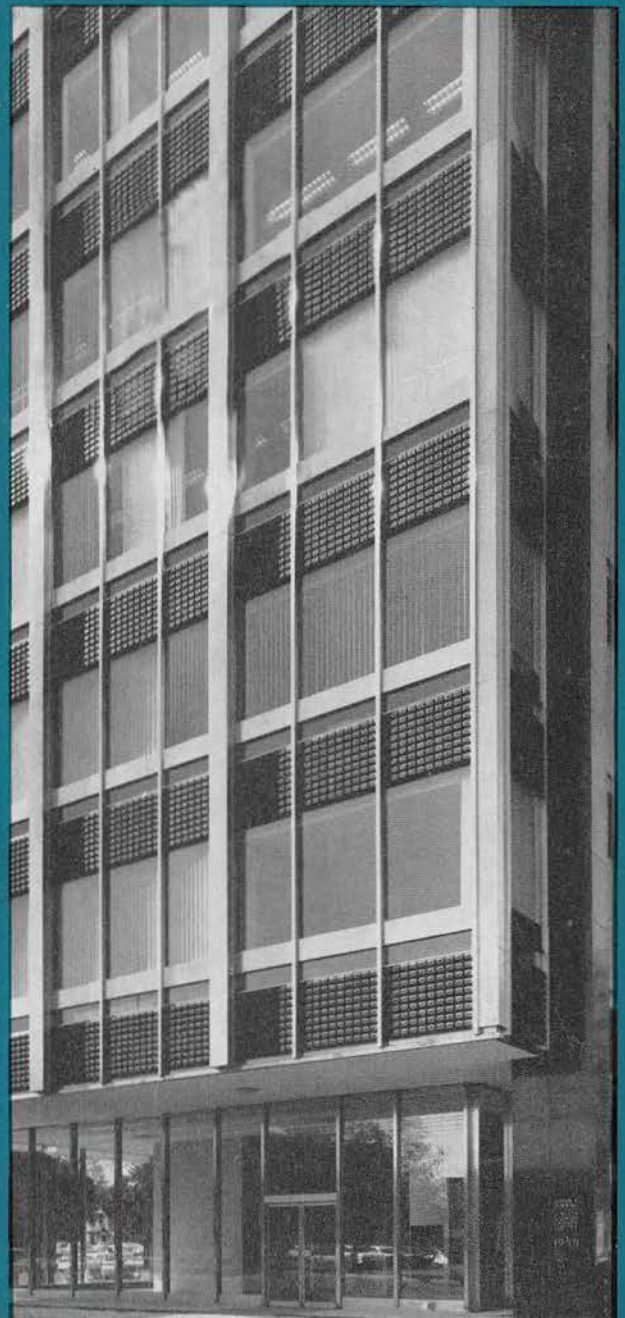
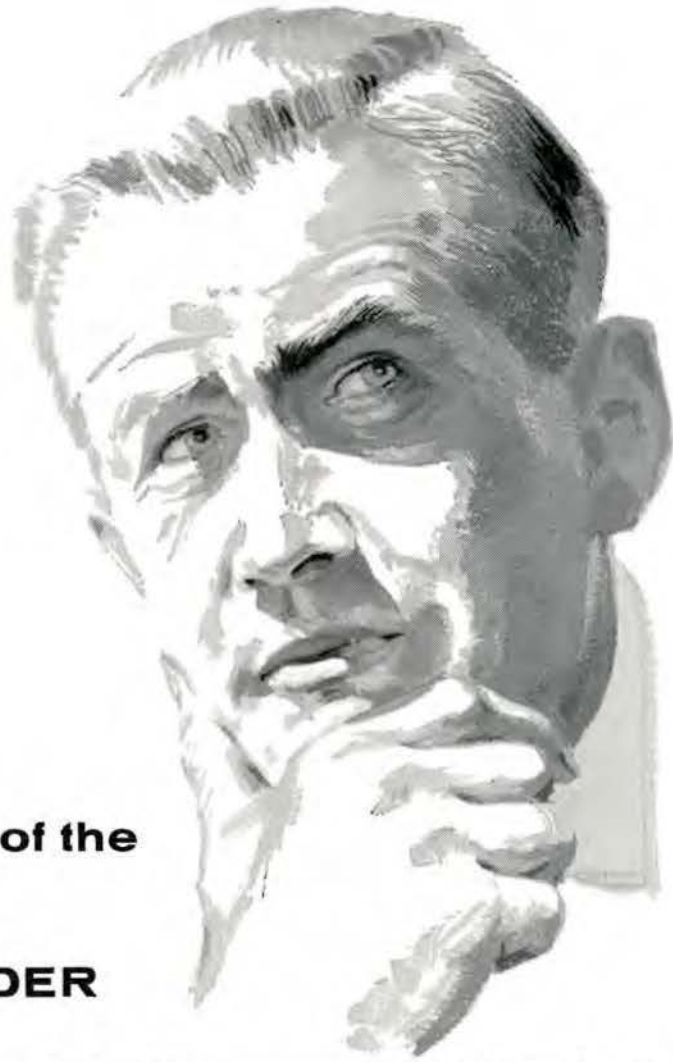


# ROYAL ARCHITECTURAL INSTITUTE OF CANADA JOURNAL

OCTOBER 1960

ROYAL ARCHITECTURAL INSTITUTE OF CANADA  
INSTITUT ROYAL D'ARCHITECTURE DU CANADA



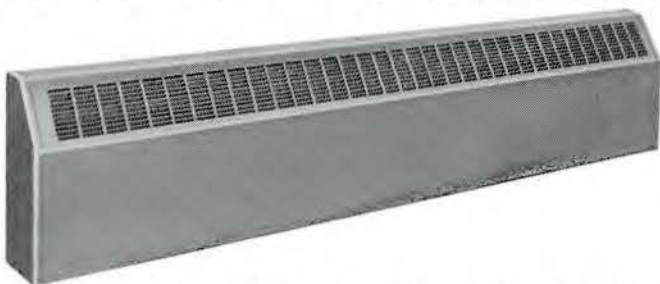


## The case of the BAFFLED BUILDER

One day, a builder faced a tough problem! How to meet all the rigid requirements of architect's and engineer's heating specifications for his new building contract. He was frankly baffled because there were so many special conditions to be met.

The heating had to be ultra-modern, highly efficient, extra rugged and maintenance-free. It should be easy to install, easy to clean and *silent* . . . no irritating scrapes and grinds of expanding metal inside the cabinets. Design should be uncluttered and blend with *any* part of the building. Above all, *quality, performance and durability* should be second to none! Altogether quite an assignment!

The builder chose Trane Wall-Fin convectors! Only Trane had the wide variety of units to meet these *exacting* requirements . . . fill the bill on *all* counts! For *any* heating application in *any* building, you can meet your specifications with Trane Wall-Fin Convectors!



TRANE COMPANY OF CANADA, TORONTO 14, ONTARIO

*Manufacturers of equipment for air conditioning, heating and ventilating.*

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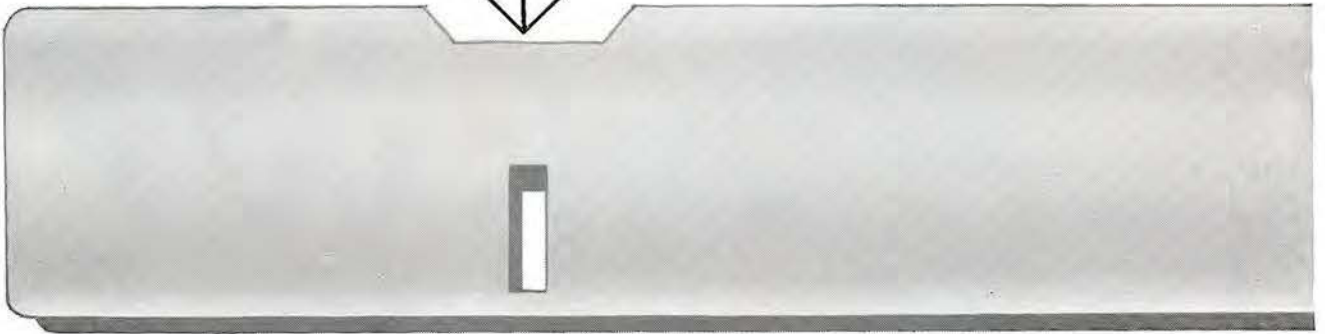
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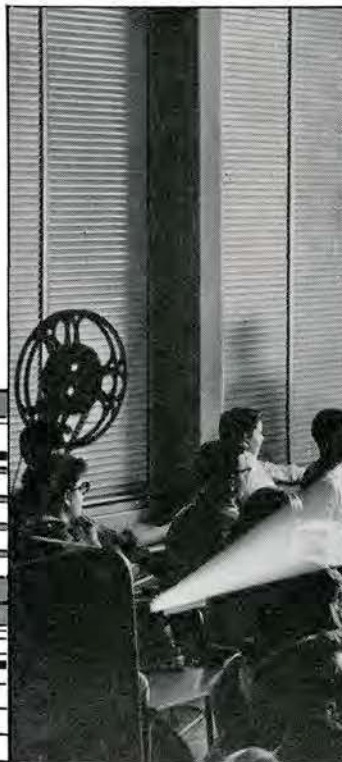
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 Limited • Makers of Dominion  
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The patented feature  
you'll find  
on no other blind

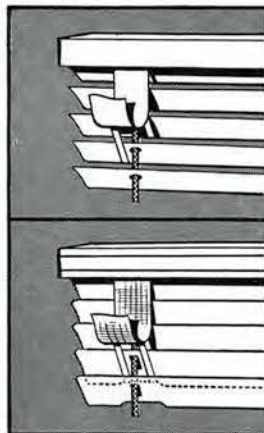


*the notch nobody sees lets*  
**Flexalum twi-nighter**  
*keep out six times more light  
than ordinary blinds.*

Few people are aware that the small notch stamped from the slats of Flexalum Twi-Nighter venetian blinds plays such an important role. When a Twi-Nighter is closed, the notch accommodates the vinyl plastic tape cross ladders, permitting a snug overlap. The notchless design of ordinary blinds *prevents* complete closure. Light meter tests prove that Twi-Nighters keep out six times as much light as some other blinds. A few more examples of the great differences in quality, function and styling which make Flexalum Twi-Nighter



the industry leader: crash-proof cord lock prevents blind from falling even when suddenly released . . . non-slip tilter prevents cords from sliding out of reach or adjustment . . . exclusive, spring-tempered slat alloy (slats snap back from 180° bend without deformation or paint damage!) . . . 5-year *written* guarantee. You pay a little more for Twi-Nighter quality at the start, but you save *much* more in upkeep, utility and long life.



**ORDINARY BLIND** Lifting cord spaces slats, prevents complete closure.  
**FLEXALUM TWI-NIGHTER** Cord holes and notches permit complete closure.

More slats per foot, special notches; light traps at sides, top and bottom . . . here is why the unique Flexalum Audio-Visual Blind is the superior performer for schools and all other screen projection situations.



Open, the audio-visual blind diffuses light for ideal class-room conditions. Also available: special, audio-visual skylight blinds for complete light control in overhead applications.

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The G.P.L. camera transmits pictures simultaneously to as many places as desired — to individuals, small groups or large audiences.



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You can augment the usefulness of every industrial and institutional building on your boards by including a Northern Electric Industrial TV System in your basic designs. For Industrial TV is working television — television that increases the efficiency of men, machines, and buildings. It transmits visual information from room to room, from story to story, from building to building.

A Northern Electric Industrial TV System enables individuals or groups to communicate visually over a closed TV circuit with the same ease that a telephone permits verbal communication over telephone wires.

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Put Northern Electric Industrial TV to work for greater efficiency and lower operational costs for your clients. It will multiply the usefulness of existing buildings. In new buildings, it will give you new freedom of design.

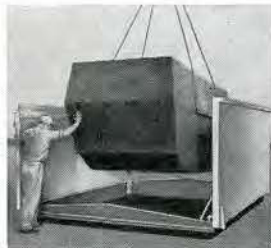
For further  
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Northern Electric Co. Limited,  
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He can select Roof Scuttles for vertical ladder access, for ship's ladder or for normal rise-and-run stairs . . .

He can choose large special Roof Scuttles in double- or single-leaf design for replacement or removal of large equipment . . .

Or he may specify Flush Floor Doors and Ceiling-Access-Doors that blend smoothly into their environment.

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MONTREAL — QUEBEC — OTTAWA

# TWINDOW Insulating Windows

stop hazardous drafts—help safeguard patients' health  
at the new Greater Niagara General Hospital



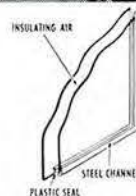
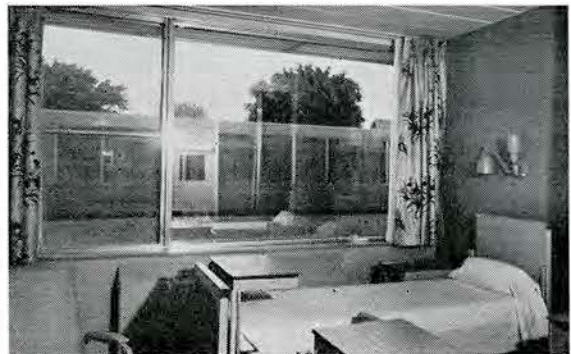
ARCHITECTS: John B. Parkin Associates, Toronto  
CONSULTANTS: Agnew, Peckham and Associates  
GENERAL CONTRACTOR: Smith Brothers Construction, Ltd.  
GLAZING CONTRACTOR: Canadian Pittsburgh Industries Limited

Plenty of light and a pleasant view are of tremendous therapeutic value to hospital patients. But to provide these requires large window areas—with their inherent risk of drafts.

Twindow\* makes these large glass areas entirely practical, for Twindow virtually eliminates drafts! It's the perfect insulating window. This is because Twindow is made up of two pieces of glass separated by an imprisoned layer of dry, non-circulating air—giving it amazing insulating qualities. Building interiors are kept snug and warm in winter and heating costs are substantially reduced.

Today, architects and builders across Canada are finding Twindow is the ideal glazing for all types of buildings—homes, schools, hospitals, office buildings and municipal centres. And this modern glazing is surprisingly economical. When standard sizes are used, Twindow costs no more to install than regular glazing and storms. Investigate the many advantages of including Twindow in your building plans.

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**Owners:**  
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**General Contractor:**  
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**Painting Contractor:**  
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**P & L Products Used:**  
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## THE DOCTORS HOSPITAL INCORPORATED

Toronto, Ontario

This new 11 story, yellow brick wing, has a 335 bed capacity plus 30 bassinets and provides full services. It incorporates many innovations in design and equipment. The lobby of the main entrance features a white terrazzo floor in contrast to the walnut panelling trimmed with stainless steel. Deep blue is used for a rich accent. Subdued lighting illuminates the attractive exterior landscaping.

Professional-level color planning service is available on request. An experienced Pratt & Lambert representative will suggest distinctive color plans and recommend authoritative painting specifications without obligation. Please write: Pratt & Lambert Architectural Service Department, 254 Courtwright St., Fort Erie, Ontario, Canada.

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# SHELDON FANS



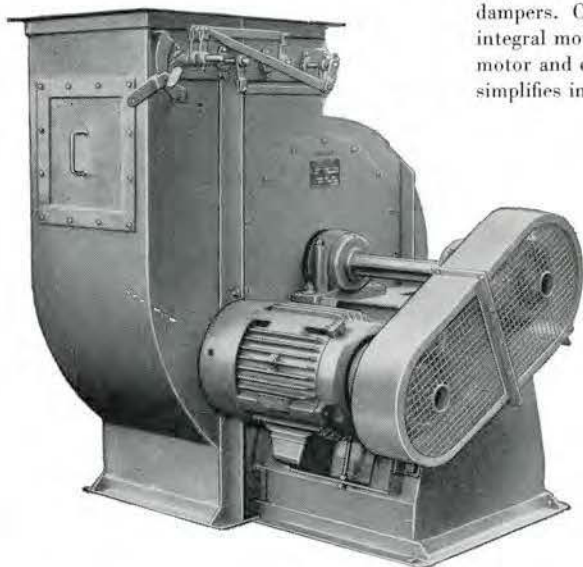
Properly selected fan equipment may be essential to the efficiency of your operation. It may provide proper ventilation for worker comfort or, play an integral part in product processing. Whatever your need you can be sure of efficient performance with Sheldon Fan Equipment.

Sheldon Fans are soundly engineered to exact specifications. They are available in the most complete design range . . . there's a fan that's right for *every* job.

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**No. 3.** Silavent Design 4 Fan for handling air at above normal temperatures. Radiation shield and cooling disc between inboard bearing and fan case keeps bearing and shaft at low operating temperature.

**No. 2.** Heavy duty fan for industrial installation requiring varying air volumes which are obtained from proportioning type outlet dampers. Compact integral mounting of motor and drive simplifies installation.



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Air Conditioning Unit



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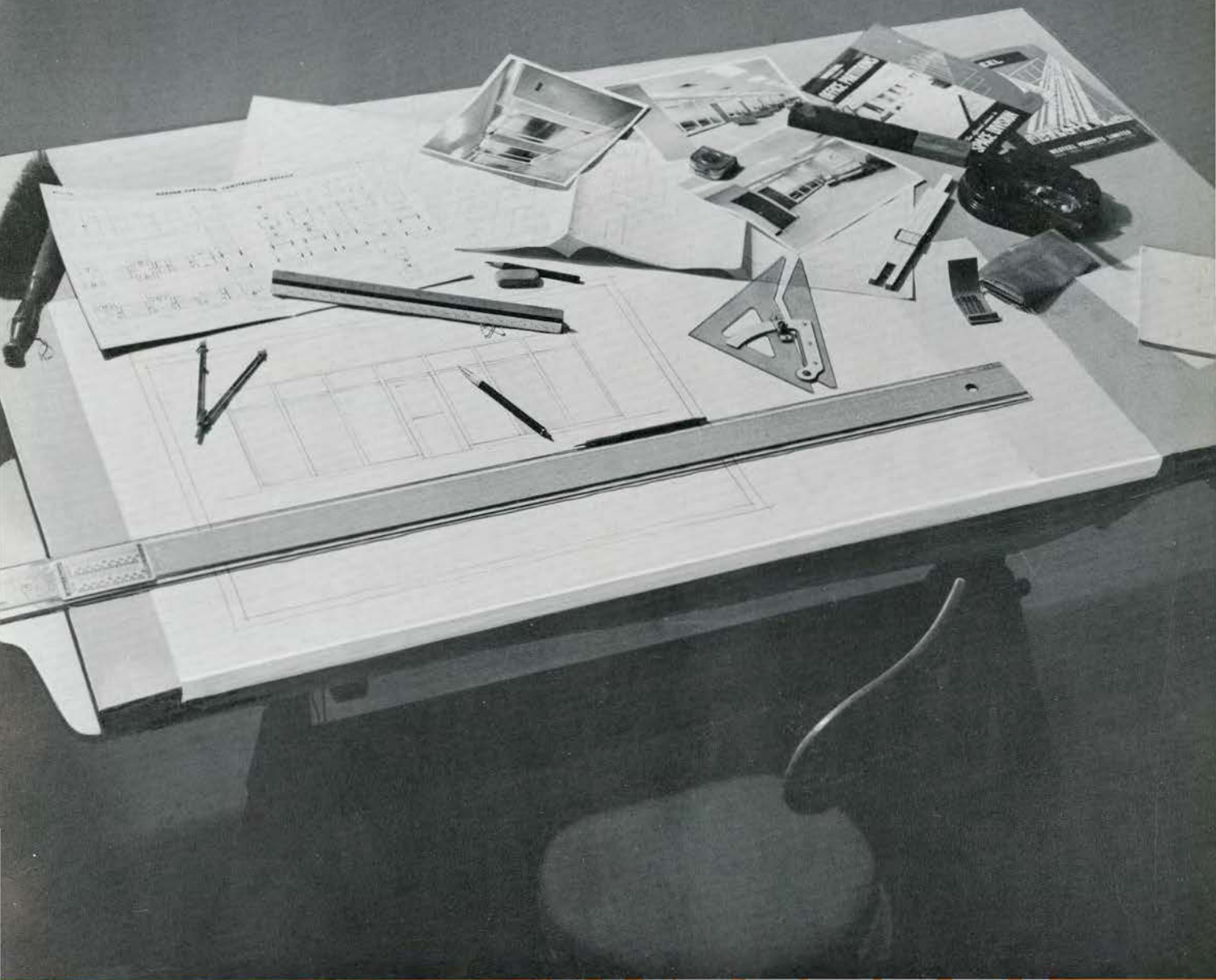


Multi-Zone Unit



Mechanical Draft

30A97



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allow broad design freedom



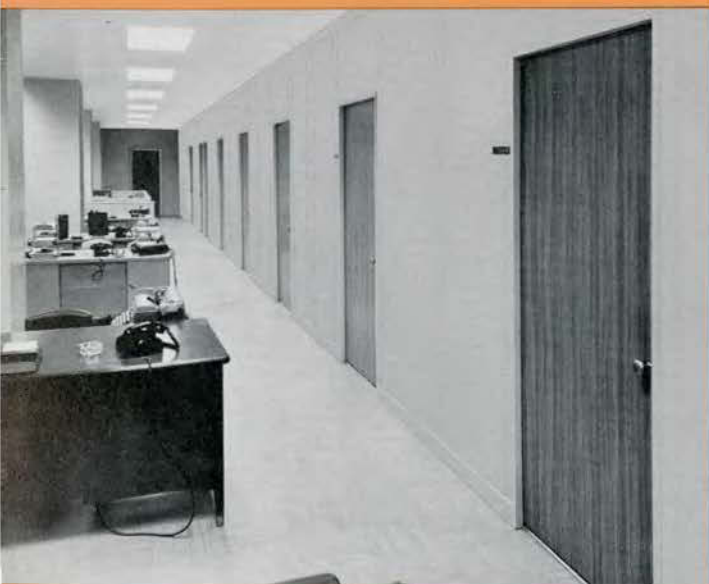


**T**HERE'S design flexibility in Westeel "Hudson" movable partitions that gives scope to the imagination. Any combination of glass and steel in various heights . . . unlimited permutations of floor layouts . . . allow a clear interplay of line . . . of geometric mass . . . of airy openness that stimulates the imagination and gives freedom of expression to the architect.



Westeel "Hudson" partitions are decorative . . . yet provide efficient, functional division of space. Full interchangeability . . . any panel can be removed or changed without disturbing adjacent panels . . . additional sections installed just as easily . . . three-way and four-way connections are simple to make . . . present neat clean-cut corners. Electrical wiring can pass through any post, base or cornice . . . makes electrical installation easy.

With "Hudson" you have all the essential elements . . . functional beauty . . . unlimited layout combinations . . . economy . . . the single responsibility of Westeel manufacture and erection . . . and, most important—the ability to give client satisfaction.





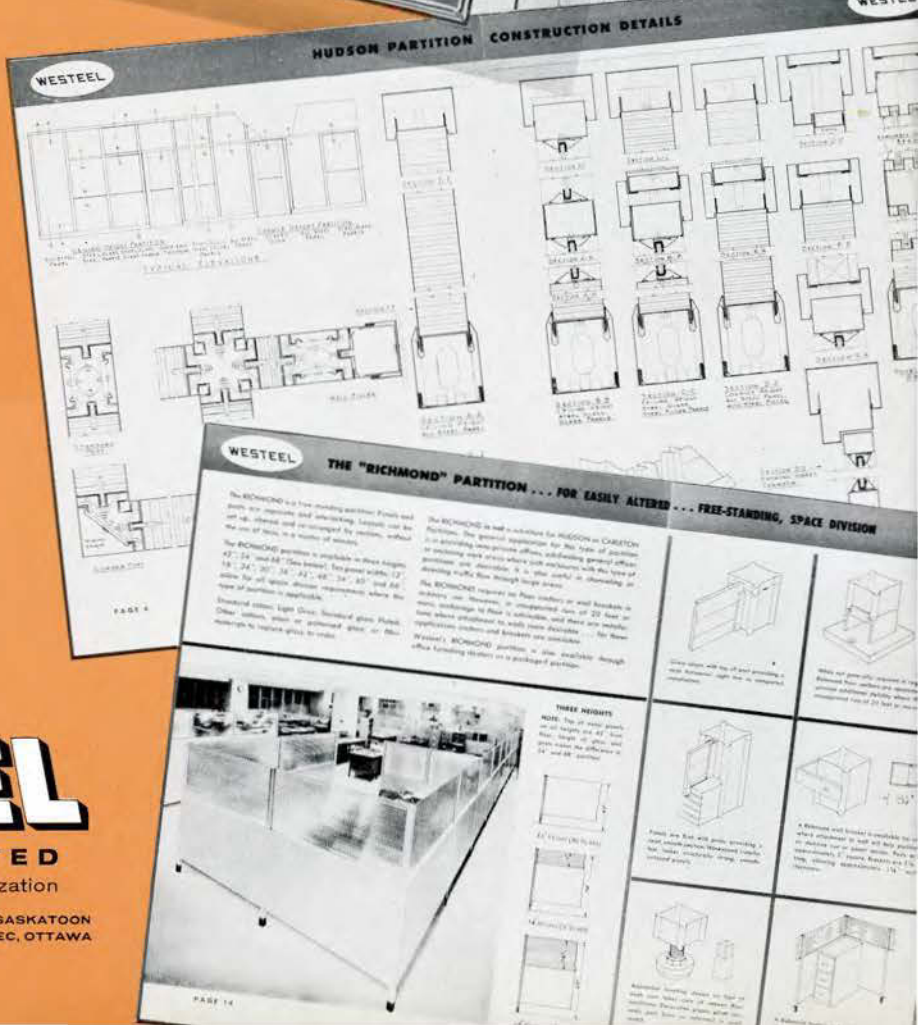
These  
and other pages  
in our Catalogue No 50  
give you full details  
on HUDSON and  
RICHMOND partitions

Among the specific data in our Catalogue are pages on "Construction Details" and "Suggested Specifications". Illustrations show typical installations and design details, while the many advantages are spelled out fully. When planning or specifying Office Partitions consult this Catalogue. Extra copies available on request.



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CALGARY, EDMONTON, VANCOUVER. Sales Offices also at HALIFAX, QUEBEC, OTTAWA



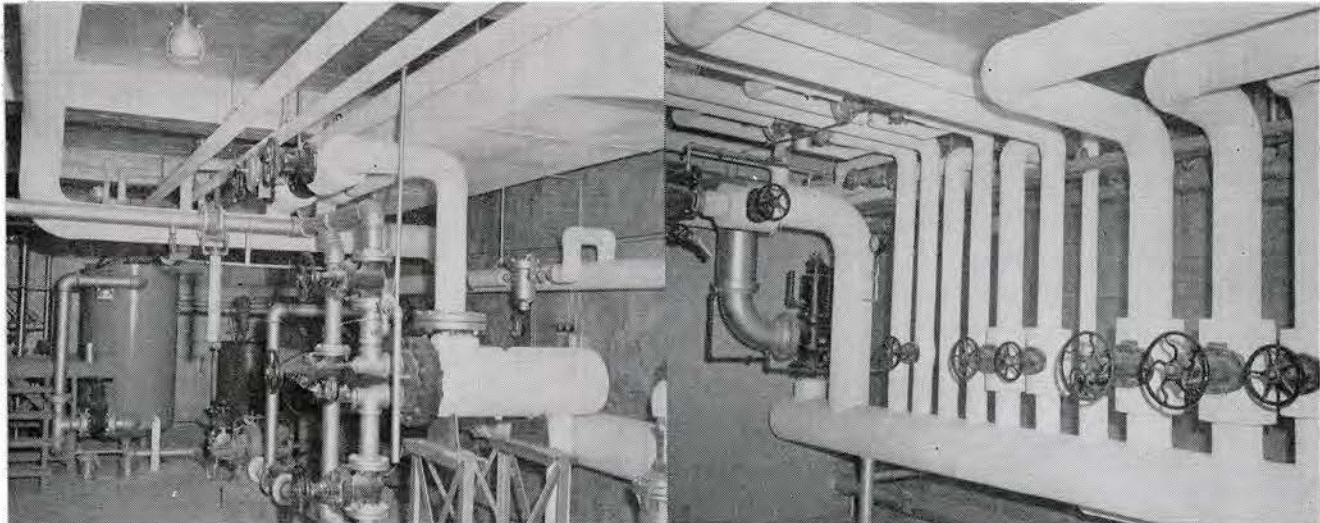
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used exclusively in

## C-I-L HOUSE

The 34-storey new head office of Canadian Industries Limited, Montreal, is one of the most impressive buildings of its kind on the continent. In its construction, **ROSCO STEEL FLOOR DECK** was used exclusively.

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Rosco Structural Products include Steel Roof Deck, Steel Longspan Deck, Insulated Metal Wall Panels and Steel Floor Deck in a complete range of designs and gauges to suit your particular requirements. With large-scale manufacturing facilities . . . top-flight design and application engineering services . . . and more than 60 years' experience in metals . . . Rosco is equipped to meet your specifications and to deliver in any quantity on time.

Rosco Plants and Sales Offices are strategically located in major centres throughout Canada. Call your local Rosco Representative now . . . he's always ready to serve you.

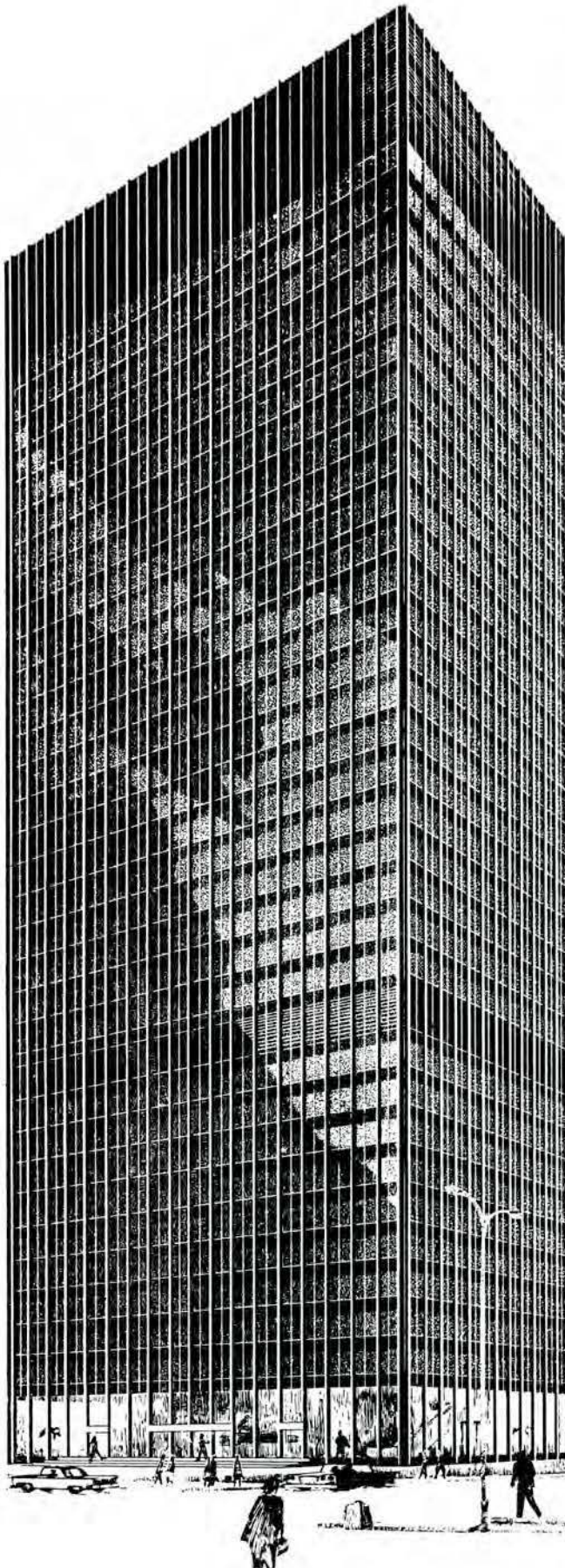
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Architects:  
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A strong advantage in the clear and logical engineering which marks Acme architectural aluminum is its adaptability through a wide range of use. In the Buchanan Building of the University of British Columbia, by Thompson, Berwick and Pratt of Vancouver, preliminary consultation by the architects with Acme's Canadian branch resulted in quick and efficient solutions to aluminum requirements throughout the building. In addition to 52 entrance doors with surrounding framing, large areas of window-wall were designed in plans which have created a strikingly beautiful college building. Acme was detailed and specified throughout. For the most complete service in architectural aluminum, see your Acme representative.



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# A NEW STAR SHINES IN THE WORLD OF LIGHTING

## WILSON MODULUX

The Wilson *Modulux* is a new modular series of fixtures that offers ample scope for versatile architectural lighting layout.

- **Versatility:**

The Modulux fixture is a modular line of 1'x4', 2'x4', 2'x2' shallow fixtures for individual mounting, continuous rows and other modular arrangements. The fixtures go lengthwise in exact foot dimensions namely: 4' and 2'; and also widthwise, 1' and 2'. The Modulux is also available in the 2'x4' model with a bar across the centre, giving a double 2'x2' appearance. Fixtures can be butted together so that two 2'x4' fixtures make a 4'x4' unit or two 1'x4' fixtures make a 2'x4' unit.

Modulux fixtures fit end to end or side to side and fit most types of suspended ceilings.

- **Shallow Depth:**

Modulux surface-mounted fixtures are only 3 $\frac{3}{4}$ " deep; the recessed fixtures are only 4 $\frac{1}{2}$ " deep; providing more space between floor and ceiling.

- **Wide range of closures:**

Here again are abundant scope and variety for interesting ceiling effects. Corning Albalite, Acrylic Drop Pan, Methyl Methacrylate, Polarized Fiberglass — these are only a few of the many closures available for the Wilson Modulux.

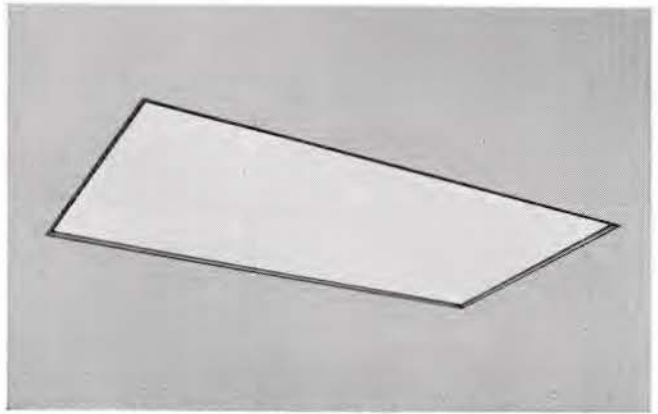


**J. A. WILSON LIGHTING**

280 LAKESHORE ROAD, TORONTO 14, ONTARIO



Modulux S, Surface Mounted



Modulux R, Recessed Plaster Ceiling



Modulux R, Inverted Tee Ceiling

**MODULUX R,  
Inverted Tee Ceiling**

- (1' x 4') 2-lamp rapid-start - - - - F962
- (2' x 4') 4-lamp rapid-start - - - - F972
- (2' x 4') 4-lamp rapid-start - - - - F982  
with divider hinge frame
- (2' x 2') 4-lamp trigger-start - - - - F983

**AVAILABLE IN THREE VERSIONS!**

**MODULUX S,  
Surface Mounted, 3 3/4" deep**

- (1' x 4') 2-lamp rapid-start - - - - F902
- (2' x 4') 4-lamp rapid-start - - - - F912
- (2' x 4') 4-lamp rapid-start - - - - F922  
with divider hinge frame
- (2' x 2') 4-lamp trigger-start - - - - F923

**MODULUX R,  
Recessed Plaster Ceiling**

- (1' x 4') 2-lamp rapid-start - - - - F932
- (2' x 2') 4-lamp rapid-start - - - - F942
- (2' x 4') 4-lamp rapid-start - - - - F952
- (2' x 2') 4-lamp trigger-start - - - - F953

*a product of "Engineered Seeing"®*

● **Extruded Aluminum Frame:**

Now . . . assurance of completely square corners, enabling easy insertion within closure frame. The extruded Aluminum frame, because of its non-warping quality, ensures dependable rigidity and strength.

● **Ease of Installation:**

The Modulux line because of the positioning of knock-outs, makes possible a new freedom and convenience of wiring arrangement, speeding up installation and resulting in important savings in time and labor costs.

● **Economical Maintenance:**

The removal of lamps leaves a clear, uncluttered reflector ready for quick cleaning with a damp cloth. Frame and closure are simply lifted out by hand—no tools required—to be cleaned by dipping as a unit in detergent solution. Aluminum frame will not corrode.

"Engineered Seeing" is identified by the Wilson "W" and symbolizes a company of illumination engineers and experts serving Canadian industry for fifty years.



**New Wilson Modulux Catalogue**

For complete details on the Modulux F900 Series, including photometric data, write for your copy of our new illustrated Catalogue.



**& DISPLAY LIMITED**

Plants: Toronto, Ont., Medicine Hat, Alta.

District offices: Montreal, Toronto, Winnipeg. Agents: Eric Ackland & Associates Limited, Vancouver, Edmonton, Calgary.

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...A MOST REWARDING APPROACH TO MULTI-STOREY CONSTRUCTION

HANDSOME IS AS HANDSOME DOES. The splendid appearance, inside and out, of many new multi-storey buildings is matched by the splendid savings of time and money through the Flexicore system of precast floor and roof construction.

Long, pre-cured, reinforced concrete slabs are laid in place as soon as the structural frame is up. There is no formwork to build and later dismantle; no waiting for concrete to cure. The Flexicore slabs need only be levelled and grouted; they are then ready for flooring or roofing.

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Pre-stressed reinforced steel in the slabs keeps the strength up, allowing handsome clear spans and extensive cantilevers.

The over-all savings can be spectacular through speed of completion, savings in materials; and low maintenance costs.

Further details elsewhere on this page; full particulars from the company nearest you.

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In any weather, a Flexicore crew lays an average of 2500 square feet per day. Slabs are prefabricated and precured in lengths required. Design is simplified; quality control is simple.

Slab cross-sections vary; sizes range from 4" to 10"; lengths vary according to application.

Use of Flexicore means a saving of 2" to 8" per storey in wall height; a great saving in exterior material and masonry.

