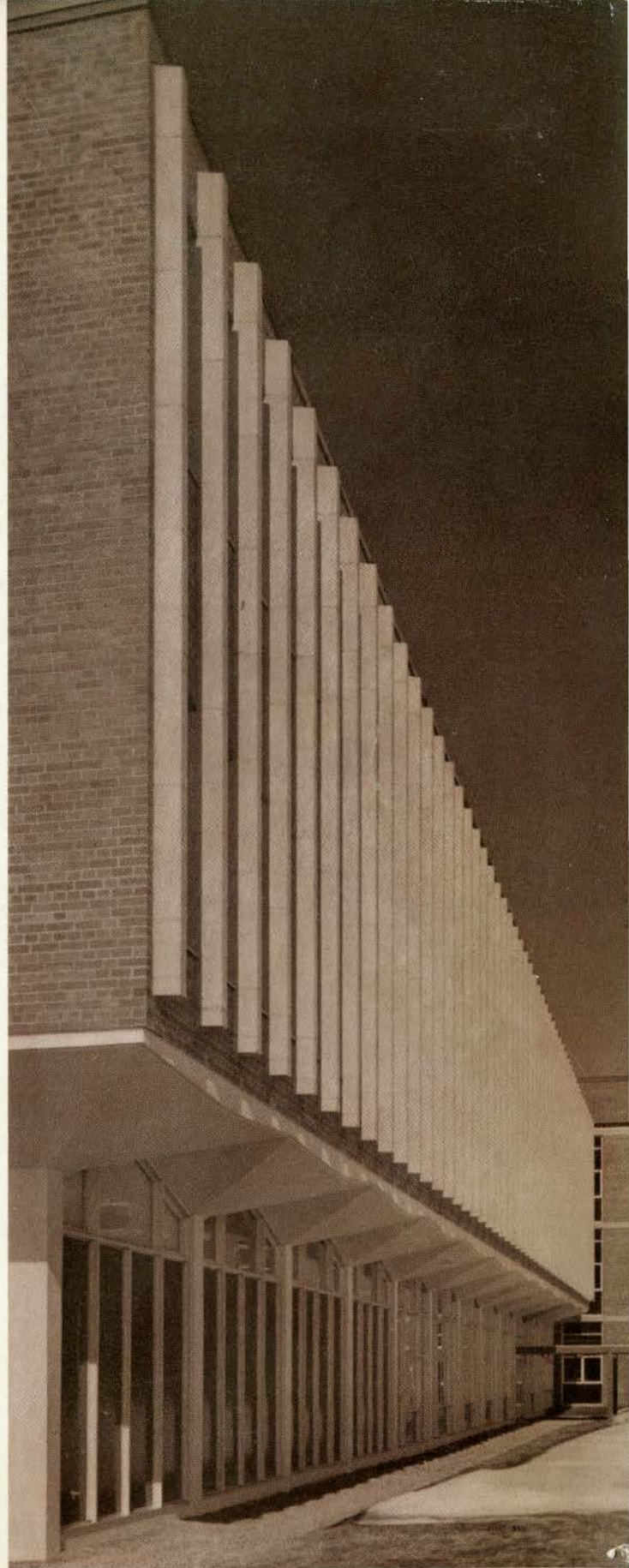


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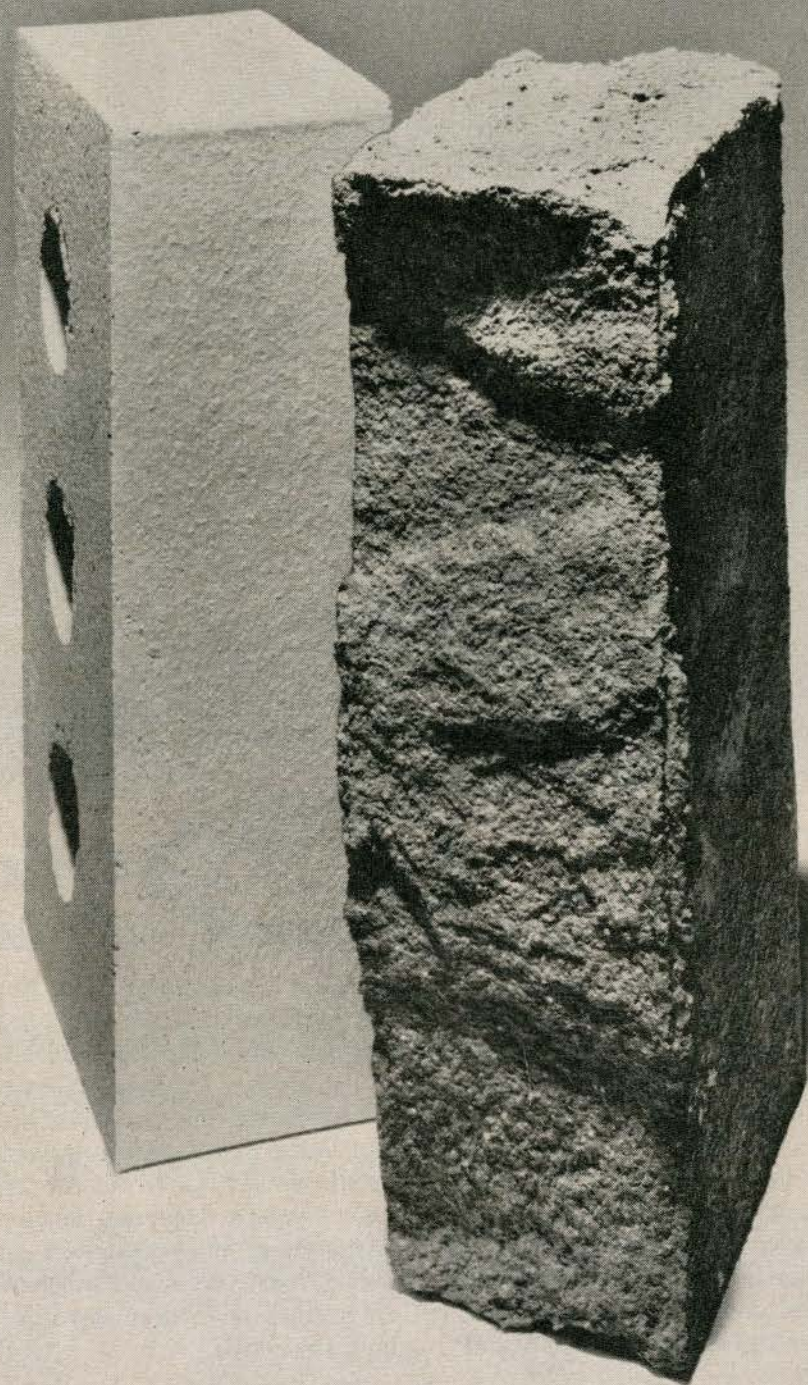
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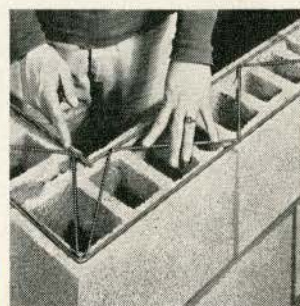
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THE NEW RAIC

PRECISELY FOUR YEARS ago the RAIC — acting upon the recommendations of a firm of management consultants — carried out a significant reorganization of the Royal Institute. Springing from the appointment of *Robbins Elliott* as Executive Director in November 1958, the Institute has developed and expanded a national program which would have been regarded as impossible of achievement in earlier years.

The remarkably broad scope of the new Royal Institute program is revealed elsewhere in this issue, but to me the significant fact is that, for the first time in the history of the profession, the Institute and all nine Provincial Associations are working in close harmony and liaison.

Members of the profession have made it abundantly clear that they prefer an active, vigorous national body at Ottawa, co-operating with the local societies and providing stimulus and direction, not only at the national level, but internationally as well.

It must be remembered that the RAIC program is administered by a small headquarters staff and is based on a minimum budget. But the potential of the Institute has been recognized by RAIC Council in acting last May in Vancouver and again in September at Montreal to request the support of all Provincial Associations in securing unanimous approval to an increase in the 1963 per capita fees payable by individual architects to the RAIC. Already four Associations — Newfoundland, New Brunswick, Nova Scotia, and Saskatchewan — have endorsed the proposal in annual convention.

