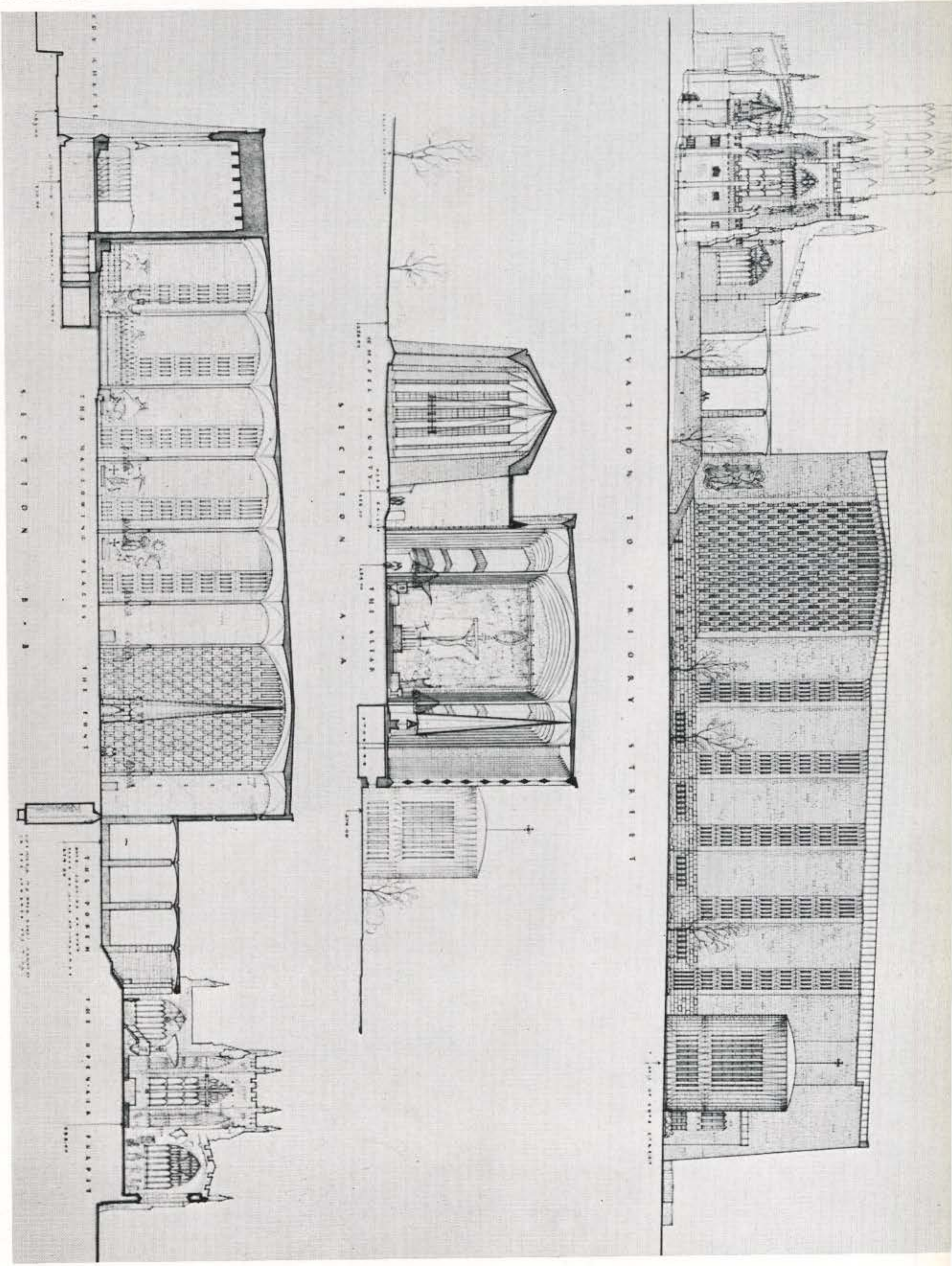
This wall provides maximum lateral support to the vault to meet both live and dead lateral loadings, and, in view of its strength, it may also be used to relieve the columns of a proportion of the vertical roof component through the grid of continuous beams, thus permitting a relatively light column section to be used.