Underside of Flexicore surface needs only paint; no ceiling plastering. The speed of Flexicore construction results in early occupancy and revenue.

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APPROVED CONSTRUCTION—The Flexicore system is designed to CSA standards . . . widely accepted and endorsed by leading architects and engineers . . . used on over 20,000 buildings.

CF 107

# DAWN GRAY BRICK

## A NEW DESIGN COLOUR FROM CANADA BRICK

Dawn Gray is a new note in buff—a cream colour related to the antique gold family. A fine mellow tone in keeping with the slight tonal range. A soft colour that literally refuses to clash with anything. Works well with other pastel Design Colours. Or consider the fresh colour potential combined with deep

Design Colours as Black Velvet, Gunmetal, or the new Sienna Brown. A truly great buff in every respect—including the best of severe weathering performance on the wall. Full information and samples are available from your Canada Brick representative. Also available is the all-new Design Colour catalogue.

**CANADA BRICK**

CANADA BRICK, STREETSVILLE, ONTARIO • ATWATER 9-2794

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**1-PART** Tremco formulation permits immediate use of factory-mixed 100% liquid polymer sealant.

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**1-PART** Tremco formulation eliminates failure hazards and higher cost of on-the-job mixing.

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**1-PART** Tremco formulation assures exceptional adhesive qualities and long-life elasticity.

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**1-PART** Tremco formulation prevents staining on all types of masonry.

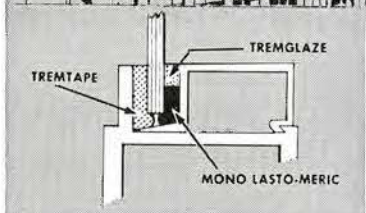
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**1-PART** Tremco formulation offers wide range of colors.

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**1-PART** Tremco formulation provides caulking gun consistency, in cartridge or bulk.

6 reasons why you should consider **TREMCO 1-PART 100% LIQUID POLYMER SEALANT!**



**LIBERTY MUTUAL INSURANCE COMPANY Office Building**

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ARCHITECT: Perry, Shaw, Hepburn and Dean — Boston, Massachusetts  
GENERAL CONTRACTOR: Turner Construction Company — Boston, Massachusetts  
PANELS & SASH FABRICATOR: H. H. Robertson — Pittsburgh, Pennsylvania  
GLASS AND GLAZING: Empire Plate and Window Glass — Cambridge, Massachusetts  
CAULKING: Brisk Waterproofing — Boston, Mass.

**TREMCO MONO LASTO-MERIC®** has this important basic superiority over conventional sealants; it is formulated with Tremco-developed and Tremco-manufactured pure 100% liquid polymer. Conventional sealants require the use of ingredients that will migrate or disappear in time, thus lowering sealant life and efficiency. The desired requirements of exceptional adhesion and enduring elasticity are *inherent* and *permanent* parts of the Tremco basic polymer.

Tremco 1-Part 100% Liquid Polymer supplies the difference that assures absolute weathertightness for controlled joints, expansion joints and conventional caulking joints. Ask your **TREMCO Man** for a Mono Lasto-Meric data sheet or write: The Tremco Manufacturing Company (Canada) Limited, Leaside, Toronto, Ontario.

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"When you specify a Tremco Product ... you specify a Tremco Service!"

A detailed architectural rendering of the Place Ville Marie skyscraper in Montreal. The building is a prime example of modernist architecture, featuring a facade of vertical glass and metal panels. The rendering shows the building's full height, its distinctive stepped top, and its reflection in the surrounding urban environment. The sky is a clear, bright blue, and the foreground shows a landscaped area with trees and a parking lot with several cars.

**CPI**

ACHIEVEMENTS  
IN ARCHITECTURAL  
GLASS AND METAL

**PLACE VILLE MARIE  
MONTREAL**

*striking architectural showcase  
for glass and  
curtain wall by*



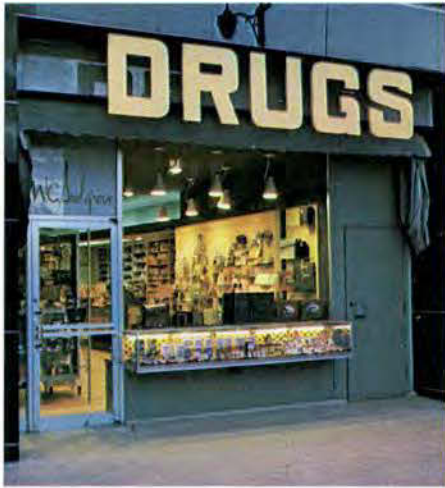
CANADIAN PITTSBURGH INDUSTRIES LIMITED

ONE FLOOR OR FORTY-FOUR

# CPI glass and metal gives wider scope for modern building design



The lofty splendour of Place Ville Marie's Cruciform Building rises over forty stories and makes it the largest curtain wall project ever undertaken in the Commonwealth. For its glass and metal skin, Canadian Pittsburgh is supplying and installing 2,000,000 pounds of aluminum and over 13½ acres of the new Solargray glare-reducing, heat-absorbing plate glass. Architects: I. M. Pei & Associates, New York City. Associate Architects: Affleck-Desbarats-Dimakopoulos-Lebensold-Michaud-Sise, Montreal.



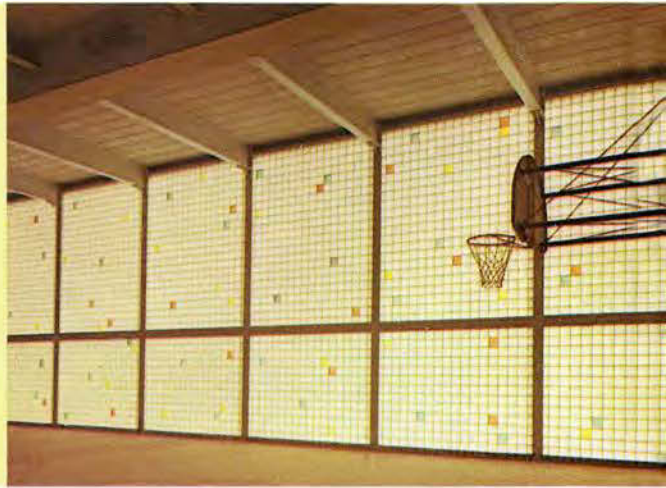
### OPEN VISION STOREFRONTS

◀ Gleaming Carrara glass complements the Pittco alumilited framing members, to give this drug store an air of elegance and spaciousness in complete keeping with the concepts of modern day pharmacy.

### P.C. GLASS BLOCK CURTAIN WALLS

The visual appeal of colour is added to this exterior wall of Sacred Heart Seminary, Delaware, Ont., by the tasteful integration of P.C. Colour Glass Blocks. The twelve colours are available in 3 sizes; 6" square and 8" square in the Decora Pattern and the new size 4" x 12". Thus complete 4" modular design variations can be effectively developed.

▶ Architects: Blackwell and Hagerty, London, Ont.



### PITTCO CURTAIN WALL SYSTEM

◀ Frames made from electro-welded tubular carbon steel sections are factory assembled and arrive at the job site in sections up to 20 ft. square, depending on module width. The Pittco system employs the principle of pressure setting and does not require glazing compounds.

Thorne Warehouse, Saint John, N.B. Architects: Ross, Fish, Duschenes & Barrett.

### PITTCO COLOURLINE ENTRANCEWAY

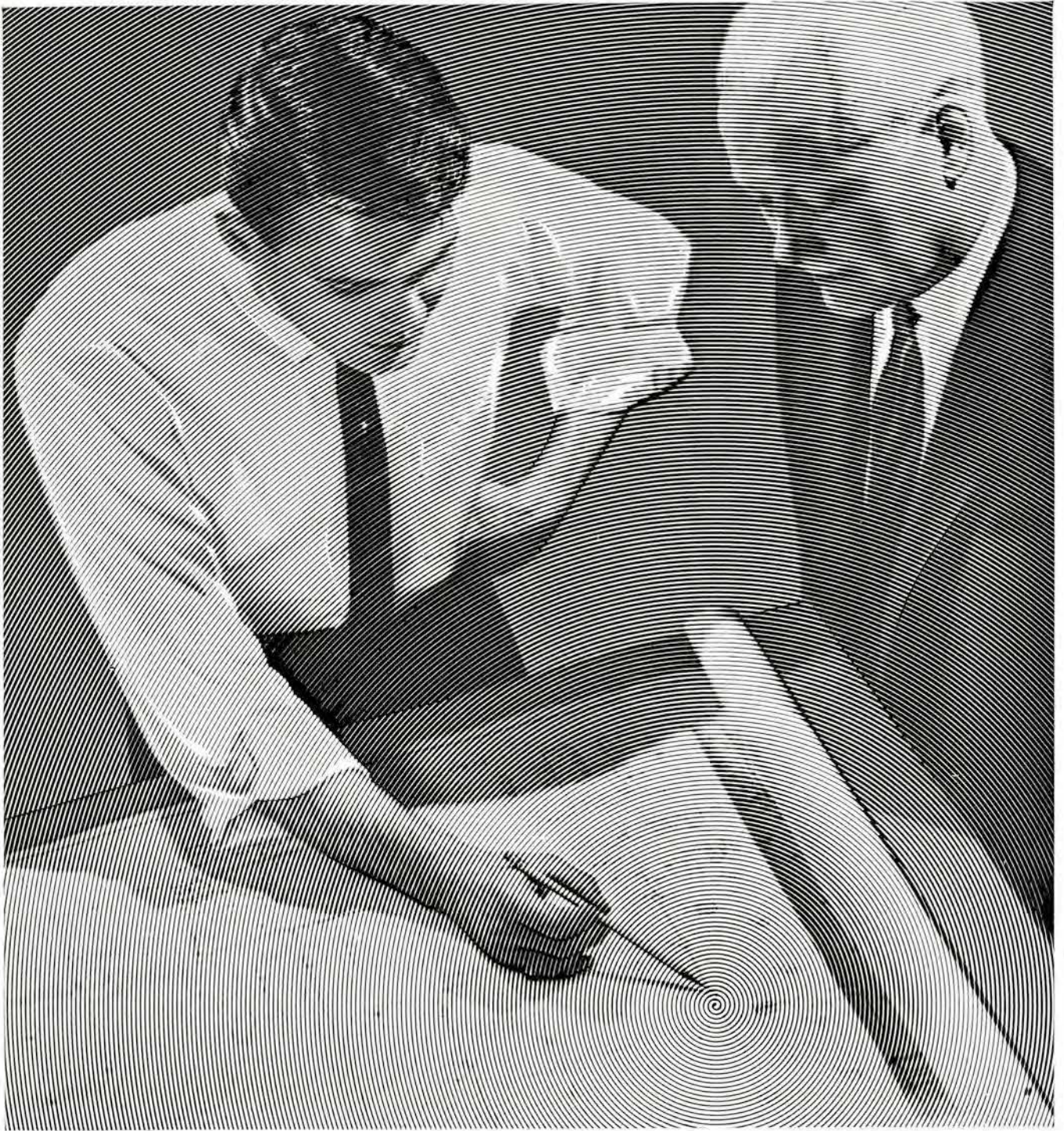
▶ Now the glamour of colour is added to Pittco Entranceways. Porcelain enamel fused into recesses in frames and doors, provides permanently colourful entrances. A choice of over 30 colours, plus colour combinations, provides a wide scope for design.



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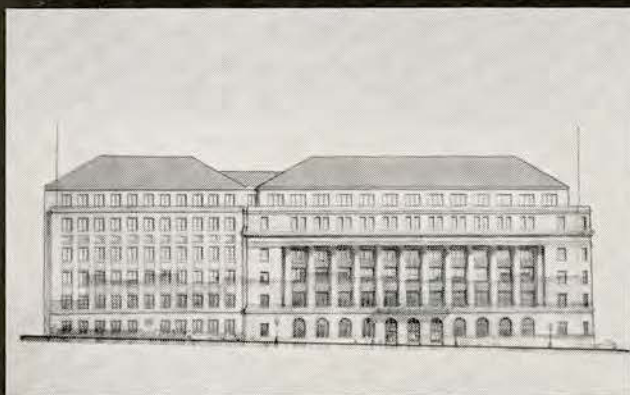
District Offices: Montreal, Saint John, Winnipeg, Vancouver

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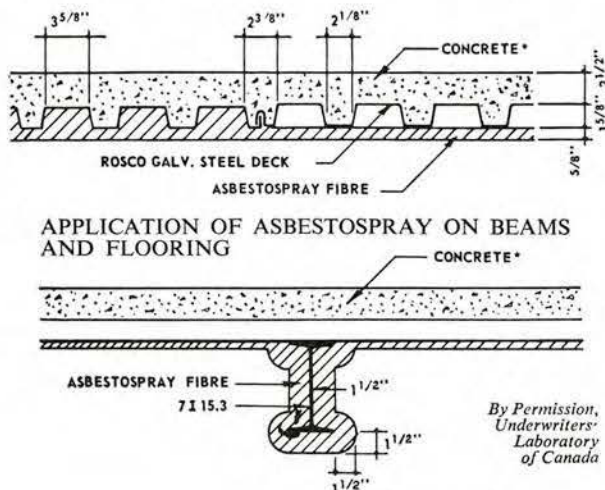
6002

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**ASBESTOSPRAY**  
SPRAY-ON FIBRE



Metropolitan Life's new Head Office in Ottawa uses Asbestospray for fire-proofing.  
Architect: Marani Morris & Allan, Toronto.  
General Contractor: Angus Robertson Ltd. Ottawa  
Asbestospray by: David McFarlane & Assoc. Ltd. Toronto.

The dining room of a Toronto gentlemen's Club has an Asbestospray ceiling for acoustical correction.  
Architect: Basil G. Ludlow, Toronto  
General Contractor: W. B. Sullivan Construction Ltd. Toronto  
Asbestospray by: David McFarlane & Assoc. Ltd. Toronto.



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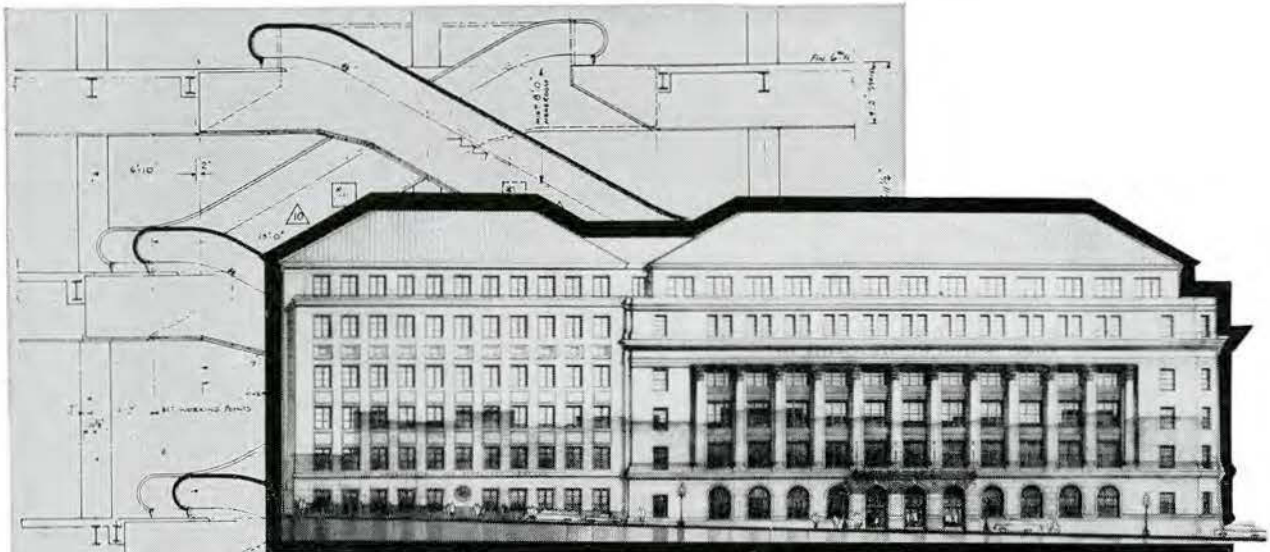
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Metropolitan Life Insurance Building  
 Architect — Marsh & Martin  
 Ottawa, Ont.  
 General Contractor — Robertson-Fuller

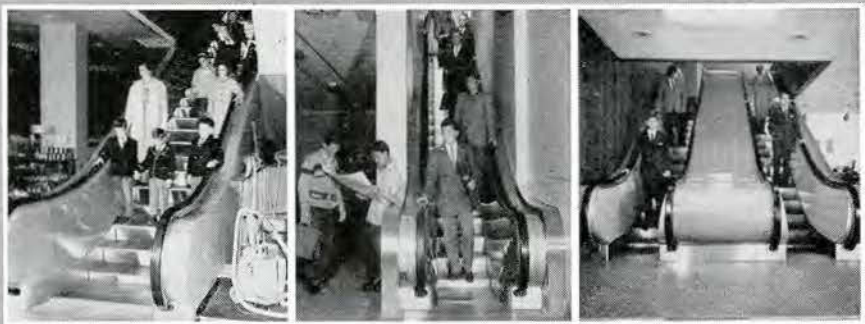
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The Turnbull Escalator system will be an integral part of the efficient clerical operation — always there, always moving at 120 ft. per minute effortlessly handling all passenger requirements — whether routine inter-floor or daily peak loads.

Wherever people go up or down stairs — you can move local traffic quicker, more economically on a Turnbull Escalator.

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One of many store installations across Canada, Turnbull Escalators provide safe uninterrupted service between department floors in the Simpson-Sears Winnipeg store.

Three escalators in L'Ecole Polytechnique, Montreal, maintain rapid transportation for staff and students in this modern educational building.

Turnbull escalators connect the main Club House entrance level with the mezzanine and upper floor at Blue Bonnets Race Track, Montreal.



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**FEATURES:** A selection of time-proven asbestos-cement boards and insulating materials. Controlled temperature conditions governed by thickness and type of insulating core selected.

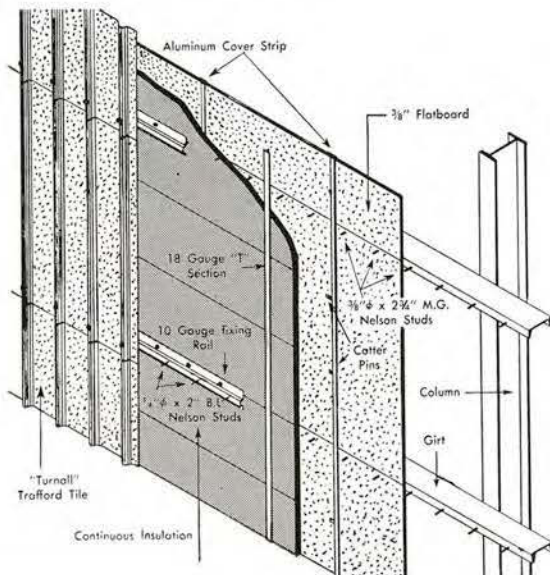
The building illustrated is the new Machine Shop for the integrated operations of The Alexander Fleck Limited and Beach Foundry Limited, Ottawa, Ont.

*This particular **Turnall-WALL** consists of "**Turnall**" **TRAFFORD TILE** on the outside, an inner core of glass fibre insulation and  $\frac{3}{8}$ " "**Turnall**" **FLATBOARD** as the inside face.*

**Architects**—Balharrie, Helmer & Morin, Ottawa, Ontario.

**General Contractor**—F. E. Cummings Construction Co. Limited, Ottawa, Ontario.

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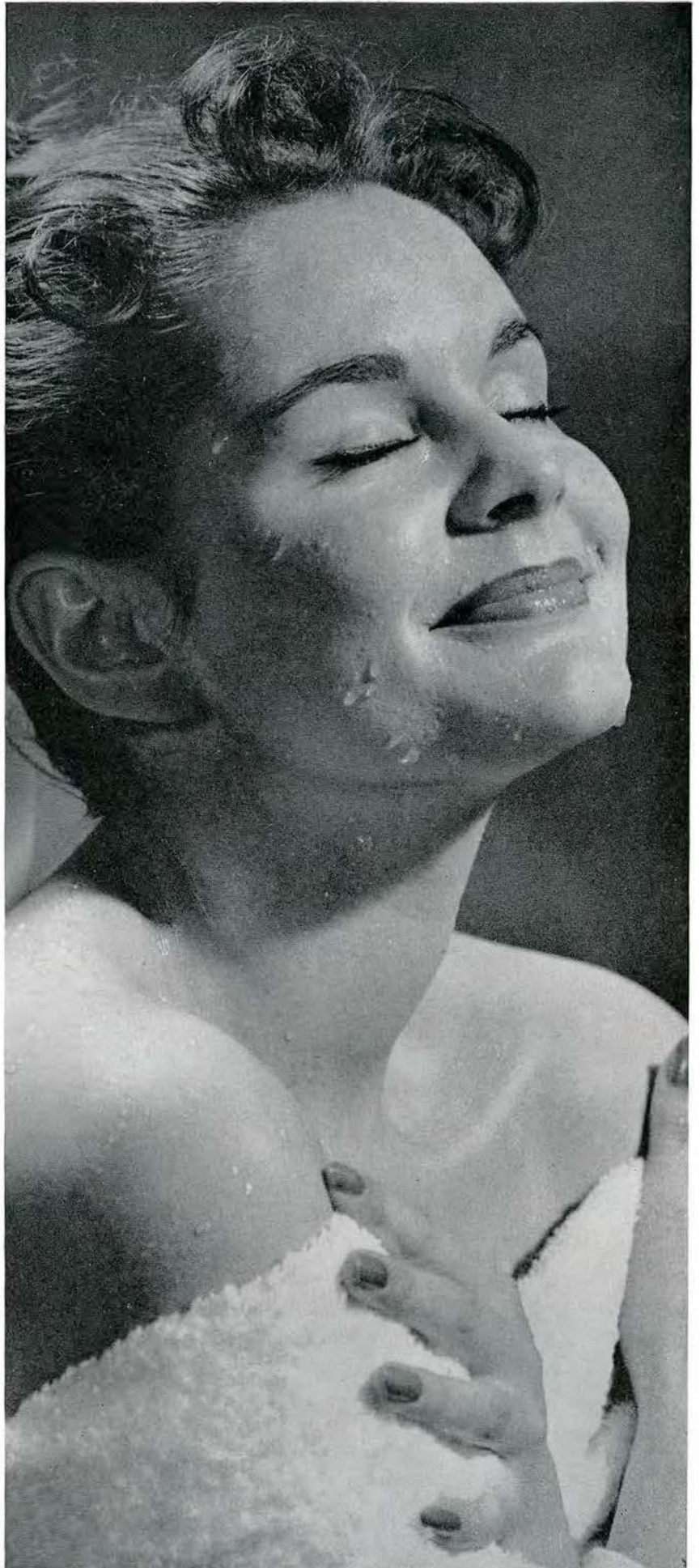
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Address..... City.....

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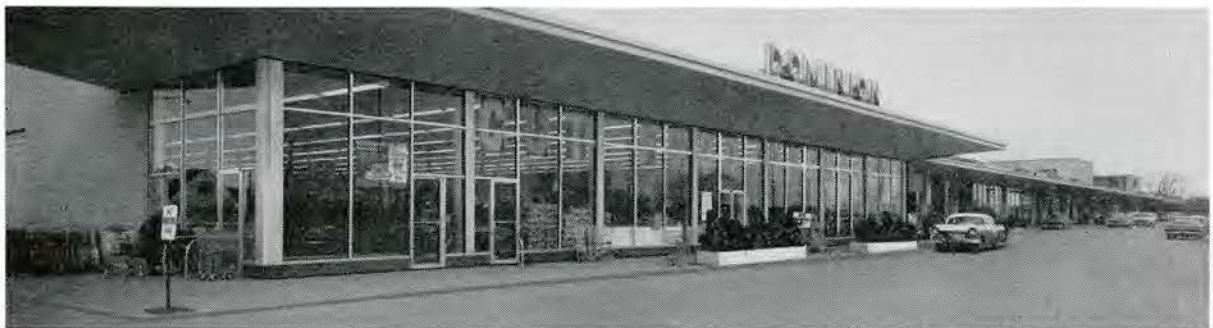
In the new Canadian Head Office of the Prudential Insurance Company of America, in Toronto, employee comfort for top efficiency has been carefully planned. Both locations are air-conditioned by Carrier.

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◀ *Prudential Building, Toronto*  
Architects: Page and Steele  
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# Aluminum GOES TO SCHOOL



 ...and to college too!



**IN QUEBEC** ECOLE NORMALE, QUEBEC CITY, QUEBEC  
Architect: G. A. Bigonnesse & Maurice Mainguy, Quebec City, Que.  
Aluminum Fabricator: Williams & Williams (Eastern) Limited



**IN ONTARIO** LORNE PARK SECONDARY SCHOOL, PORT CREDIT, ONT.  
Architect: Hanks Irwin & Pearson, Toronto, Ontario.  
Aluminum Fabricator: AlSCO Products of Canada, Limited



**IN B.C.** SIR JAMES DOUGLAS ELEMENTARY SCHOOL, VANCOUVER, B.C.  
Architect: Davies & McNab Architects, Vancouver, B.C.  
Aluminum Fabricator: Northwest Manufacturing Company Ltd.



ENGINEERING BLDG., McMASTER UNIVERSITY, HAMILTON, ONTARIO  
Architect: William R. Souter & Associates, Hamilton, Ont.  
Architectural Metal Contractor: Aluminum Window Manufacturers Ltd.

In communities all across Canada, school boards, architects and builders are choosing aluminum for the exteriors of their buildings—and for inside use, too. Outside they are specifying it for entrances, curtain walls and windows. Inside they are using sturdy, maintenance-free aluminum furniture, chalkrail boards, teaching

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*and you've said everything*



Vegas design 813



Melody design 811 C



Chalice design 809



Crestwood design 805



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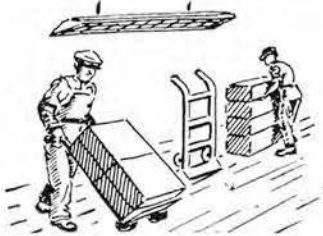


### UNIT HEATERS

Propeller type shown  
Capacities from 1500W up to 60000W. Any voltage up to 575 Volts, as specified. Propeller and Blower type Unit Heaters for various industrial applications.

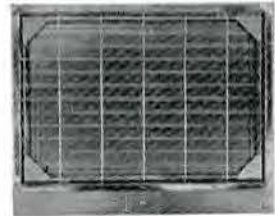
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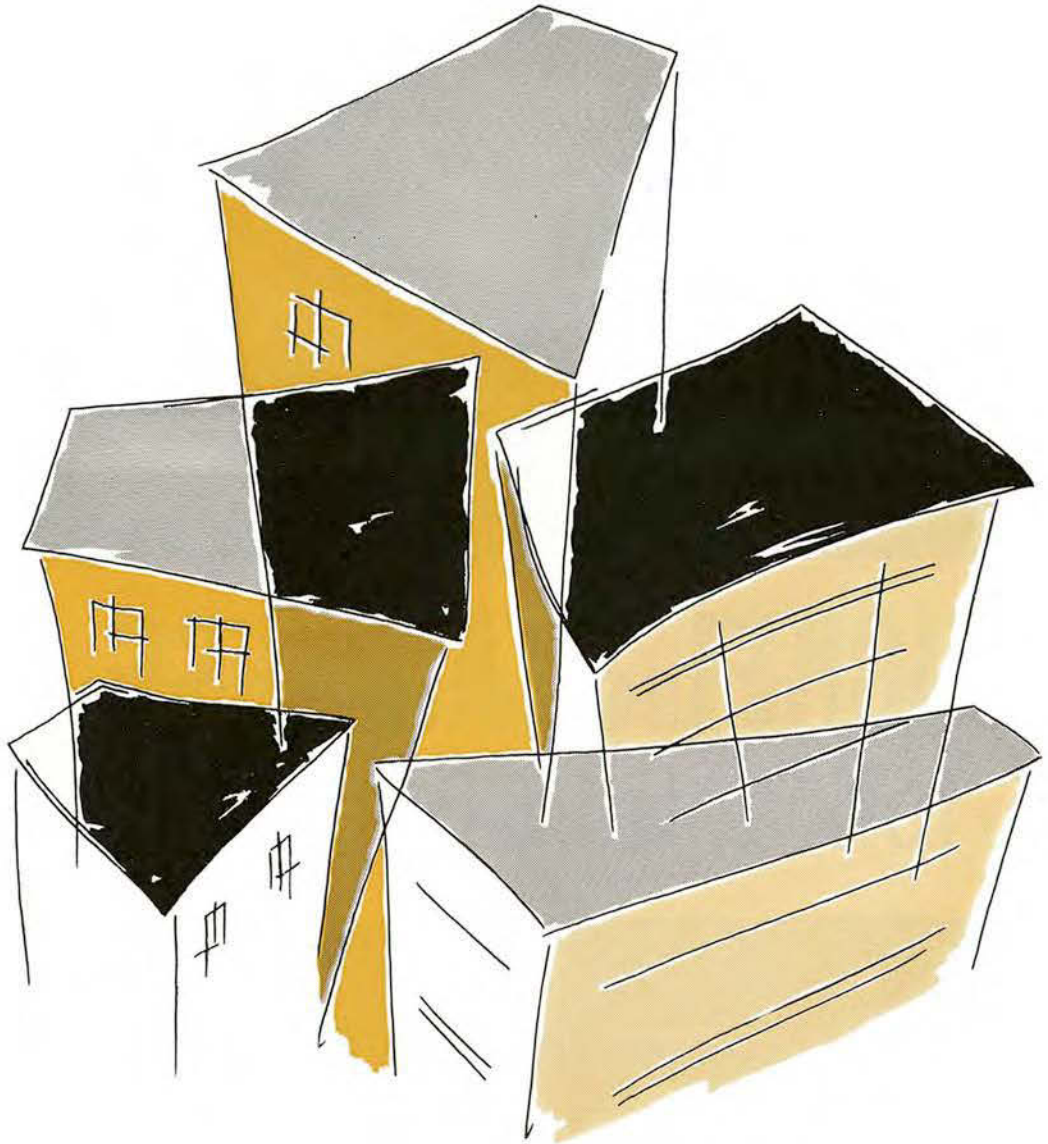
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2323



New Laval University Medical School in Quebec City is designed with nickel stainless steel kalamein curtain walls fabricated by National Window Company Ltd., Montreal. Architect: Lucien Mainguy, Quebec City.

# NICKEL STAINLESS STEEL

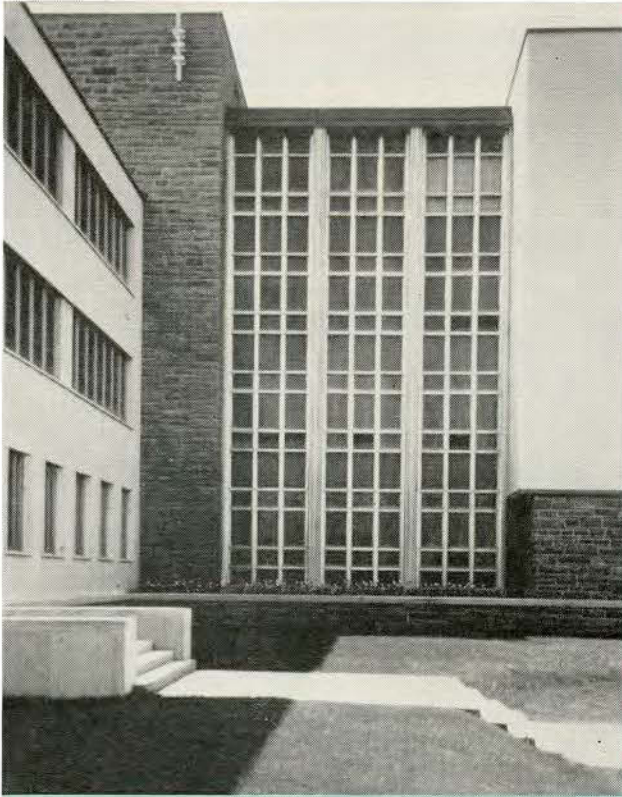
for lasting beauty, low cost



Entranceway and windows of new Manitoba Red Cross Centre on Osborne St., Winnipeg, are of nickel stainless steel. Fabricator: Dominion Bronze and Iron Ltd., Winnipeg. Architects: Moody and Moore, Winnipeg.



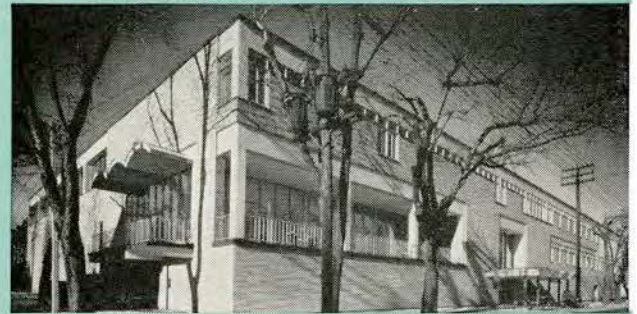
Nickel stainless steel mullions lend bright beauty to St. George's Roman Catholic Church in Byron, Ontario. Fabricator: Macotta Company of Canada Limited. Architects: Blackwell and Hagarty.



New wing of Cardinal Leger Normal School for girls in Montreal uses nickel stainless steel kalamein curtain wall construction. Fabricator: National Window Company Ltd. Architects: Larose and Larose.



New office building of Parke, Davis & Company, Ltd. in Montreal features nickel stainless steel window walls and entranceway fabricated by Canadian Pittsburgh Industries Limited of Montreal. Architect: Paul H. Lapointe. Engineer: R. P. Steketee, c/o Giffels & Vallet of Canada, Ltd.



New Women's Athletic Building, University of Toronto. Window frames and mullions are designed in nickel stainless steel. Fabricator: Cresswell-Pomeroy Ltd. Architects: Fleury, Arthur and Barclay.

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Nickel stainless steel is the ideal architectural material for curtain walls and entrances of modern buildings, windows, beautiful ageless hardware and a multitude of related applications.

Nickel stainless steel resists corrosion from weathering and atmospheric conditions. It won't crack, chip, peel or deteriorate with age; stays attractive for years with a minimum of cleaning and maintenance. And it harmonizes beautifully with wood, stone, glass and enamelled surfaces to produce striking architectural effects.

Nickel helps give stainless steel its rich, silvery lustre, increases its resistance to rust and corrosion, makes it easier to form and fabricate.

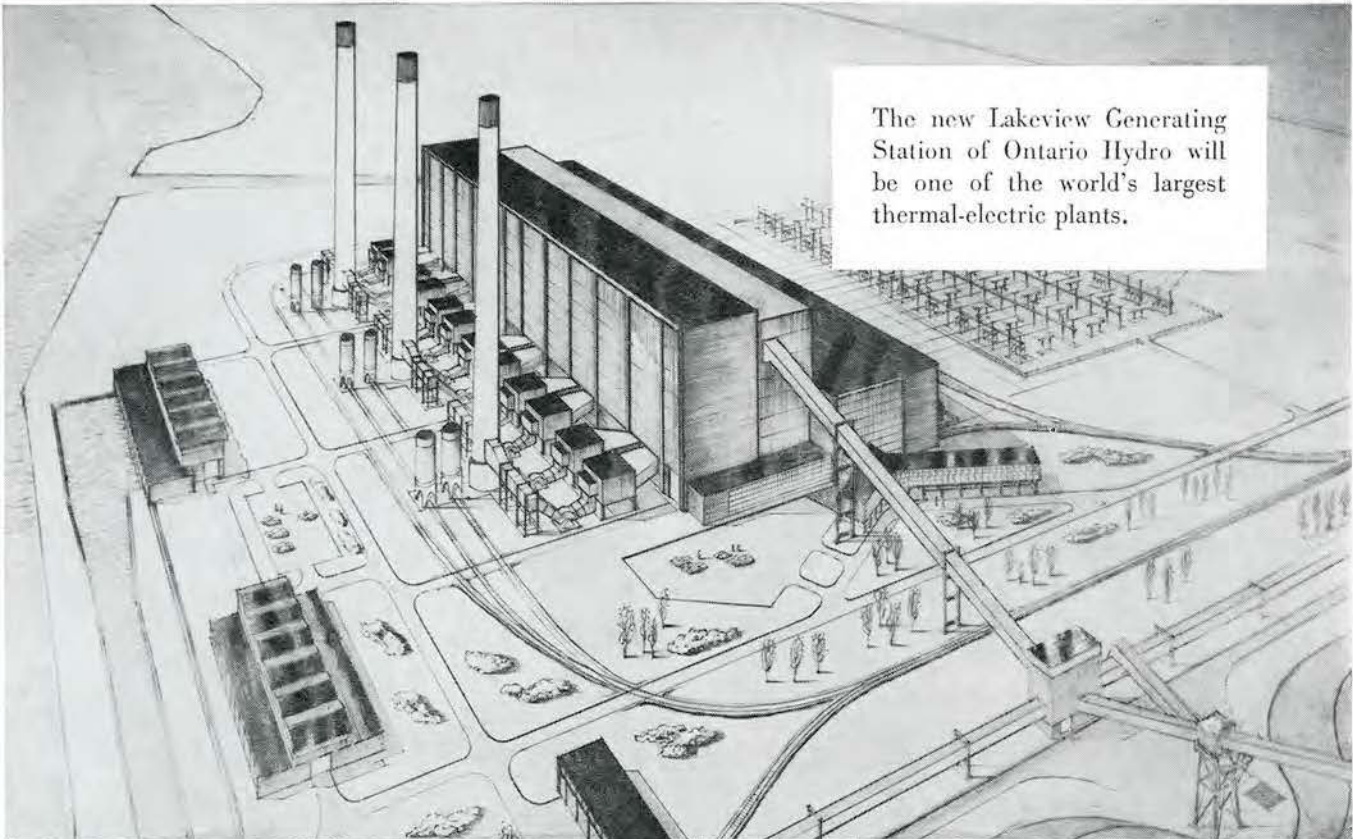


Nickel stainless steel curtain wall at Oakridge Senior Public School, St. Catharines, Ontario. Fabricator: Macotta Company of Canada, Limited. Architects: Salter and Flemming.