As the first President of the RAIC from Canada's west coast, I am particularly proud of the close inter-relationship between architects in various regions of Canada — a relationship which, from my personal observation, is growing stronger every year.

May I take this opportunity of extending to all members of the RAIC my best wishes for a happy Christmas and a prosperous New Year.

John L. Davies, FRAIC, President

LE NOUVEL INSTITUT

IL Y A QUATRE ANS EXACTEMENT, l'Institut, donnant suite aux recommandations d'une maison de conseillers en administration, a sensiblement réorganisé ses cadres. Commençant par la nomination en novembre 1958 de M. Robbins Elliott au poste de directeur administratif, il a établi et développé un programme national qui aurait été considéré comme tout à fait impossible à réaliser quelques années plus tôt.

On expose dans d'autres pages du présent numéro l'engorgement remarquable du nouveau programme de l'Institut royal. Pour ma part, ce que je trouve consolant c'est que, pour la première fois dans l'histoire de notre profession, l'Institut et les neuf associations provinciales travaillent dans l'harmonie et dans un esprit d'étroite collaboration.

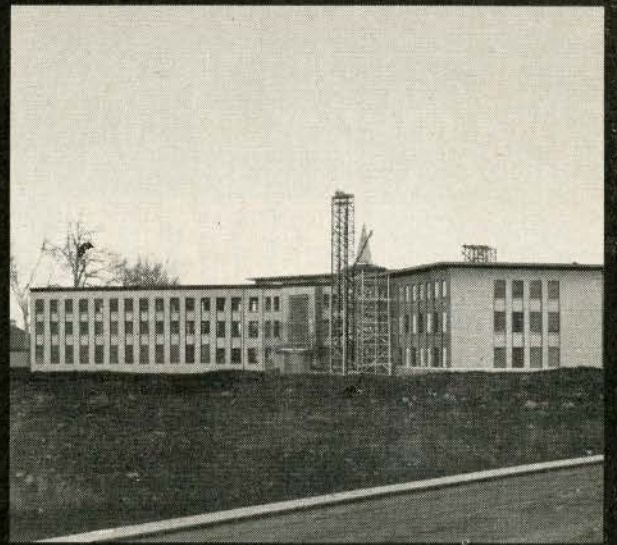
Les membres de la profession ont clairement démontré leur désir de posséder à Ottawa un organisme national actif, fort, qui travaille de concert avec les sociétés locales et fournit des stimulants et des directives non seulement sur le plan national mais même sur le plan international.

Il faut se rappeler que ce programme de l'Institut est appliqué par un personnel restreint dans les cadres d'un budget réduit à son strict minimum. Toutefois, le Conseil a reconnu le rôle possible de notre association nationale lorsqu'il a demandé à Vancouver en mai dernier et de nouveau à Montréal en septembre le concours des associations provinciales en vue d'obtenir l'approbation unanime à une augmentation en 1963 des cotisations des architectes à leur Institut. Déjà trois associations provinciales, celles de Terre-Neuve, du Nouveau-Brunswick et de la Saskatchewan, ont approuvé la résolution adoptée à la dernière assemblée annuelle.

En ma qualité de premier président originaire de la côte occidentale du Canada, je suis tout particulièrement heureux de ces étroites relations qui existent entre les architectes de toutes les régions du pays et qui, j'ai pu le constater personnellement, tendent à se raffermir davantage chaque année.

Je profite de l'occasion pour souhaiter à tous les membres de l'Institut un joyeux Noël et une nouvelle année prospère.

Le président, John L. Davies (F)



Upper left, Amqui Hospital; upper right, Bellevue Convent; lower, Applied Sciences Building, Laval University

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THE ENJOYMENT WHICH Frank Lloyd Wright derived from collecting Japanese prints was matched only by the pleasure and care with which he assembled and preserved his own architectural drawings. Some 8,000 of these remain today in The Frank Lloyd Wright Foundation archives and from this vast reserve the present exhibition was assembled.

Frank Lloyd Wright's favourite medium for drawing was colored (in addition to gray) pencil on tracing paper and his technique — in contrast to his bold and dramatic designs — was as soft and delicate as the Japanese prints which these drawings sometimes suggest. His hand can be distinguished by the quick, nervous, yet always assertive rendering of landscape in outline and the sure, steady, and straight (frequently assisted by triangle or T-square) delineation of the architecture (Fig. 2). For formal presentation drawings, particularly in his later years, the larger areas such as sky and grass were drawn with parallel lines close together and graded in intensity throughout their length. The resulting effect was to suggest flat, receding planes in space into which the three dimensional building was set. These buildings, shown in perspective and at an off-centre angle, were characteristically placed high on the sheet to enhance their spatial setting, while the physical environment of vegetation, ground, and sky formed an integral part of the composition as did the bled-off pencil-line frame and the extensive border of the sheet. (Fig. 1). The view point depended upon the scale of the project: normal eye level for small buildings (Fig. 1) and bird's-eye for complex schemes or those situated on precipitous sites. Even the most rudimentary sketch was worked up in three dimensions rather than as elevations parallel to the picture plane.

The majority of the drawings selected for the current exhibition represent the final state in the design sequence, that is, the presentation drawing. They are large and colorful, ideal for display, and easily recognized and interpreted. Projects, rather than executed works, predominate thereby enriching our experience, especially since several illustrate previously unknown designs.

Of particular interest is the impression of unbroken continuity as represented in Wright's creative work. The apparent hiatus of the 'twenties and early 'thirties, when his executed designs were so few, emerges through this

THREE EXHIBITIONS

- Frank Lloyd Wright's architectural drawings, School of Architecture, University of Toronto, Dec. 15—Jan. 15 (reviewed on this page)
- Ontario Association of Architects Exhibition, "The Face of Our Town," Toronto Art Gallery, Jan. 11—Feb. 10
- Four Centuries of Architectural Drawings, from the RIBA Collection, National Gallery, Ottawa, Feb. 5-26 (expected at University of Toronto School of Architecture in April)

The nearly 200 architectural drawings by *Frank Lloyd Wright* currently on exhibition at the School of Architecture, University of Toronto, represent the major portion of the exhibition organized by the Museum of Modern Art in New York where they were first shown earlier this year. As the largest exhibition devoted exclusively to Wright's drawings that has ever been assembled, an unprecedented opportunity is offered for the study of his work at an earlier stage in the creative process than is possible in after-the-fact photographs of completed buildings. All of the drawings on exhibit, with the addition of more than one hundred others, are illustrated in *The Drawings of Frank Lloyd Wright*, which has been published to serve as the exhibition catalogue as well as a monograph on Frank Lloyd Wright's drawings; this book is available at the exhibition which opened December 16th and will close on January 15th.

Dr Brooks is Assistant Professor, Department of Fine Art, University of Toronto. He is an authority on the life and work of the late FLW and is currently writing a new book about him. The accompanying review of the exhibition has been adapted by Dr Brooks from his earlier article in *The Burlington Magazine*, and is published by the kind permission of the Editor.

exhibition as a period of great creative activity which, if often filled with frustration for the architect, served as a time of exploration and regeneration which found ultimate fulfillment in his final years. The Guggenheim Museum, Beth Sholom Synagogue, Price Tower, and the Mile High all can be seen to stem from ideas initially studied at mid-career.

It is only regarding the type of drawings selected for the exhibition that certain reservations may be expressed.