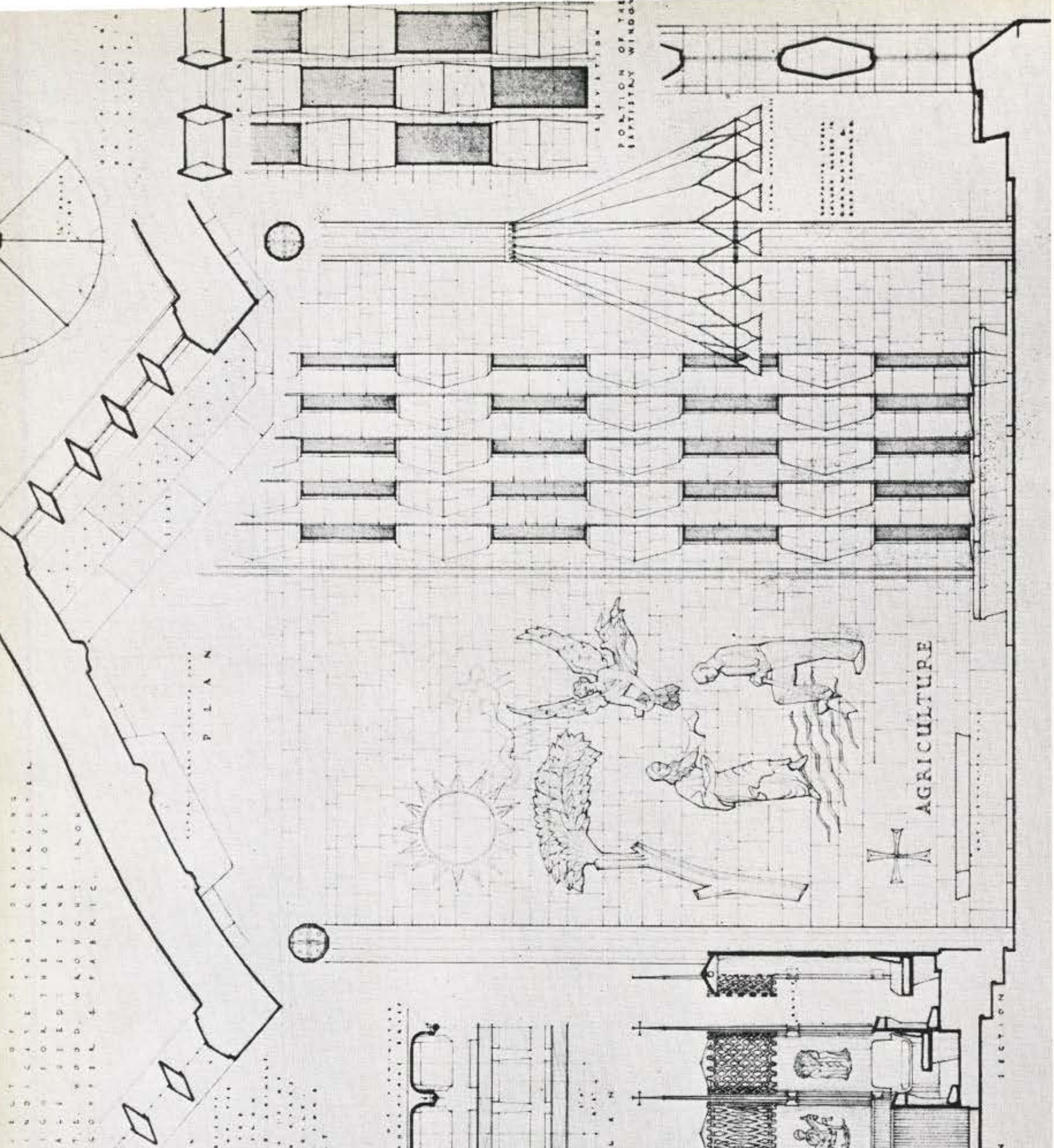
Type of stone: *It was considered essential that the same stone, or a similar variety to that of the old cathedral, be used. Where possible, mouldings and other expensive masons' carvings, have been eliminated. Simple chamfers are used, and decoration is in the form of sculpture which is not much more expensive than an elaborately moulded wall surface carried out by masons. This stone is used for the Christian Service Centre as well.*