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NICKEL**

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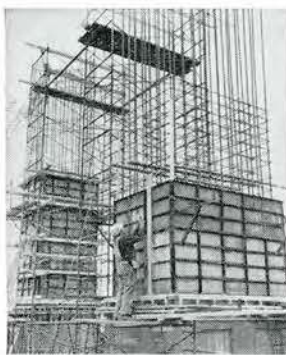


The new Lakeview Generating Station of Ontario Hydro will be one of the world's largest thermal-electric plants.

# 1,800,000 Kilowatt Hydro Station Utilizes Stelco Reinforcing Steel



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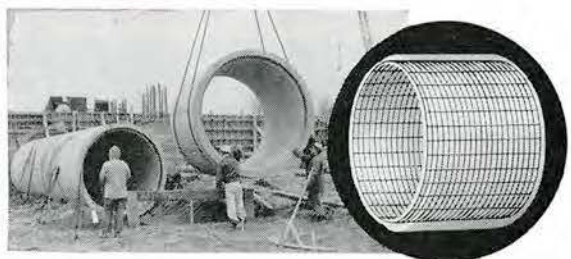


Nearly 5,000 tons of Stelco Hi-Bond Reinforcing Bars, including 1,000 tons of No. 14 (1½" s.e.) bar, in lengths up to 90 feet, will eventually be used in the concrete work for this station.

Stelco Hi-Bond Reinforcing Bars conform to C.S.A. Specifications G.30.1 and G.30.6-1954, and A.S.T.M. Designation A.305-51.



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*For full details contact any STELCO Sales Office.*

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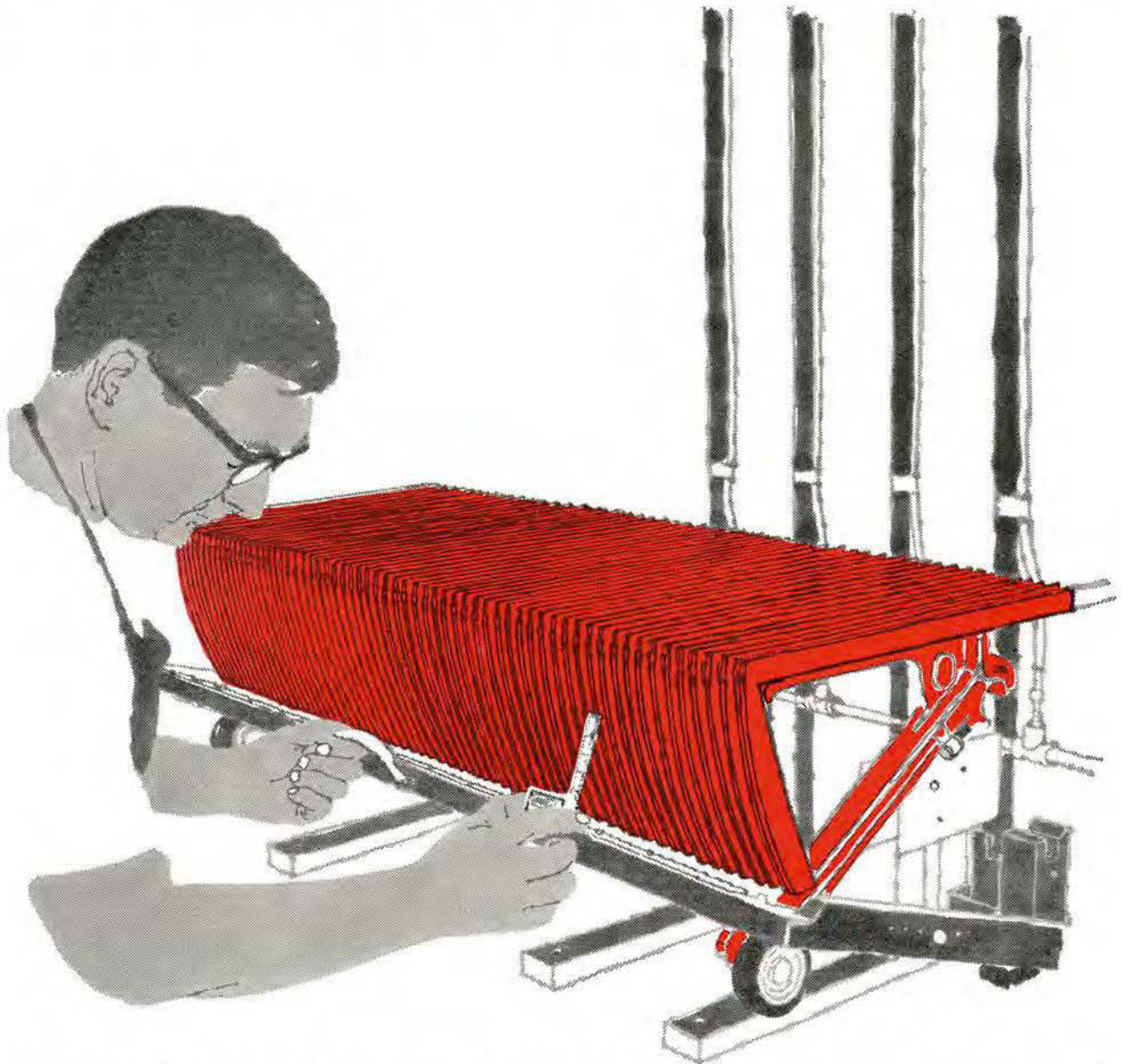
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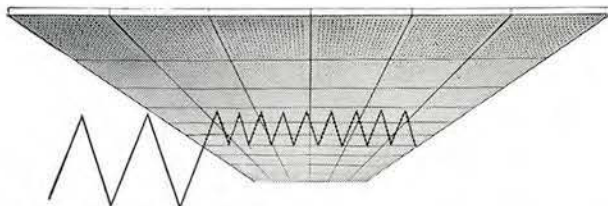


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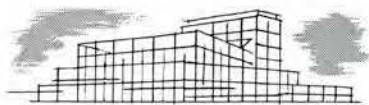
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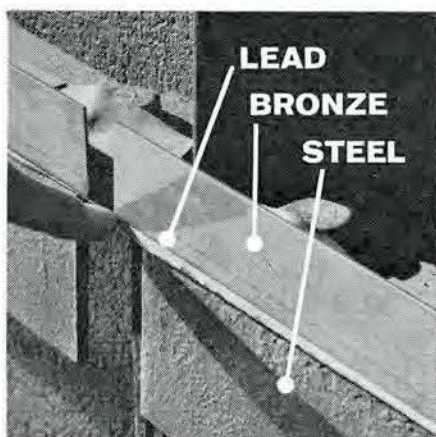
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Lead flashing

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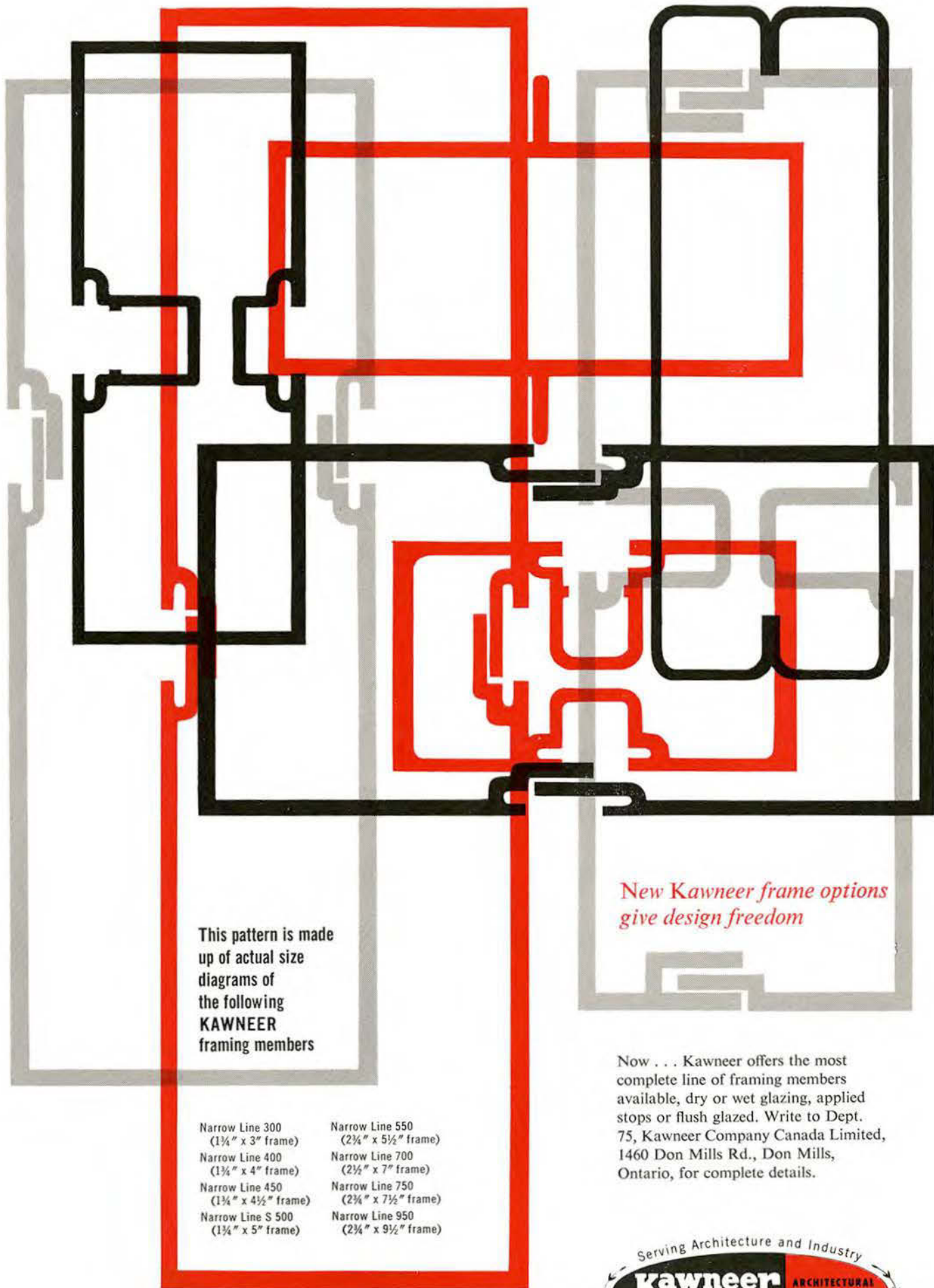
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Union Carbide  
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SERIAL 422, VOLUME 37, NUMBER 10, OCTOBER, 1960

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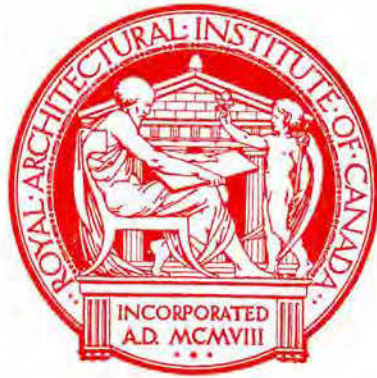
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## A SPRINGING OF SEED

## ECLOSION

SOME YEARS AGO, we wrote an article in a quite inappropriate, fashionable magazine on the subject of church architecture. The date may be judged from the fact that, of the religious denominations in Canada, only the Presbyterians seemed then aware of modern architecture. They, indeed, were adding more than their mite to the evolution of architecture in ecclesiastical building by holding competitions and offering generous prizes in, at least, one university school of architecture. It was a period when we were able to report apathy on the part of the Church of England, suspicion on the part of the United Church, and a disappointing aloofness on the part of the Roman Catholic Church which, historically, has been the leader in architectural movements since mediaeval times.

In this interval much has happened. A few unpretentious Roman Catholic churches in British Columbia are now the progenitors of a movement that has spread throughout the province and beyond to Manitoba, and have done not a little to wean other congregations from the sterility of the Gothic revival which, for many, still represents the only suitable manner for a house of God. The *Journal* is evidence that, while we were watching the movement in the west, the Church in Quebec had accepted modern architecture without qualification for the roadside chapel as for great religious monastic establishments.

We cannot speak for Ontario, but, in Toronto, the stronghold of eclecticism would seem to have been breached. We get the impression, not so much of a movement which would be a frightful exaggeration, but of a number of young, and very sincere, architects carrying on a highly subversive action against the establishment in all denominations. The standards they have set are high in congregations as diverse as Buddhists and Presbyterians. As a rule, their interiors are more successful than their exteriors, often because of a restricted budget, but, in the last hundred years, the exterior was often given precedence over the interior which every modern churchman would deplore.

In our summer reading we were impressed by the following lines — "There are some churches in which the words of the sermon seem still to hang in the air; there are others in which, even though they are deserted, one still seems to hear the prayers offered by the congregation; and there are yet others which are God's houses where even a non believer becomes aware of the presence of God." They were written in the diary of a German paratrooper in Crete in the last war.

IL Y A QUELQUES ANNÉES, nous avons écrit un article sur l'architecture religieuse dans un magazine fashionable. A cette époque lointaine, seuls les presbytériens se préoccupaient d'architecture moderne. Ils faisaient même plus que leur part dans l'évolution de l'architecture des édifices cultuels en tenant des concours et offrant des prix généreux dans au moins une école d'architecture. C'est à cette époque que l'on pouvait déplorer l'apathie de la Church of England, la défiance de la United Church et le désintéressement regrettable de l'Église catholique qui, historiquement, montre la voie en architecture depuis le moyen âge.

Tout a bien changé depuis lors. Quelques églises catholiques, sans prétention, en Colombie-Britannique ont donné naissance à un mouvement qui s'est répandu dans toute la province et au-delà, jusqu'au Manitoba, contribuant à détacher les autres sectes de la stérilité du renouveau médiéval qui, aux yeux d'un grand nombre, offre la seule solution acceptable pour un temple du Seigneur. On peut constater en feuilletant le *Journal* que pendant que nous surveillions l'Ouest, l'Église dans Québec avait opté sans réserve pour l'architecture moderne dans la construction des petites chapelles comme des grands monastères.

Nous ne pouvons pas parler de l'Ontario mais à Toronto on semble avoir ouvert une brèche dans le chateau-fort de l'éclectisme. On a l'impression qu'il existe non pas encore un mouvement sans doute mais un certain nombre d'architectes jeunes et sincères qui luttent contre les valeurs consacrées de toutes les sectes. Ils se sont fixé des normes très élevées dans des groupes aussi divers que les bouddhistes et les presbytériens. En général ils ont mieux réussi leurs intérieurs que leurs extérieurs, souvent à cause de ressources limitées, mais au cours du dernier siècle, on a fréquemment accordé plus d'importance à l'extérieur qu'à l'intérieur, ce que tout homme d'église déplorerait aujourd'hui.

Nous lisons, l'été dernier, ces réflexions d'un parachutiste allemand, écrites en Crète, pendant la dernière guerre: "Il y a des églises où les paroles du sermon semblent encore flotter dans l'air; d'autres où l'on croit, même lorsqu'elles sont désertes, entendre toujours la prière des fidèles; d'autres enfin, véritables temples de la divinité, où même un incroyant peut sentir la présence de Dieu."

E.R.A.



NEARLY TWENTY YEARS HAVE PASSED since the component associations put their stamp of approval on RAIC Document Number 4, which provides a code for the conduct of architectural competitions. In recent years Canadian clients have increasingly resorted to the use of competitions as a means of selecting architects.

An editorial appearing in the Ottawa Journal issue of August 5, 1960, had this to say about competitions: "Announcement that an architectural competition will be held to choose a design for the new Home for the Aged in Ottawa is a welcome indication that this method is becoming an established policy. It was such a competition that gave Ottawa one of the most efficient and striking city halls in this country, and, more recently, a design for the new Juvenile and Family Court which promises to be a handsome as well as practical building.

"Competitions, open to architects anywhere in Canada for such major projects as the City Hall, or restricted to Ottawa members of the profession for the smaller buildings, seems the fair way for municipalities to choose their architects. There can be no tender system in architecture, since uniform fees are established by the profession. A competition also encourages originality, imagination and efficiency in design and need cost no more. It also promotes an interest in public architecture which has too long been lacking."

However, the profession recognizes that, without appropriate regulation, competitions for the selection of architects may tend to be wasteful of a client's funds and of the time and energy of practitioners. Wasted effort of architects must in the end be a public loss because any unproductive effort must take the place of what would otherwise be valuable professional service.

Recent experience has demonstrated that a revision of Document Number 4 is long overdue. Amendment is required to bring the document into line with current architectural practice. The subject came under review by the Ontario Council on September 16 and by the RAIC Executive Committee September 23. The RAIC has appointed a committee charged with: (a) Revising the document, and (b) Establishing a sound administrative procedure within the RAIC or component societies, as the circumstances may dictate, to screen the conditions applying to new competitions.

In addition, the profession is obliged to study the regulations governing competitions originating beyond our borders and issue a ruling with respect to authorizing or withholding participation by Canadian architects.

Architects participating in recent competitions have complained that an owner has failed to clearly state in the conditions the nature of the building to be created, others have criticized failure of the owner to make the fact of the competition widely known throughout the area of competition. Some have suggested that a brilliant solution may be barred from a competition should it ignore certain conditions laid down by the promoters or the professional adviser. Perhaps, the competition conditions should establish a minimum of regulations except for the cubic content and cost of the structure. Perhaps because of too many restrictions in competitions, Frank Lloyd Wright was led to say that competitions guarantee mediocrity.

In any event, it is hoped that a revised version of Document Number 4 (Code for the Conduct of Architectural Competitions) will be available for distribution early in 1961.

PRES DE VINGT ANS sont passés depuis que les associations constituantes ont approuvé le document numéro 4 de l'Institut qui prévoit un code pour la tenue des concours en architecture. Ces derniers mois, on a eu recours de plus en plus à cette méthode au Canada, pour choisir des architectes.

Dans un éditorial paru le 5 août 1960, l'Ottawa Journal, parlant des concours, disait: "Nous apprenons que le choix des plans du nouvel asyle pour vieillards d'Ottawa se fera par concours; il nous fait plaisir de voir que l'on a recours à cette méthode, en voie de devenir une coutume reconnue. C'est un concours de ce genre qui a valu à notre ville l'un des plus efficaces et plus frappants hôtels de ville du pays et, tout récemment, les plans d'un nouveau palais où siègeront la cour des jeunes et la cour familiale, qui promet d'être un bel et pratique édifice.

"Les concours, qu'on y admette tous les architectes du Canada pour les entreprises importantes comme l'hôtel de ville ou ceux d'Ottawa seulement pour les édifices de moindre importance, semblent la meilleure façon pour les municipalités de choisir leurs architectes. Il ne peut être question de soumission en architecture puisque la profession a établi un tarif uniforme. Un concours encourage l'originalité, l'imagination et l'efficacité de l'ensemble sans qu'il en coûte nécessairement plus cher. Cette méthode suscite aussi l'intérêt dans l'architecture publique qui fait défaut depuis trop longtemps."

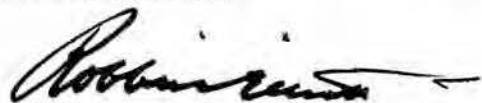
Cependant, les architectes savent que sans une réglementation appropriée, le concours pour le choix d'un architecte a tendance à faire dépenser trop d'argent au client et trop de temps et d'efforts à l'architecte. C'est le public qui y perd lorsque les efforts de l'architecte sont vains car le temps qu'il y consacre, il l'affecterait autrement à des services professionnels précieux.

L'expérience a démontré récemment que le Document numéro 4 aurait dû être révisé depuis longtemps. Il faut le modifier pour le rendre conforme à la pratique courante en architecture. Le conseil de l'Association d'Ontario a étudié ce problème le 16 septembre et, le 23 du même mois, le Comité exécutif de l'Institut l'abordait à son tour. L'Institut a créé un comité chargé (a) de réviser le document en cause, et (b) d'établir une procédure administrative satisfaisante au sein de l'Institut ou des sociétés composantes, selon les circonstances, visant le choix des conditions applicables aux nouveaux concours.

De plus, les architectes doivent étudier les règlements régissant les concours tenus dans d'autres pays et décider s'il y a lieu d'autoriser les architectes canadiens à y prendre part ou les en empêcher.

Des architectes qui ont pris part à des concours récents se sont plaints que, dans un cas, le propriétaire n'ait pas clairement énoncé dans les conditions la nature de l'édifice à créer; d'autres, que le propriétaire n'ait pas donné suffisamment de publicité à son concours dans la région. Certains estiment qu'une solution brillante peut être exclue d'un concours si elle ne tient pas compte de certaines des conditions fixées par l'auteur du concours ou par ses conseillers techniques. Les conditions du concours devraient peut-être contenir un minimum de réglementation sauf quant au volume et au coût de la structure à ériger. C'est sans doute à cause des multiples restrictions stipulées dans certains cas que Frank Lloyd Wright a dit que les concours sanctionnent la médiocrité.

Quoi qu'il en soit, on espère pouvoir distribuer au début de 1961 le texte révisé du Document numéro 4: Code pour la tenue des concours d'architecture.





HERB NOTT

*Union Carbide Canada Limited, Architects, Shore & Moffat*



HERB NOTT

# Union Carbide Canada Limited

## Head Office Building Toronto

### Architects

*Shore & Moffat, Toronto*

### Consultants

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*Charles S. Leopold Engineers Incorporated,  
Philadelphia, Pennsylvania*

#### Landscaping

*Sasaki, Walker & Associates, Inc.,  
Watertown, Massachusetts*

#### Executive Floor Interiors

*J & J Brook Ltd, Toronto*

#### Lobby Cafeteria & Waiting

#### Alcove Furniture

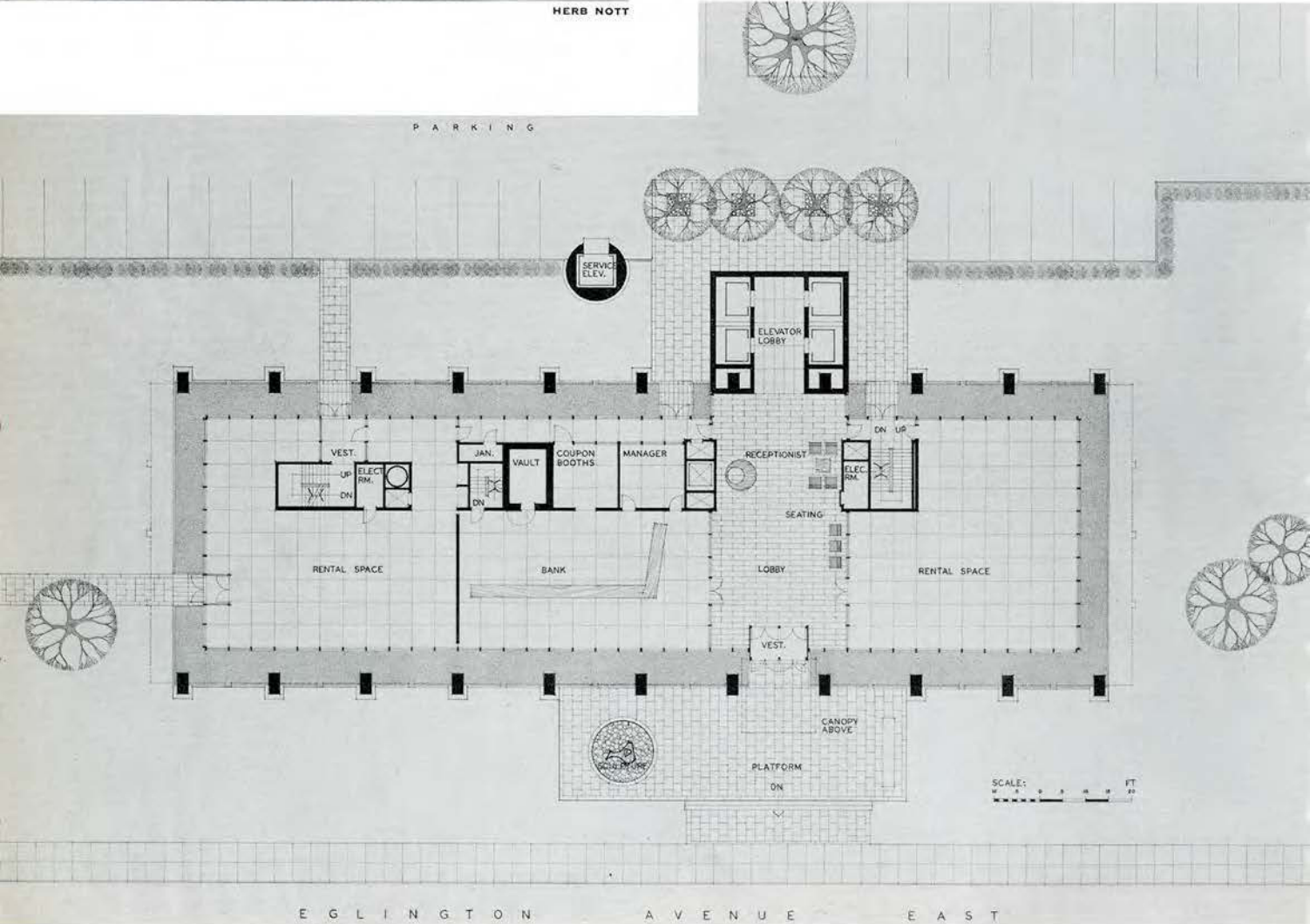
*Stefan Siwinski, Toronto*

### Contractors

*For Sub Structure — Perini Ltd, Toronto*

*For Superstructure —*

*Anglin-Norcross Ontario Ltd, Toronto*





HERB NOTT

*Above:  
Main entrance, reception and  
elevator lobby*

*Right:  
The east end of the building  
illustrating the over-hang,  
the columns and the extensive  
use of floating glass around  
the ground floor. All glass is  
suspended in a stainless steel  
frame.*



HERB NOTT

BY A. P. TILBE

The building, located at 123 Eglinton Avenue East, houses the administrative and head offices of Union Carbide Canada Limited and its six divisions.

Located in a landscaped park-like setting, the building site occupies the width of a complete city block on a main traffic artery running east and west through the City of Toronto. As the building is approached a feeling of spaciousness is experienced as the building walled street line opens onto the simple eleven-storey tower which has been set back 25'-0" from the street line. In this setting the observer is able to view the proportion of the building mass and the intricate facade design.

In association with Sasaki, Walker and Associates, Landscape Architects, an overall landscaping plan has been prepared. Work on this program will be carried out in stages over the next two or three years. It is expected that the first stage will be carried out this winter with the planting of large tree stock.

Typical of head office buildings, an unusually high proportion of window-wall private office accommodation in relationship to open general office space was required. Paralleled with this requirement was the continuing growth of Union Carbide Canada Limited's organization, which indicated the need of a building capable of coping with the problems of expansion and change.

After applying these requirements to many plan shapes, we selected the elongated narrow rectangular plan, since it provided the maximum amount of perimeter window wall. The selected shape was then analyzed by our structural department, and the conclusion was reached that it would be economically sound to eliminate interior columns by providing a 61-foot clear span structural frame. Since the floor plan was no longer hampered by interior columns, it was decided to locate the elevator service shaft separate from the main building mass. By eliminating these two obstacles the preparation of interior partition arrangements was greatly simplified.

The decision to adopt a 5-foot x 5-foot unit module was made after the client's private office needs, as well as the module's relationship to standard building materials, were carefully considered. Many size variations were studied but the 10-foot x 15-foot, 15-foot x 15-foot and 15-foot x 20-foot office sizes best suited the client's requirements. The module was selected during the early planning stages of the project and from that time on each element woven into the design adhered to the 5 x 5 unit. In this way, the building architecturally, structurally, mechanically and electrically has been knitted together to provide an integrated form of flexibility.

After visiting many buildings, both in Canada and in the United States, the client concluded that their building must not repeat the flat, monotonous curtain wall character apparent in many of the buildings visited. They, however, were anxious that the exterior facade of the

building express the use of stainless steel since they are closely allied to the stainless steel industry. The obvious answer to satisfy the stipulated requirement was the development of a three dimensional stainless steel and glass curtain wall. Our decision to use a single span rigid structural frame resulted in 3'-0" deep exterior wall columns which, when faced with granite and projected outward from the exterior wall, created a dominating vertical design element. The problems encountered in the development of the stainless steel and glass curtain wall infill between the vertical columns were not unlike those faced by the Gothic builders. They similarly strived for the maximum glass area in the wall between the buttresses. We, however, substituted stainless steel tracery members for the stone tracery of the past. The resulting facade could be called "machine made Gothic".

Considerable study went into the development of the textured spandrel panels. Initially we were advised that it was impossible to deep draw a stainless steel panel to the depth and design capable of providing the desired texture. It was therefore decided that it was not only necessary to design the panel but it would be necessary to actually produce a full size sample unit to assure ourselves that the embossed panel was a manufacturable item. After many failures, with the assistance and cooperation of the metal wall industry, we were able to produce the panel now part of the wall assembly.

To provide the blackened field on the embossed stainless steel spandrel panels, a heat treated coating was applied, and the highlighted surfaces were then polished. The pattern, color and highlighting combine to create the illusion of a deeper textural design than actually exists. The embossed panel, incidentally, is symbolic of the Union Carbide trademark.

As the exterior facade design developed, many models of varying scales were made. The final model built was of a typical full-size bay which was subjected to a 100 mile per hour simulated gale. This model not only verified the physical properties of the wall but provided the opportunity to re-assess the facade design.

Since the word flexibility was inherent in the overall design, movable metal partitions have been used on all typical floors of the building. The partition used adopted the 5-foot unit and was especially designed for the Union Carbide Corporation. Its simple panel design is enriched by the vertical stainless steel uprights which define each modular unit.

The tenth floor executive suite houses the senior officers of the Company. Interiors here were developed in conjunction with J & J Brook Limited, Interior Designers. Early planning of furniture and furnishings resulted in a happy co-ordination of these important elements into the overall design scheme for this floor.

## STRUCTURAL DESIGN

BY J. E. STANNERS

There is an ever increasing demand by clients for greater freedom and flexibility of plan in their new buildings. Ideally the solution is a clear unobstructed interior devoid of all columns. It has been the traditional opinion that a long clear span, multi-storey frame would be impractical to fabricate and erect and therefore economically prohibitive. Because of the nature of the space required in this particular building it was desirable to have a relatively narrow building. Dealing with a width in the order of 60 feet it seemed worthwhile pursuing the feasibility of using a single span. It was obvious that such a frame would have to be of the rigid type and, therefore, the connection of the clear span girders to the columns would be the most important structural detail in the entire frame. That is, the girders would literally have to be fused to the columns. With the rapid development of welding equipment and technique in the last ten years, it is now practical to design and construct such a fully fused rigid steel frame.

One of the basic requirements of a modern office building is that it must be air-conditioned, which requires an extensive system of large metal ducts throughout the ceiling of the building. This duct system is usually supported under the structural floor frame and invariably results in a significant increase in floor to floor height. One method of reducing the floor to floor height would be to locate the air-conditioning duct system in some manner or other within the structural depth of the floor framing system. Generally, in the conventional structural system the floor framing beams are not of sufficient depth to permit cutting holes through them for passage of the air-conditioning ducts. However, in long span beam systems the greater depth of the beam will, in most cases, permit cutting sufficient openings through them to accommodate all of the air-conditioning ducts.

The structural design of a clear span rigid multi-storey frame does not involve the use of any new or unusual engineering principles and the design techniques are, for the most part, conventional in current practice. One of the prime requisites is complete co-ordination between the structural and mechanical engineer and the superimposing of the air-conditioning duct layout on and through each and every structural floor framing. At this stage the design would appear to be eminently satisfactory but there still remains the question — is it practical to construct and economical? The answer to this query can only be found from one source — the structural steel fabricator. To “ask the man who built one” was not possible since no fabricator in this country had constructed such a building. The designer then interviewed five of the leading steel fabricators of the country and, as expected, they were all keenly interested and enthusiastic about the proposed design. After considerable consultation with the group of fabricators, the study of the frame was completed, and it was the unanimous opinion that the frame was completely practical from the standpoint of current fabrication and erection practices.

HERB NOTT



*South elevation, showing elevator tower and circular service elevator shaft.*

A final and most important question was — what effect will the use of the clear span frame have on the *total* cost of the completed building? For an answer to this question we produced a conventional design frame of a three span bent with two interior equally spaced columns. Again, with the help of the select fabricator group, a comparative estimate was made between the single span bent and the conventional three span bent with the following results.

- (i) A single span was 50% higher in tonnage than the conventional three span.
- (ii) The unit price of the single span bent was 24% lower than the conventional three span.
- (iii) The total cost of the single span bent was 20% higher than the conventional three span and amounted to approximately \$100,000.00.

But, the use of the single frame bent would result in a saving of over 8 feet in the height of the building required for the three span conventional frame, which is equivalent to the volume of an entire working floor. By the use of the single frame bent, the net saving on the total cost of the building was estimated to be \$182,000.00. No estimate was made of the additional savings to the owner in reduced heat loss in the winter and heat gain in the summer because of the reduced exterior wall surface.

The preliminary design of the single span bent had proven to be an unqualified success. It was now apparent that in order to incorporate this type of frame successfully into the completed building, a continuous effort must be made to maintain simplicity and repetition in the final design. Finally, the simplicity and repetition of the structural frame is architecturally expressed in the granite faced columns at the exterior and the exposed roof girder.

### *Sub Structure — Main Building*

The entire sub structure was constructed of 3,000 p.s.i.

reinforced concrete with spread footings bearing on a dense sandy sub-strata 39 feet below street level. The basement and sub basement floor structures consist of three bays on two rows of interior columns, approximately 21 feet centre to centre across the width of the building, and longitudinally concrete joists 5" wide x 12½" deep spanning the 20-foot bays. The exterior foundation walls are 20" thick in the sub basement and 16" thick in the basement, with integral pilasters 50" x 78" to support the vertical leg of the rigid steel superstructure bents.

#### *Sub Structure — Elevator Tower*

The elevator tower is constructed as a concrete cellular shaft adjacent to and integral with the substructure of the main building.

#### *Superstructure — Main Building*

The structural system basically consists of transverse rigid single span steel bents, spaced at 20-foot centres and, in the longitudinal direction, cast-in-place concrete joists and a composite concrete spandrel section. There are 11 identical rigid steel bents, which span 65'-9" centre to centre of columns, with no interior columns. It is believed that this is the longest clear span multi-storey building frame in the world — the clear span is 62'-9". The vertical legs of the bents for the lower seven storeys consist of welded plate sections: 16⅝" flange plates, 3½ to 2" thick and 33⅜" web plates 1" thick. The plate columns are shop assembled in the automatic submerged arc welder. The upper four storeys are 36" wide flange

44" x 72" x 6" thick and are installed on 2" of non-shrink grout at the first floor level and the columns welded to these in the field.

All transverse girders are 36" wide flange sections and in each girder there are two 36" x 18" deep holes to permit the air-conditioning ducts to pass through the girders. The girders were butt welded to the vertical legs of the bent, and the sequence of welding was very carefully scheduled in order to obviate distortion of the frame and to assure final plumbness. All field welds were tested by the ultrasonic method. The all-welded connection detail of the girders to the vertical leg of the bent was identical throughout the building, and as an illustration of the simplicity of the frame, only five detail shop drawings were required for the entire 2,000 ton frame.

The structural system in the longitudinal direction consists of 12½" deep concrete joists framing into the top of the transverse girder and supported by the integrally poured encasement concrete around the girder. These joists are identical to those used in the sub basement and first floor framing system. The spandrels are 3-foot deep concrete sections, in which the steel erection trusses were incorporated as reinforcing in conjunction with the normal reinforcing. This procedure permitted a more rapid construction of the frame and expedited the subsequent installation of the exterior curtain wall and stone work.

The superstructure of the elevator tower consisted of an all concrete frame adjacent to but independent of the structural frame of the main building.