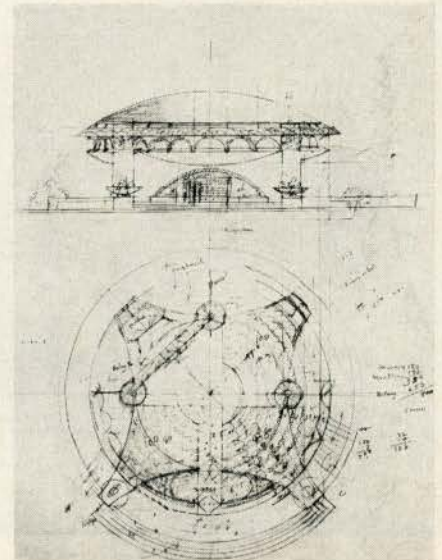


Figure 2: Frank Lloyd Wright, *Greek Orthodox Church, Wauwatosa, Wisconsin, 1956*. Pencil and blue and orange pencils on tracing paper (29 $\frac{3}{4}$ " x 36 $\frac{1}{4}$ "). Courtesy The Frank Lloyd Wright Foundation. (See "Orthodoxy," page 65 this issue.)

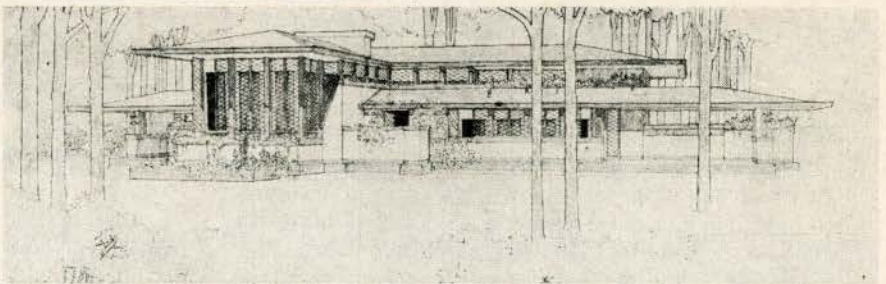
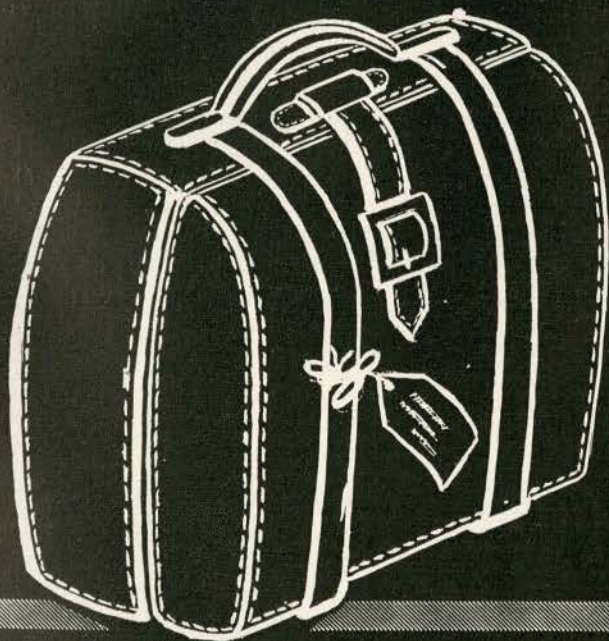


Figure 1: Frank Lloyd Wright. Project: *William Norman Guthrie House, Sewanee, Tennessee, 1908*. Pencil and brown ink on tracing paper (12 $\frac{5}{8}$ " x 25 $\frac{7}{8}$ "). Courtesy the Frank Lloyd Wright Foundation.

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The emphasis upon handsome presentation drawings has two unfortunate consequences for any viewer anxious to comprehend the creative genius of Frank Lloyd Wright as an architect. First, plans have been entirely excluded from the exhibition—and from the book—except where they happen to share a sheet with other drawings. This omission, particularly for Wright's work, is most regrettable, especially since his drawings of plans were frequently very beautiful and, like the perspectives, sometimes rendered in colored pencil and set in landscape. Second, too many of the drawings selected, while executed under Wright's close supervision, are not by his hand. That he did not personally execute all presentation drawings is to be expected; a busy architect does not have the time. The aid of assistants was a necessity and just as Wright had once characterized himself, about 1890, as a good pencil in Louis Sullivan's hand, so too did Wright train many a talented pencil to help realize his conceptions. Yet the result is that when viewing these final drawings one does not witness the recorded act of creation, only the consummation. To have included a larger percentage of the available preliminary studies and the rough sketches wherein an idea begins to assume form—these executed in Wright's own hand—would have added greater depth and value to the exhibition.

The Drawings of Frank Lloyd Wright, by Arthur Drexler, was published by Horizon Press for The Museum of Modern Art and contains 300 illustrations which generally duplicate, and also greatly augment, those drawings on display. The author, who is director of the Museum's Department of Architecture and Design, has annotated the plates and written the short introduction: an essay about Wright's drawings which is both sensitive and appreciative and admirably serves to introduce the fascinating illustrations.

Several books exclusively devoted to drawings by Frank Lloyd Wright have now been published. In 1910 a large folio—the first monograph on Wright—was issued by Ernest Wasmuth of Berlin; that volume was destined to alter the course of European architectural design. Forty-two years passed before another book of drawings appeared. This was the small *Taliesin Drawings* of 1952 by Edgar Kaufman, Jr, who in 1959 made possible the publication of the beautiful folio *Frank Lloyd Wright Drawings for a living architecture* which contained many color plates. Unfortunately this book soon went out of print. The present volume, *The Drawings of Frank Lloyd Wright*, although lacking the magnificence of the earlier folios, is unquestionably the most useful, comprehensive, and instructive yet published. The

plates, often full page in size, are printed by photo offset which does not give maximum clarity yet has the advantage of visually retaining the paper proportions as well as the various marks and notations added thereto. The selection of illustrations has the same limitations previously discussed regarding the exhibition. The lack of plans requires references to other sources among which H. R. Hitchcock's *In the Nature of Materials* remains the most valuable despite its 1942 publication date.

The Notes to the Plates (actually a catalogue) in Drexler's book contain didactic comments that serve to enhance our appreciation of the designs as well as to furnish factual data about the drawings: their identity, dates, dimensions, the medium employed and type of paper, and the 'F' or Frank Lloyd Wright Foundation number. However, the precision of the dating is sometimes open to question primarily because seemingly authoritative date notations written on the drawings vary from those listed.

The two drawings herein illustrated represent the early and late phase of Wright's brilliant architectural career; his early prairie houses (*Fig. 1*) and his final exploits in curvilinear design (*Fig. 2*). They may also serve to suggest the breadth and richness of Frank Lloyd Wright's drawings. H. ALLEN BROOKS

LETTERS TO THE EDITOR

Editor, RAIC *Journal*:

As chairman of the RAIC International Relations Committee, I have been asked by the United Nations Technical Assistance Department to assist in the recruiting from the RAIC membership of experts in the fields of town planning, low-cost housing, and educational building construction, for temporary assignments abroad.

The Technical Assistant Department has passed on several job descriptions for United Nations projects in various countries. The following posts are to be filled immediately: Damascus, Syria, expert in low-cost housing; Kampala, Uganda, city planner; Karachi, Pakistan, city planning and housing expert; Santiago, Chile, school building design expert.

In each case, the applicant is ex-

pected to remain at his post for a minimum of one year, beginning the first few weeks in 1963. It will thus be necessary for those who are interested, and feel they have the necessary qualifications, to contact me as soon as possible. Please send outline of pertinent qualifications and experience to me at 908 McCallum Hill Building, Regina, Sask.

Joseph Pettick, Chairman,
RAIC International Relations
Committee

"Search for Focus"

Editor, RAIC *Journal*:

For the October issue of the *Journal*, Mr C. Ross Anderson joined with me in preparing the piece called "Search for Focus." I wrote the brief article, and he

most kindly took on the responsibility for the illustration material. He came to my rescue with his usual enthusiasm and great interest in things of this kind and I was most grateful to him. Imagine my horror, on receiving my copy of the *Journal*, to discover that no credit was given to Ross Anderson for his part in this.

I think it was Professor Gordon Stephenson who first drew my attention to the Yonge-and-St Clair intersection as an interesting example of a mature community focus that had occurred spontaneously. I wanted to get a picture of this to go with my article but had been unable to find a satisfactory one. However, Ross Anderson promptly solved the problem by going up in an aeroplane himself and taking the

NEOPRENE GASKETS KEEP LIGHT CONSTRUCTION TIGHTLY SEALED

Wind-driven rain. Freezing. Summer sun. To combat these weather extremes, curtain wall construction needs a reliable, permanent glazing seal. Du Pont Neoprene gasketing adds an element of dependability you can get with no other material.