The walling below the main floor level, as appears on both east and west elevations, is in grey granite blocks backed by brick. On the west elevation, this embraces the choir vestry, and ceases where it joins the warden's house. On the east elevation, it butts on to the guild chapel corridor.

The floor slab carries the heating elements. The finished surface is composed of a pattern of stone slabs of varying cool colours to contrast with the pinky-grey walls. Under the porch, however, cobbles are interspersed with stone slabs to catch surface water which may permeate from the outside. Foundations are normal.

SECTION B-B SECTION A-A ELEVATION



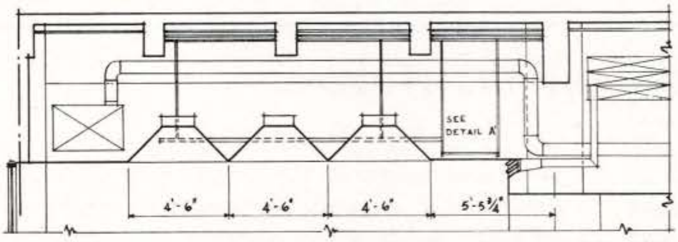


THE BISHOP'S THRONE

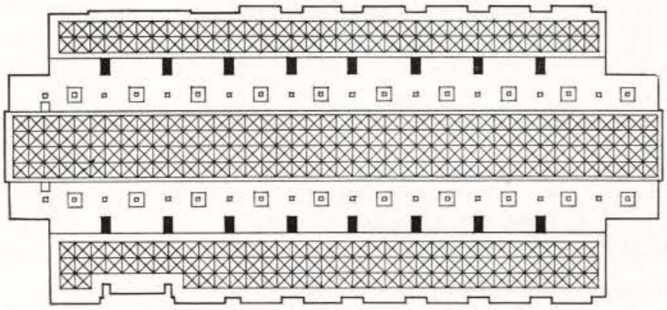
THE STALLS

HALLOWING PLACE: ELEVATION

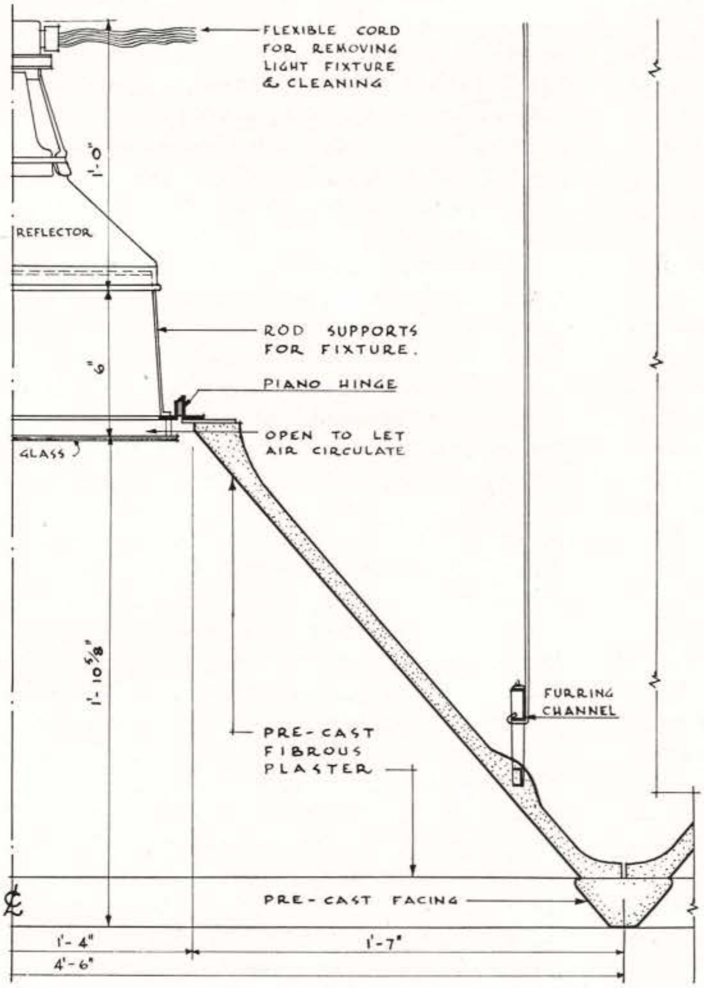
:HILDREN'S CHAPEL: WROUGHT IRON SCREEN



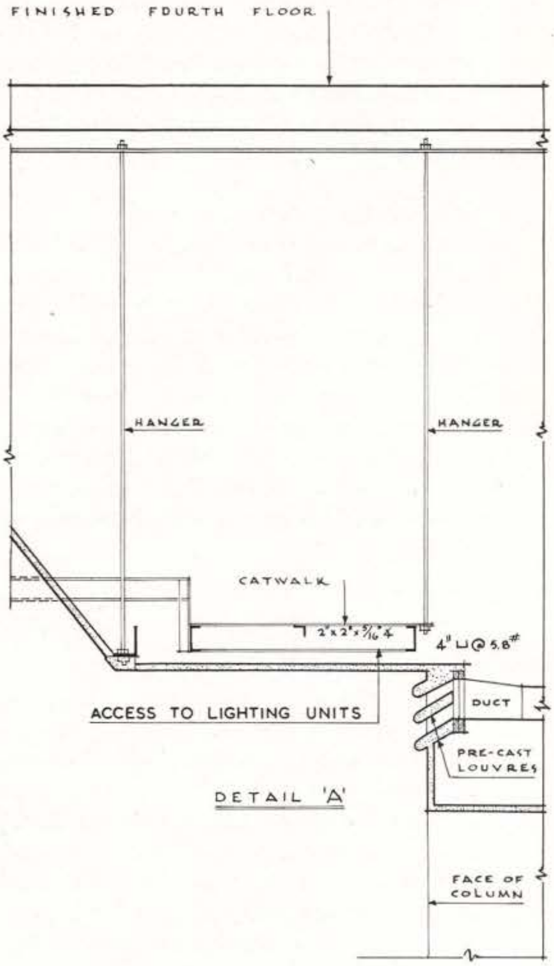
PARTIAL SECTION THROUGH THE CEILING



CEILING PLAN



SECTION THROUGH LIGHT & PLASTER COFFER



LOUVRE & CATWALK DETAIL

BANKING ROOM LIGHTING

MATHERS & HALDENBY ARCHITECTS
BECK & EADIE ASSOC. ARCHITECTS

THE BANK OF NOVA SCOTIA TORONTO CANADA

RAIC Annual General Assembly – 1952
Members are reminded that the 45th Annual General Assembly of the Institute is to take place in Vancouver, April 30th, May 1st, 2nd and 3rd. According to the latest word received from the BC Convention Committee, plans are well under way for this Assembly and those RAIC members intending to be present on that occasion may be assured of a very pleasant and interesting time. It is hoped that many members will find it possible to attend the Assembly which will mark a milestone in the history of the Institute, being the first RAIC Annual General Assembly to be held in British Columbia.

An Exhibition of new building materials will be held at the Hotel Vancouver during this Assembly.

International Union of Architects
Members may be interested to note that the Executive Committee has recently advised the Secretary of the International Union of Architects that the RAIC Council would second with pleasure the British Section of the Third Congress (Summer, 1953) of the IUA in proposing that the main item of study for this congress be "Health and Welfare".