## ELECTRICAL DESIGN

BY A. W. HENSCHEL

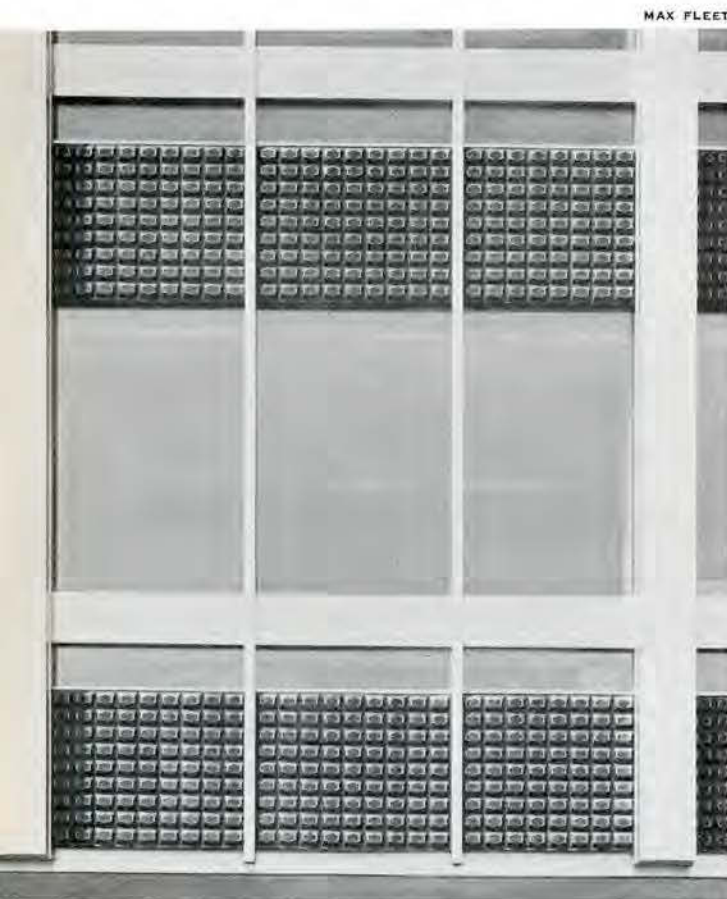
### *Lighting*

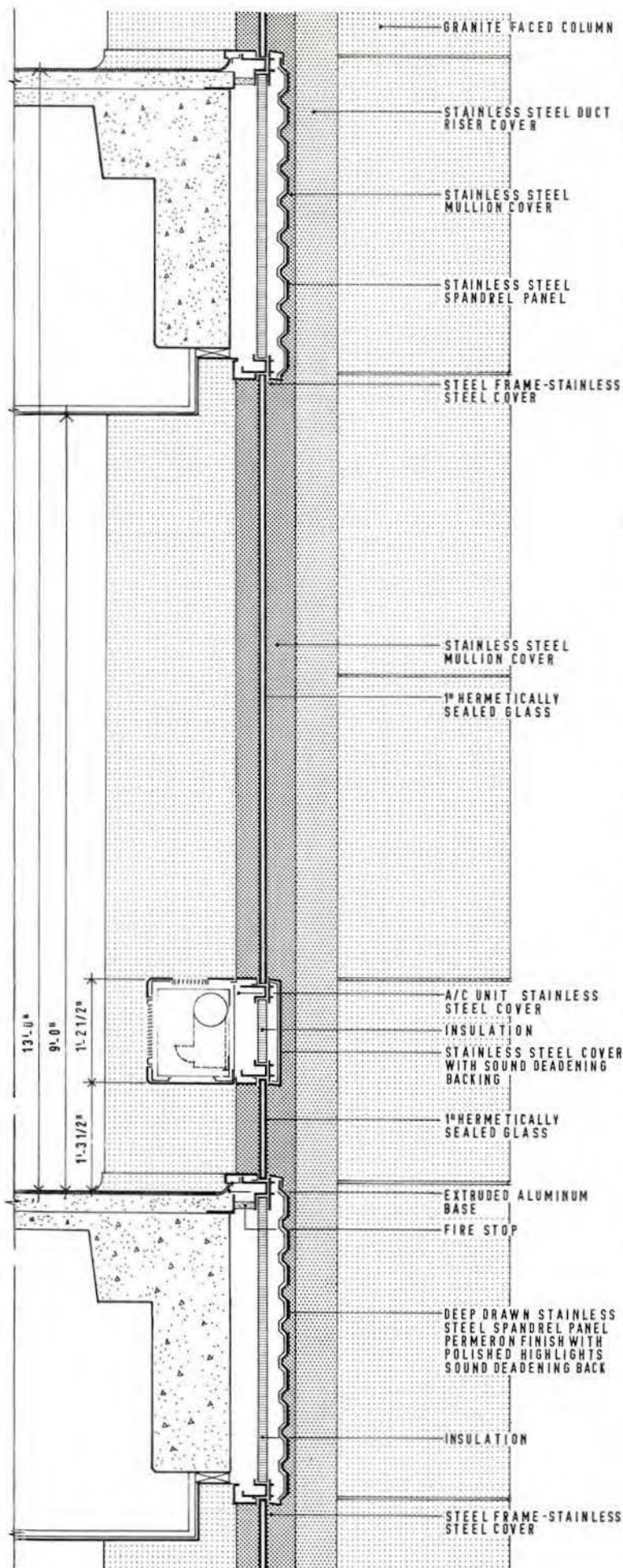
A comfortable seeing environment has been achieved in the offices of the building by means of low brightness troffers. Whereas the average initial intensity is 90 foot candles, (70 foot candles maintained expected) the source is hardly apparent, indicating optimum quality lighting. The luminaires meet the latest recommendations of the Illuminating Engineering Society to minimize direct glare.

The 1' x 4' rapid start alzak aluminum troffers are equipped with 30° x 42° coined louvre shielding and snap-in mounting for metal pan acoustic ceilings. One unit has been located in each 5' x 5' ceiling module providing complete partition flexibility.

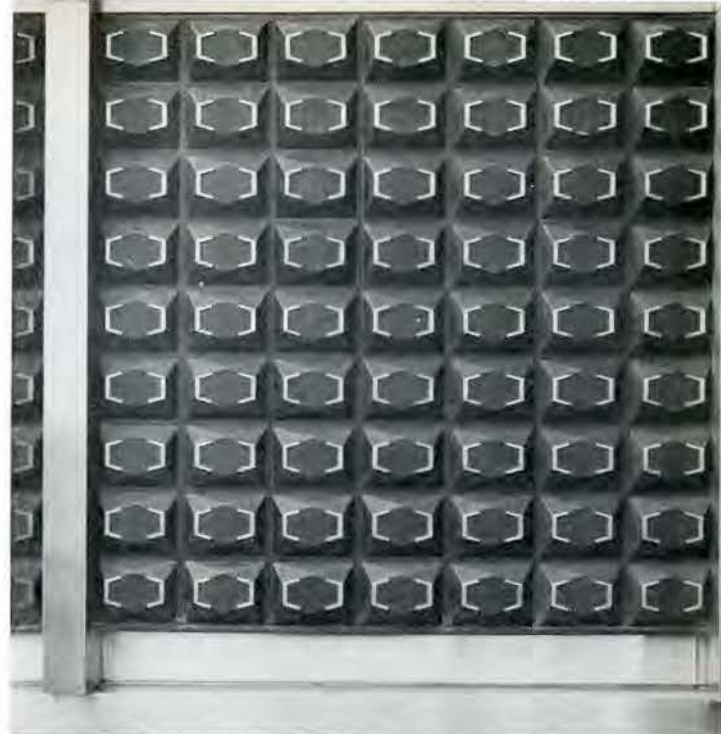
The executive suite on the tenth floor is bathed in the soft diffused light of a luminous ceiling. A stainless steel grid supports ¼" opal glass, 18" below continuous bare lamp strips, spaced 24" o.c., providing illumination levels of 80 to 100 foot candles at desk level with only 200 foot-lamberts of panel brightness.

The main lobby lighting was specially designed to integrate lighting with the architectural elements of the ceiling, providing a low level of totally indirect light filtering down through the baffles. In the background, the main elevator lobby luminous ceiling provides a high level of intensity on the white mosaic walls and the Union Carbide trademark.





Typical Wall Details



MAX FLEET

The electrical energy is supplied to the building at 120/208 volts 60 cycle from a Toronto Hydro-Electric System underground network transformer vault of 1,500 KVA capacity. Four MCM cables per phase in concrete encased fibre duct connect the transformer secondary to the main switchboard in the electrical room.

The totally enclosed, dead front, switchboard located in the first basement is composed of drawout air circuit breakers, 3000 A and 6000 A for the mains, and 150 A to 1600 A capacity for sub-feeder protection.

Power is fed from the switchboard via low impedance aluminum bus duct ranging in size from 1350 amperes to 2500 amperes, rising up through the building in two vertical shafts. Tap-off points at each floor connect to circuit-breaker lighting panels.

All branch circuit conductors are installed in rigid galvanized iron conduit or electrical metallic tubing.

#### Motor Control Centre

All motors in the building, apart from the boiler room units, are protected and controlled by means of three motor control centres located in the basement and pent-house equipment rooms. The original design allows for all motors to be remotely controlled from one central location in the building superintendent's office.

#### Underfloor Duct

A two-duct system of underfloor duct on approximately 6' o.c., has been installed to distribute telephone and business machine receptacle conductors. The duct headers terminate in two electrical rooms on each floor and connect to panels of their respective systems.

#### Emergency Lighting

In accordance with local safety codes, the building is equipped with an emergency incandescent lighting system for stairwell and basement areas. In the event of failure of the normal hydro supply, the emergency lighting will automatically be fed, through a transfer switch, by a bank of nickel cadmium batteries rated at 115 volts 162 amperes for a period of one hour.





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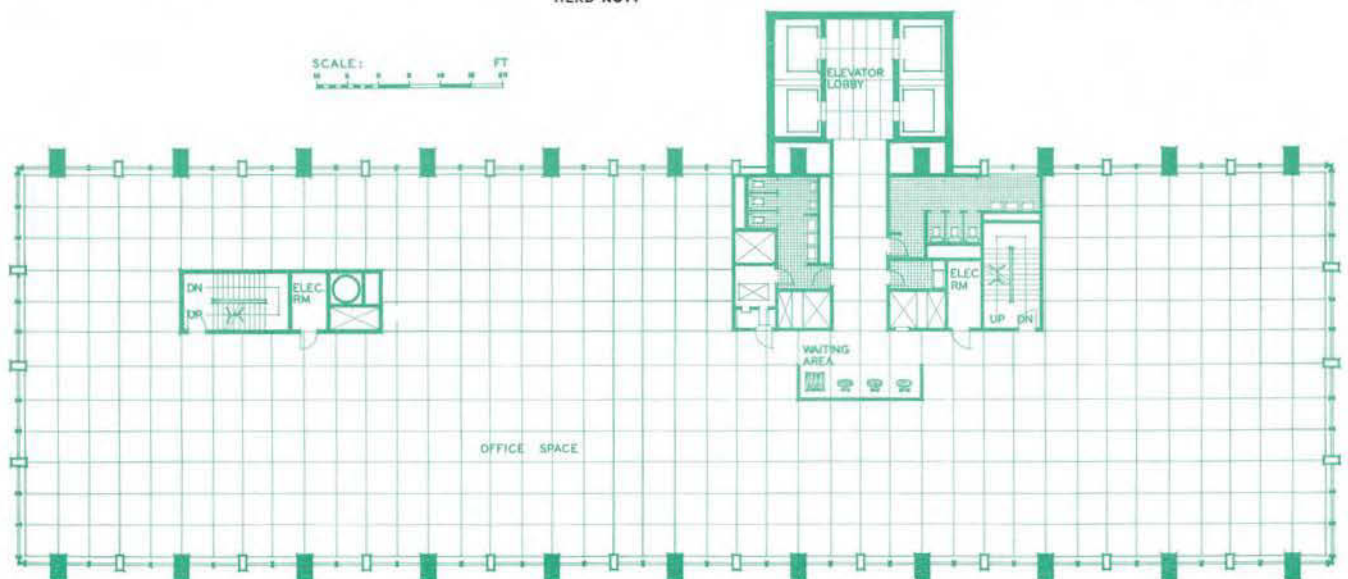


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*Above: reception and lobby area. Left, the receptionist's desk, and right, the lounge area for visitors. To the rear is the elevator lobby. All trim in the area is in stainless steel.*

*Left: interior detail of elevator cab*

*Typical floor plan*





MICHAEL BURNS

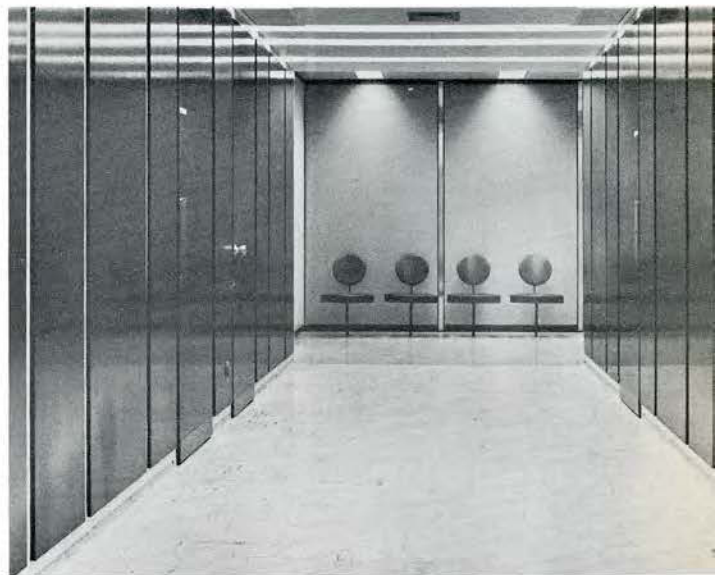


HERB NOTT

*Top left: ladies' staff lounge, eighth floor*

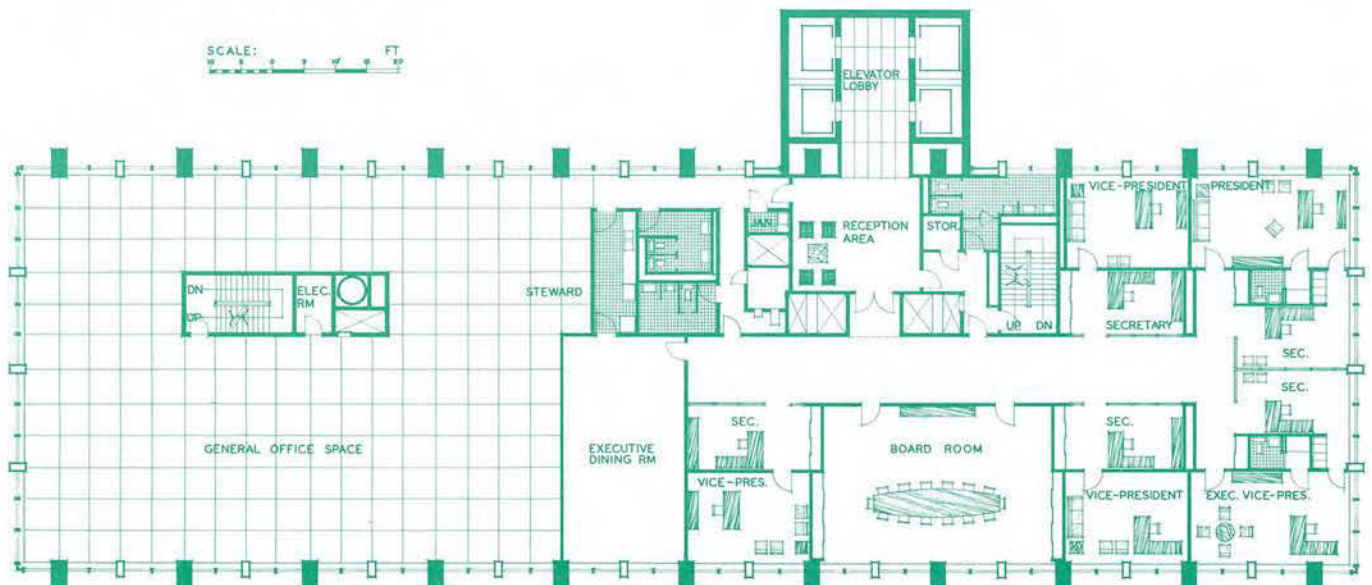
*Top right: executive (tenth) floor elevator lobby and reception area*

*Right: typical elevator corridor and reception area. The design is common to all floors except the ground and the tenth*



HERB NOTT

*Executive (tenth) floor plan*





*Office of the President*

MICHAEL BURNS



*Executive Corridor*

J & J BROOK



*Board Room*

HERB NOTT

BY CHARLES S. LEOPOLD

A partial typical floor plan is shown in Fig 1. All areas adjacent to the windows are potentially private office space and are provided with a means for individual thermostatic temperature control.

For the perimeter areas air is supplied at high velocity through round ducts to each of the window induction units from apparatus located on the penthouse floor. Cooling and heating are supplemented by a finned coil within each enclosure. All of the ventilation and humidity control, approximately 30 per cent of the cooling and at times a portion of the heating, is effected by the air system; the balance of the cooling and heating by the finned coils.

The high pressure air to each exposure of the building is supplied by a separate fan; four fans are connected to two dehumidifiers. The secondary water supply which serves the induction units is common to all four exposures.

The method of installing the vertical risers for air and water and the run-outs to the units is shown in Figs 2 and 3. Vertical risers were run on the outside of the spandrels in vertical mullions midway between the columns. The water piping was run in corresponding vertical mullions on the room side of the spandrels. In order to make the mullions as compact as possible and allow adequate space for connections, the air riser was tapped above the unit — as shown in Fig 3.

Copper run-outs to the coils within the units are wrapped around the air duct to form a loop which permits both vertical and lateral expansion. Each unit has its own water control valve. A thermostat located in a unit controls the water valves of either two or three units, depending on the office layout, and is subject to modification when required by partition change.

A view of the fenestration and induction units from the interior of the building is shown in Fig 4.

*Interior Zone*

Areas in excess of 15 ft from the windows are considered

as interior space in which individual control is neither needed nor desirable as conditions in these areas should be maintained at an optimum for group occupancy.

Since the perimeter system compensates for all changes in outdoor weather, changes in outdoor weather will have no effect on the interior which remains the same cooling problem summer and winter.

A barrier is erected from the suspended ceiling to the structural floor above on a line 15 ft in from the perimeter in order to form a supply air plenum for the interior areas.

Air is distributed through a perforated metal acoustic ceiling.

Although the entire interior zone is treated as a plenum, there is enough distribution ductwork available

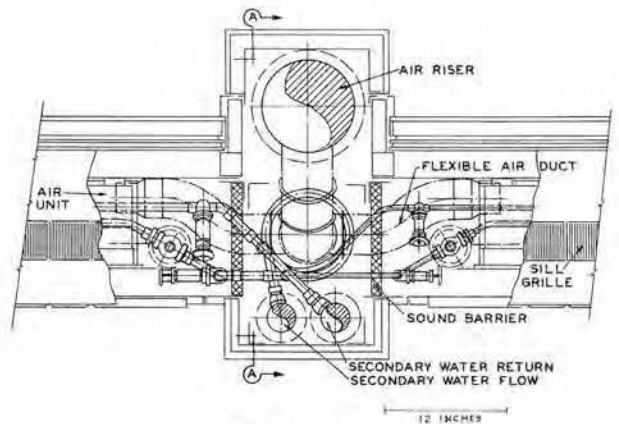


FIGURE 2

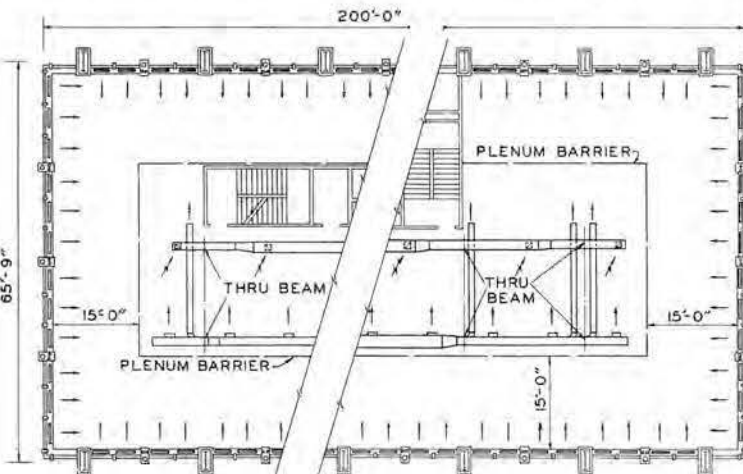


FIGURE 1

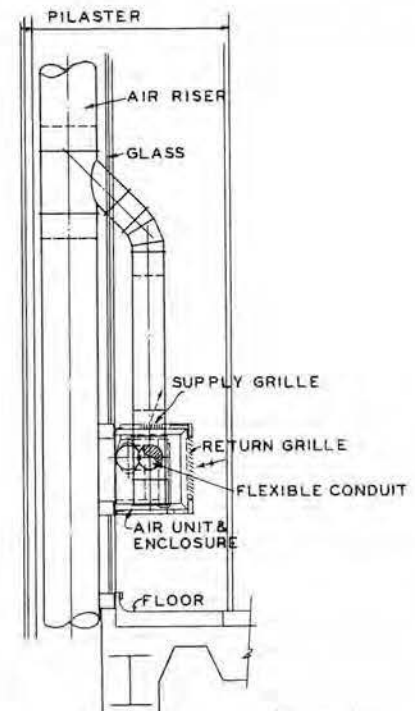


FIGURE 3  
SECTION 'A-A'



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Figure 4

so that an office or conference room built in the interior can have a direct supply and return from the air mains. It is not feasible to supply a conference room or similarly enclosed office by means of a plenum system because of the small supply pressure available and the resulting requirements for either an excessive amount of relief openings or a positive exhaust.

In order to conserve head room, the distributing ductwork for the interior zone passes through rather than under the major beams.

A low velocity air system supplies the interiors of Floors number 2 to number 10 with one point of thermostatic control.

The lighting system is an over-all pattern of recessed lights of approximately 4 watts per square foot. The load imposed on the cooling system by this lighting is greatly in excess of any normal loading due to occupancy, which is one of the reasons why uniform conditions in the interior can be maintained from one point of control.

#### *First Floor*

The treatment of the first floor is essentially similar except that separate systems are installed in the sub-basement feeding up through the first floor. The distribution for the interior zone is by ceiling diffusers rather than a perforated ceiling. Separate booster heater control is provided for all areas on the first floor and basement.

Unit heaters located in the basement supply air to all first floor entrances.

The interior air systems are essentially conventional bypass systems. The filtration consists of a coarse filter followed by an electrostatic filter, and sprayed coil dehumidifiers which also serve for winter humidification

within limits set by condensation on the fenestration. The bypass air is filtered.

The air conditioning apparatus which supplies the perimeter system is essentially the same other than that the filtered bypass is omitted, a reheater added, and the system operates at higher pressure.

#### *Sound Control*

The induction units were selected of a size which would permit relatively low air nozzle pressure. Each fan and its motor is on a concrete base. The base is isolated from the structure by spring isolators. Suitable sound attenuation has been provided at the inlet and outlet of the central apparatus, generally in the form of duct lining. Long, heavily lined attenuators are used on the discharge side of the high speed, high pressure fans which supply the perimeter system.

#### *Refrigeration*

Two centrifugal hermetic refrigerating units, fully automatic, totaling 635 tons, supply the refrigeration effect. Condenser heat is rejected by a cooling tower located on the 10th floor roof. Space has been provided for an additional refrigeration unit and an additional cooling tower for the possible future extension of the building. The condenser water lines to and from the roof have been sized and installed for the future load.

#### *Boiler Plant*

Steam is provided by two packaged type low pressure boilers of 250 horsepower each, equipped to burn No 6 oil. Burners have been selected for ready conversion to gas. Space has been provided for a future boiler for possible expansion of the building.

The heating system necessary to convey No 6 oil is of the electric resistance type, in which the oil pipe serves as the heating element. Further oil heating is accomplished by immersion electric heaters.

#### *Plumbing*

The usual facilities designated as plumbing are of conventional design. Street pressure is used for water supply to the 5th floor and duplicate pressure tank systems for the supply from the 6th floor upward.

#### *Protection of External Connections*

City water, fire lines and sewers are carried on concrete beams from the building wall for a distance which was deemed adequate to avoid danger of settlement of the outside ground. The beams are attached directly to the building wall and have foundations on virgin soil.



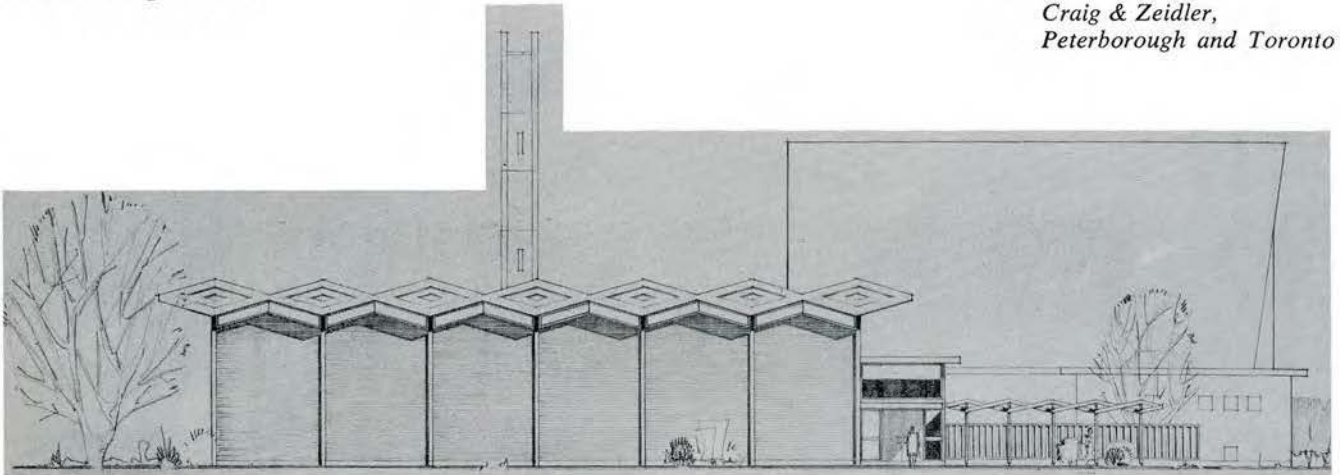
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West Ellesmere United Church, Architects, Craig & Zeidler

# WEST ELLESMERE UNITED CHURCH AND CHRISTIAN EDUCATION CENTRE

Scarborough, Ont.

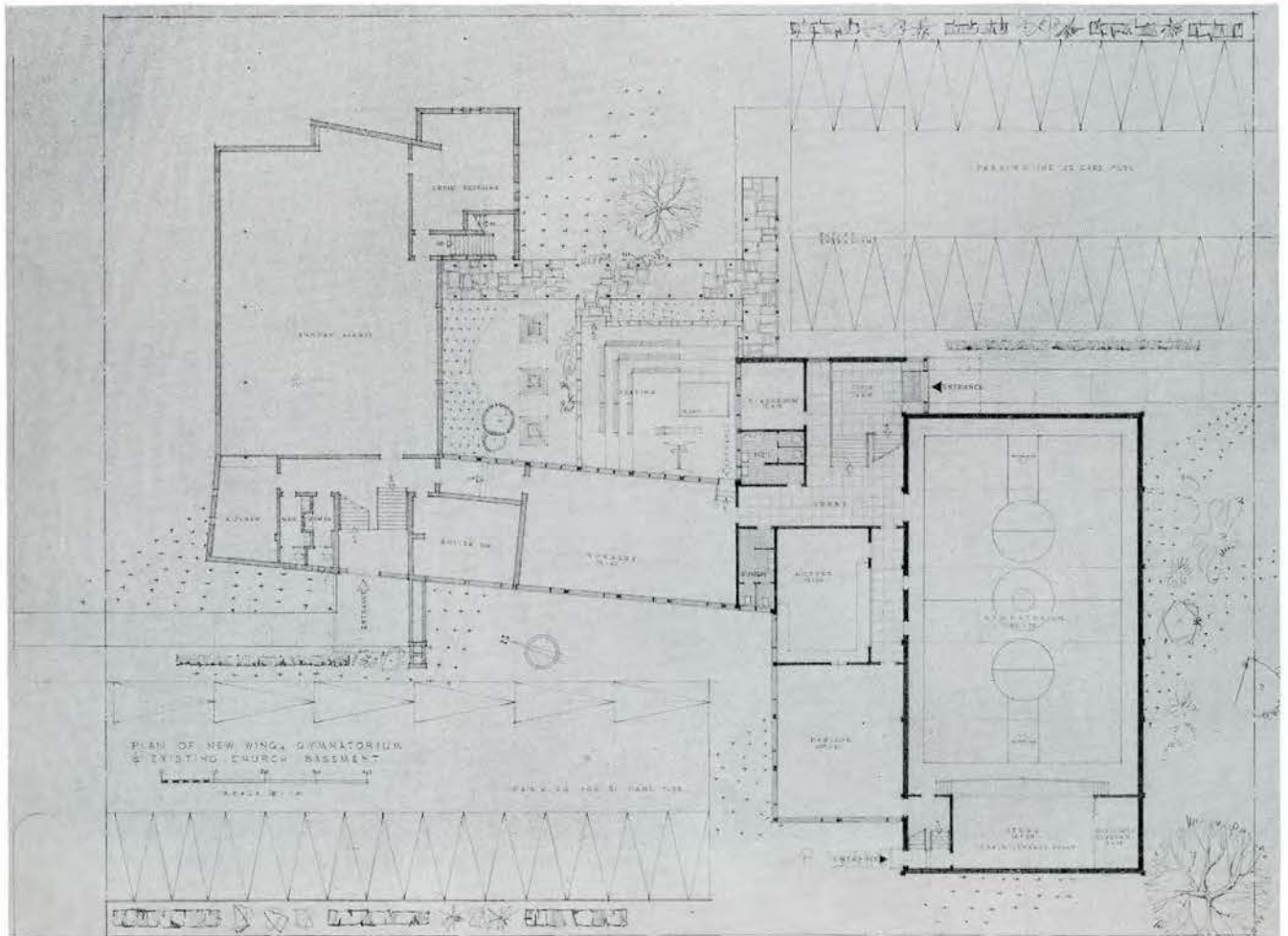
Architects,  
Craig & Zeidler,  
Peterborough and Toronto

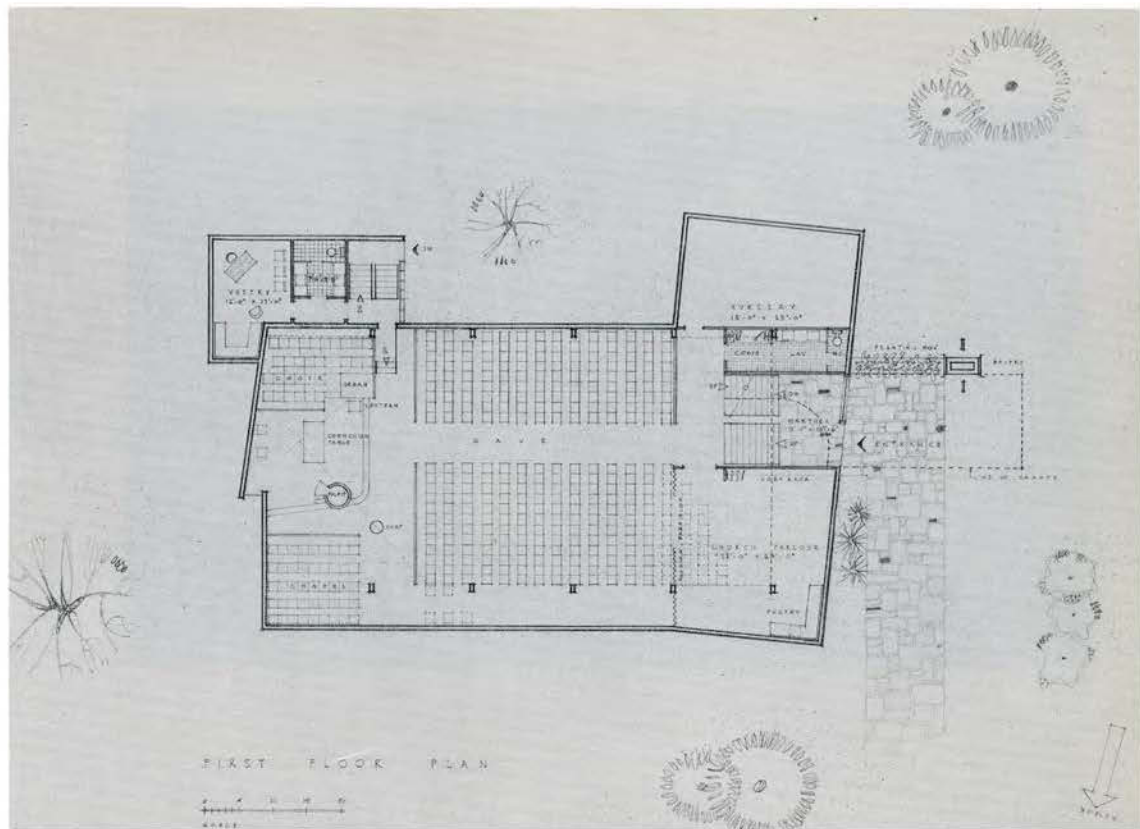


South Elevation

The church was completed in 1958 and construction of the Christian Education Centre is to begin early in 1961. The basic frame of the first floor of the church is parabolic glulam arches with wood joists, wood deck and plaster on the south side and 4" AM deck on the north side. The exterior facing is natural stone, which was quarried in Napanee and has very bright colours. The exposed arches are covered on the exterior with anodized aluminum flashing. Flooring is asbestos tile. The basement is partly poured concrete, partly con-

crete block, with steel beams, wood joists and sound insulation ceiling. The entrance stair is steel and terrazzo. The heating system is hot water, thermostatically controlled. Structural consultants were Carruthers and Wallace, Toronto; mechanical and electrical, McGregor and Beynon, Toronto; and the general contractor was the L. C. Scott Construction Co. Ltd, Willowdale, Ont. and for the Christian Education Centre the consultants are, structural, Gordon Dowdell and Associates, and mechanical, W. Hardy Craig, Toronto.



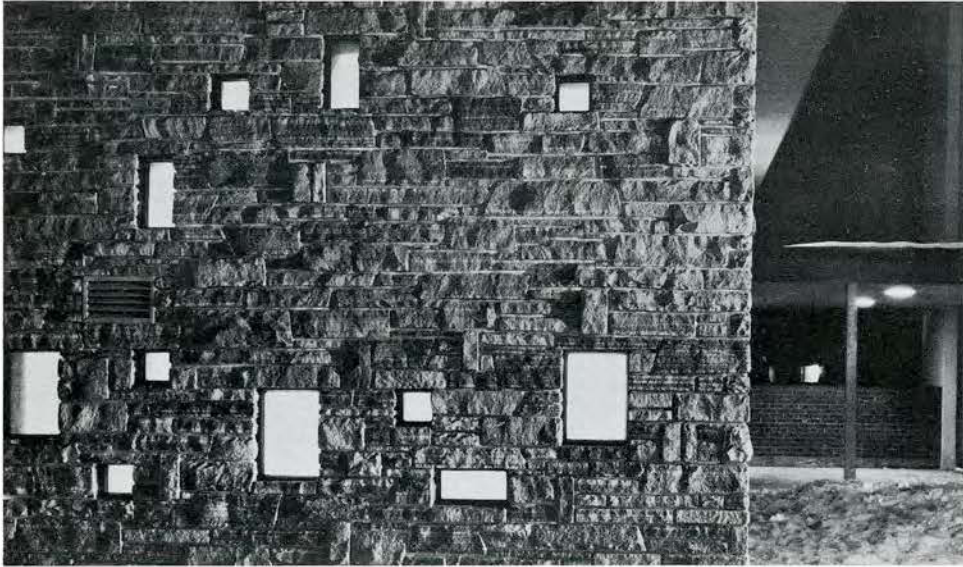


First Floor Plan

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*Detail of  
Exterior Facing*

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## The Design of West Ellesmere United Church

By

Eberhard H. Zeidler

It is always dangerous to put an evolution into a system but it appears to me that the form world of modern architecture has gone through three stages since the twenties.

The first stage, the beginning of "modern architecture", started with austere rectilinear forms and a restricted use of materials. As it matured it began to encompass a wider range of materials and a greater leniency towards forms. Mies Van Der Rohe, Gropius and Corbusier in his early works, exemplify this evolution. Even after 40 years, the majority of today's buildings are still designed with the "square" in mind.

The predominance of this form world is a logical reflection of today's technology and economy. Both are in reciprocal relation to each other in the practical application of architecture.

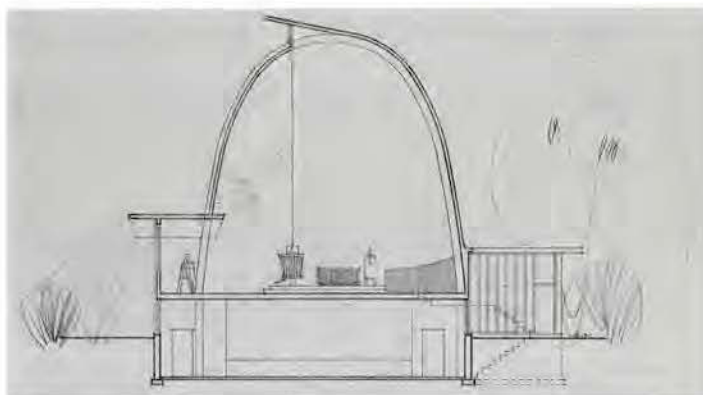
I think even some of the later works of Rudolph fall into this category which at the end of its development might be termed "decorative first stage".

The second stage began with the use of the plastic potentials of building materials. However, its resultant form is still tied to symmetric geometry. Many of Saarinen's buildings exemplify this category — his Ice Rink at Yale and his M.I.T. Auditorium.

It appears that each stage is separated from the next by a thought barrier. There is a certain parallel between Saarinen's development and Perret's. Both broke through a thought barrier and both fell short of the full potential they had begun to explore. Perret broke the first barrier by shedding eclectic ornament and using concrete structure as an aesthetic expression but he applied this structure within a classical aesthetic of rectilinear composition. Saarinen broke through this rectilinear barrier by using the plastic potential of concrete aesthetically but his forms are still tied to the classical harmony of symmetry and repose — a classic composition with modern plastic forms.

The third stage was envisaged by Corbusier at Ronchamp. Here, symmetric geometric forms were replaced by shapes which could not be comprehended by classical aesthetic. Architecture began to flow freely, breaking loose from century-old ties. The Lieder Halle in Stuttgart also is an experiment of this third stage, with the reservation that the interior of the concert hall achieved this freedom while the rest of the building has no relation to this concept. Some might call this development the baroque of modern architecture and there are other parallels between this stage and baroque that just the reminiscence of form. Corbusier achieved in Ronchamp a space feeling by "theatrical" rather than "architectural" means paralleling the same "unarchitectural" use of materials found in the baroque churches of the 18th century. The huge walls of Ronchamp simulate the feeling of romanesque fortresses but are in structure nothing but concrete frames disguised by thin shells.

If the third stage follows this "theatrical trend" it will quickly be doomed, and like Baroque and Rococo die within a short while; for we can only express dynamic forms architecturally if we use materials and techniques truthfully. Art Nouveau, for example, freed itself from static geometric forms to dynamic forms but forgot



that any architectural form is an expression of its material and technique and cannot be applied as a fake. As a formal expression, art Nouveau invoked delight, but as architecture, it withered in a decade stilted in formalism.

But there is another way to look at Ronchamp. Perhaps architectural design, as exemplified in this Church, has advanced further than technology and maybe this building is an idea of a new form world which only lacked the proper technology to fulfill itself. I feel that this new stage is more than a frill, but if it is, it must adhere to the same principles which governed the previous stages, in fact all architectural styles.

I feel, that today as in the days of Wotton, or Vitruvius, architecture is fulfilled by three components, may they be called "function", "construction" and "beauty" or "commodity", "firmness" and "delight". These three components must be integrated as a unit, but in their service to this unit they are not equal but have a varying hieratic order while serving the other and the whole. If the resultant form has changed through the centuries it is not because these components have changed or that we have discovered new ones but it is that the respective times have put different demands on these components, and have placed them in different relationships one to the other.

The space concept of West Ellesmere falls into the third stage but it expressed these three principles as a unity. The basic structural form of the church is developed from parabolic glulam arches, however, the space created is free-flowing, asymmetric and dynamic.