Performance records over the past decade have demonstrated Neoprene gasketing's ability to seal out rain and cushion glass panes against winds of hurricane force. Neoprene gaskets accommodate horizontal and vertical expansion of glass and metal panels. This versatile synthetic rubber also resists ozone and airborne chemicals.

In addition to time-proved reliability, Neoprene gasketing offers two other important features. (1) Glazing is easier, can be done faster. (2) After installation, no maintenance is required. Pre-formed Neoprene gasketing is

competitive in terms of installed costs since job-site labour is reduced to a minimum. Stores, shopping centers and schools are now using Neoprene effectively.

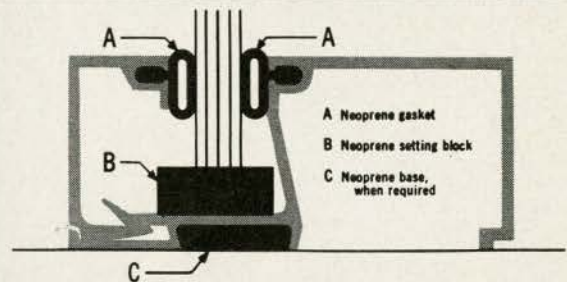
For more information and a list of reliable manufacturers of Neoprene sealing strips, write Du Pont of Canada Limited, Elastomers, 85 Eglinton Ave., East, Toronto 12, Ontario.

NEOPRENE ANOTHER RELIABLE



ELASTOMER

EL-2-16



picture; he then drew the sketch that appears on page 63 of the October *Journal* in order to bring out the idea more clearly. I mention this just as one example of his collaboration.

I would be very grateful if you could publish this letter in the *Journal*, as a measure of thanks to Mr Anderson for his contribution to this issue of the *Journal*.

Humphrey Carver,
Chairman, Advisory Group, CMHC,
Ottawa

Pilkington Scholarship

Editor: RAIC *Journal*:

We have been very pleased with the reception given to our distribution of copies of the brochure "Pilkington Awards in Architecture - 1962."

We have had many letters from architects across the country expressing deep interest in the opportunity this afforded for appreciating the high standard of the winning project.

We are most grateful to those who wrote to us and for the co-operation of the profession and your *Journal* in carrying through this annual project.

Donald Jupp, President,
Pilkington Glass Limited, Toronto

POSITION VACANT

EXPERIENCED ARCHITECTURAL DESIGNER required by long established firm of Toronto Architects. Applicant must have proven ability and be capable of presenting his ideas in distinctive renderings. Applications will be treated with strict confidence and should include resume of qualifications and experience. Box 110 *Journal*.

POSITIONS WANTED

Position wanted by architect with degree of "Dottore Architetto" from Rome University, 1939. Special training in town planning. Has worked with building firms in number of Italian cities and in Buenos Aires. Experience in all types of interior design. Speaks seven languages including English. Write Victor Grinenco, Valley Remedios de Escalada 2626, Martinez, Prov. de Buenos Aires, Argentina.

Position as assistant architect or architectural assistant wanted in Canada by architect now resident partner of firm in Blantyre, Nyasaland. English de-

scant, age 35, B.Arch, University of Capetown, 1952. Write Paul Jones, P.O. Box 347, Blantyre, Nyasaland, Central Africa.

Position with architectural firm or contractor's office wanted by 1960 graduate of "Fine Arts Academy, Architectural Part," who will be completing military service in mid-January, 1963. Considerable civil and military service experience in field and offices; working knowledge of English, French and German. Write Ibrahim Kobaner Dip.Architekt, Ust Zerren Sok.No.3 Levent/1st. Turkey.

Will Organize Structural Department in Architectural Office

Structural engineer with long professional design supervision and administration experience in work with architects open to organize structural department in architectural office with \$4 million minimum annual volume of work. Box 111 *Journal*.



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AND NATURAL STONE ADD BEAUTY WITH AGE

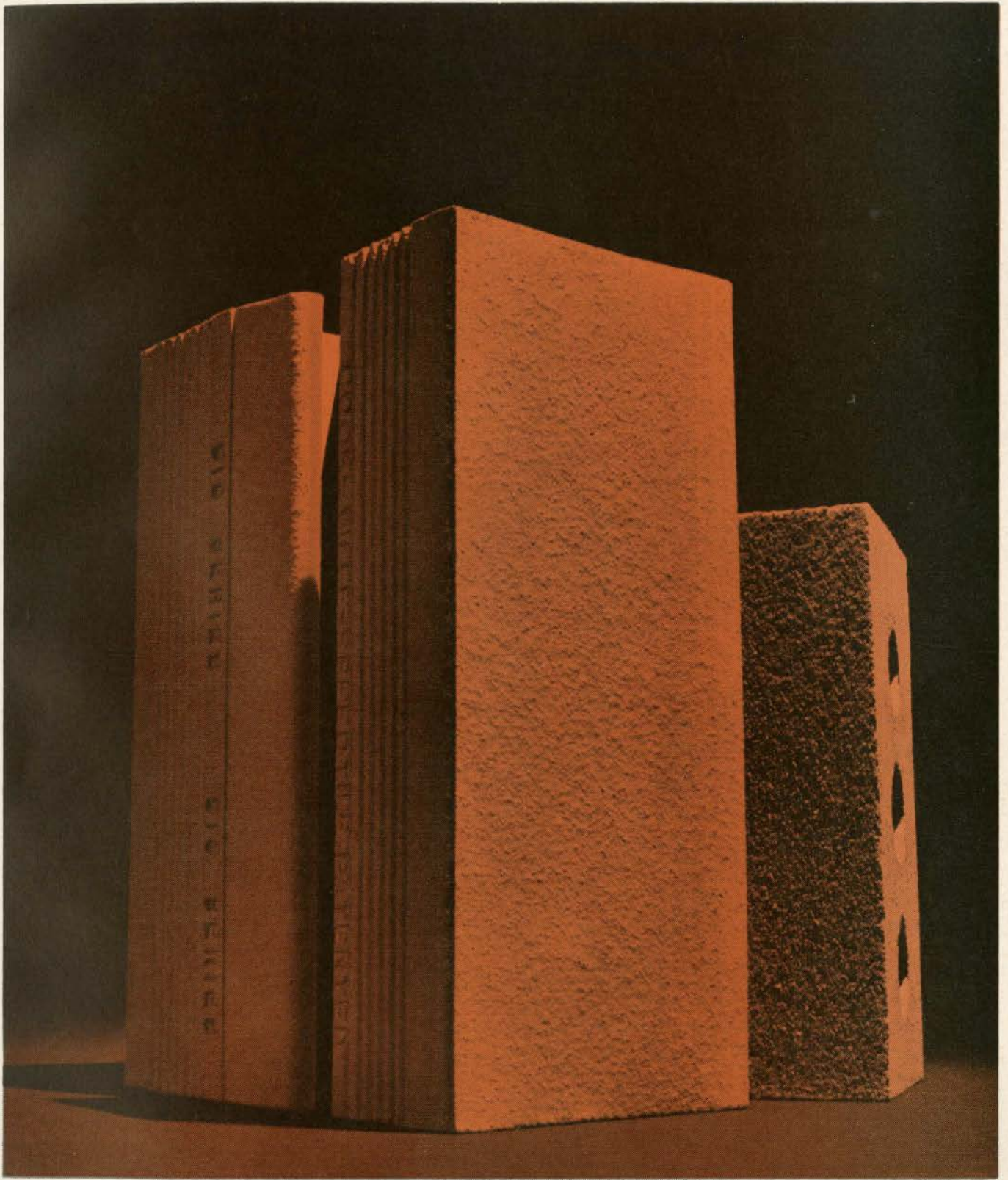
Architects and contractors are impressed by Medusa StoneSet's non-staining and aging qualities. This White Masonry Cement, used white or tinted, ages in color with natural stone making a beautiful wall. Since it is the only white masonry cement with a Portland Cement base, only StoneSet can give this aging advantage.