Architectural Association of Ireland
A message has recently been received in the Institute office from the Embassy of Ireland in Ottawa, stating that the Architectural Association of Ireland would be very pleased to have an eminent Canadian architect address the Association, and inquiring the possibility of any of the Institute members being in Ireland this winter. Receipt of any information to this effect would be very much appreciated by Mr John O'Brien, Secretary of the Embassy of Ireland, through the secretary of any of the component Societies of the Institute which have already been informed of this message.

ALBERTA
One day, in the now long distant past, I was much impressed on hearing the chief of the firm of architects for which I was then working as a draughtsman, relate to a friend that he had passed a sleepless night and had been out at break of day to inspect a building whose progress he was pressing forward. There had been a full gale during the night. On this building a high stone gable had just been completed. The mortar was still fresh, no roof had yet been built to give it support and he feared that he might find the ruins of the gable scattered upon the ground. Fortunately it had weathered the storm. This incident helped to imbue my then studies of Gothic architecture with a considerable zest. I could, owing to the extremely elastic quality of imagination, suppose myself, to have designed a forty-foot diameter rose window, such as may be seen at Amiens or at the Ste Chapelle, having, of course, found the several hundred centres of circles necessary to direct and merge all those flowing curves and having furnished the necessary drawings to the masons who had with their matchless daring erected this marvel, I thought that, for some time it must be exposed, unbraced, to blows of incalculable velocity. I realised, in fact, that this was a work of high adventure as was each great work of that period. The whole history of architecture is a record of great adventure, not merely of the physical sort that entered so largely into the Gothic period. Even in that period many other interesting elements were involved. At the back of the erections of that wonderful period stood the vital ecclesiastical organisation, the practised masoncraft, the quarries and their operation and, probably not least, the draftsman's art. Beside each great building as it progressed stood the line of open fronted sheds in which the masons plied their tools. On an upper floor over this was the tracing room or, as we should say the draughting office. The work there was called tracery and consisted in making the traces to be followed in erecting the stone vaulting and in cutting the stones to fit their various places. I have often wondered upon what material these traces were made; for paper was not merely in short supply. It was just not available. I have seen traces for vaulting cut upon a stone wall by medieval masons, but this must surely have been a very exceptional case.

All periods of architecture have their many entrancing interests and these are of great variety. With what keen appetites to ascertain that which appealed as beauty to the eye and to the mind did the Greeks penetrate into the secrets of human thought. They well and truly invented and produced effects that no mortal had ever dreamed of before; the entasis of columns, the varied spacing of columns, the rhythmic arrangement of shapes, the application of variety and repetition of parts. Archæologists puzzle over the origin of triglyphs, mutules and guttae. The wonderful thing is not their origin but the marvellous and delicate purposes which they have been made to serve. Every period of architecture, including our own, has its many fascinating elements of interest.

I have been tempted to call attention to this aspect of the history of architecture as one so full of intense interest because it has been my sad fate to sit many times in judgment on this particular subject in examinations in architecture. Too often I have had to realize that the view of architecture as an age-long thrilling adventure has never entered the minds of many of those who have chosen this as a profession. It has been looked on as a superfluity, even as a bore. More deplorably still, I have read writings by smart young things referring to the great works of the past as if they were merely to be decried as incompetent and out-classed childish efforts. On these occasions I have been forcibly reminded of a gentleman that John Bunyan met in the course of his Progress who, he says, was "a brisk lad, and his name was Ignorance." Such as these are not and never can be fit to touch the hem of the garments of the great builders of old who so well revealed the possibilities of making dead matter to live and to nourish the human soul.

Cecil S. Burgess

ONTARIO

Personalities make news. This was amply demonstrated last month by three leaders in the O.A.A.

Earle L. Sheppard, president, did a notable job of cementing professional bonds between our provincial architectural organization and the New York State Association of Architects. Mr Sheppard addressed the luncheon meeting at the General Brock Hotel, Niagara Falls, that closed the NYSAA's 1951 convention.