It contrasts light with shade. Through a clerestory between the two roof planes, light is reflected from the curved north wall into the nave slowly decreasing in its intensity as it descends towards the nave floor. In this way, height is emphasized. The low side aisle, covered by a series of gables, is lit by multi-coloured small glass openings carrying further the idea of height in light levels. The low gables and the entrance under the balcony are in contrast to the loftiness of the nave.

Architecture is a meeting between interior and exterior, between form and space, each being the expression of the other. The arches in West Ellesmere are exposed towards the interior on the south wall, accentuating the contrast and the flow of forms; while they are used as a rhythmic expression on the exterior of the north wall. The gables which form the side aisle in the nave are on the outside a linking scale for the surrounding houses above which the body of the main nave rises.

If architecture is an expression of its time then economy must become a factor in our design. Our standard and freedom of living are due to the advances of our economy. However, we have to find a similar relationship to this economy as we find in the designs of nature, where a delight in structural economy gracefully fulfills purpose without waste. Thus, in West Ellesmere, economic restrictions became a challenge rather than a hindrance.

# RAIC Develops Program to Implement Residential Environment Report

THE REPORT OF THE COMMITTEE OF INQUIRY into the Design of the Residential Environment burst upon a relatively unsuspecting profession at the RAIC Assembly in Winnipeg last June and Institute members realized they had "taken a tiger by the tail". It was certain that many of the recommendations contained in the report of the three-man Committee demanded vigorous follow-up action by architects in all provinces.

In order that the report might receive wide distribution both inside and outside the profession, the report was inserted in the May issue of the *RAIC Journal* and simultaneously one thousand additional copies of the report were produced for sale. Three hundred copies of the report were purchased by the Canadian Federation of Mayors and Municipalities for distribution as required reading to member municipalities across Canada, and one hundred copies were bought by the Department of External Affairs for distribution to missions abroad. A copy of the report was placed in the hands of Federal Cabinet Ministers and Members of Parliament, and sent forward to a number of responsible ministers in all Provincial Governments. Subsequently, the demand for copies of the report reached the point where 1,000 additional English copies and 1,000 French copies were printed for distribution. A French copy of the report has been sent to all French speaking members of the Province of Quebec Association of Architects.

The thirty-two recommendations contained in the Residential Environment report have been under study by the RAIC-CMHC Committee during the summer months. The Joint Committee subjected the report to a close analysis in an Ottawa meeting on July 12. Subsequent meetings were held on September 8 and 12. The Committee members decided that the thirty-two recommendations logically separate into six main categories: Provincial, Municipal, CMHC and Federal, University Economic Studies, and the architectural profession. As a result individual reports were submitted to the Committee by Messrs. James Strutt, John Bland, Ian MacLennan, Alan Armstrong, Humphrey Carver, and James Murray (Chairman).

At meetings of the Joint Committee in early September, Committee members formulated the separation of the report's proposals into four groups for specific action to implement. These four groups are: (1) Recommendations requiring direct action now by the RAIC Executive Offices; (2) Recommendations for referral back to the RAIC-CMHC Committee for further action; (3) Recommendations for referral to a joint committee outside the profession comprising RAIC members and others; (4) Recommendations requiring efforts at the provincial level (i.e. by component societies of the Institute through committee action). The Joint RAIC-CMHC Committee believe that effective and worthwhile implementation of

the Report will result from developing simultaneous action on all these fronts.

The Executive Committee of Council, following their September 23 meeting in Ottawa, decided to adopt the recommendation of the Joint Committee to appoint, as quickly as possible, an administrator to the Executive Offices at Ottawa in order that continuing liaison with other organizations might be established. It was recognized by the Executive Committee that the large majority of recommendations contained in the report require immediate action to be taken by the RAIC through direct correspondence, telephone communication or by calling a meeting or conference.

The Joint Committee reported that only three recommendations merited reference back to the Committee for further study and comment. Several recommendations propose action requiring the appointment of joint committees incorporating RAIC members and outside organizations. Eleven, or approximately one-third of the recommendations, demand that the report proposals, accompanied by explanatory memoranda, be referred to the Provincial Associations for study in the light of varied local conditions. Action by component societies would involve either (1) The making of representations to Provincial governments following committee study, or (2) direct report back to the RAIC. It is considered by the Committee that the Institute, in order to secure useful data from Provincial Associations, must be elaborately specific as to precisely what information is being sought, why it is being requested, as well as providing a list of sources of information.

The Joint Committee proposal, which was adopted by the Executive Committee, was that the Institute appoint a non-professional administrative officer, to be secured on loan from Central Mortgage and Housing Corporation for a period of one year. The administrator should be under the direct supervision of the Executive Director of the RAIC, and would administer the work of implementing the report. The administrator, who is expected to be appointed early in November, will have a secretary-stenographer to assist him.

In the meantime, Harland Steele, President of the RAIC, has written to individual members of the RAIC under date of September 8 and the result has been the contribution of moneys totalling \$3,000 up to mid-October. A second Presidential letter, addressed to approximately six hundred architectural firms in the ten provinces, has been sent forward under date of October 14. The Joint Committee has estimated that the cost of operating an effective program of implementation over a one year period will require a budget of approximately \$15,000. The Royal Institute expects that financial support from architectural firms and from Provincial Associations during October and November will result in the full budget of \$15,000 being achieved.

# Programme de l'IRAC en vue de donner suite au rapport sur les conditions de l'habitation

LORS DE L'ASSEMBLEE DE L'IRAC tenue à Winnipeg en juin dernier, le rapport du Comité d'enquête sur les conditions de l'habitation avait, en quelque sorte, fait l'effet d'une bombe, et les membres de l'Institut se rendirent compte qu'ils avaient "éveillé le chat qui dort". Chose certaine, en tout cas, nombre des recommandations contenues dans le rapport du comité de trois membres allaient avant de devenir réalité, exiger des architectes de toutes les provinces des efforts énergiques.

Afin de donner au rapport une large diffusion, tant au sein de la profession qu'à l'extérieur, on le fit paraître dans la livraison de mai du *Journal* de l'IRAC en même temps qu'on le faisait tirer à part à mille exemplaires pour le mettre en vente. La Fédération canadienne des maires et des municipalités en acheta trois cents exemplaires en vue de les distribuer à toutes les municipalités qu'elle groupe à travers le Canada. Le ministère des Affaires extérieures, pour sa part, en acheta cent exemplaires pour les distribuer à ses missions à l'étranger. D'autres exemplaires furent remis aux membres du Cabinet fédéral ainsi qu'aux députés, et d'autres encore à un certain nombre de ministres compétents dans chacun des gouvernements provinciaux. Par la suite, la demande devint si forte qu'il fallut en faire tirer encore mille exemplaires en anglais et mille en version française. Des exemplaires de la version française ont été adressés à tous les membres de langue française de l'Association des Architectes de la Province de Québec.

Au cours de l'été, les trente-deux recommandations formulées dans le Rapport sur les conditions de l'habitation ont été passées au crible par le comité IRAC-SCHL, qui en a fait une analyse minutieuse le 12 juillet, lors d'une réunion tenue à Ottawa. D'autres réunions ont suivi le 8 et le 12 septembre. Les membres du comité ont jugé que les trente-deux recommandations pouvaient logiquement se ranger en six grandes catégories: questions d'intérêt provincial, questions d'intérêt municipal, questions intéressant la SCHL et le gouvernement fédéral, études économiques intéressant les universités, et questions relevant des architectes en tant que groupement professionnel. En conséquence, MM. James Strutt, John Bland, Ian MacLennan, Alan Armstrong, Humphrey Carver et James Murray (président) ont présenté chacun un rapport distinct.

Lors de ses réunions du début de septembre, le comité conjoint a divisé en quatre groupes les propositions contenues dans le rapport, selon les mesures concrètes à prendre pour y donner suite: (1) Recommandations exigeant une action directe et immédiate de la part de l'exécutif de l'IRAC; (2) Recommandations à renvoyer au comité IRAC-SCHL; (3) Recommandations à déférer à un comité conjoint extérieur à la profession, mais englobant un certain nombre de membres de l'IRAC; (4) Recommandations exigeant une action au niveau provincial (c'est-à-dire de la part des sociétés membres de l'Institut,

par leurs comités d'action). Le comité conjoint IRAC-SCHL estime qu'une action menée sur tous ces fronts à la fois serait efficace et donnerait des résultats intéressants.

Par suite de sa réunion du 23 septembre à Ottawa, le Comité exécutif du Conseil a décidé, conformément à la recommandation du comité conjoint, de nommer le plus tôt possible au bureau de l'Exécutif à Ottawa un administrateur qui serait chargé d'assurer en permanence la liaison avec les autres organismes. Le Comité exécutif s'est rendu compte, en effet, que la grande majorité des mesures préconisées par le rapport imposent à l'IRAC des tâches immédiates: correspondance directe, communications téléphoniques, convocation d'assemblées ou de conférences, et ainsi de suite.

Le comité conjoint a déclaré, dans son rapport, que trois recommandations seulement méritent d'être renvoyées au comité pour y faire l'objet d'une étude plus approfondie. Plusieurs des mesures préconisées exigent la formation de comités mixtes groupant des représentants de l'IRAC et des représentants d'organismes extérieurs. Onze des recommandations, soit environ le tiers, demanderaient à être adressées, avec un mémoire explicatif, aux diverses associations provinciales, avec prière à celles-ci de les étudier dans l'optique des conditions locales. Le rôle des sociétés membres consisterait soit (1) à adresser des instances aux gouvernements provinciaux, après étude en comité, soit (2) à renvoyer un rapport à l'IRAC. De l'avis du comité, l'Institut doit, s'il veut obtenir des renseignements utiles des associations provinciales, définir avec détail et précision les renseignements qu'il recherche, dire pourquoi il les recherche, et fournir une liste de sources d'information.

La proposition du comité conjoint, qui a été adoptée par le Comité exécutif, veut que l'Institut engage un agent d'administration qui ne soit pas de la profession, et qui serait emprunté à la Société centrale d'Hypothèques et de Logement pour une période d'un an. Cet administrateur relèverait directement du Directeur exécutif de l'IRAC, et serait chargé de la mise en oeuvre du rapport. L'administrateur, qui entrera vraisemblablement en fonctions au début de novembre, aura à sa disposition une secrétaire-dactylo.

Entre-temps, le Président de l'IRAC, M. Harland Steele, a adressé, en date du 8 septembre, une lettre aux architectes membres de l'Institut; à la suite de cette lettre, il avait recueilli, à la mi-octobre, la somme de \$3,000. Le 14 octobre, il a adressé une seconde lettre à quelque six cents bureaux d'architectes dans les dix provinces. Le comité conjoint calcule que, pour appliquer un bon programme de mise en oeuvre pendant un an, il faudra dépenser environ \$15,000. L'Institut compte que l'appui financier des bureaux d'architectes et des associations provinciales lui permettra de recueillir cette somme au cours d'octobre et de novembre.

The Joint RAIC-CMHC Committee on Housing submitted to the Executive Committee of Council on September 23 a series of detailed action proposals based, point by point, upon the thirty-two recommendations contained in the Report of the Committee of Inquiry into

the Design of the Residential Environment. Herewith is a tabular breakdown of the series of tasks soon to be assumed by a new administrator, to be appointed at RAIC headquarters in Ottawa on loan from Central Mortgage and Housing Corporation for a period of one year.

PROVINCIAL	No. 1 Recommendations requiring immediate RAIC action.	No. 2 Recommendations for referral back to Joint Committee RAIC-CMHC.	No. 3 Recommendations for referral to new Joint Committee outside profession.	No. 4 Recommendations requiring efforts at Provincial level (architectural assns.).
69 – Utility regulating authorities to study electrical distribution systems.	Propose to CEA forming joint committee to study problem.		Set up joint committee consisting of CEA, CFMM, EIC, NHBA, municipal engineers.	Forward briefs to utilities and municipalities based on action developing from No. 1 & No. 3.
158 – Determine whole costs of housing at various densities.			Set up joint committee of RAIC & TPIC.	
171 – Discover trends in uses made of open space (recreation).			Set up joint committee with RAIC-TPIC-CSLA.	
56 – Action to identify areas of irreplaceable agricultural value.	RAIC to request action by individual Prov. Assns. providing guidance in submission to Prov. Govts.			Prov. architectural assns. to prepare local briefs for submission to Prov. Govt.
167 – Immediate studies of impact of major roads on adjoining private properties.	(Same as above)			(Same as above)
173 – Powers for cities to buy lands.	(Same as above)			(Same as above)
188 – Make economic analysis of regions undergoing fastest urbanization.	(Same as above)			(Same as above)
<b>UNIVERSITY</b>				
136 – RAIC to promote behavioral and economic studies of residential environment.	Get report from Prof. Bland—then propose to CMHC they call a conference.	Prof. Bland to report.		
138 – Encourage and promote residential design.	RAIC to ask heads of Schools to assist in every way. RAIC to ask Housing Design Council to give full support.	Also refer back to RAIC-CMHC Committee for further study.		
141 – Support establishment of a professional school of landscape design.			Set up a joint committee with TPIC and CSLA to study idea.	
201 – Establish Canadian Institute of Urban Studies.	RAIC to ask CMHC to call a conference to view proposals.			
<b>BUILDING INDUSTRY</b>				
143 – RAIC to explore and develop system for provision of dividing plans.		Mr Strutt to assist in preparation of proposal to Prov. Associations.		Individual Prov. Assns. to review current system of plan supply and consider alternative proposals.
145 – RAIC to recognize and impress on component associations mutually satisfactory terms to profession & building industry.	Phase 1: Write to Prov. Assns. urging a careful reconsideration of minimum fee for housing services RAIC fee comm. (E. C. S. Cox to be advised).			Phase 2: Prov. Assns. should form local study committees to ensure a thorough review of architect-house builder relationship.

<b>RAIC ACTION</b>	<b>No. 1 Recommendations requiring immediate RAIC action.</b>	<b>No. 2 Recommendations for referral back to Joint Committee RAIC-CMHC.</b>	<b>No. 3 Recommendations for referral to new Joint Committee outside profession.</b>	<b>No. 4 Recommendations requiring efforts at Provincial level (architectural assns.).</b>
85—Insure recognition of outstanding work by distribution of photos.	RAIC can arrange to circulate to daily and periodical press photos of residential design work receiving awards.		Possible liaison with other interested bodies e.g. Canadian Housing Design Council.	
86—Prepare a catalogue of street furniture.	Understand Industrial Design Council has decided to prepare a catalogue—secure particulars e.g. price, distribution.			
148—Architects to sign all their work.	RAIC to urge Prov. Assns. to review this recommendation and implement.			Prov. Assns. should carefully consider implications of this proposal.
175—Chapters of design professions to offer sketches for development of public sites.			RAIC, TPIC and CSLA to form a joint committee.	(Same as above)
177—Preservation of historic architecture.	RAIC to ask support from Prov. Assns., seek aid of CFMM, and secure a list of architects skilled in reconstruction.			Members of Preservation Committee to be informed of proposed action. Prov. Assns. should write to their Prov. Govts.
<b>ECONOMIC STUDIES</b>				
158—Close study of useful identification of density of housing.	Propose joint committee action to TPIC.		This requires a joint RAIC-TPIC committee to establish ground rules for proposed study.	
162—Thorough study by Provinces of impact of public regulation over intensity of urban land use on private property values.	Propose joint committee action to TPIC.		It is believed an official judicial inquiry is indicated resulting from joint action by RAIC and TPIC.	
185—Study general change to a system of real property on site value only.	Continue discussion already under way with CFMM and propose leadership action by the Federation.			
<b>CMHC &amp; FEDERAL</b>				
72—Review appraisal formulae to give more inducement to build quality into housing.	Submit a brief to President CMHC and seek support of Society of Residential Appraisers.			
79—Encourage variety in dwelling types and combinations.	Submit a brief to the Minister of Public Works.			
95—Survey operating costs of housing.	Submit a brief to the President of CMHC.			
99—Build pilot projects.	Submit a brief to the Minister of Public Works.			
190—Government of Canada needs machinery for co-ordination.	Submit a brief to Prime Minister.			
<b>MUNICIPALITIES</b>				
51—Utilize federal-provincial land assembly provisions to greater extent.	RAIC to write to CFMM and to Prov. Assns. (CMHC to provide special land assembly kit).			On RAIC guidance Prov. Assns. to urge Provincial Govts. to use land assembly more.
62—To develop logical codes for siting of residential buildings.	Ask Oberlander of UBC on action taken to date—offer to secure information from profession to assist in study. Collaborate with Prov. Assns. and Chapters.			Prov. Assns. should gather information to assist Oberlander study and utilize briefs gathered in No. 1 to effect local changes.
153—Permits for projects to require full visual exhibit.	RAIC should present problem to CFMM and ask opinion of municipalities.	Refer back to Joint Committee for preparation of brief on the nature of design control.	Informal inquiries to be made of Division of Building Research in approach through National Building Code.	Prov. Assns. should be asked to give their comments.
181—Vigorous program for removal of housing and creation of public housing.	Write to CFMM advocating extension of urban renewal also send letter direct to each municipality.			Write to Prov. Assns. asking them to take matter up with individual provinces.
182—Stimulate rehabilitation of older houses.	Write to congratulate Ontario Government after Pickett (CMHC) report is received. Consider making proposals to all Prov. Govts. inform CFMM of action being taken.			When CMHC report is available make specific proposals to all Prov. Govts. through Prov. architectural assns.

Le 23 septembre, le comité mixte de l'habitation qui groupe l'IRAC et la SCHL proposait au Comité exécutif du Conseil une série de mesures à prendre; ces mesures se fondaient point par point sur les trente-deux recommandations formulées dans le Rapport du comité

d'enquête sur les conditions de l'habitation. Voici, sous forme de tableau, la liste des tâches qui seront assumées prochainement par le nouvel administrateur qui sera affecté au siège de l'IRAC, à Ottawa, et dont les services seront empruntés à la Société centrale.

QUESTIONS D'INTERET PROVINCIAL	No 1 Recommandations exigeant action immédiate de l'IRAC.	No 2 Recommandations à renvoyer au comité conjoint IRAC-SCHL.	No 3 Recommandations à déférer au nouveau comité conjoint extérieur à la profession.	No 4 Recommandations exigeant démarches au niveau provincial (associations d'architectes).
69 — Etude, par les autorités des services d'utilité publique, des systèmes de distribution électrique.	Proposer à la CEA de former un comité conjoint pour étudier la question.		Créer un comité conjoint de la CEA, la CFMM, l'EIC l'ANCH et les ingénieurs municipaux.	Adresser aux services d'utilité et aux municipalités des mémoires fondés sur mesures découlant des nos 1 et 3.
158 — Déterminer le coût total de l'habitation à diverses densités.			Créer comité conjoint de l'IRAC et de l'Inst. can. d'Urbanisme.	
171 — Etudier les tendances dans l'utilisation de l'espace libre (récréation).			Créer comité conjoint IRAC, I. C.-U., CSLA.	
56 — Prendre dispositions pour identifier les régions agricoles irremplaçables.	L'IRAC doit demander aux diverses associations prov. d'adresser des mémoires aux gouvernements prov. pour leur gouverne.			Associations prov. d'architectes censées préparer chacune un mémoire à l'intention de leurs gouvernements prov. respectifs.
167 — Etudes immédiates sur les répercussions de l'aménagement de grandes artères sur les propriétés privées avoisinantes.	(Idem)			(Idem)
173 — Accorder aux villes le pouvoir d'acheter des terrains.	(Idem)			(Idem)
188 — Analyse économique des régions en voie d'urbanisation très rapide.	(Idem)			(Idem)
<b>QUESTIONS INTERESSANT LES UNIVERSITES</b>				
136 — IRAC censé favoriser études des conditions de l'habitation du point de vue économique et par rapport au comportement des gens.	Obtenir rapport du prof. Bland, puis demander à la SCHL de convoquer conférence.	Prof. Bland censé présenter son rapport.		
138 — Favoriser et encourager la bonne architecture dans la construction domiciliaire.	L'IRAC doit demander aux directeurs d'écoles d'appuyer le mouvement par tous moyens, et réclamer l'appui du Housing Design Council.	A renvoyer aussi au comité IRAC-SCHL pour étude plus approfondie.		
141 — Appuyer la création d'une école professionnelle de dessin paysager.			Créer un comité conjoint avec ICU et CSLA pour étudier la question.	
201 — Etablir un institut canadien des études d'urbanisme.	L'IRAC doit demander à la SCHL de convoquer une conférence pour étudier le projet.			
<b>QUESTIONS INTERESSANT L'INDUSTRIE DU BATIMENT</b>				
143 — Etude et mise au point, par l'IRAC, d'une méthode pour la préparation de plans de lotissement.		M. Strutt censé aider à préparer une proposition à l'adresse des assoc. provinciales.		Les assoc. prov. censées étudier régime actuel et envisager méthodes de rechange.
145 — IRAC censé s'entendre sur conditions satisfaisantes à la fois pour architectes et pour industrie du bâtiment, et essayer de les faire accepter par associations provinciales.	1re étape: Ecrire aux assoc. prov. et les prier de reconsidérer taux minimums applicables à l'habitation, com. des honoraires de l'IRAC (communiquer réponses à E.C.S. Cox).			2e étape: Les assoc. prov. devraient former comités d'étude locaux afin que relations entre architectes et constructeurs fassent l'objet d'un examen complet.
<b>QUESTIONS EXIGEANT UNE ACTION DE LA PART DE L'IRAC</b>				
85 — Faire connaître les réussites exceptionnelles en distribuant des photos.	L'IRAC peut voir à adresser aux quotidiens et périodiques des photos des oeuvres primées.		Liaison possible avec autres organismes intéressés, e.g. le conseil canadien de l'habitation-type.	
86 — Préparer un catalogue de meubles de rue.	Le Conseil des formes industrielles aurait déjà décidé de préparer un catalogue. Obtenir des détails, e.g. prix, distribution.			
148 — Que les architectes signent tous leurs travaux.	IRAC censé presser les assoc. prov. d'étudier cette recommandation et d'y donner suite.			Les associations prov. devraient étudier avec soin les répercussions d'une telle mesure.
175 — Que les groupes locaux des professions architecturales offrent des croquis pour l'aménagement des lieux publics.			L'IRAC, l'ICU et la CSLA doivent former un comité conjoint.	(Idem)
177 — Conservation des oeuvres architecturales d'intérêt historique.	IRAC censé demander l'appui des assoc. prov. et l'aide de la CFMM, et dresser une liste des architectes versés dans l'art de la restauration.			Les membres du Comité de conservation seront mis au courant du projet. Les assoc. prov. devraient écrire à leurs gouvernements provinciaux.

ETUDES ECONOMIQUES	No 1 Recommandations exigeant action immédiate de l'IRAC.	No 2 Recommandations à renvoyer au comité conjoint IRAC-SCHL.	No 3 Recommandations à déférer au nouveau comité conjoint extérieur à la profession.	No 4 Recommandations exigeant démarches au niveau provincial (associations d'architectes).
158—Etude minutieuse sur méthode pratique de déterminer la densité de la construction domiciliaire.	Proposer à l'ICU de confier la question à un comité conjoint.		Cela exigerait la création d'un comité conjoint IRAC-ICU afin d'établir les règles de base pour l'étude envisagée.	
162—Etude approfondie, par les provinces, des effets de la réglementation publique de la densité d'utilisation des terrains urbains sur les valeurs immobilières.	Proposer à l'ICU de confier la question à un comité conjoint.		Il semble que la tenue d'une enquête judiciaire officielle soit indiquée, par suite de l'action conjointe de l'IRAC et de l'ICU.	
185—Etudier possibilité d'un changement général en faveur d'un régime de propriété foncière fondé uniquement sur la valeur des emplacements.	Continuer les pourparlers déjà en cours avec la CFMM et demander à la Fédération d'aller de l'avant.			
<b>QUESTIONS INTERESSANT LA SCHL ET LE GOUVERNEMENT FEDERAL</b>				
72—Reviser les formules d'évaluation afin d'encourager la qualité dans la construction.	Présenter un mémoire au président de la SCHL et demander l'appui de la Soc. des évaluateurs de maisons (SRA).			
79—Encourager la variété dans les types d'habitation et dans les combinaisons.	Présenter un mémoire au ministre des Travaux publics.			
95—Enquêter sur les frais d'exploitation dans la construction domiciliaire.	Présenter un mémoire au président de la SCHL.			
99—Construire des projetstémoins.	Présenter un mémoire au ministre des Travaux publics.			
190—Le gouvernement canadien a besoin d'un rouage de coordination.	Présenter un mémoire au premier ministre.			
<b>QUESTIONS INTERESSANT LES MUNICIPALITES</b>				
51—Recourir davantage aux dispositions fédérales-provinciales visant les projets d'aménagement de terrains.	L'IRAC doit écrire à la CFMM et aux assoc. prov. (La SCHL fournira une documentation spéciale sur l'aménagement des terrains).			A la demande de l'IRAC, les assoc. prov. presseront les gouv. prov. de recourir davantage à l'aménagement de terrains.
62—Elaborer des codes logiques visant le choix des emplacements de construction domiciliaire.	S'informer auprès d'Oberlander, de l'Univ. de la C.-B., des mesures prises jusqu'ici. Offrir d'obtenir renseignements des membres de la profession pour aider à l'enquête. Collaborer avec associations et groupes prov.			Les assoc. prov. devraient recueillir des renseignements pour secondar l'enquête Oberlander et s'inspirer des mémoires recueillis au no 1 pour obtenir des changements dans leur territoire.
153—Exiger, avant d'accorder un permis pour un projet, la production d'un plan visuel complet.	L'IRAC devrait exposer le problème à la CFMM et demander l'avis des municipalités.	Renvoyer au comité conjoint en vue de la préparation d'un mémoire sur la nature du contrôle des plans.	Obtenir officieusement des renseignements de la Division des recherches sur la construction, en vue de demander une modification du Code national de l'habitation.	On devrait demander aux assoc. prov. de faire leurs commentaires.
181—Energique programme pour la démolition de maisons d'habitation et le lancement de projets d'habitation publics.	Ecrire à la CFMM pour réclamer un plus gros effort de rénovation urbaine. De plus écrire directement à chaque municipalité.			Ecrire aux assoc. prov. pour leur demander de faire des démarches auprès des autorités de leurs provinces respectives.
182—Encourager la remise en état des maisons anciennes.	Adresser une lettre de félicitations au gouvernement de l'Ontario sur réception du rapport Pickett (SCHL). Etudier l'idée d'adresser des propositions à tous les gouv. prov. Avertir la CFMM des dispositions prises.			Une fois publié le rapport de la SCHL, adresser des propositions précises à tous les gouv. prov. par l'entremise des associations prov. d'architectes.



# Inaugural Meeting RAIC-CCA Building Materials Committee

FURTHER PROGRESS towards the achievement of closer working relationships between the architectural profession and manufacturers of building materials was made on September 13th, when the inaugural meeting was held in Toronto of the recently organized Joint Committee on Building Materials of the Royal Architectural Institute of Canada and the Manufacturers and Suppliers Section of the Canadian Construction Association.

The Joint Committee was formed last June with the objective of establishing in Canada an organization of architects and suppliers similar to the Producers Council in the United States.

The Institute is represented on the ten man committee by Ernest J. Smith, Winnipeg, Chairman of the RAIC Section; W. G. Leithead, Vancouver; P. T. M. Barott, Montreal; Robert E. Briggs, Toronto; and S. A. Gitterman, Ottawa.

Members of the CCA Section are A. W. Purdy, Calgary manager of the Canada Cement Company and chairman of the Manufacturers and Suppliers Section of the CCA; Donald H. Jupp, Toronto, President of Pilkington Bros (Canada) Ltd; J. G. Graham, Toronto, Director of Construction Industry Relations, Dominion Tar and Chemical Company; P. N. DuVal, Winnipeg, President of Acme Sash and Door Company, Ltd, St Boniface; C. O. P. Klotz, Montreal, of Aluminum Union Ltd. E. L. Mahoney, of the CCA staff in Ottawa, is secretary to the Committee.

The meeting was largely devoted to organizational details and to discussion of a four point program, which calls for the establishment of local committees of architects and manufacturers in major cities; the production

of a library of producers' films; the publication of a guide for the use of manufacturers in the preparation of product literature; and the establishment of training courses for manufacturers' salesmen.

Mr Purdy was elected Chairman, and Ernest Smith, Vice Chairman.

Mr Smith and Mr DuVal were appointed a sub-committee to investigate the feasibility of an "agreement of affiliation" between the two groups and to make general plans for the future operation of the Committee, including suggestions for a name.

R. E. Briggs and J. G. Graham were appointed a sub-committee to produce a guide to the preparation of brochures, technical bulletins and advertisements to the architectural profession. S. A. Gitterman will undertake a study of building material catalogues and technical files.

The RAIC Journal will work in close cooperation with the Committee and will publish the product literature guide.

A welcome visitor was Keith Belch, Executive Assistant of the Producers Council Inc. in Washington, D.C., who outlined the program of sales training courses conducted by the Council at various US universities. The courses are conducted chiefly by prominent American architects. The Joint Committee plans to conduct a similar training course in Toronto, probably in January. Arrangements for the course are in the hands of a sub-committee consisting of Dr Thomas Howarth, Director of the School of Architecture, University of Toronto; Prof W. G. Raymore, also of the School of Architecture; R. E. Briggs, Donald Jupp, J. G. Graham; E. L. Mahoney, and Robbins Elliott, Executive Director of the RAIC.

*Left to right, (sitting) C. O. P. Klotz, Montreal (CCA); Ernest Smith, Winnipeg (RAIC); A. W. Purdy, Calgary (CCA); Ernest Mahoney, Ottawa (CCA); D. H. Jupp, Toronto (CCA); Peter Barott, Montreal (RAIC); (standing) S. A. Gitterman, Ottawa (RAIC); D. C. Chutter, Ottawa (CCA);*

*Robert Briggs, Toronto (RAIC); P. N. DuVal, Winnipeg (CCA); J. G. Graham, Toronto (CCA); R. Elliott, Ottawa, Executive Director of the RAIC; and Walter Bowker, Toronto, Managing Editor of the RAIC Journal. (Not shown, William G. Leithead, of Vancouver and Keith Belch, Executive Assistant, Producers Council, of Washington, DC)*



ERIC TRUSSLER

# Light Industrial Buildings at Dorval, P.Q.

CIBA CO LTD    SANDOZ (CANADA) LTD    MOUNT ROYAL CHEMICALS LTD

Project Consultants, T. Pringle & Son Ltd, Montreal    Architect, Percy Booth, Montreal    Project Manager, B. Saskin  
General Contractor, Byers Construction Co Ltd    Foundation, Ross & Anglin Ltd

Consultants on Ciba Group

Preliminary Design, H. A. Swanson; Landscaping, McFadzean & Everley Ltd; Interior Design, Norman Slater

The project comprises a group of light industrial buildings for the Ciba Co Ltd, the Sandoz (Canada) Ltd, and Mount Royal Chemicals Ltd.

The Ciba group, which is extensively illustrated in the following pages, consists of an office and laboratory building, a cafeteria and a dye and pharmaceutical warehouse. The office and laboratory building is of steel frame construction with concrete floors on a steel deck which carries a grid of electrical and telephone conduit panels. The exterior is aluminum and glass curtain wall with anodized aluminum mullions on 4' centres spanning continuously from the first floor line to the roof. The spandrel panels are insulated glass in void grey. All horizontal aluminum members are anodized black.

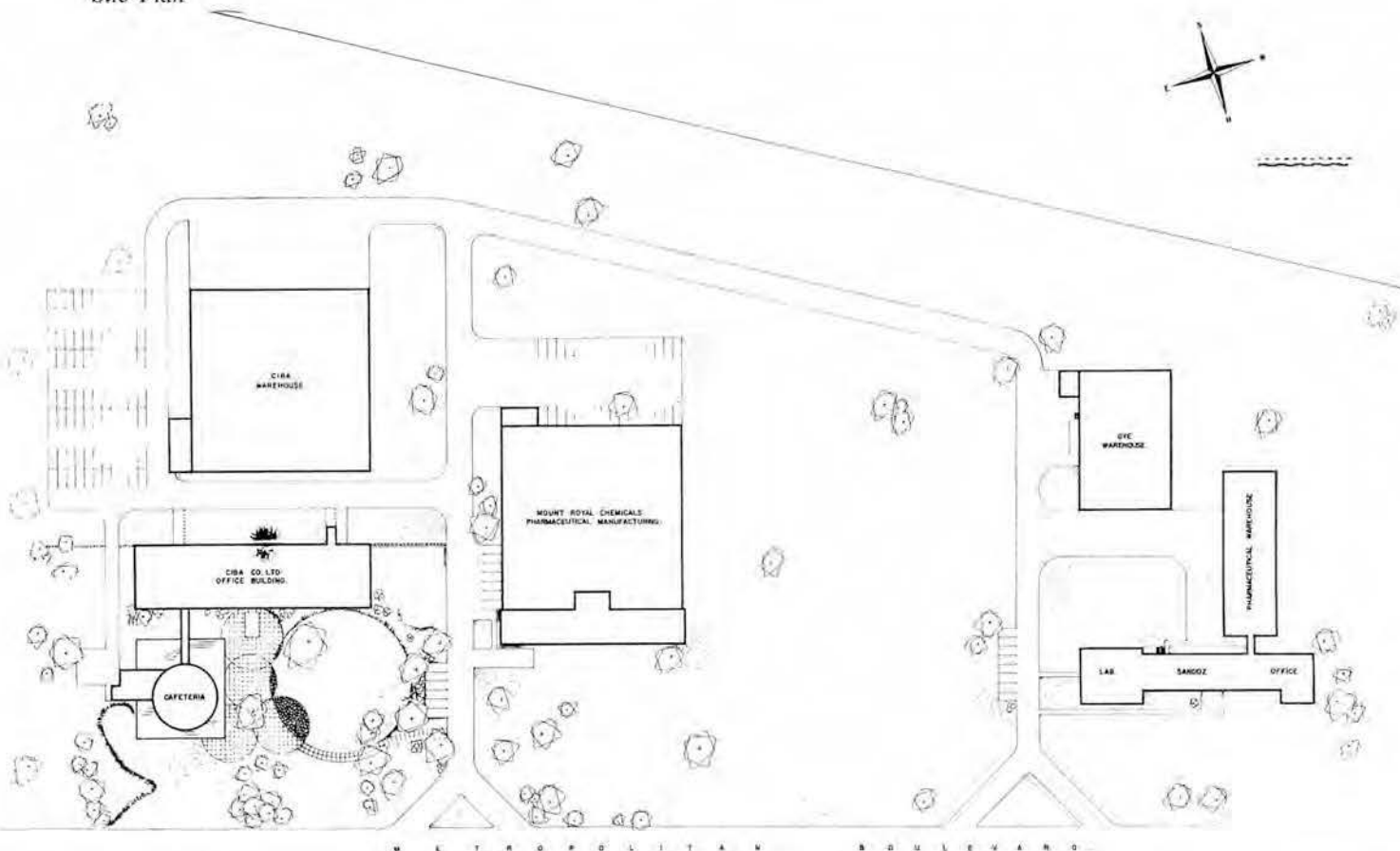
Heating and air conditioning is by high pressure induction units. The units are approximately 30" high and line the perimeter of the building. In the cafeteria the units are set in separately designed anodized aluminum

cabinets projecting approximately 12" above the floor around the perimeter.

Great care was given to the interior detailing of the office building and cafeteria, which was carried out by the architects in close collaboration with the owners. The two side walls of the lobby are 4" teak planks, the floor is terrazzo and the upper ceiling is a plastic luminous surface. The underside of the second floor area, which projects into the lobby, is of acoustic plaster, lit by pot lights. Basically, all areas are treated similarly with the 10' high teak panels separating white painted plaster surfaces. The public corridors are vinyl asbestos floor tile in deep blue, while all other areas are in off white. To complete the decorating scheme, the owners are acquiring paintings by Canadian artists which will be hung in private and general office areas.

An area in the basement accommodates a small theatre capable of seating 150, with cloakroom adjacent.

Site Plan





*Mount Royal Chemicals Ltd*

HENRY KORO



*Sandoz (Canada) Ltd*

ASSOCIATED COMMERCIAL

The circular cafeteria building is set in a reflecting pool approximately 100' by 110' and connected to the main building by a glass walled bridge. It is divided into a dining area and a lounge. The kitchen is a small brick structure adjacent to the cafeteria and is equipped to serve up to 150 meals at a sitting. The interior finish is acoustic plaster, with the floor in grey epoxy terrazzo. The glass walls are screened in beige transparent curtaining.

A prominent feature in the cafeteria is a ceramic tile wall mural, 7' by 26' long, designed and executed by Claude Vermette of Ste Adele.

The third building in the Ciba complex is a 200' by 200' warehouse of steel frame construction with beige brick exterior and aluminum sash above.

A comprehensive landscaping and exterior lighting scheme compliments the building layouts. The approach, by means of a concrete terrace and walk, is designed to feature works of sculpture. The visitors parking area is screened by an aluminum mural designed and erected by Norman Slater, and consisting of aluminum tripods anodized in various colors using Ciba dyes. Photographs of the Ciba buildings are by Norman Slater.