StoneSet joints are remarkably free of stain and hair-line cracks and are uniform in color throughout the wall. May we send you detailed information and specifications on this superb white masonry cement?

SHELL OIL BUILDING, Toronto, Ontario
Architect: Marani, Morris and Allan, Toronto, Ontario
General Contractors: Redfern Construction Company, Ltd., Toronto, Ontario, Canada



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Meet big brother: burned clay tile. Cooksville-Laprairie structural tile is close kin to brick; only the shape is different. Like brick, tile is made of clay. It is fused with the same burning process that gives it low absorption, high insulating value, permanent colour and compressive strength. Clay tile won't shrink, crack or fade. Makes sense, doesn't it, to use a masonry unit that has all the qualities of clay brick? Between them, Cooksville-Laprairie tile and brick make quite a family.

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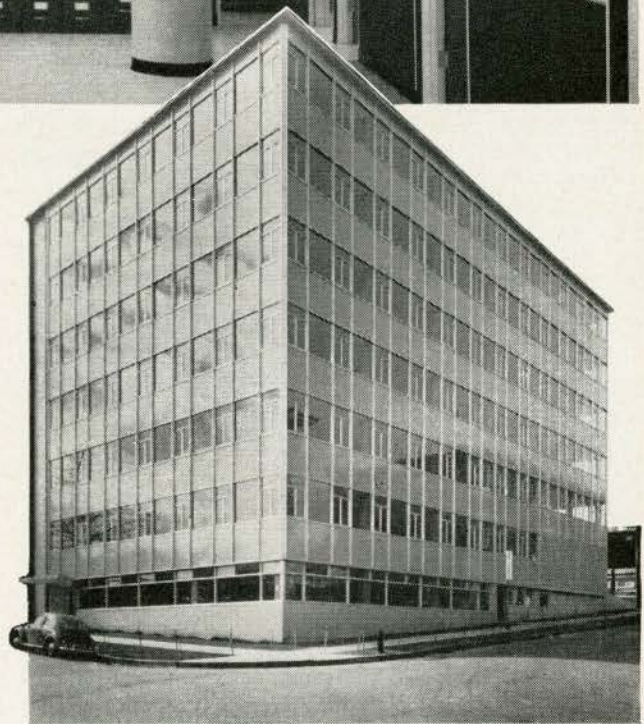
This seven storey Phillip's Building in Vancouver, B.C., is sound conditioned with Acousti-Celotex Products. Acousti-Celotex Random Cane Tile and Acousteel Metal Pan Assembly was applied throughout this building.

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sound conditioning products offer the widest variety of materials, textures and patterns to satisfy any acoustical or decorative need.

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Dominion Sound Equipments Limited is Canada's foremost Acoustical Applicator, with more than 25 years of experience in this highly specialized field. Dominion Sound Equipments Limited is ready to serve you.



ARCHITECT: R. Renke, Vancouver, B.C.,
 GENERAL CONTRACTOR: Kirkpatrick Construction Co. Ltd., Vancouver, B.C.

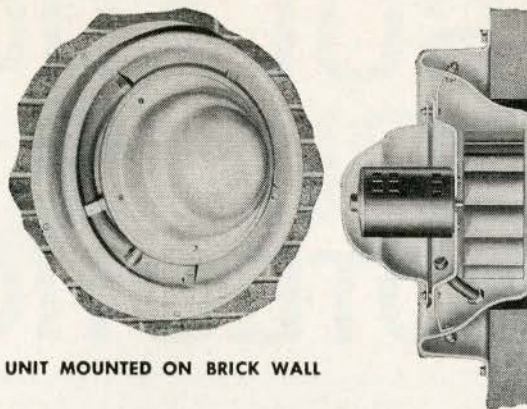
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| TRANSLUCENT CEILINGS | —of LUMICEL and ACOUSTI-LUX which assure low brightness and uniform diffusion with high illumination levels. |

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This Fiberglas* unit with its new molded-in fawn colour blends perfectly with most brick and other external wall colours — exhausts fumes away from the building — attractive, quiet and rugged. The perfect unit for restaurants and hotel kitchens. From 235 to 2,415 C.F.M. capacities.



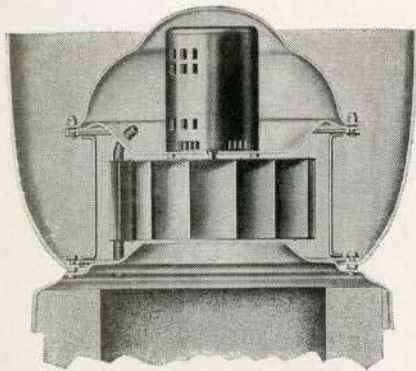
UNIT MOUNTED ON BRICK WALL



Powered Low-Line and Low-Line Relief. Economical low contour ventilators.

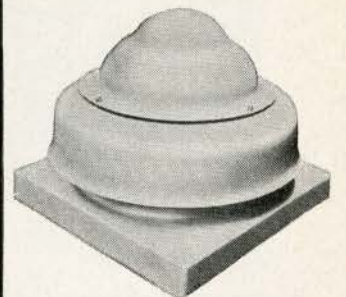


Sky-Lite Pyrojector — this unit which features emergency relief plus skylighting opens automatically in case of fire or explosion.



FIBER-AIRE WHIRLOUT

Especially designed for restaurants and commercial kitchens — exhausts greasy fumes up and away from the roof. Moulded-in Sky Blue Fiberglas* housing is fire-resistant. In case of duct fire will not melt or drop motor through the duct into deep fat friers or cooking ranges as other ventilators could. From 370 to 2,350 C.F.M. capacities.

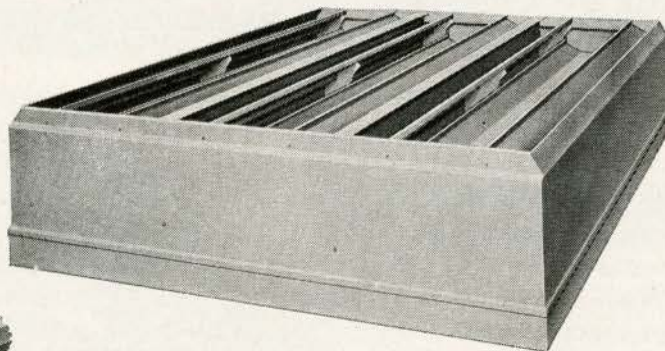


Fiber-Aire — indestructible molded-in Sky Blue Fiberglas* housing is virtually impervious to weather, salt spray, chemicals and fumes. Direct drive, belt drive and axial units available.

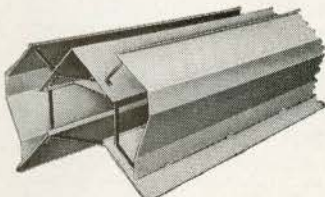
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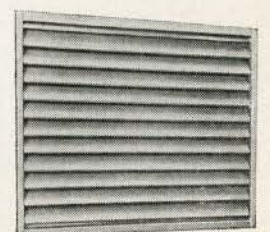


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Combine ventilation with skylighting to save money, time and space. Available in two different models; Lite-'n-Aire Airmover and Lite-'n-Aire Heat Valve. Both styles available with either molded Fiberglas* or metal dampers and gutters.



Insta-Curb — high quality prefabricated roof curb for fast installation — no sharp corners to tear roofing materials — wood top with all welded steel construction.



Airlouwer — adjustable or fixed in any size single units or multiple assemblies — weather proof.