Forecasting that construction contracts awarded in Canada this year would reach a record total of $2¼ billion, the OAA president declared that development of our natural resources is generating the steam behind the biggest building boom in our history. "From coast to coast, feverish activity in creating great new industrial works is transforming Canada's economy, helping to ensure prosperity for years to come. A brilliant future awaits us; few other lands can equal the size and variety of the opportunities that are ours."

Painting a vivid word picture of national progress for the visiting architects, Mr Sheppard told his audience that Canada's population had grown 160 per cent since 1900. "One-third of our national income comes from manufacturing, with 33,000 factories turning out $10 billion worth of goods each year. We are the third largest exporting nation in the world, indeed on a per capita basis, we are first."

After touching upon the importance of the facilities for aluminum production now being constructed in British Columbia, the oil and uranium discoveries in the prairie provinces, and the huge reserves of iron ore in Quebec and Labrador, Mr Sheppard paid tribute to the Niagara River. "It is," he said, "a symbol of the aims and aspirations of both U.S. and Canada, depicting our unity of purpose and preserving our ideals of democracy."

John B. Parkin spoke to members of the Toronto Builders' Exchange at their monthly luncheon meeting at the Park Plaza Hotel. His subject was "That's Real Building!"

Mr Parkin pleaded for all branches of the construction industry to jack up their standards of performance. He stated his opinion that. "Present boom conditions are no excuse for the poor workmanship seen on every hand. Architects and general contractors are just as responsible as the foremen, superintendents and mechanics on the job."

Shortcomings are not found only in the construction industry, the speaker claimed. They permeate nearly every aspect of our business life. Waste of time and materials in making bad work good leads to higher costs. The belief that a man is a "sucker" if he does more than just enough to get by is false and needs to be exposed. Letting a job slide in the hope that mistakes will be caught on the way through must be replaced by the older, sounder creed that only the best is good enough.

John Caulfield Smith

LETTER TO THE EDITOR

Sir:

I was somewhat shocked but not very surprised to read a recent news item stating that the Toronto Board of Education permitted a tender to be opened which had been received after the deadline set. This, too, the report stated, was against the recommendation of their own Business Administrator and a minority of members who were perhaps less interested in politics than in sound business ethics.

One member of the Board was reported as saying that he would do it again under similar circumstances. Experience has shown that laxity of this kind, especially in open tendering, is not in the public interest.

I should think, too, that reputable contractors would hesitate to figure under such conditions.

The real surprise is that I haven't yet see any protest from the Architectural profession.

Yours truly,
W. N. Moorhouse

CONTRIBUTORS TO THIS ISSUE

Clare D. Carruthers.
See *Journal*, June, 1951.

A. S. Mathers was born and educated in Ontario. He formed a partnership with E. W. Haldenby in 1921 under the name of Mathers & Haldenby and has practised continuously in Toronto since that time. He was for a number of years on the staff of the School of Architecture, and is a past president of the Ontario Association of Architects. As a member of the National Capital Planning Committee, he was closely connected with the planning of the Ottawa area, and is continuing his interest in the Capital in his capacity as Chairman of The Architectural Sub-Committee.

Karel R. Rybka, mechanical and electrical engineer, graduated at Prague in 1923. In 1937 was awarded the Degree of Doctor of Science during a brief visit in Prague. Came to Canada in 1928 and has since been engaged in Consulting Engineering, first as engineer with, and later as associate of Walter J. Armstrong of Montreal and Toronto. Was prominently connected with the construction of some of the major buildings in Toronto and other centres in Canada. Is a registered Professional Engineer in Ontario, Quebec, and Alberta, a member of the Association of Consulting Engineers of Canada, The Engineering Institute of Canada and other Engineering Societies. Served on diverse Public Committees and Boards. Has contributed widely to the technical press in Canada and abroad.

Basil Spence is an Edinburgh Architect. He was trained at the Schools of Architecture at London and Edinburgh, Universities and worked in Sir Edwin Lutyens' office for a year before starting to practise on his own. He was Chief Architect of the "Britain Can Make It" Exhibition. He has also designed housing estates and secondary schools.

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