*Ciba Co Ltd, the cafeteria, connecting bridge and office building*



THE CIBA GROUP



*First floor plan*



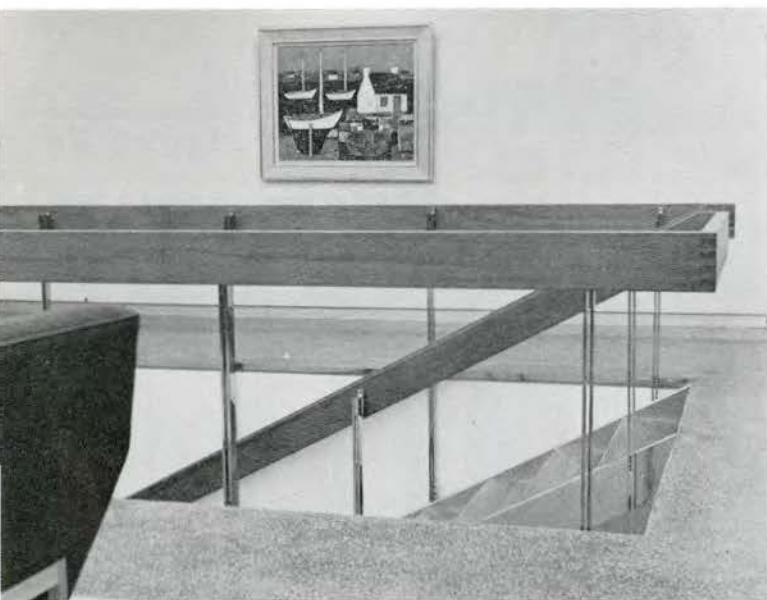
*Second floor plan*

*Detail of screen by Norman Slater*





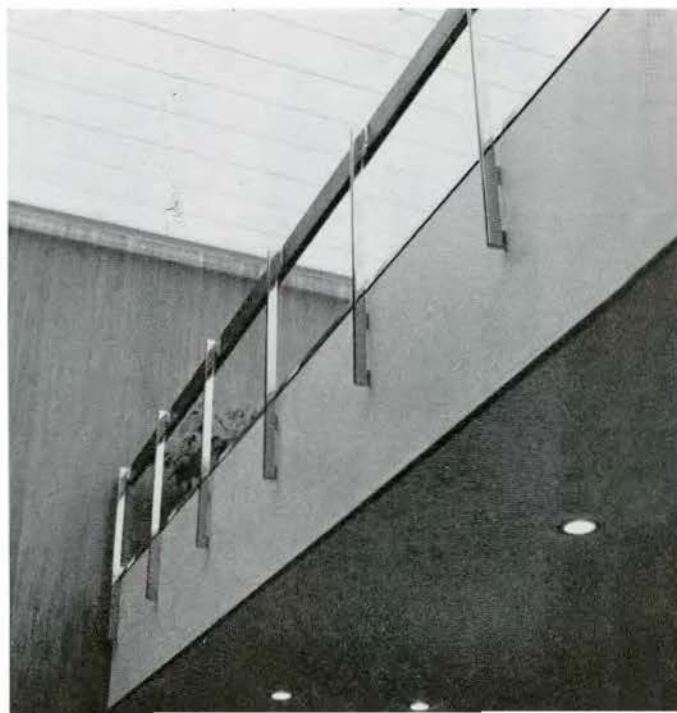
*View of general office area*



*Stair head*

*Below left: View of suspended stainless steel stairway. Stringers and hangars are polished stainless steel; treads and platform are 2½" teak*

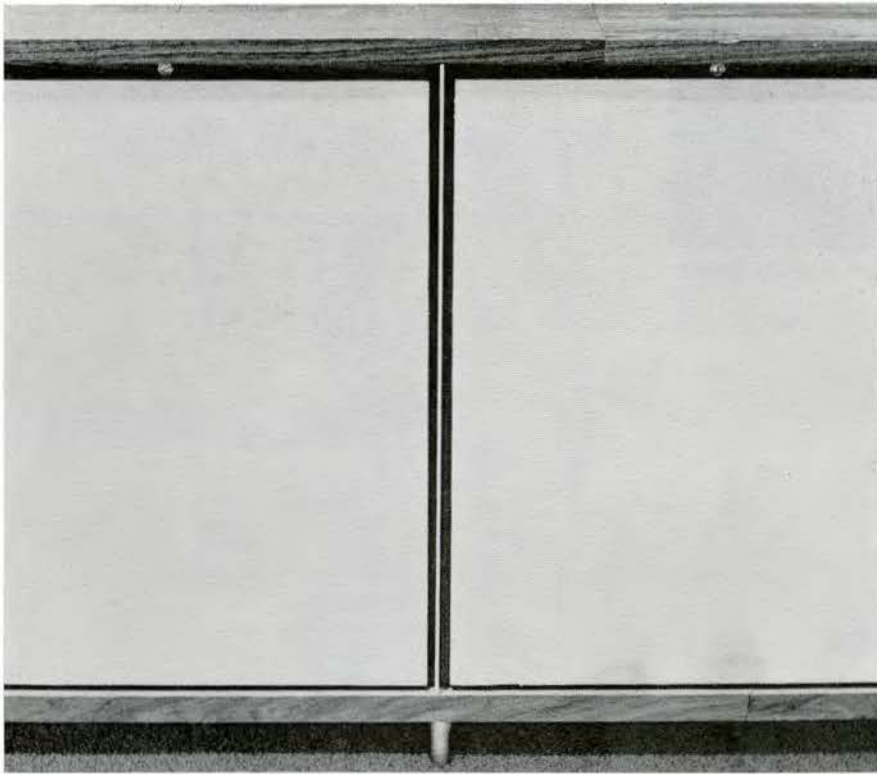
*Below: Detail of railing at mezzanine in lobby. Vertical posts are polished stainless steel, top rail is teak, side walls are 4" wide teak plank*



*Interior detail of Board Room*



*Detail of induction unit cabinet in executive areas. Unit is teak framed with anodized aluminum separators, panels are covered in vinylite*



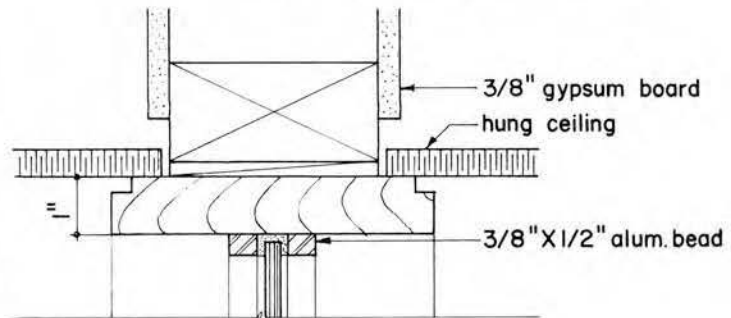
*Interior detail of Board Room*



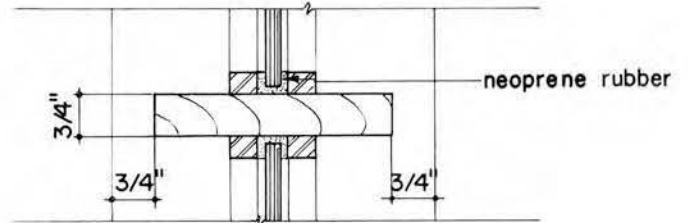


View down corridor

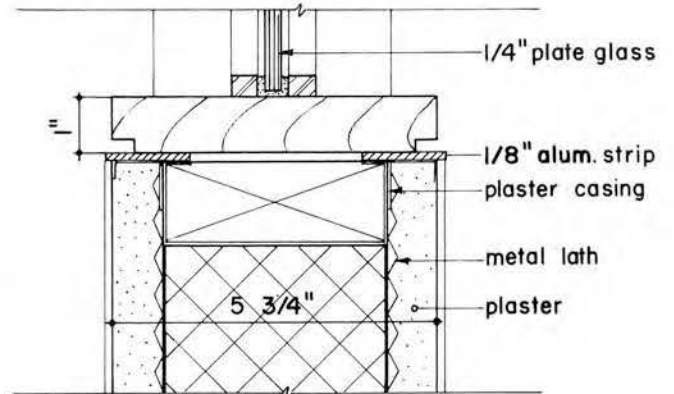
Detail of jamb for glazed partitions



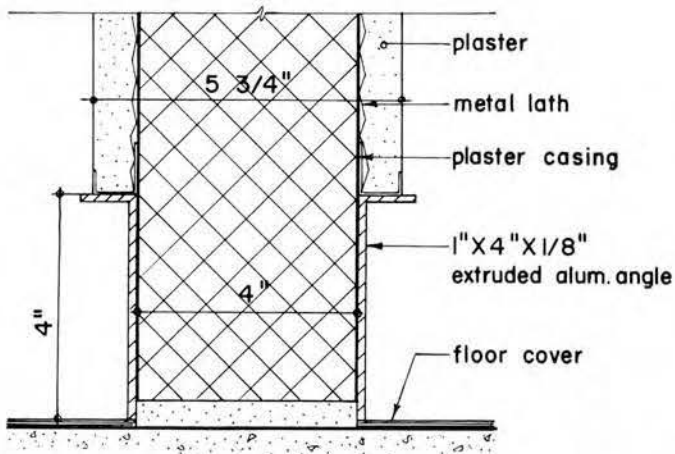
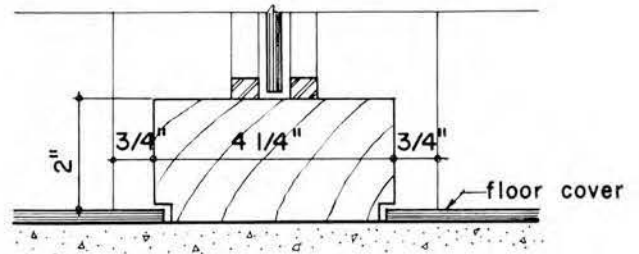
HEAD



TRANSOM

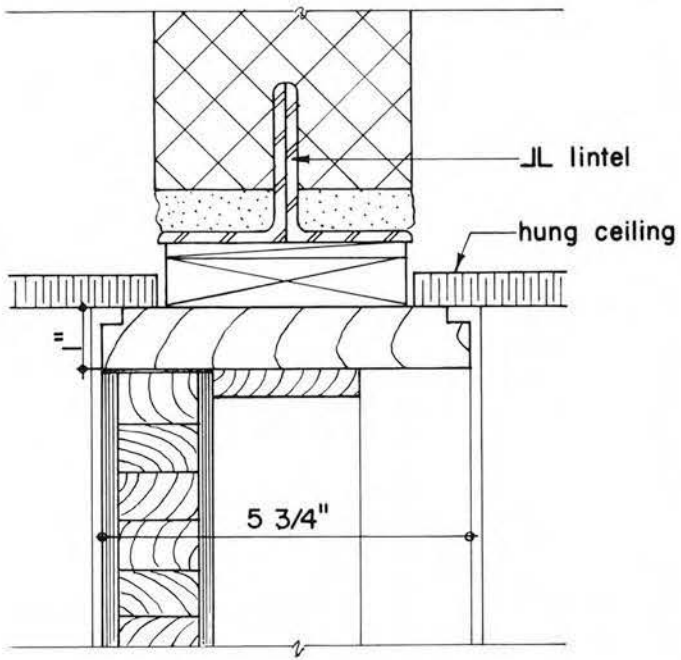


JAMB



Base detail at TC partition

Head detail for door



Detail at head of door and ceiling

View from corridor into small conference room

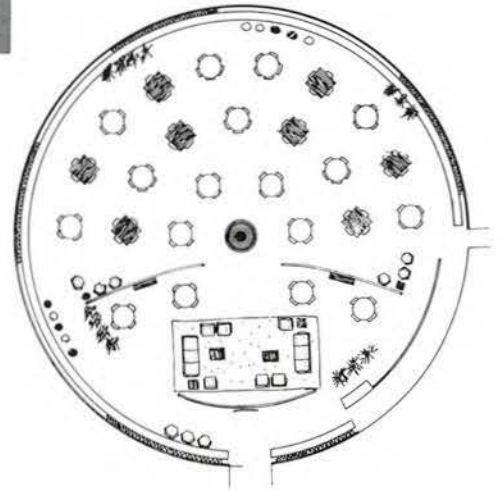






*Detail view of cafeteria*

*Plan of cafeteria*



*View of cafeteria in reflecting pool at night. Ceramic mural over serving counter is by C. Vermette of Ste Adele*



# CANADIAN BUILDING DIGEST



DIVISION OF BUILDING RESEARCH • NATIONAL RESEARCH COUNCIL

CANADA

## Noise Transmission in Buildings

by T. D. Northwood

UDC 534.83

The old-fashioned building, in which massive walls supported massive floors, provided among its hidden virtues considerable protection against the transmission of noise. In decided contrast is the modern building, in which lightweight construction is the aim, and in which the walls, divested of their load-bearing responsibilities, have become merely curtains. The result is that in the modern building sound insulation must be dealt with explicitly, as a basic requirement.

It is proposed to discuss here the chief ways in which noise considerations affect the design of buildings, illustrating with three common structures: the apartment building, the office building, and the industrial plant. The analysis will be made as quantitative as this brief treatment will permit. A few special construction details will be discussed in the final section.

The most important point to be made is that the successful design is one in which noise is a consideration at every stage. A noisy site, for example, will strongly affect the over-all design of a building, and may necessitate costly noise control measures. Similarly within the building the spatial separation of quiet and noisy regions will simplify the problem of achieving adequate noise insulation between them. Finally, noise insulation design must be carried through to the last detail: there is no merit, for example, in specifying a good partition and then allowing it to become punctured with service outlets, or badly fitted doors.

### *Apartment Buildings*

The problem to be considered in apartment buildings and other multiple-dwelling structures is the transmission of noise from one dwelling unit to another (on the assumption that the occupants of an individual dwelling

can settle their local noise problems among themselves).

Noises produced in apartments vary with the occupants and with their activities of the moment. Similarly one's tolerance of extraneous noise varies with one's own activities; in fact if all the occupants of a building were always doing the same things at the same time there would be no noise problem. More commonly, however, one occupant will be trying to sleep while his neighbour watches a late television show; or a day worker will be living below someone who works in the evening and dines at 3 a.m. The successful building is one that can accommodate the wide variety of tenants and tenant activities amicably. A completely "soundproof" building is not practical; the modest objective in the following discussion is to satisfy perhaps 75% of apartment dwellers 90% of the time.

An apartment building can usually be laid out in plan so that the most critical rooms (bedrooms, living rooms) are protected from adjoining apartments by a buffer zone of non-critical areas such as bathrooms, kitchens, closets and hallways. For separating such non-critical areas a party wall having an average sound transmission loss of 45 decibels\* is adequate. The next best arrangement is to place quiet rooms such as bedrooms on the two sides of the party wall; in this case the separation should be a 50-db wall. The worst arrangement is to place a critical region of one apartment adjacent to a noisy region (such as a bathroom or kitchen) of the adjacent unit; even a 50db wall is inadequate in this case.

Similar considerations apply to floors separating dwelling units. For separating

\* The decibel (db) is a convenient acoustical unit used here for specifying the transmission loss of partitions. In this article the values of airborne sound transmission loss are averages based on measurements at 9 standard test frequencies, according to ASTM Recommended Practice E90-55.

critical areas an airborne sound transmission loss of 50-db is necessary. Since in the conventional building pattern it is not easy to vary the floor construction from critical to non-critical areas, it is usually the 50-db requirement that governs. An arrangement with noisy regions over critical regions should be avoided.

An additional problem of special importance in floors is impact sound (e.g. footsteps), originating as a vibration in the separating structure itself. Floors separating apartments should provide adequate insulation against impact sounds. Since a satisfactory floor design is the most costly noise control measure it is worth noting that floor transmission is the commonest and most disturbing noise problem in existing apartment buildings.

The floor problem does not arise, of course, in row dwellings. It is possible to minimize it also in apartment buildings by designing two-story apartments; if they are planned so that the bedrooms or individual apartments are beneath their own living rooms the impact problem largely disappears. Airborne noise transmission is still important, but this is more readily dealt with.

#### *Office Buildings*

Noise insulation requirements for an office building are not as stringent as those for an apartment building. Offices are usually occupied for only about 8 of the 24 hours, a moderate amount of business noise is usually acceptable, and interference with sleep is rarely a concern. The main requirement for partitions between tenants in an office building is speech privacy: i.e. speech originating in one tenancy should not be intelligible in an adjoining tenancy. An exact specification depends upon the ambient noise level in the "listening" room, but generally an average transmission loss of 35 to 40 db is adequate. Office building floors usually provide adequate insulation for airborne sound, and impact noise is of minor importance except when heavy machines or other sources of vibration or impact are involved.

Unfortunately, with the current fashion in office buildings, even the modest requirement of speech privacy is not always met. Typically large floor areas are finished without partitions and subdivided to meet tenants' space requirements with prefabricated office partitions. A suspended acoustical ceiling is commonly used to provide an unbroken surface masking

miscellaneous pipes, ducts, and electrical services. However satisfying they may be visually, such partitions and suspended ceilings are frequently almost transparent acoustically.

Progress is being made in the development of partitions, and some excellent individual panels are now available. But in typical installations they are joined together by flimsy, leaky cover plates and filler strips resulting in an assembly that has a transmission loss of less than 25 db. Frequently the partitions meet an exterior curtain wall with only a narrow window mullion on which a satisfactory joint must be attempted. Other common features of the curtain wall, such as a continuous perimeter heating strip, introduce sound channels that nullify the value of a good partition.

Finally there is the problem of noise transmission over the partition above the suspended ceiling. This may be prevented (1) by using ceiling panels backed by a heavy impervious layer that reduces sound penetration through the ceiling, or (2) by building adequate partitions in the space above the ceiling.

The whole problem might be simplified by restricting the location of major partitions to modular intervals, perhaps coinciding with the structural module. At these intervals adequate partitions could be provided above the ceiling and suitable joint details could be incorporated in the curtain wall.

Executive offices and conference rooms constitute the most critical noise control problem in office buildings. Speech privacy is usually a requirement, necessitating the same considerations as above even for walls within a tenancy. An additional concern is to provide conditions quiet enough for comfortable speech over ranges of perhaps 10 to 20 ft. Meeting the speech privacy requirements will take care of most business noises except possibly business machine noise. Commonly the remaining problem is the noise produced by mechanical equipment such as ventilators. Quiet ventilator design is primarily the responsibility of the equipment manufacturer and the heating engineer. A suitable performance specification is to require that the equipment should not raise the noise level above the appropriate Noise Criterion given below. These specify noise levels, as a function of frequency, that have been found acceptable for the applications indicated. (For further details see Reference 3)

- NC-30—Executive offices, conference rooms seating 50 people.
- NC-35—Small offices, semi-private offices, conference rooms seating 20 people.
- NC-40—General offices, in which speech and telephone communication are important.
- NC-45—Large general offices, drafting rooms. Normal communications at 3 to 6 ft.
- NC-55—Business machine rooms, communication in raised voice at 3 to 6 ft.

The large general office is a compromise between sound insulation and such factors as space economy, lighting and ventilation. The main noise sources are telephone conversations, and small machines such as typewriters. A partial solution is to use sound absorbing hoods or partial partitions around the principal offenders. More mechanized equipment such as card-punching and sorting machines, and reproduction equipment should be placed in a separate room where possible. Heavy machines should be mounted on properly designed vibration-isolating bases.

#### *Industrial Noise*

The typical industrial plant comprises offices, factory areas, storage space, and other occupancies. The special noise control problem is the factory area. No general solution can be prescribed for factory noise since the intensity and character of industrial noises vary widely. Apart from airborne noise there is often a vibration problem, which can usually be solved by providing special foundations or vibration-isolating mountings. Sometimes the machine manufacturer is prepared to offer guidance; otherwise a qualified acoustical consultant should be retained. The principal considerations will nevertheless be sketched below.

The requirements are: (1) to prevent hearing impairment among machine operators, (2) to facilitate necessary speech communication among operators, and (3) to prevent the transmission of excessive noise into other parts of the building or into adjacent buildings. The building designers' share in minimizing the first two problems is to provide sound-absorbing surfaces or space absorbers within the factory space. Sound-absorbing hoods or partial enclosures around the principal noise-makers are also sometimes feasible and useful.

The third problem is dealt with as in the preceding examples, except that the frequency content of the noise should be considered in

conjunction with the frequency versus transmission loss characteristics of the walls and floors used to enclose it.

#### *Building Details*

*Transmission loss of walls and floors.* — Airborne sound transmission losses of representative walls are given in Table I. It will be noted that a high transmission loss may be achieved either with a heavy wall or with a complicated one composed of several relatively independent layers. In either case it is essential that the wall be as air-tight as possible. Cracks or holes at joints or around service outlets can spoil an otherwise excellent construction.

Similar considerations apply to floors, with the additional problem of impact noise. Table II lists a few typical floor constructions. The impact ratings shown are based on a non-standard test, and are for comparison only. For separating dwelling units an impact rating of better than 20 db (in this scale) is recommended. Although a satisfactory impact rating may be obtained with a suspended ceiling arrangement (see Table II), a floating floor is generally more successful since it prevents impact vibrations from getting into the main structure and thence into adjoining parts of the building.

*Doors.* — Doors should be avoided in partitions for which a high sound insulation is required. Where they must be employed in such walls they should be of solid wood and should be carefully fitted to minimize cracks around them. A refrigerator-type gasket is useful around top and sides; either a sill or a special drop-strip may be used at the floor.

*Plumbing fixtures.* — Plumbing fixtures are troublesome noise producers, and the service pipes may provide an efficient direct path between occupancies. To minimize such problems quiet fixtures should be used; service pipes should be resiliently supported and should not be fastened to critical walls. Doors leading to public washrooms should not open directly into quiet areas and should be well fitted. Ventilating louvres, if any, should incorporate noise filters. In apartment planning it is good practice to group bathrooms and kitchens of adjacent units together, and to locate the services (with due precautions against air leaks) in the party wall. Each set then acts as a buffer against noise from the adjoining apartment.

TABLE I — AIRBORNE SOUND TRANSMISSION  
LOSS OF TYPICAL WALLS

A —	Transmission loss 50 db or more. (Recommended between critical areas of adjoining dwellings.)
	1. Single masonry wall weighing at least 80 lb per sq ft including plaster if any.
	2. Masonry cavity wall — 2 leaves of masonry spaced at least 2 in. apart, each leaf weighing at least 20 lb per sq ft <sup>a</sup> ; leaves tied together with butterfly ties at 2-ft centres.
	3. Composite wall — basic wall masonry weighing at least 22 lb per sq ft <sup>a</sup> ; on one side of basic wall an additional leaf consisting of ½-in. gypsum lath mounted with resilient clips, ⅜-in. sanded gypsum plaster.
	4. Stud wall — 2- by 4-in. studs; on each face ½-in. gypsum lath mounted with resilient clips, ⅜-in. sanded gypsum plaster; paper-wrapped mineral or glass wool batts between studs.
	5. Staggered stud walls — 2- by 3-in. studs at 16-in. centres on common 2- by 6-in. plate; on each face ½-in. gypsum lath, ⅜-in. sanded gypsum plaster; paper-wrapped mineral or glass wool batts between one set of studs.
B —	Transmission loss 45 to 49 db. (Recommended between non-critical areas of adjacent dwellings.)
	1. Single masonry wall weighing more than 36 lb per sq ft including plaster if any <sup>a</sup> .
	2. Composite masonry — as in A-3 except gypsum lath supported on furring.
	3. Staggered stud dry wall — 2 sets of 2- by 3-in. studs at 16-in. centres on common 2- by 4-in. plate; on each face 2 layers of ⅜-in. gypsum wallboard, the first layer nailed, the second cemented; joints staggered and both sets sealed; mineral or glass wool blanket or batts in the interspace.
C —	Transmission loss 40 to 44 db.
	1. Single masonry wall weighing at least 22 lb per sq ft including plaster if any.
D —	Transmission loss 35 to 40 db.
	1. Stud wall — 2- by 3-in. or 2- by 4-in. studs ⅜-in. gypsum lath and ⅜-in. sanded gypsum plaster.
	2. Stud wall — 2- by 3-in. or 2- by 4-in. studs, 2 layers of ⅜-in. plasterboard, the first layer nailed, the other cemented, joints staggered.

<sup>a</sup> If porous blocks are used one face of each block section must be sealed with plaster or heavy paint.

TABLE II — SOUND TRANSMISSION  
LOSS OF TYPICAL FLOORS

	Impact Rating (db)
A — Airborne transmission loss 50 db or more.	
1. 4-in. solid concrete or equivalent slab weighing at least 50 lb per sq ft; ceiling side bare or plastered directly on slab; floor side wood furring, rough and finish floors.	30
2. As in (1) except floor side 1-in. foamed plastic or paper-covered glass fibre quilt, supporting 2-in. concrete.	30
3. As in (1) except floor side parquet or linoleum; ceiling side wood furring, ½-in. gypsum lath, ⅜-in. sanded gypsum plaster.	5°
4. As in (3) but ceiling side ½-in. gypsum lath suspended on resilient clips, ⅜-in. sanded gypsum plaster.	20
5. As in (3) but ceiling mounted on separate joints supported at walls.	25
6. Open steel joints or similar structure; on floor side form-work, paper-covered glass fibre quilt or foamed plastic, 2-in. concrete; ceiling side ½-in. gypsum lath on resilient clips, ⅜-in. sanded gypsum plaster.	30
B — Airborne transmission loss 45 — 49 db.	
1. 4-in. solid concrete or equivalent slab construction weighing 50 lb per sq ft.	2°
2. As above but floor side finished in linoleum or wood parquet.	5°
3. As in (1) but floor side finished with carpet and underlay.	10°

\* Impact rating not adequate for separating dwelling units.

#### References

1. Acoustical Designing in Architecture, by V. O. Knudsen and C. M. Harris (John Wiley, 1950).
2. Handbook of Noise Control, edited by C. M. Harris (McGraw-Hill, 1957).
3. Revised Criteria for Noise in Buildings by Leo L. Beranek, Noise Control, Vol. 3, No. 1, p. 19-27, January 1957.

*This is one of a series of publications being produced by the Division of Building Research of the National Research Council as a contribution toward better building in Canada. The Division has issued many publications describing the work carried out in the several fields of research for which it is responsible. A list of these publications and additional copies of this Building Digest can be obtained by writing to the Publications Section, Division of Building Research, National Research Council, Ottawa, Canada.*

# Institute News

## RAIC Executive Committee Meets

Members of the RAIC Executive Committee met at Ottawa headquarters on September 23rd and 24th to consider a lengthy agenda. Present were the President, Harland Steele, Toronto; Vice-president, John L. Davies, Vancouver; Honorary Secretary, F. Bruce Brown, Toronto; Honorary Treasurer, Randolph Betts, Montreal; Past-president, Maurice Payette, Montreal; F. Nobbs, Montreal; G. E. Wilson, Toronto; A. Prack, Hamilton; Neil Stewart, Fredericton; Howard Bouey, Edmonton.

Heading the agenda was consideration of proposals from the joint RAIC-CMHC committee for implementation of the Residential Environment report released by the Institute last June. James Murray of Toronto, Committee chairman, presented a written memorandum recommending detailed action in respect to the thirty-two recommendations contained in the report. (See page 426 of this issue for a full report on the RAIC program to implement the report). The Executive Committee endorsed the joint committee recommendations unanimously.

The President reported his intention to prepare a second letter, to go to architectural firms at the middle of October, stressing that an active program to implement the Committee of Inquiry report represents a tremendous public relations effort, and that any financial contributions from the profession will be for a period of one year only. It was decided that the RAIC administrator, to be secured on loan from CMHC, will not be retained until two-thirds of the campaign total of \$15,000 has been reached.

### RAIC Council to Meet

The Executive Committee will hold their next meeting in Toronto and invitations have been issued to the Provincial Associations to send representatives to a meeting of RAIC Council to take place in Toronto, Saturday, January 21st, 1961.

### Governor General to Accept Honorary Fellowship

Preliminary plans have been announced for the 1961 Annual Assembly to be held at the Chateau Frontenac in Quebec City May 17-20. The Assembly theme will be: "The Architect and the Building Community". His Excellency Major General Georges Vanier, Governor General of Canada, has graciously consented to accept an Honorary Fellowship from the College of Fellows. The Executive Director

tabled a draft convention manual to be used by the Institute as a future guide in the organization and control of annual conventions.

### RAIC Journal Reports Encouraging Progress

It was reported that the RAIC *Journal*, during the first two quarters of 1960, had recorded a 35.7% increase in advertising revenue, representing a substantial increase in the sale of *Journal* advertising over the same period in 1959. The circulation base of the *Journal* is being expanded to permit the provision of five hundred complimentary subscriptions to consulting engineers, specification writers, members and allied arts. The Executive Committee members recorded their satisfaction with the substantial improvement in *Journal* editorial content during 1959 and 1960.

### Roofing Guarantees

Members reviewed reports from Provincial Associations in British Columbia, Alberta, Ontario, Quebec, and Nova Scotia which reveal that the official attitude of component societies respecting the period of roofing guarantee is extremely varied. The RAIC, at the request of the Canadian Roofing Contractors Association, had attempted to secure uniformity earlier in 1960, respecting (1) length of guarantee, (2) testing methods, (3) revised specifications. It was recognized, however, that the RAIC was in a position only to suggest a specific course of action with the final recommendation remaining with the individual architect. The committee reached the conclusion that the problem is beyond the scope of RAIC responsibility. And any policy decision in this field must be regarded as coming within the jurisdiction of Provincial Associations, and will henceforth be determined in accordance with local circumstances.

### New Personnel Named to Advisory Committee on Architecture Abroad

It was announced that RAIC President, Harland Steele, and H. H. G. Moody, of Toronto and Winnipeg, respectively, had been appointed, effective November 1st, to replace RAIC Past-president, Maurice Payette, and Vice-president, John L. Davies, as RAIC members of the Advisory Committee on Architecture Abroad, established by the Department of External Affairs in 1958. The third RAIC member is H. Gordon Hughes of Ottawa. The next meeting of the committee, which assumes responsibility for recommending the names of private architects qualified to undertake important commissions abroad, is slated for November 3rd in Ottawa.

## RAIC Travelling Card



### Royal Architectural Institute of Canada

88 Metcalfe St., Ottawa 4, Ont., Canada

It will be much appreciated if all those whom it may concern will allow

Mr. \_\_\_\_\_ whose Signature\* is on this card, and who is travelling for the purposes of Architectural Study, to Sketch, Measure or otherwise examine any ancient or notable buildings or monuments under their charge, and afford him such reasonable facilities and assistance as may lie in their power from \_\_\_\_\_ 19\_\_\_\_ to \_\_\_\_\_ 19\_\_\_\_

No. \_\_\_\_\_ Executive Director

\*Signature and Address of Bearer:

Members travelling abroad are reminded of the availability from RAIC Headquarters, Ottawa, of the official RAIC travelling card. The wallet size card serves both to identify the owner as a member of the Institute and to request, in seven languages, the cooperation of those concerned in allowing the bearer access to buildings for architectural study purposes. The card also shows the regulations governing the photography and measuring of public buildings in European and Asian countries.

## Reserve Now for RAIC Post-Assembly Air Tour of Europe

An announcement in the August issue of the *Journal* concerning an RAIC-sponsored architectural tour of Europe at the end of the 1961 Assembly in Quebec City next May, has stirred a substantial number of inquiries. The 79-passenger aircraft will depart Quebec City airport on Sunday, May 21st, for a 19-day tour of Portugal, Spain, Italy, Switzerland and the Netherlands.

The tour director will be Dr Thomas Howarth, Director of the School of Architecture, University of Toronto, who is planning the itinerary. Hospitality for participating architects and their wives has already been offered by architects in the countries concerned and by the Department of External Affairs. An all-expense rate has been set at \$800 per person.

The RAIC will circulate a descriptive brochure to members of the Institute early in November, and the deadline for final tour registration will be January 15, 1961.

A compter de ce mois, le *Journal* met cette page à la disposition de l'A.A.P.Q. Je sais gré à Monsieur Bowker de me fournir l'occasion de communiquer aux architectes d'expression française un compte rendu de la besogne abattue dans les trente jours précédents et un aperçu des projets envisagés par l'Association du Québec.

A maintes reprises, on a fait la demande et avec raison d'être renseigné sur les activités du Conseil et des différents Comités. Je profiterai de ces quelques lignes chaque mois pour vous faire savoir ce qui se passe à l'A.A.P.Q.

Dans ce premier message, permettez-moi, à cause de l'importance de la question, de ne traiter que d'un sujet: l'HABITATION. Vous êtes déjà tous au courant qu'à l'aide d'un octroi de \$30,000 du Gouvernement fédéral l'Institut Royal, de concert avec la Société centrale d'hypothèque et de logement, a conduit une enquête nationale l'an dernier dans le domaine de l'habitation. Le Comité d'enquête présidé par l'architecte Peter Dobush de Montréal, a déposé son rapport à l'Assemblée annuelle de l'Institut en juin dernier.

Ce ne devait être que le commencement. Il eût été pour le moins étrange de dépenser une telle somme d'argent pour relever les erreurs monstrueuses qui se sont glissées depuis dix ou quinze ans dans l'aménagement de certaines banlieues et pour noter, à grand regret, l'absence presque totale de l'architecte dans la préparation des plans de résidences, pour ensuite reléguer le rapport aux oubliettes.

A la suggestion de M. Peter Barott, le Conseil de l'A.A.P.Q. a décidé d'aller de l'avant dès cet automne. La mise en pratique des recommandations contenues dans le Rapport est à l'ordre du jour. Déjà une réunion d'importance a eu lieu le 28 septembre, au Arts Club, à Montréal. Vingt-cinq architectes ont rencontré à cette occasion les délégués d'une vingtaine d'Associations, toutes très intéressées à l'habitation, à l'urbanisme, au bien-être social.

Il a été alors résolu à l'unanimité de tenir une journée d'études le 7 décembre, au Reine Elizabeth, à Montréal. Sujet: le Rapport du Comité d'enquête sur les conditions de l'habitation. Un groupe d'experts choisis dans différentes sphères connexes à l'habitation discuteront des recommandations du Rapport et plus particulièrement de la possibilité de les appliquer à la Province de Québec.

L'I.R.A.C. pour sa part s'appête à effectuer le même travail à l'échelle nationale. A cette fin, le président de l'Institut, Monsieur Harland Steele, a lancé un appel à tous les architectes du Canada et à toutes les firmes d'architectes de bien vouloir contribuer \$10 par tête. Le Conseil endosse pleinement cette sollicitation et compte sur le sens professionnel de tous les membres de l'A.A.P.Q. pour la réalisation de ce projet d'envergure.

Il ne m'appartient pas de sonner l'alarme, mais je voudrais signaler un risque réel. Un architecte m'affirmait dernièrement qu'il n'y a pas 2% des résidences, qui se construisent suivant des plans et devis conçus par des

architectes. Que ce pourcentage soit inférieur à la réalité n'enlève pas qu'il y a sérieuse anomalie. La Loi des architectes (du Québec) réserve exclusivement aux membres de l'A.A.P.Q. le droit de préparer des plans et devis pour toutes catégories de bâtisses, y inclus bien entendu la résidence. S'il est vrai que l'architecte ne "fait pas de résidence", un danger le menace. A ne pas exercer un droit, il devient vite caduc; à fortiori, lorsqu'il est exclusif, rien ne garantit la perpétuité de ce privilège.

Pour cette raison, et au nom de la solidarité professionnelle, chaque bureau devrait se faire représenter à la journée d'études du 7 décembre. D'autre part, l'appel de Monsieur Steele ne doit pas demeurer sans réponse. La sauvegarde des prérogatives de l'architecte ne vaudrait pas \$10?

### *Nouvelles de l'Institut*

La Société Centrale d'hypothèque et de logement annonce un concours pour l'aménagement du site du chemin Smyth à Ottawa. On peut obtenir les conditions du concours de l'architecte-conseil, le Dr E. R. Arthur, School of Architecture, University of Toronto. Les chèques au montant de cinq dollars doivent être faits à l'ordre de la SCHL. Le montant sera remboursé aux concurrents de bonne foi et à ceux qui retourneront les conditions (en bonne condition!) avant le 16 décembre.

La prochaine Assemblée annuelle de l'Institut aura lieu au Château Frontenac du 17 au 20 mai 1961. Le thème sera: L'Architecte et le monde de la construction. Son Excellence le gouverneur général, le Major général Georges Vanier, sera créé fellow honoraire. L'Institut est à organiser un voyage de 19 jours en Europe: 79 passagers s'envoleront de Québec le lendemain du congrès pour visiter le Portugal, l'Espagne, l'Italie, la Suisse et les Pays-Bas. Le directeur de l'Ecole d'architecture de Toronto, le Dr Thomas Howarth, en trace l'itinéraire. Le prix est de \$800, toutes dépenses comprises. Pour plus amples renseignements, les architectes peuvent s'adresser au Directeur administratif de l'IRAC, 88, rue Metcalfe, Ottawa.

Un Comité national d'architectes et d'ingénieurs vient d'être formé. MM. Randolph Betts et Henri Mercier y représentent l'AAPO. A sa première réunion à Ottawa, le 22 septembre, le Comité a recommandé à l'IRAC et au Conseil canadien des ingénieurs de se consulter avant de faire des représentations à des organismes fédéraux en matière d'honoraires et chaque fois que l'un ou l'autre revise son tableau d'honoraires. Une autre résolution contenait une semblable recommandation dans le cas des formules de contrat.

Deux mois de célébrations en l'honneur de quatre grands initiateurs de l'architecture moderne, Walter Gropius, Le Corbusier, Mies van der Rohe et le regretté Frank Lloyd Wright, auront lieu à l'Ecole d'architecture de l'Université Columbia au printemps de 1961. Le programme intitulé "The Four Great Makers" prévoit une rencontre de ces trois grands et de Mme Wright avec un groupe d'architectes, d'éducateurs et d'écrivains à réputation internationale.

*J. Tisseur*

## Alberta

The Council of the Alberta Association of Architects, meeting on September 14, endorsed the appeal of the President of the RAIC for a contribution of at least ten dollars per member to establish the Institute's fund for implementation of the Report of the RAIC Committee of Inquiry into the Design of the Residential Environment. The Council commended the worthiness of the project and recommended that contributions be sent to RAIC Headquarters, Ottawa, as early as possible.

The Council also agreed that local chapters proceed to organize committees for implementation to the recommendations of the Report.

J. C. Clayton of Calgary was congratulated on his election as a Fellow of the RIBA.

Officers of the Edmonton Chapter for 1960-61 were elected as follows: Chairman, Garth Fleet; Secretary-Treasurer, J. H. Donahue; Entertainment Committee, M. Holland; Exhibition Committee, J. Naito; Members at Large, D. G. Forbes, R. Gordon.

## National Architect-Engineer Committee Inaugural Meeting

Following a preliminary gathering in Ottawa last January, the first full scale meeting of the National Joint Architect-Engineer Committee, comprising five members each from the RAIC and the Canadian Council of Professional Engineers, was held in Ottawa on September 22nd.

Present were: Messrs Gordon Adamson, Toronto; Randolph Betts, Montreal; Howard Bouey, Edmonton; Henri Mercier, Montreal; Neil Stewart, Fredericton; Robbins Elliott, Ottawa, representing the RAIC; Messrs A. W. F. McQueen, Niagara Falls; T. A. Monti, Montreal; D. R. Stanley, Edmonton; D. O. Turnbull, Saint John, N.B.; W. L. Wardrop, Winnipeg; L. M. Nadeau, Ottawa, representing the Canadian Council of Professional Engineers.