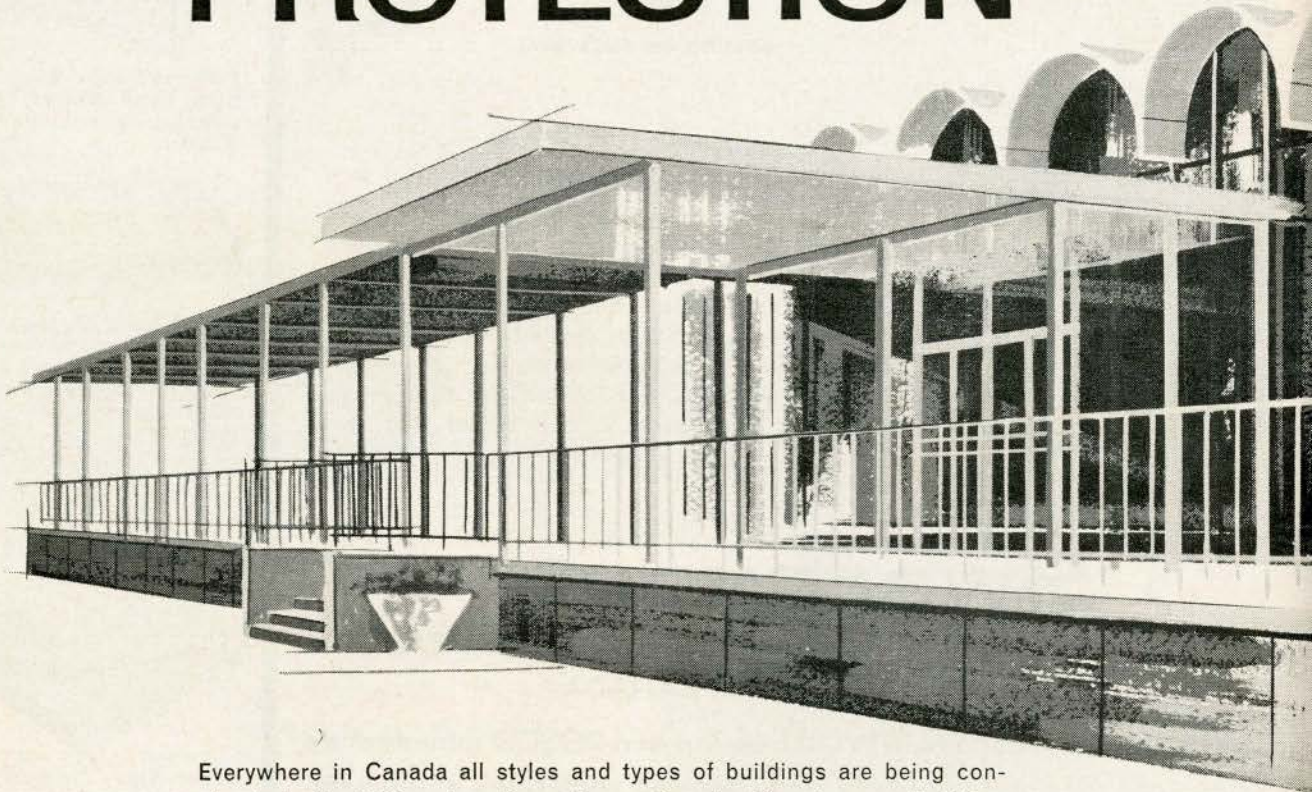
*TM — Owens Corning Fiberglas Corporation.
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Fiberglas Roof Deck Insulation offers less thickness for equal performance, and the lowest overall heat transfer for flat or low pitched roofs. In addition, it is light, easy to apply, rot-proof, shrink-proof, and swell-proof.

Fiberglas Built-up Roofing reinforces the finished roof in all directions—the glass fibers strengthen the asphalt as steel mesh reinforces concrete. The blending of asphalt and glass fibers results in a single *monolithic* structure. This lowers maintenance costs by preventing blistering, surface cracks, decay, and alligatoring. Neither does it dry out or permit the capillary transmission of water. Also, with Fiberglas Built-Up Roofing buildings can be "closed in" sooner and construction speeded up, as adverse weather during roofing application is not a problem. For further information contact:

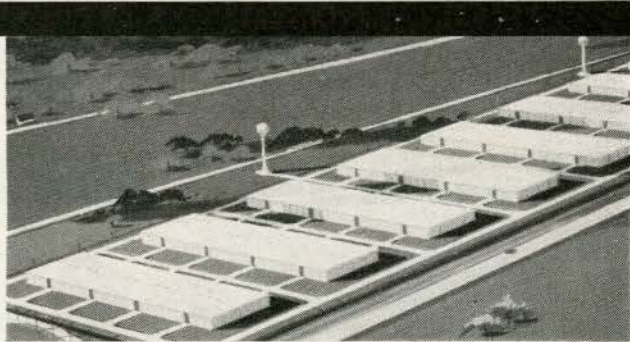




Sarnia Lambton City County Building, Point Edward, Ont.
 Engineers—Giffels & Vallet of Canada Limited, Toronto, Ont.
 Associate Architects—Trace & Gloss, Windsor, Ont.
 General Contractor—Eastern Construction Company Ltd., Windsor, Ont.
 Roofing Contractor—Schreiber Bros. Limited, Hamilton, Ont.



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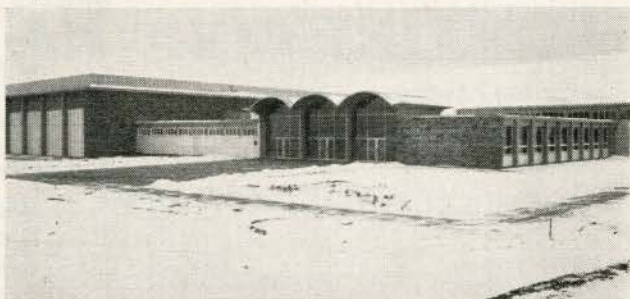
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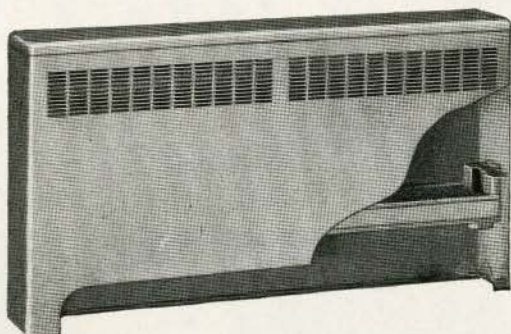
6.

- 1. Pictou Academy Recreation Hall, Pictou, N.S.**
 Architect—John L. Darby, Bedford, N.S.
 General Contractor—MacDougall Construction Company Limited, New Glasgow, N.S.
 Roofer—Tasco Sheet Metal and Roofing Company Limited, Sydney and Halifax, N.S.
- 2. Bell Telephone Company—C.O. Building, Montreal**
 Architects—Barott, Marshall, Merrit and Barott, Montreal
 General Contractor—J. S. Hewson Limited, Montreal
 Roofer—Delphis Cote Ltee., Montreal.
- 3. Faculty of Dentistry Building—University of Toronto.**
 Architects—Allward and Gouinlock, Toronto
 General Contractor—Foundation Company of Canada Limited, Toronto.
 Roofing Contractor—Semple Gooder & Company Limited, Toronto.

- 4. Maturing Warehouses—Hiram Walker & Sons Ltd., Windsor.**
 Engineers—Smith, Hinchman & Grylls Associates, Windsor.
 General Contractor—Eastern Construction Limited, Windsor.
 Roofing Contractor—Schreiber Bros. Limited, Hamilton.
- 5. River East School Division No. 9, North Kildonan, Man.**
 Architect—Ward and MacDonald Associates, Winnipeg.
 General Contractor—Wyatt Construction Company Limited, Winnipeg.
 Roofing Contractor—Aetna Roofing Company Limited, Winnipeg.
- 6. Gymnasium—University of Alberta, Calgary.**
 Architects—Department of Public Works, Province of Alberta.
 General Contractor—Burns & Dutton Concrete and Construction Company Limited, Calgary.
 Roofing Contractor—William Clark Roofing Company Limited, Calgary.



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are constructed of 18 to 20 gauge steel with heavy metal stiffeners for added rigidity. Steel supports hold elements firmly in place without danger of bending or breaking. Over 11 standard cabinet styles are available.