Randolph Betts occupied the chair and was named committee chairman for 1960-61. Donald Turnbull was appointed vice-chairman for a one year period. It was agreed that the joint committee will meet twice a year in April and September to coincide with RAIC Executive Committee meetings. The secretariat will alternate between the Executive Director of the RAIC and the Secretary of the Canadian Council.

Messrs Nadeau and Elliott were appointed a sub-committee to prepare draft procedures to govern operations including composition, size of com-

mittee, length of service of members, etc.

It was unanimously agreed that the name of the group be the "National Joint Architect-Engineer Committee".

Official terms of reference were adopted as follows:

- (a) to develop better understanding between members of the two professions
- (b) to assist in maintaining and developing proper relations between architects and engineers in the best interests of the public they serve
- (c) to provide a means of co-operation on problems which are of interest to both groups and national in scope.

The committee dealt with a number of items of mutual interest, including the admissibility of non-professionals to the field of town planning, the matter of nonconformity of fees within provincial associations and between the two professions; standard contract forms, and ethics and rules of practice.

Concerning fees, a resolution was passed recommending that the RAIC and the Canadian Council agree to consult each other whenever making submissions to national agencies on matters of fees; and that both national bodies recommend to their constituent provincial societies that architects and engineers in each province arrange consultations whenever revising their respective fee schedules.

Another resolution proposed that the two national bodies agree to consult each other whenever standard contract forms are developed or revised by either organization, and that the two national bodies recommend to their provincial associations the adoption of a similar policy.

The question was raised concerning the desirability of the committee studying problems involved in ethics and rules of practice with a view to recommending adoption of uniform joint rules of practice throughout the country. It was decided that, for the time being, the committee will limit its action to investigating the existing joint rules of practice presently in force in Canada, informing other provinces of these rules and recommending that consideration be given to the adoption of similar joint rules. Messrs Bouey and Stanley were appointed a sub-committee to study and report on the subject.

Considerable discussion took place regarding the method of approach toward implementation of the report of the RAIC Committee of Inquiry into the Design of the Residential Environ-

ment. It was agreed that the engineers on the committee would study the report prior to the April, 1961, meeting, and that architect members of the Committee would recommend to the RAIC that its future actions in relation to the residential environment report will be communicated to the Canadian Council as soon as determined.

The next meeting of the committee will be held at Ottawa in April, 1961.

## Commonwealth Architects Discuss Reciprocal Registrations

Agreement was reached by the conference of representatives of architectural societies in the British Commonwealth, which met at the RIBA from September 19 to 23, to consider some of their common professional problems. The conference, which was exploratory in character, has invited architectural societies and institutes throughout the Commonwealth to consider the establishment of a permanent advisory and consultative conference to be held every few years.

One of the principal functions of the proposed Commonwealth body would be to form a Commonwealth education committee to prepare the way for reciprocal recognition of architectural qualifications. The conference also discussed a wide range of other matters including the assistance to be given to developing countries where there is a shortage of architects and of facilities for academic teaching.

The recommendations of the conference will now be referred back for further study by the Commonwealth societies and institutes. If they accept the proposal to establish permanent consultative and advisory machinery, a first conference will be held in London, probably in September 1962.

The conference was attended by 21 representatives or members of architectural societies in 12 countries. The RAIC was represented by Prof Fred Lasserre, Director of the School of Architecture, University of BC.

## CMHC Ottawa Competition

The announcement of the CMHC Competition for the development of the Smyth Road site in Ottawa in last month's issue neglected to mention the five dollar fee required for the Conditions of the Competition. The fee will be refunded to bona fide competitors or to those who return the Conditions in good condition before December 16. The Conditions are obtainable from the Professional Adviser, Dr. E. R. Arthur, at the School of Architecture, University of Toronto. Cheques should be made payable to CMHC.



### Columbia to Honor Founders of Modern Architecture in 1961

A two-month program of celebrations in honor of four great founders of modern architecture, Walter Gropius, Le Corbusier, Ludwig Mies van der Rohe, and the late Frank Lloyd Wright, will be held at the Columbia School of Architecture in the Spring of 1961. Titled "The Four Great Makers," the program will bring each of the three men and Mrs Frank Lloyd Wright to the School for a two-week period to meet with a distinguished group of international architects, educators, and writers. They will participate in a series of exhibitions, seminars, lectures, broadcasts, and social affairs to be tended them by the University and such professional societies as the Architectural League, the American Institute of Architects, etc.

The seminars will bring together the leading international scholars of each man's work. The retrospective shows, all four of which will be held at Frank Lloyd Wright's Guggenheim Museum, will be designed by Philip Johnson, AIA, the sculptor Constantino Nivola, Gyorgy Kepes of MIT and Paul Grotz, Art Director of the *Architectural Forum*. A series of affairs for the students of architecture at East Coast schools will also be organized by the Columbia student body.

### Conference on Shell Structures

A conference on experimental investigation of shell structures in various materials as applied to architecture and civil engineering will be held at Delft, Netherlands, from August 30 to September 2, 1961, under the sponsorship of the International Union of Testing and Research Laboratories for Materials and Structures, and the International Association for Shell Structures. Further information may be obtained from the Conference Secretary, Prof A. L. Bouma, Department of Civil Engineering, Technical University, at Delft.

### Municipal Fire Department Code

The first draft of the Municipal Fire Department Code prepared by the Associate Committee on National Fire Codes of the National Research Council is now available to all Canadian municipalities. The Code is essentially a set of minimum requirements for the establishment and regulation of a full-time fire department and its primary purpose is the promotion of effective fire-fighting organizations throughout Canada. Copies can be obtained from the Secretary of the Associate Committee on National Fire Codes, NRC, Ottawa.

### British School at Rome Appeal for Library Extension Fund

The British School at Rome (Accademia Britannica) is making an appeal for funds for construction to an urgently needed extension to the Library. The sum of £25,000 is required.

The Royal Charter of the School, granted in 1911, lays down as two of the primary objects of the School the promotion of the study of archaeology, history and letters, architecture, painting, sculpture and the allied arts by British subjects; and the formation and maintenance in Rome of a general library.

The School is noted for its scholarships, but also assists visiting Commonwealth students.

Contributions should be sent to Mr Maurice Lush, Honorary Appeal Secretary, 1 Lowther Gardens, Exhibition Road, London, S.W. 7.

### Announcements

Rother/Bland/Trudeau and associate Roy E. LeMoyné wish to announce that following the death of their partner Vincent Rother the practice of their profession will be carried on at the same address under the name of Bland/LeMoyné/Edwards, Architects and Town Planning Consultants, 2290 St Matthew Street, Montreal. Charles Elliott Trudeau will continue his association with John Bland until the conclusion of the current work.

Mr Aza Avramovitch, EAUG, SIA, MRAIC, announces the opening of private practice at 20 Robie Street, Halifax, NS.

John B. Parkin Associates, Toronto, announce the appointment of three new Associates in the firm, L. S. Laity, B.Arch; J. B. Mar, B.Arch, and D. C. Rowland, M.Arch, B.Sc.Eng.

### Position Wanted

British architect, age 29, graduate of a London School, working for architectural firm in South Africa for past 2½ years, interested in position in Canada. P. M. Cross, ARIBA, c/o John Kemp & Associates, P.O. Box 2163, Windhoek, South West Africa.

Architect, Canadian, 35, single, University of Toronto graduate, six years own practice, desires position with progressive office in architecture or related field. Box 103, c/o Journal.

### FUTURE ISSUES

November

O'Keefe Theatre, Toronto

December

Airport Buildings

## REGISTRATIONS

### Ontario Assn of Architects

August 30, 1960

**Diplock, P. R.**, B.Arch., Dip.C.D. (L'pool), ARIBA, 235 Vauxhall Bridge Road, London S.W.1, England. (restored to membership)

**Kelman, Harold**, B.Arch., (Tor); 37 Wasdale Crescent, Apt 6, Toronto 19, Ontario. (Lipson & Dashkin)

**Klym, Justyn**, B.Arch., (Tor); 9 Wren Court, Don Mills, Ontario. (Visvaldis V. Upenieks)

**Zimmerman, A. Gordon**, B.Arch., (Tor); 431 Windermere Road, Niagara Falls, Ontario. (D. N. Chapman).

September 27, 1960

**Bourke, R. David**, M.Arch; 4635 Sherbrooke St. W., Montreal 6, P.Q.

**Grafton, (Miss) Daphne Lennox**, B.Arch, Rm. 11, Woolworth Building, Simcoe, Ont. (Restored to membership).

### Alberta Association of Architects

September 14, 1960

**Maltby, Ronald L.**, B.Arch., M. Civic Design, (L'pool); Box 413, St. Albert, Alberta. (Edmonton District Planning Commission)

**Piffko, Julius**, Dip.Arch. (Tech. University of Construction, Budapest); 9732 - 105th St., Edmonton, Alberta. (DPW Alberta)

**Polansky, Sidney, William**, B.Arch. (McGill); 9808 - 104th St., Edmonton, Alberta. (Rule, Wynn & Rule, Edmonton).

### Nova Scotia Assn of Architects

September 19, 1960

**Hay, Charles Dewar**, ARIBA (School of Arch. Edinburgh College of Art, Heriot Watt College, Edinburgh); 12 Masters Terrace, Kentville, Kings County, N.S. (G. F. Cole, P.O. Box 35, Amherst, N.S.).

## BOOK REVIEWS

"PRIVATE ARCHITECTURAL PRACTICE," by Maurice E. Taylor, MTPI, ARIBA, AILA, FRIAS, FSA, (Scot) RIBA. DIST. TP, AA. DIP. Planning. Published by Leonard Hill. Price 15s.

When we need answers to the many business problems arising day by day in the course of our professional lives, we can turn to Maurice Taylor's commentary on practice and find how he has solved these problems during his interesting career. There we find considered discussions on such intimate matters as the selection of a partner,

office location, library arrangement, the capital required, handling a client (and how to get him in the first place), fees and their collection, large or small practice, the expert witness, income tax, and also some subjects more directly useful to British architects.

The book could be looked upon as a reference work, or text book, but is written in a conversational tone and makes enjoyable reading for one who is at all interested in the subject. The work has a humourously detached view point which increases the interest, and not the least humorous part of the book, and one unsuspected by the author, is his discussion on the operating expenses of a professional office where he places the costs of living for a principal and his assistant, with rent, taxes, phone, supplies, etc. at approximately \$2,500.00 per year. Doubtless he is speaking seriously and his figures could be accurate in Britain, but let not the young Canadian architect be anything but amused at such figures. When the author gets down to fees and their collection, he is talking a universal language and even the most experienced can profit from his description of a painless method of collection.

In discussing a large or small practice, he shows the importance to a young architect, or prospective architect, of knowing early where he wants to go, the necessity of self-analysis in determining his course and the advantages of individual effort against the possibility of profit in large organized effort.

Although most of the work is easily understandable from Canadian standards, some of the subject matter needs translation.

On the whole, if you are already experiencing a large and lucrative practice, this work will be of little help, although of great interest and worthy of a place in your library, but, if you have no practice as yet, or if it is just beginning, the author can give you valuable hints in an easy to take style, and the work can become your business text book.

*Hugh P. Sheppard, Windsor.*

"PLANNING — THE ARCHITECT'S HANDBOOK," by "E. and O.E." (S. Rowland Pierce, Patrick Cutbush and Anthony Williams). Published for *The Architect and Building News* by Iliffe & Sons Limited, London, England. Eighth Edition, 1959. Price 63s.

The Seventh Edition of this work was reviewed in the *Journal* July 1954. The jacket of this Eighth Edition informs us that "the format has been re-designed and the sections re-arranged"

which is true enough, and it is an improvement. The book is slightly smaller and the price has more than doubled. We are also told that this edition "has been almost entirely re-written" which is a gross exaggeration to say the least. Significant changes in the text are few and far between. There is so little difference that it seems fair enough to repeat our previous comments on the Seventh Edition, with a few minor revisions.

This book deals with the practical requirements of building, in terms of planning practice rather than planning theory. The text covers site planning, basic relationships, and specific requirements for each component element of the plan. Most of the illustrations are relationship diagrams or plans of typical rooms. There are a number of drawings of furniture and fittings, but virtually no construction details. There are some curious omissions in the table of contents. There is nothing whatever about churches, theatres or railway stations. The practising architect will encounter commissions of this kind more frequently than either crematoria or piggeries, which are discussed in great detail. Residential planning is thoroughly covered, including houses and flats. In addition to the information one would normally expect, the book contains useful data concerning the hanging of game and the storage of beer in barrels for the convenience of the well-to-do client. Of course English practice differs greatly from the normal standards of planning in Canada. Nevertheless these chapters can only be described as antiquated. We know for a fact that many English architects share this opinion. To a lesser degree the same criticism applies to the book as a whole. Much of the text probably dates from the first edition of 1936. The illustrations convey a distinct impression of stiff, formal planning. No plans of actual buildings are shown, but it is obvious that the diagrams are conceived in the spirit of symmetrical neo-Georgian architecture. There are a few examples of really atrocious planning which would not be accepted from a first year student.

The text contains a wealth of information. But so much of this is directly related to English standards and English practice that its value to the Canadian architect is decidedly limited. Probably fifty percent of the material can be discounted immediately as not applicable to Canadian usage. Most of the useful data can be found more readily in "Time-Saver Standards" or other familiar American handbooks.

*Kent Barker, Toronto*

## OBITUARY

ROBERT OBAN MAC TAVISH, B.A.R.C.H., M.R.A.I.C., died in London, Ontario, on August 30, 1960, after a two-month illness.

Mr MacTavish was born on December 18, 1921, in Seaforth, Ont., and received his early education there. During the Second World War, he served overseas as a navigator in the RCAF, with the rank of Flying Officer. In 1946 he entered the University of Toronto School of Architecture, graduating in 1951.

From the time of graduation until his untimely death, Mr MacTavish was associated with Mr L. G. Bridgman, London, Ont., in the practice of architecture. Projects on which he worked include the Huron County Court House in Goderich, Sudbury Public Library, Hanover Memorial Hospital addition, Canadian Pittsburgh Industries Ltd Metal Fabrication Division in London, and the Huron County Home addition near Clinton, presently under construction.

Mr MacTavish was predeceased by his father, the late Mr John MacTavish; and is survived by his mother, Mrs Cora MacTavish, of Seaforth, and two brothers, Ian E. MacTavish, of Montreal, and Donald A. MacTavish, of Toronto. To the family, all members of the architectural profession and his many friends extend their deepest sympathy.

*L. G. Bridgman*

## Mr Max Fleet

It was with a sense of shock that the *Journal* heard of the sudden death of Mr Max Fleet. Mr Fleet came to Toronto from Great Britain in 1947, and quickly made a reputation for himself in the field of architectural photography. His profession, naturally, brought him into contact with architects who soon realized that he was a young man who brought artistry to his work along with a high degree of technical proficiency. Many architects were fortunate to know him as a friend.

Mr Fleet was born in Leipzig in 1924, but settled in England in 1938. Before coming to Canada, he saw service with an infantry regiment during the war. Mr Fleet left a wife and two young children, but the *Journal* is happy to learn that his widow, herself a skilled photographer, will continue her husband's practice. She can be assured of the sincere good wishes of the *Journal* in her brave venture.

*E.R.A.*

## LETTERS TO THE EDITOR

Editor, RAIC *Journal*:

This Library has a file of the RAIC *Journal* from Volume 2 onward, much of which has kindly been given to us by architects and other libraries. The file still lacks a number of issues, and we are most anxious to complete and bind these volumes for permanent reference. We would be very grateful if it would be possible to advertise these wants in the RAIC *Journal*, in the hope that some member of the Institute may be able to spare even one or two of the needed copies.

The following issues are required:

- Vol. 1 (Complete)
- Vol. 2 No. 4 (July-Aug. 1925)
- Vol. 3 No. 3 and 4 (May/June, July/Aug. 1926)
- Vol. 4 All except No. 6 (1927)
- Vol. 5 No. 8, 9 (Aug., Sept. 1928)
- Vol. 6 No. 2, 3, 5 to 11 (Feb., March, May to Nov. 1929)
- Vol. 7 No. 7 (July 1930)
- Vol. 8 No. 1 (Jan. 1931)
- Vol. 9 No. 2, 4 to 6 (Feb., April, May, June 1932)
- Vol. 10 No. 2 (Feb. 1933)
- Vol. 11 No. 2 (Feb. 1934)
- Vol. 12 No. 6 (June 1935)
- Vol. 13 No. 5, 8 (May, Aug. 1936)
- Vol. 14 No. 9 (Sept. 1937)
- Vol. 15 No. 1, 7, 11 (Jan., July, Nov. 1938)
- Vol. 16 No. 6, 11 (June, Nov. 1939)
- Vol. 18 No. 8 (Aug. 1941)
- Vol. 21 No. 6 (June 1944)

*D. A. Redmond, Librarian,  
Nova Scotia Technical College,  
Halifax, N.S.*

Editor, RAIC *Journal*:

I wish to build a Chinese-style residence in the Province of Quebec, and would thank you for the name and address of a Canadian architect familiar with Oriental architecture.

*L. M. Wilson,  
200 Kensington Avenue,  
Apt 802,  
Westmount, Montreal.*

Editor, RAIC *Journal*:

Yesterday some friends of mine brought me the latest copy of the *Journal* of the RAIC. I was so impressed and flattered by the way you have presented my work that I would ask you kindly to send me ten copies of the August 1960 issue and the bill to cover the cost.

*Leo Mol, Winnipeg*

## COMING EVENTS

October 14-15, 1960  
Annual General Meeting  
Saskatchewan Assn of Architects  
Saskatoon

October 17-20, 1960  
Annual Convention  
Canadian Good Roads Assn  
Royal York Hotel, Toronto

October 23-26, 1960  
Community Planning Association  
of Canada  
Sheraton-Connaught Hotel,  
Hamilton

November 14-16, 1960  
Annual Convention  
Structural Clay Products Institute  
Diplomat Hotel,  
Hollywood, Florida

December 2-3, 1960  
Annual General Meeting  
Architectural Institute of  
British Columbia  
Empress Hotel, Victoria

January 14, 1961  
Annual Meeting  
Manitoba Association of Architects  
Fort Garry Hotel, Winnipeg

January 27-28, 1961  
Annual Meeting  
Alberta Association of Architects  
Macdonald Hotel, Edmonton

January 27-28, 1961  
Annual Meeting  
Prov. Quebec Assn of Architects  
Quebec City

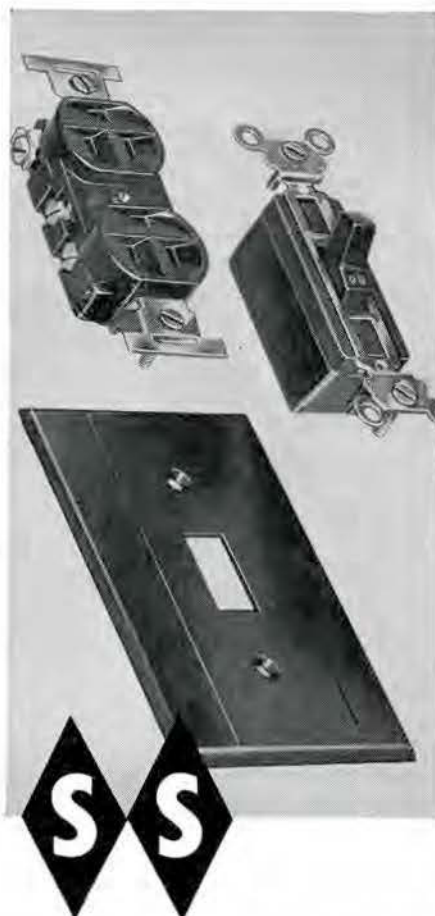
February 9-11, 1961  
Annual Meeting  
Ontario Association of Architects  
Royal York Hotel, Toronto

Spring of 1961  
Celebration in Honor of Founders  
of Modern Architecture,  
Gropius, Le Corbusier,  
van der Rohe, Wright  
Columbia School of Architecture,  
New York

May 17-20, 1961  
RAIC 54th Annual Assembly  
Chateau Frontenac, Quebec

July 3-7, 1961  
VIth Congress  
International Union of Architects  
London, Eng. (Registrations, RIBA)

August 30-September 2, 1961  
Conference on Shell Structures  
Civil Engineering Dept,  
Technical University,  
Delft, Netherlands



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# INDUSTRY

## New Extruded Aluminum Core Base

A new extruded aluminum core base has been introduced by Tekama (Canada) Ltd. The new product is said to be practical, functional and economic, and units may be custom designed to individual requirements. Special shapes are available for hospital use. Samples and literature may be obtained from the Company at 88 Richmond St. West, Toronto.



## New Canadian Gypsum Shingle

A new 255 lb. textured asphalt shingle, "Random Tab", available in four colors, has been produced by the Canadian Gypsum Co, 720 Bay St, Toronto 2.



## New Pozzolith Bulletin

Concreting problems in the construction of 16 stadium and auditorium projects are illustrated and explained in a new 20-page bulletin (MBR-P-12) available from Master Builders Company Ltd, Toronto 15.



## Modulux Lighting Fixtures

Modulux, a new modular series of fluorescent lighting fixtures, is announced by J. A. Wilson Lighting and Display Limited, 280 Lakeshore Road, Toronto 14. A variety of ceiling patterns may be achieved by suitable use of the three sizes available, 1' x 4', 2' x 2' and 2' x 4'. A range of 20 lens and louvre closures are available in glass, vinyl, acrylic, polystyrene and fibreglass polarizing light panel.



## Carrier Introduces Air Purifier

A new air purifying device which is said to remove odors, wash out dust and pollen, and end filter changing and cleaning has been produced by Carrier Air Conditioning Ltd, 70 Queen Elizabeth Blvd, Toronto 18. Called the Automatic Air Purifier, the new device is suitable for residences and small commercial establishments. The unit can be inserted into new or existing air conditioning systems, and, coupled with central heating and cooling equipment it is said to make possible year-round control of temperature, humidity and air purity. The filtering element consists of many layers of aluminum mesh screen, rinsed three times a minute by a mixture of water and an

odor absorbing liquid called Garrex. The element is self cleaning, so never needs changing.



## Sliding Glass Doors

New sliding glass doors in wood reinforced with steel T sections on all four sides, suitable for residential architecture, have been introduced by the Rolscreen Co, Pella, Iowa. Doors can be equipped with glazing stops for 1/4" plate and 5/8" or 1" insulating glass in 33" and 45" widths and 76 3/4" glass height.

## Armicon Window Bulletin

A new bulletin describing and giving specification and details of Armicon windows has been published by Armicon Ltd, 20 Brydon Drive, Rexdale, Ont.



## Canadian Armature Catalogue

A new 85-page catalogue, No. 100A, containing complete information on electrical heating, ventilating equipment, domestic refrigeration and electrical appliances is now available from Canadian Armature Works Inc, 6595 St Urbain St, Montreal 14.

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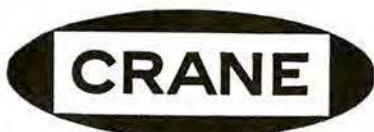
Crane plumbing fixtures and fittings are used throughout this impressive new office building, occupying an entire block in downtown Toronto. *Owner:* Department of Public Works, Ottawa. *Chief Architect:* E. A. Gardner. *Architects:* Shore & Moffat, Toronto. *General Contractors:* Redfern Construction Co. Limited. *Mechanical Contractor:* Universal Plumbing & Heating Co. Ltd.

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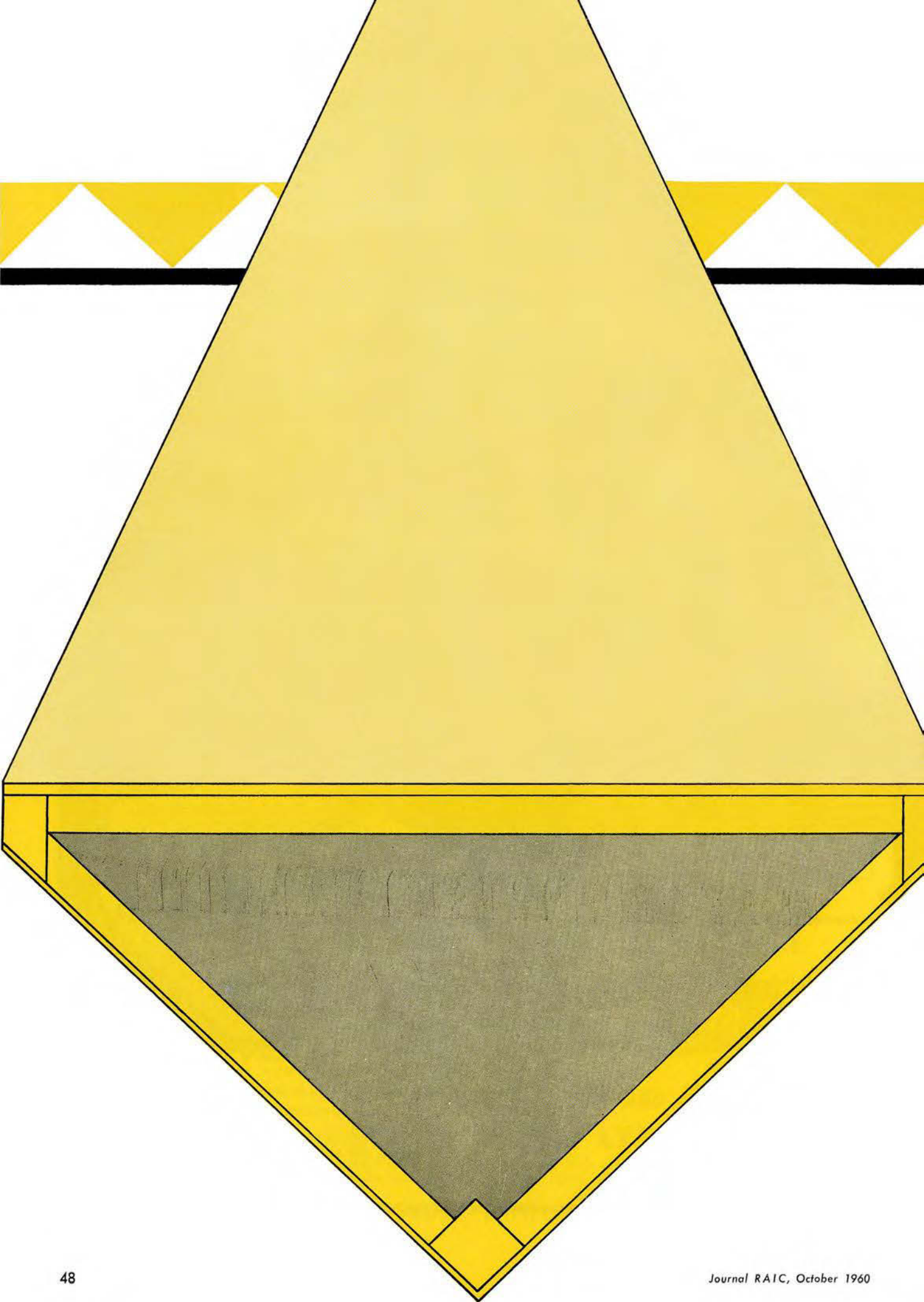


Crane's modified Norwich wall-hung lavatory, installed in the Mackenzie Building, features 10-pint capacity built-in soap chamber. "Dial-ese" supply fittings. It's a handsome, efficient, low-maintenance product of Crane engineering leadership. *Dimensions:* 22" x 19".

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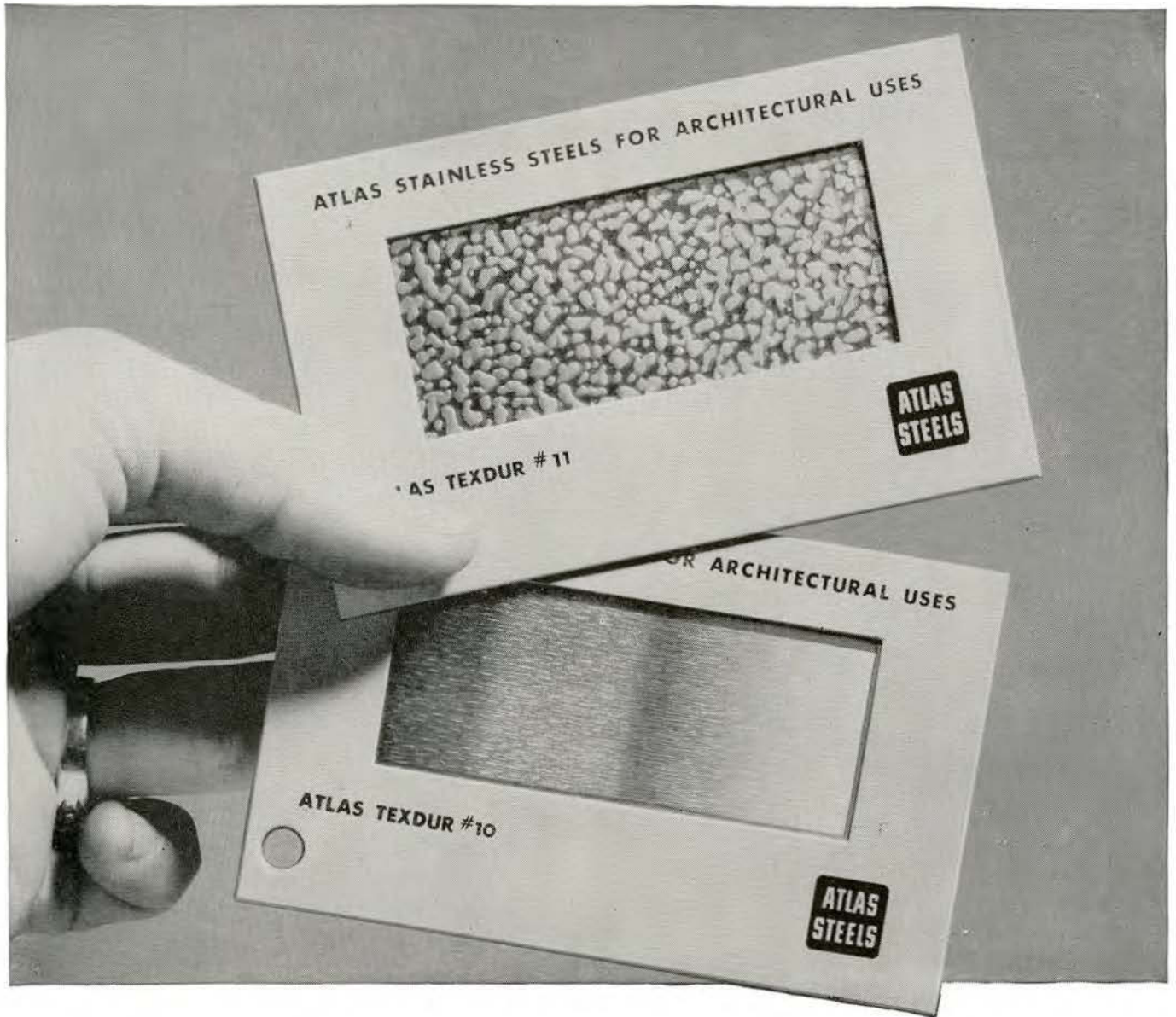
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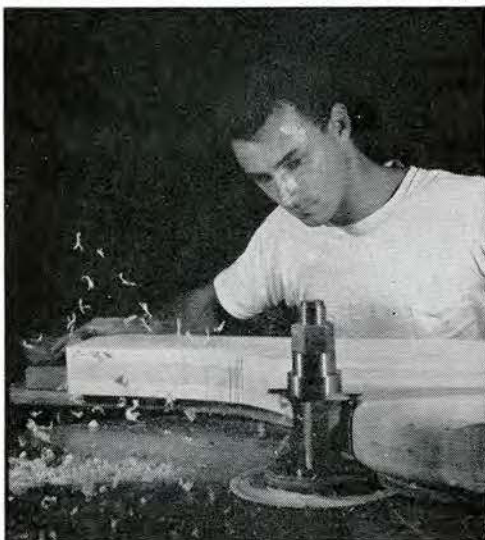
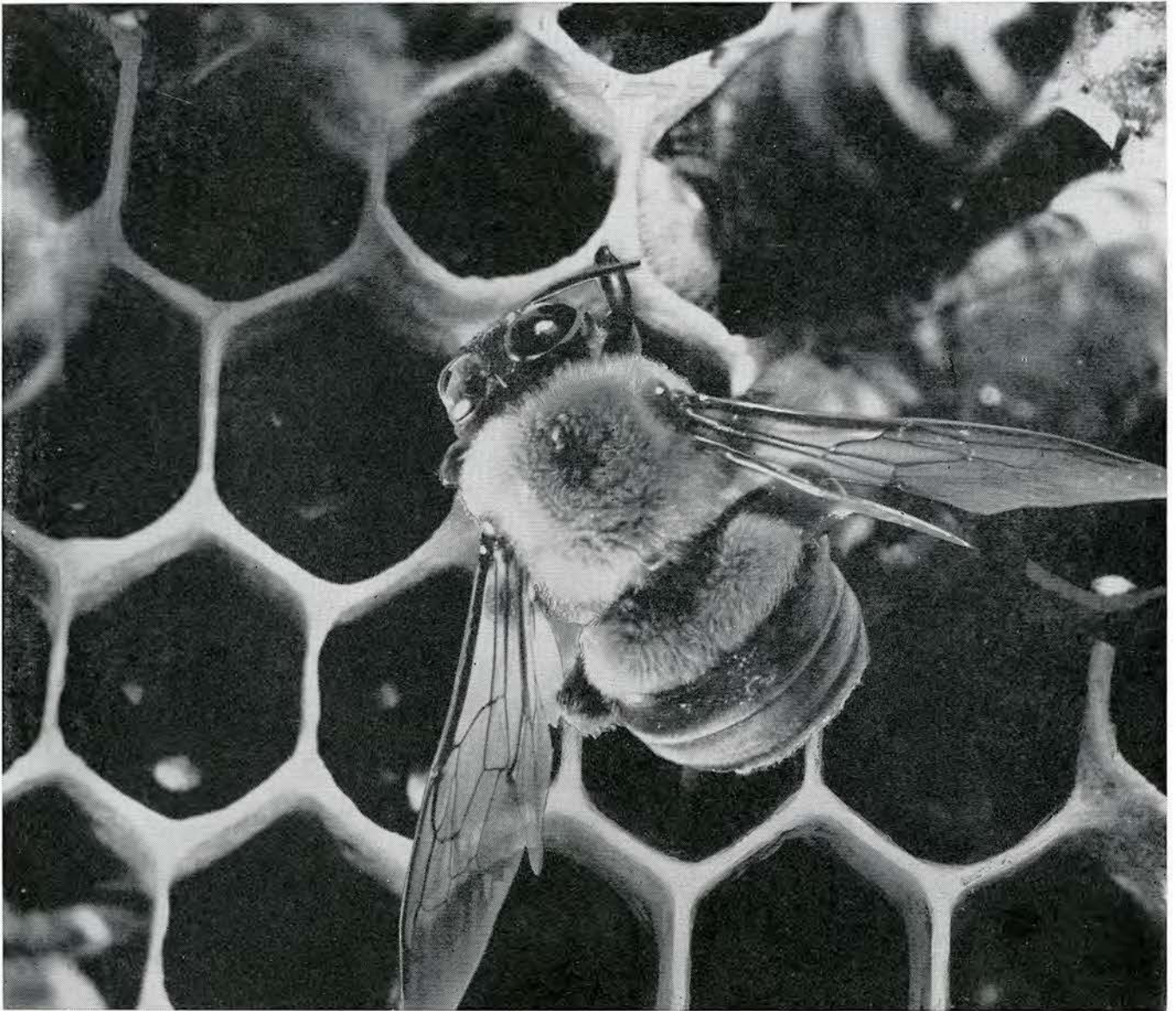
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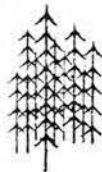
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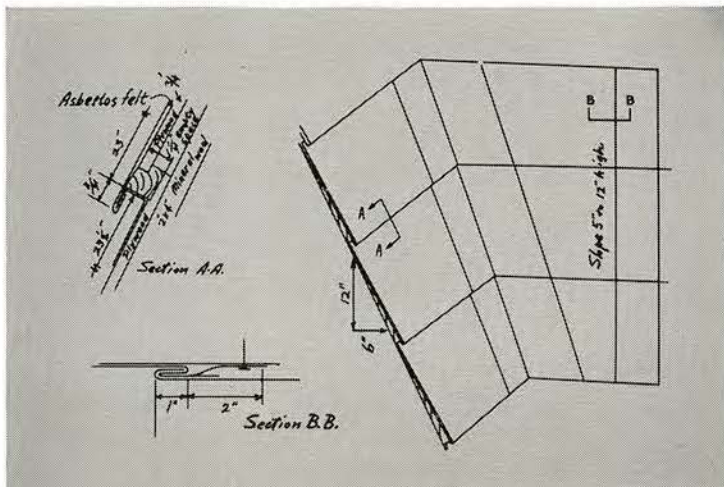
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Crowther MacKay & Associates Ltd., mechanical engineers, Vancouver.

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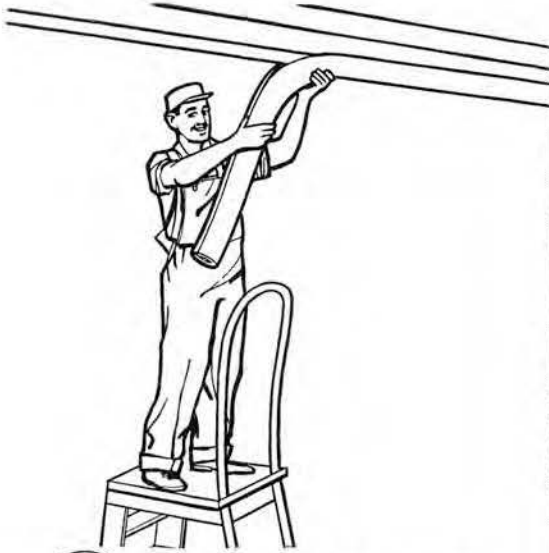


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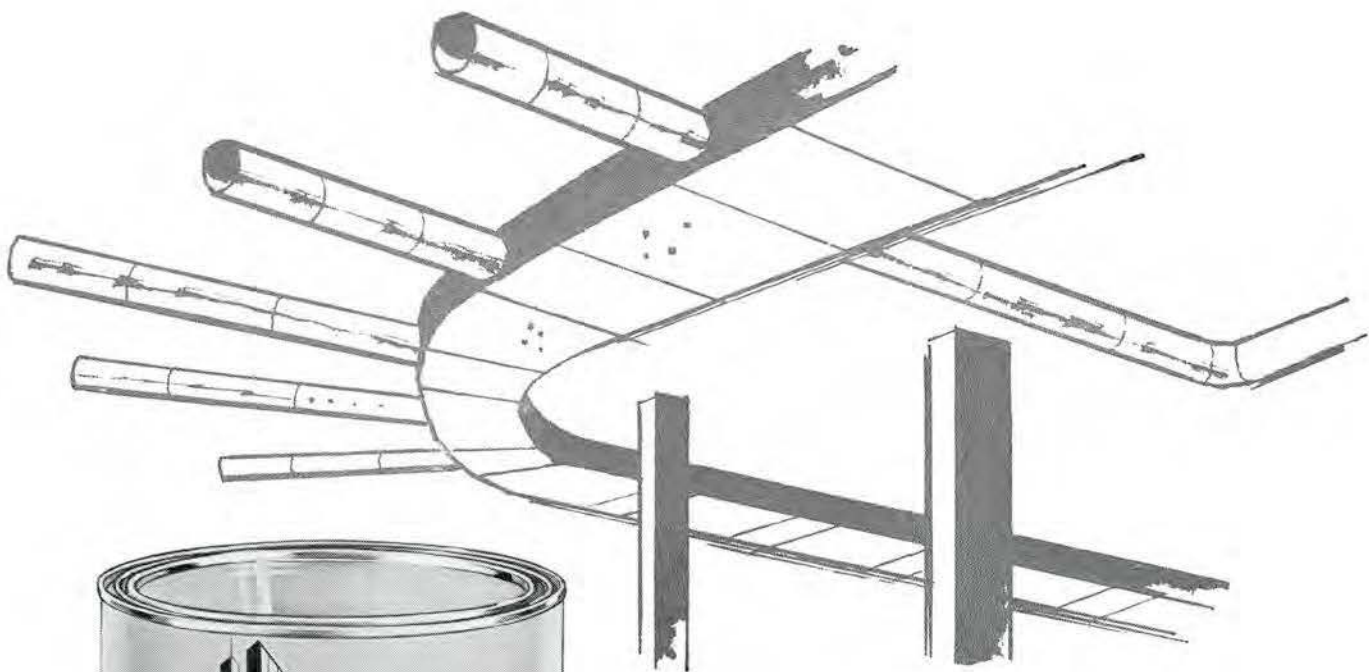
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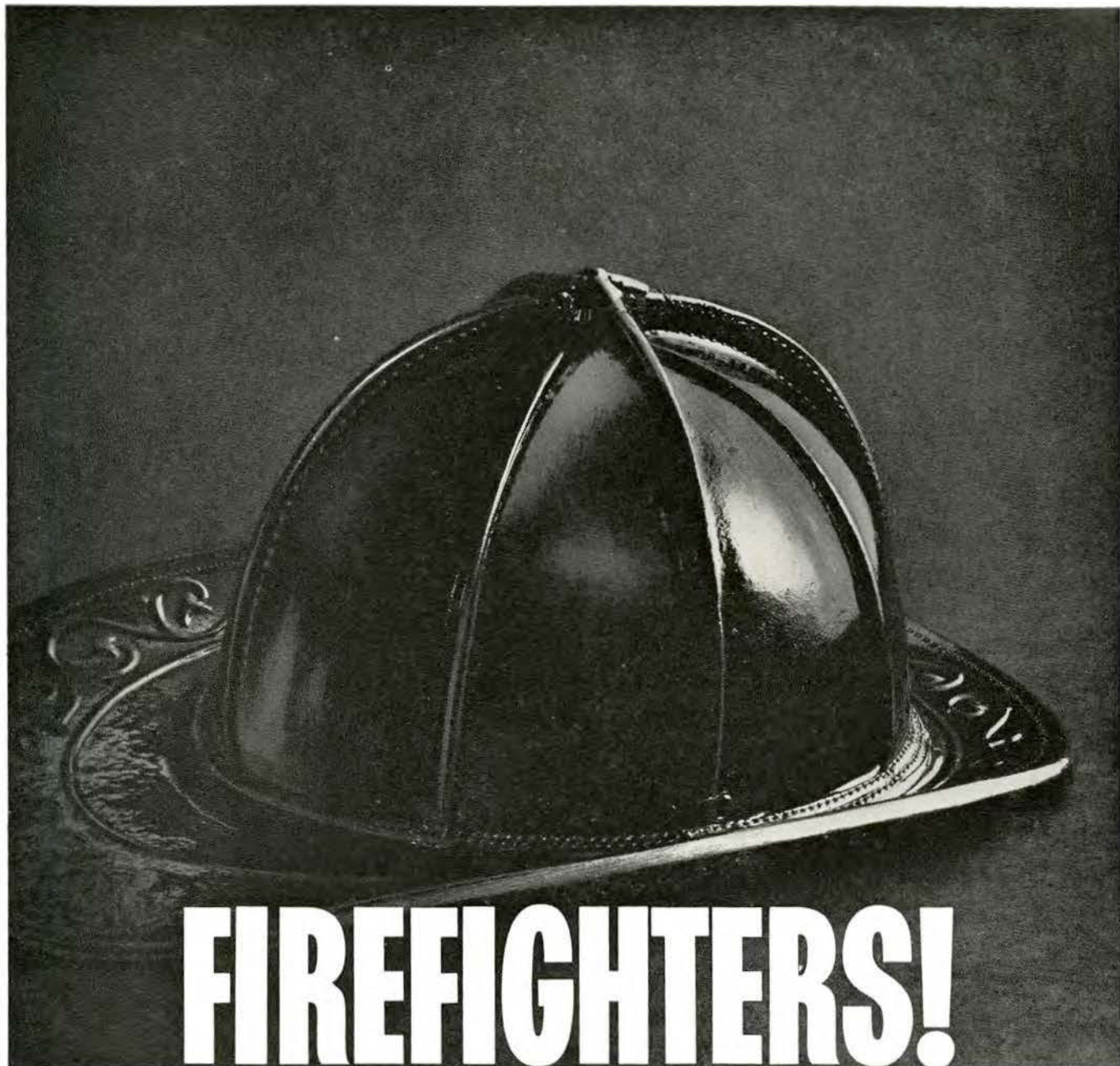
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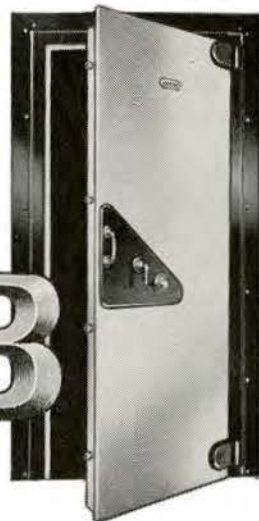
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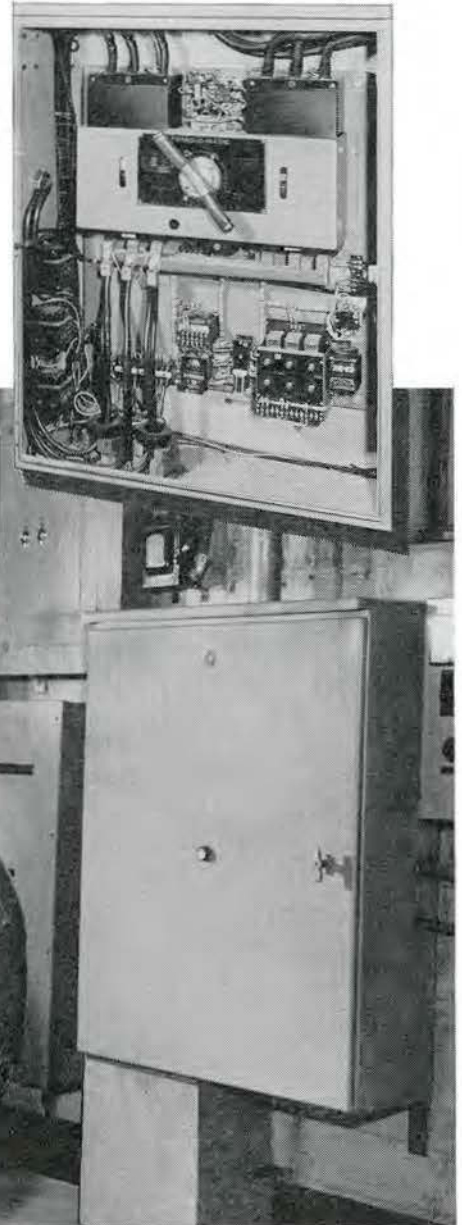
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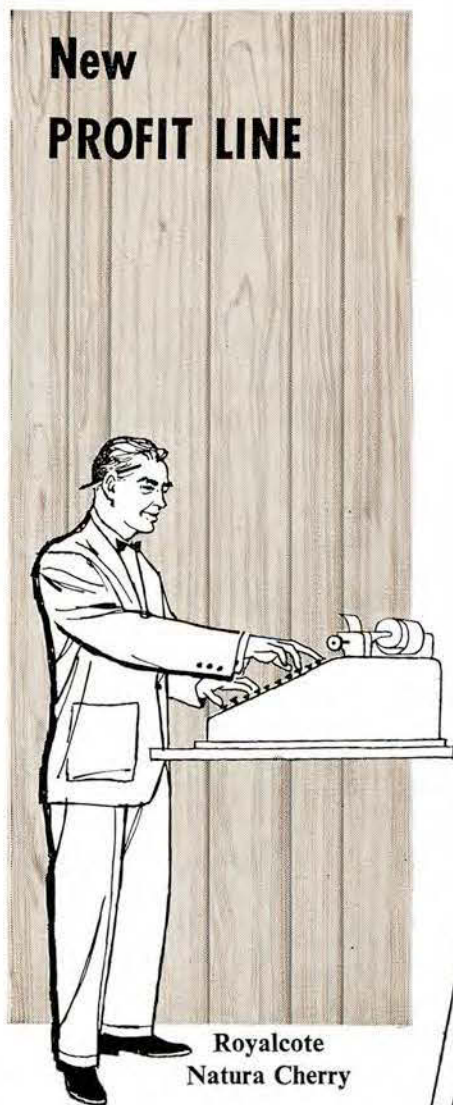
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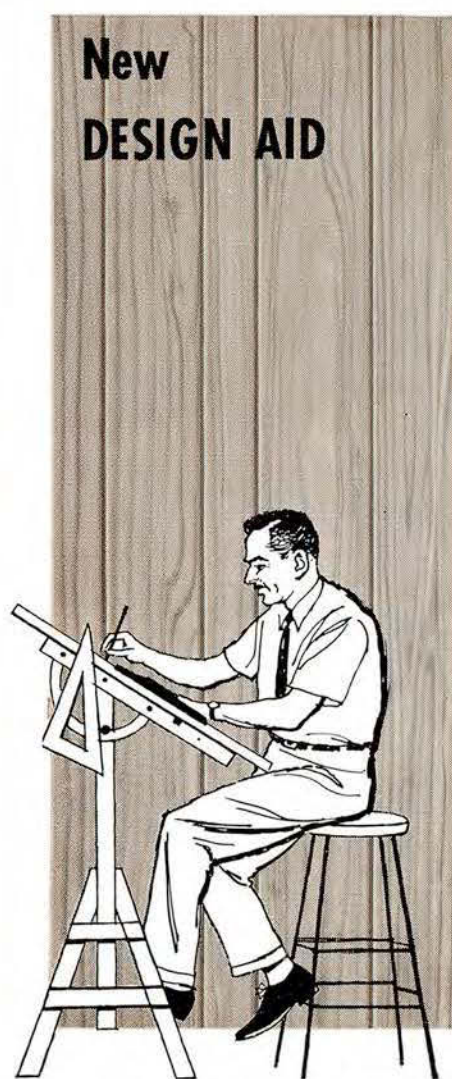
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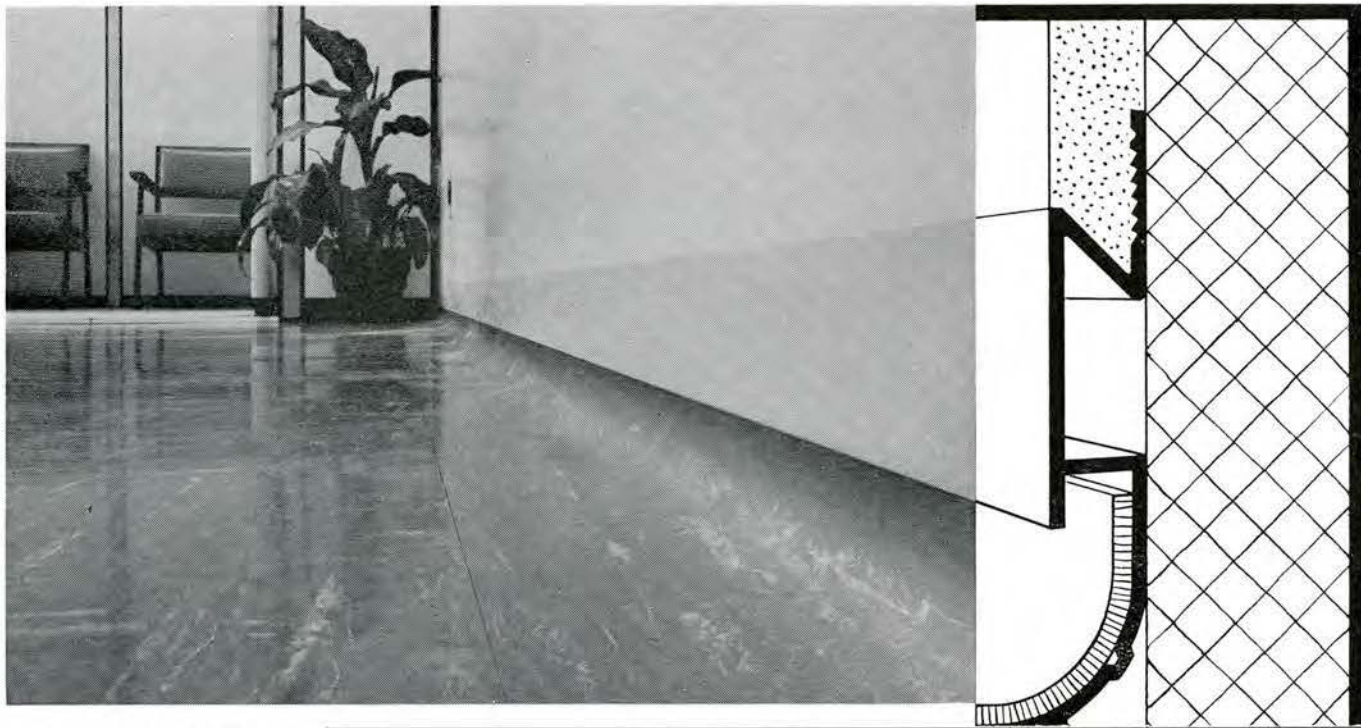
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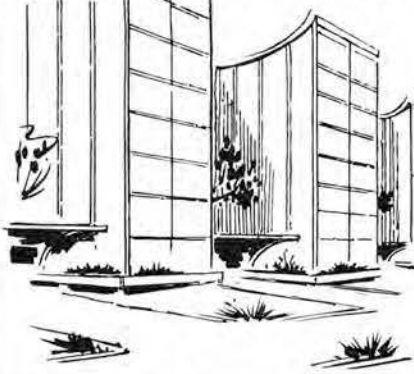


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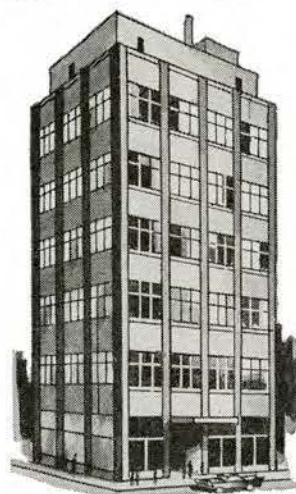


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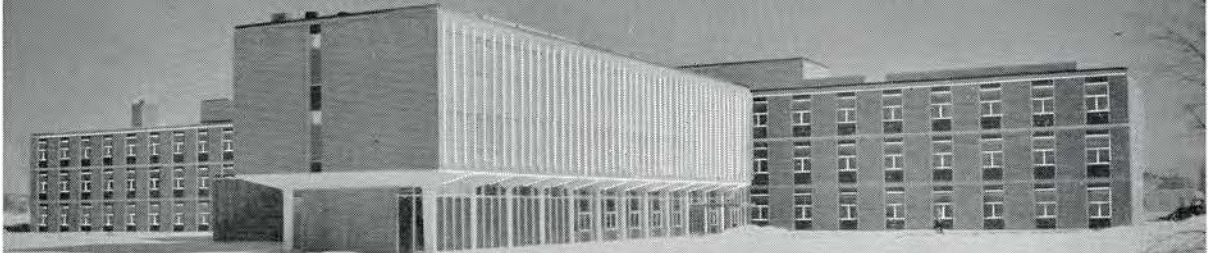


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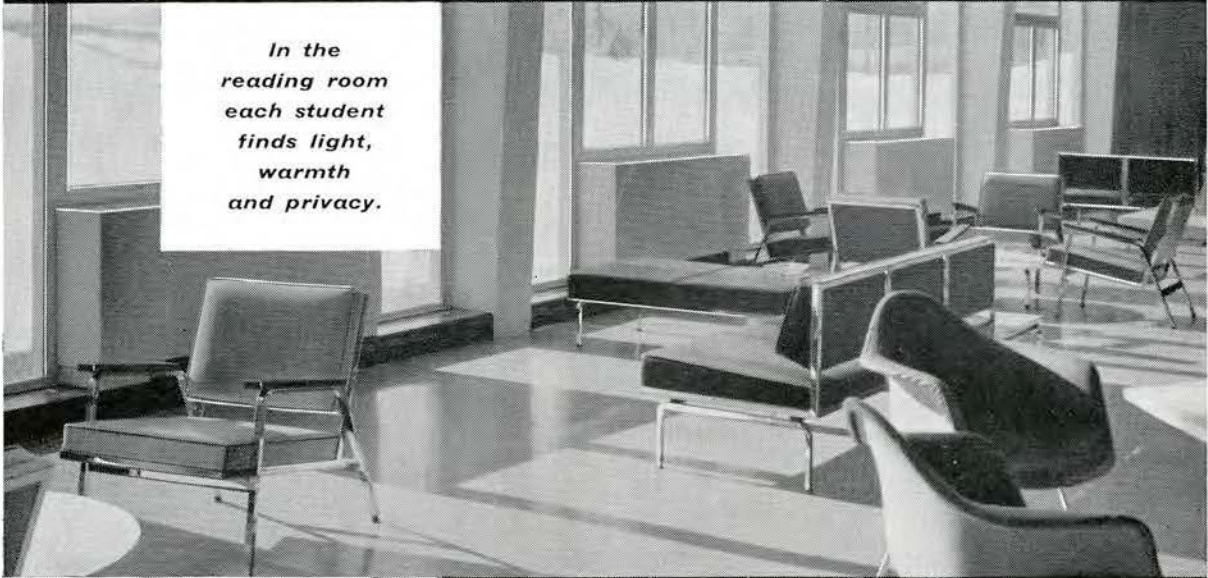
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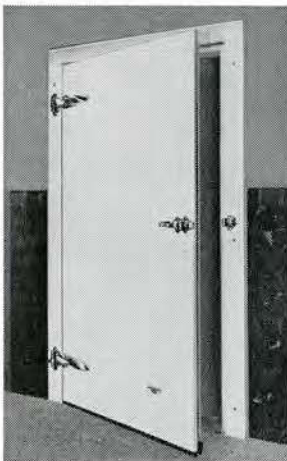
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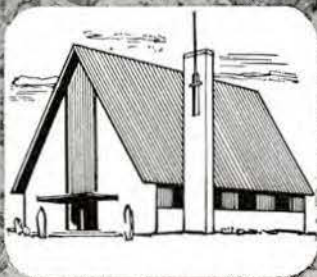
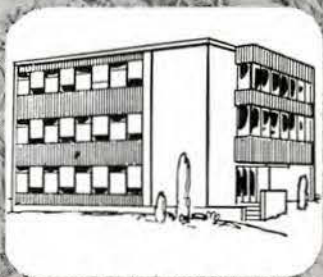
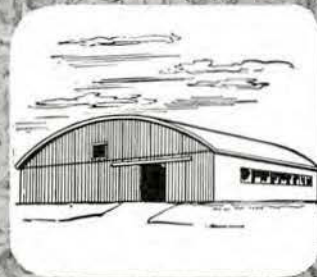
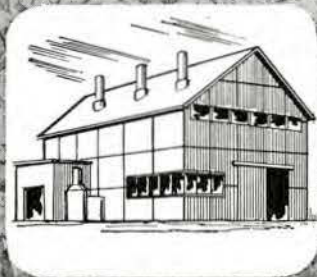


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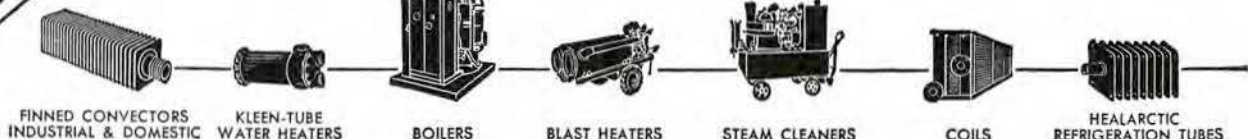
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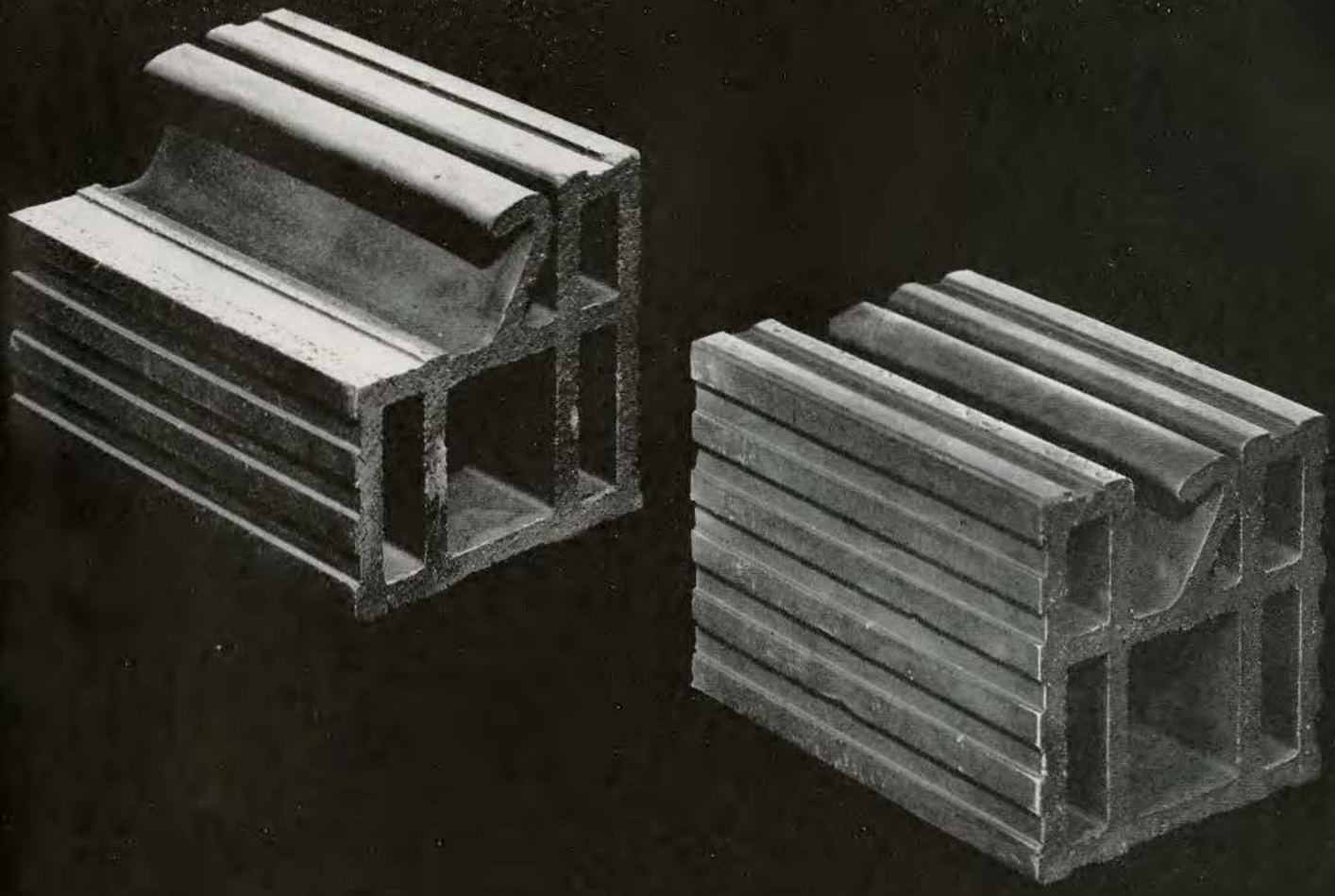
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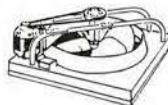
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Both Atlan Flame-Crete Fire Retardant Paints and Fire Retardant Varnish have been used extensively by the Canadian government coast-to-coast and in the more remote Arctic regions to provide a high degree of fire protection in addition to top quality decorative appearance.

While various chemical compounds have been recommended over the past twenty years as a method of fire suppression, it has only been within a relatively short period that fire protection has been "built in" to top quality interior paints.

Atlan Flame-Crete Paints and Varnishes have been tested and listed by the Underwriters' Laboratories of Canada and by other independent testing laboratories. These revolutionary coatings are washable, highly decorative, have no unpleasant odor and provide the maximum in fire protection.

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Canadian government departments have led the way in fire protection because they are responsible for many large buildings from coast to coast. The problem has been to find a way of preventing fire from spreading until the fire department can get to the fire. If this can be done, fire loss can be reduced to a minimum.

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Atlan Flame-Crete Paint is now being sold for commercial, industrial and private use across Canada. It is a totally new kind of fire retardant paint, with advantages never before available.

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## New Fire Retardant Varnish

Atlan Flame-Crete has developed a new fire-retardant varnish which may be applied on any surface where a varnish or clear lacquer finish is required. A flame-spread of 35 has been achieved in a two-coat application at a coverage rate of 240 ft. per gallon per coat when applied to either bare wood or previously varnished surfaces. Architects have found that this exclusive, washable, fire retardant coating enables them to provide a natural wood grain finish on areas where the fire hazard or existing by-laws precluded the application of standard varnish. In short, Atlan Fire Retardant Varnish adds fire protection qualities to the aesthetic and insulative values of a wood grain finish.

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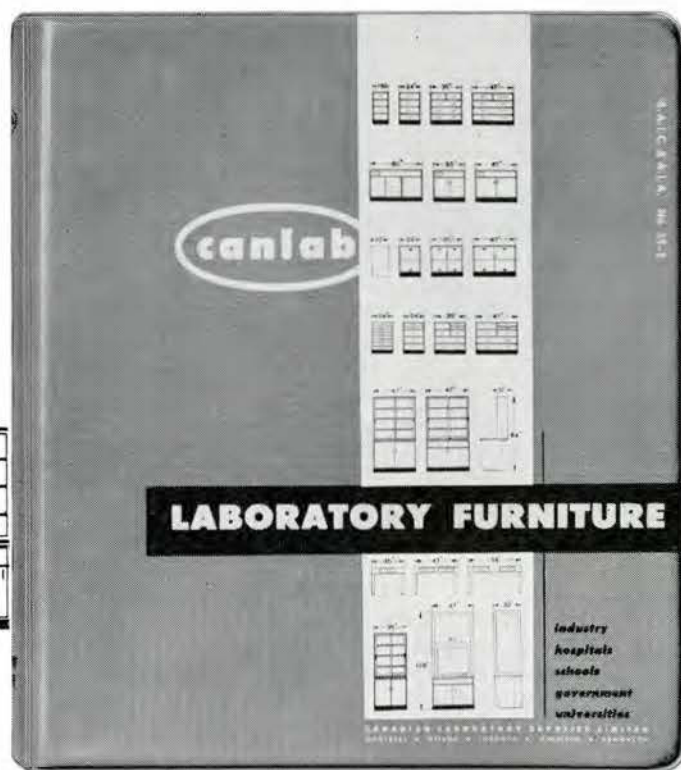
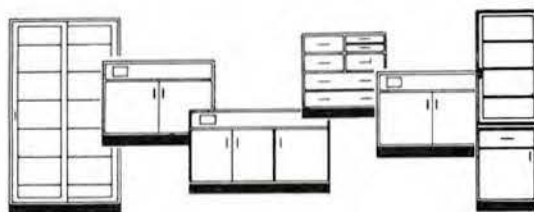
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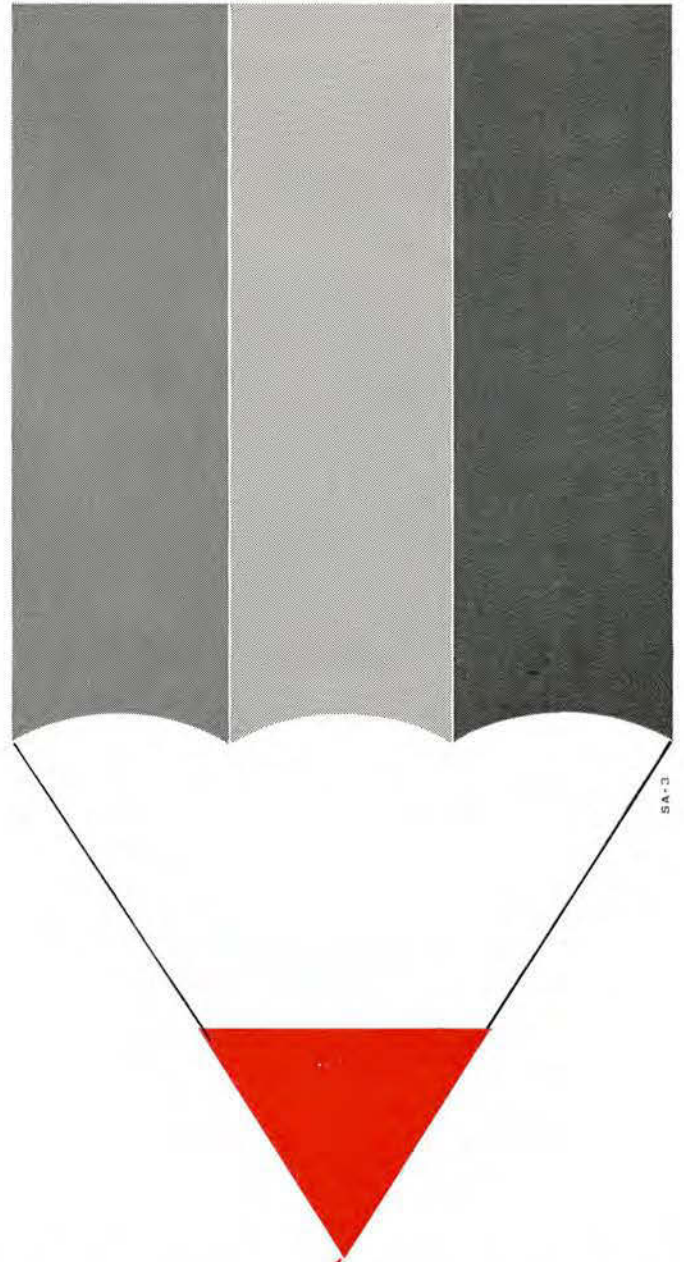


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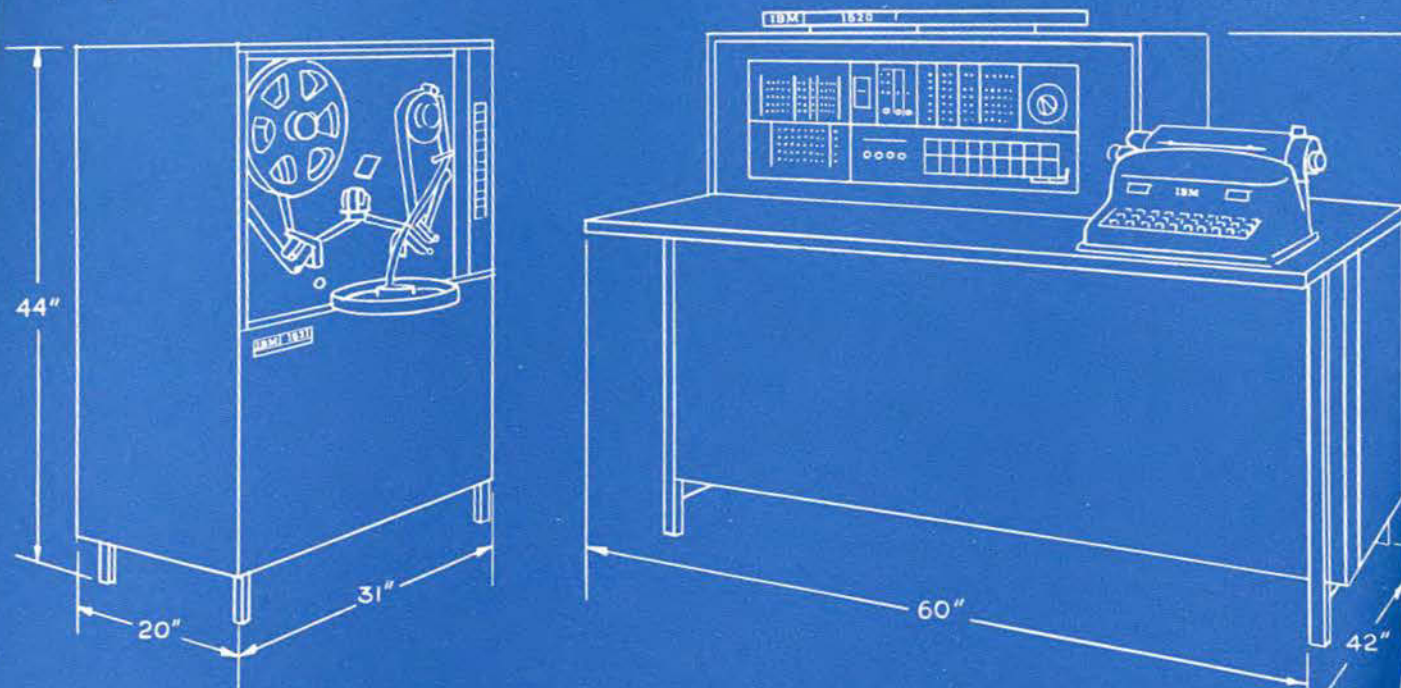
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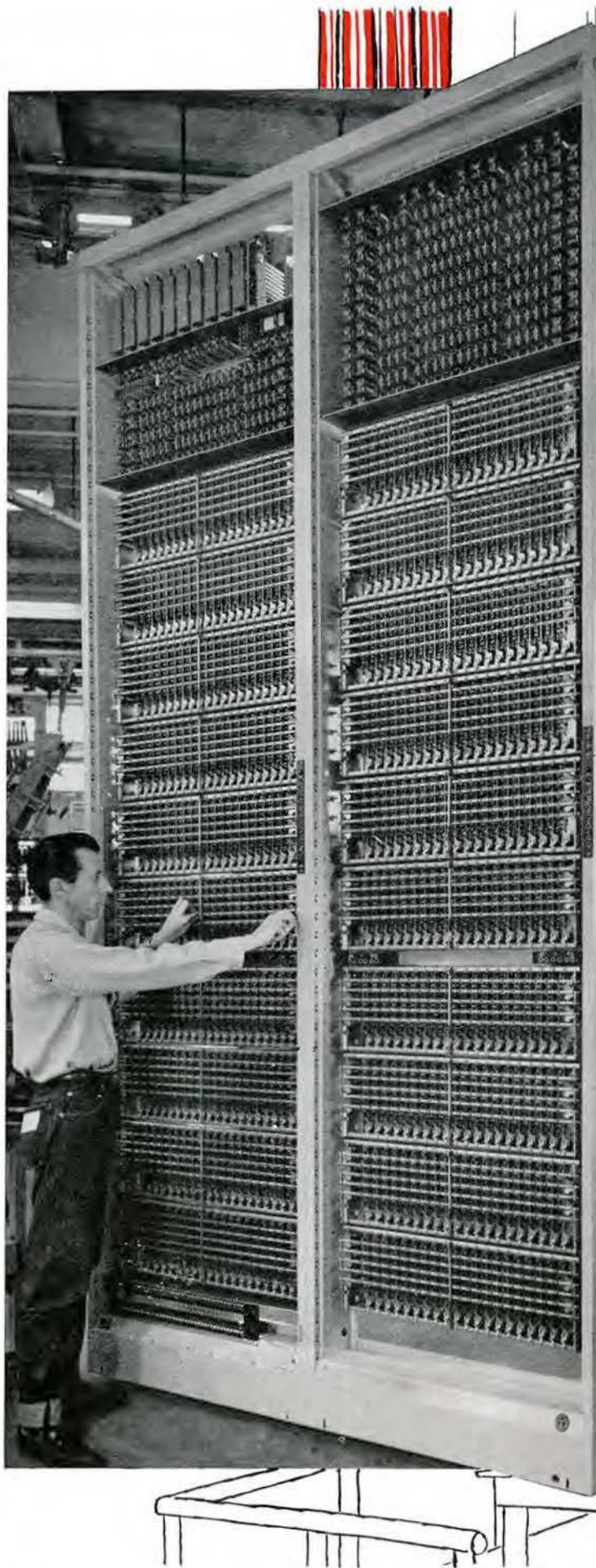
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architect: Jean Maurice Dube

builders: J. R. Robillard Ltd.



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