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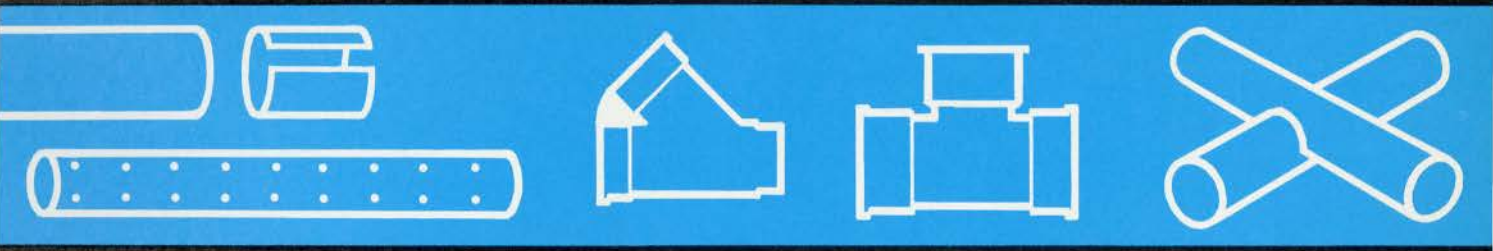


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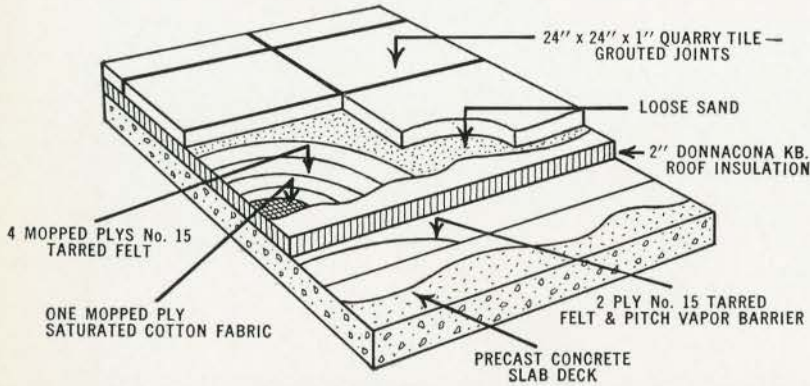
Specify NO-CO-RODE pipe. It's light to handle, easy and fast to install. Uses simple fittings and cross joints for smooth, constant drainage. The architect: John B. Parkin Associates, the General Contractor: the Foundation Company of Canada Limited. *NO-CO-RODE is an all-Canadian product.* Write for full information to DOMTAR Construction Materials Ltd., 1 Place Ville Marie, Montreal 2, Que.

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HERE ARE 3 EXCEPTIONAL EXAMPLES OF
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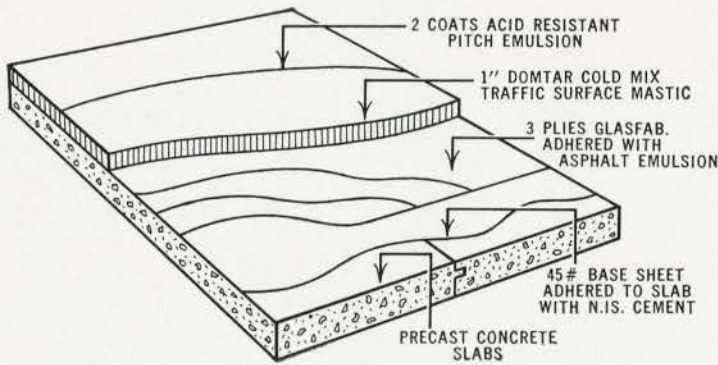
TO BUILD A ROOF STRONG ENOUGH TO LAND AND HOLD A HELICOPTER...

Sectioned diagram shows special treatment for a helicopter landing area using Murray-Brantford Built-up Roofing materials, on the roof of St. Justines Hospital, Montreal.

ROOFER: Philibert Bedard Ltd.

GENERAL CONTRACTOR: Damien Boileau Ltd.

ARCHITECT: Henri S. Labelle.



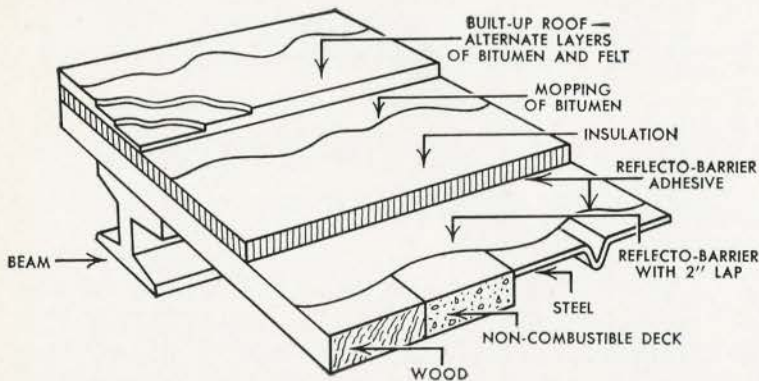
TO ROOF A POWER STATION...

Here's a section of the special traffic surface roof, also employing Murray-Brantford Built-up Roofing materials, for the hydro-Quebec Power Station, Carillon, Que.

ROOFER: Simard et Freres, Enrg.

GENERAL CONTRACTOR: Hydro-Quebec.

DESIGNER: Shawinigan Engineering Co. Ltd.



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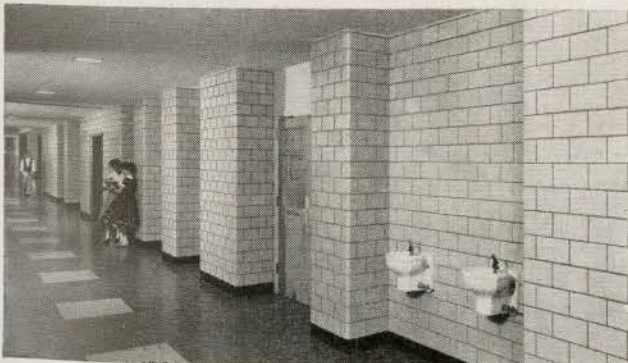
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Vitritile—a ceramic glazed structural clay facing tile—is resistant to moisture, fire, chemicals, dirt and scuffs. Interior walls of smooth Natco Vitritile resist the day by day wear and tear that only school children can administer.

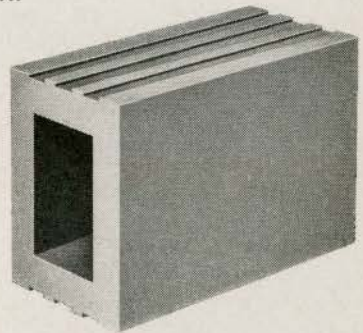
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Install it and forget it! Vitritile's permanent, hard-fired finish assures years and years of maintenance-free service. Because it is a **genuine** clay tile product Vitritile will last the life of any school in which it is installed.

If you're building a new school or adding to an existing school it will be to your best interests to consider Natco Vitritile. For complete information write for catalog #S-61 N.



Vitritile is available in many shapes and sizes. Including the large 8W series (7 $\frac{3}{4}$ " x 15 $\frac{3}{4}$ " face size) and the popular 6T series (5 $\frac{1}{16}$ " x 11 $\frac{3}{4}$ " face size) available in nominal 2", 4", 6" and 8" thicknesses.



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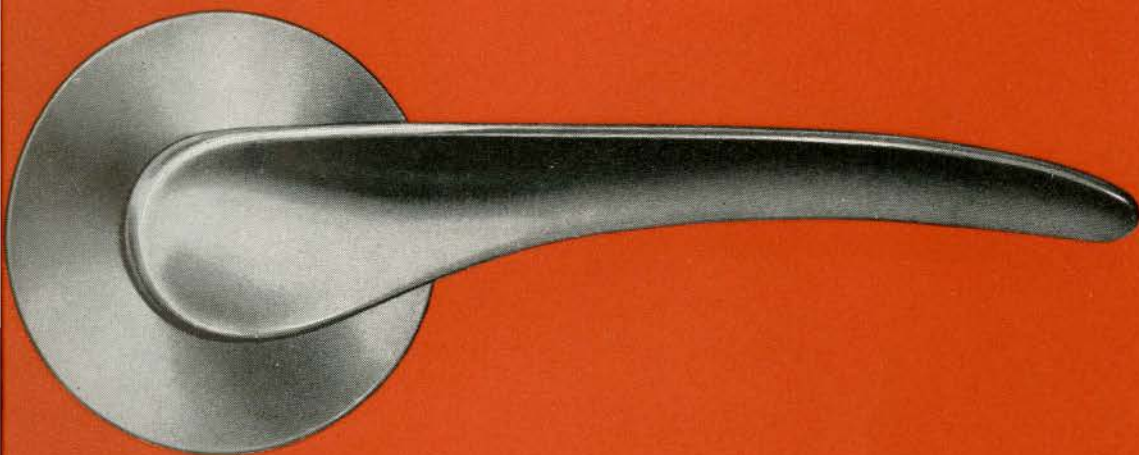
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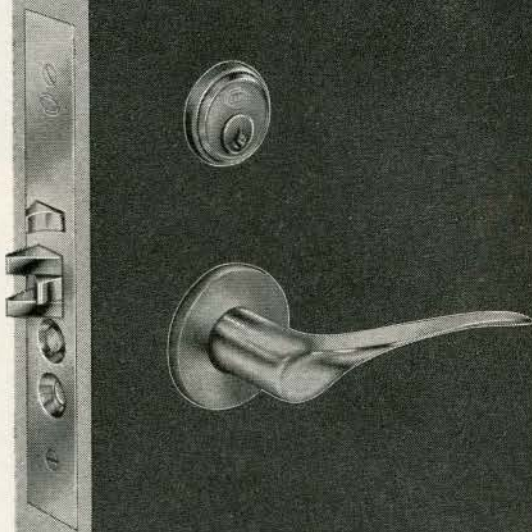
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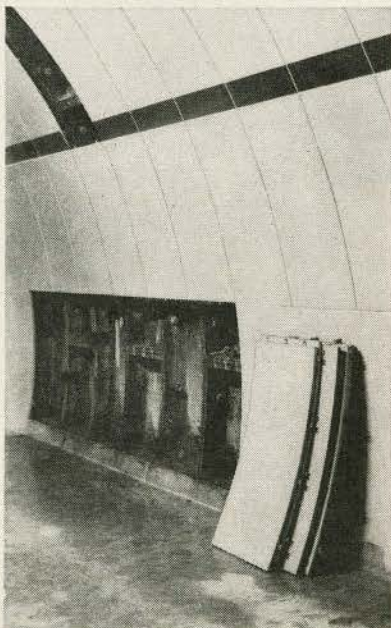
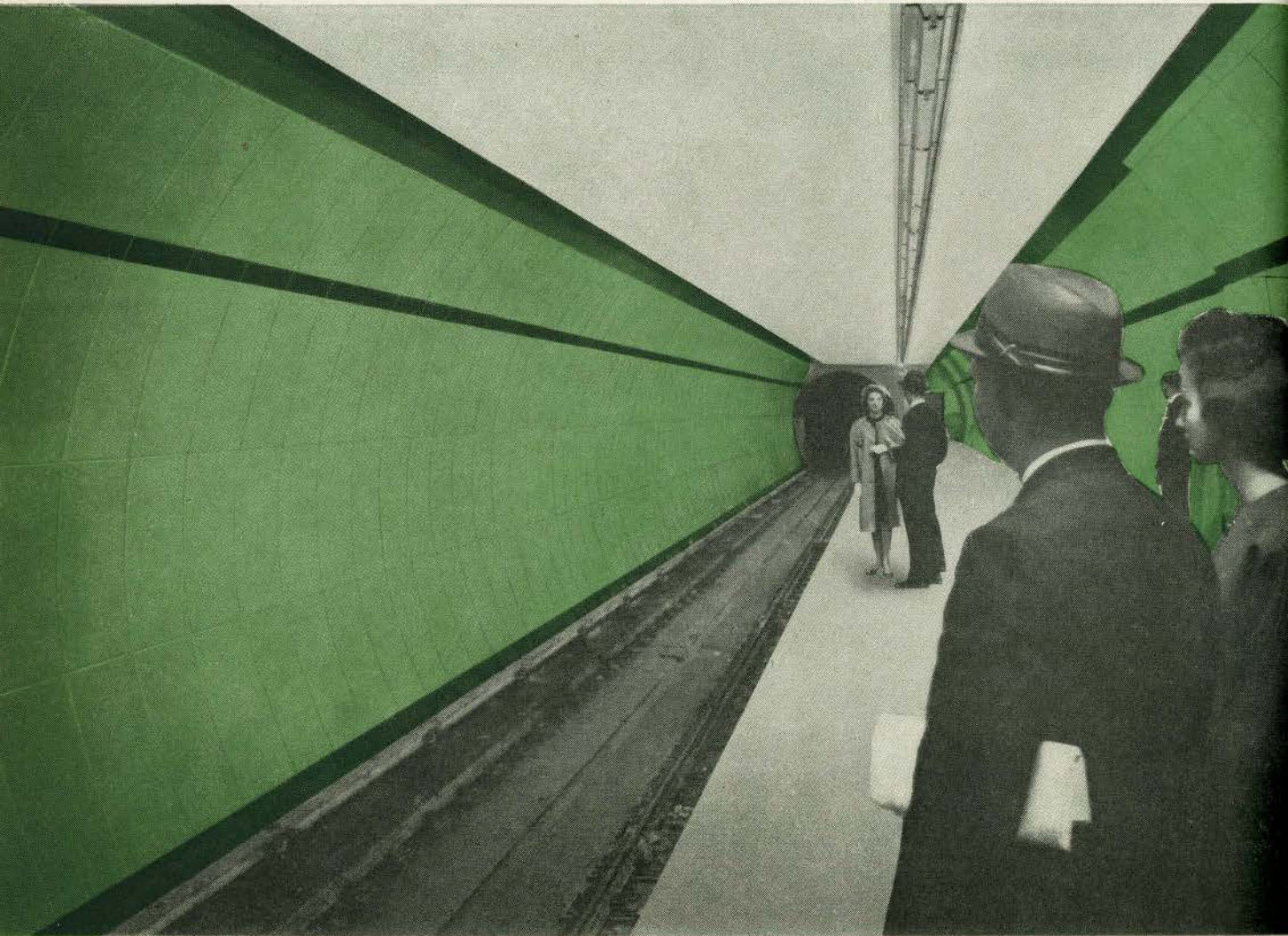


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ARCHITECTURAL DESIGNERS & CONSULTING ENGINEERS:

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CONSULTING ARCHITECTS:

John B. Parkin Associates
Margison & Keith Engineers & Architect

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The strength of steel sheet . . . the lifetime beauty of colour . . . are combined in Porcelain Enamelled Steel.

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Porcelain Enamelled Steel offers permanent colours ranging between full gloss and a variety of matt, matching and simulated finishes. It gives the designer exceptional freedom at costs competitive with other quality materials.

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STRUCTURAL ENGINEERS:
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MECHANICAL ENGINEERS:
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GENERAL CONTRACTOR:
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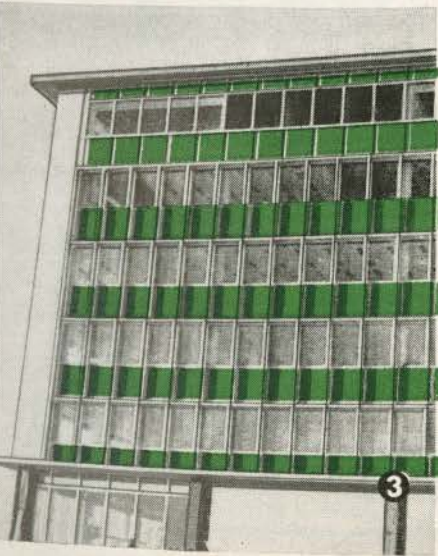
③

OWNER:
Ford Motor Company of Canada, Limited

ARCHITECTS:
Allward & Gouinlock

GENERAL CONTRACTORS:
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ARCHITECTURAL PORCELAIN PANELS by P. Graham Bell Associates Limited



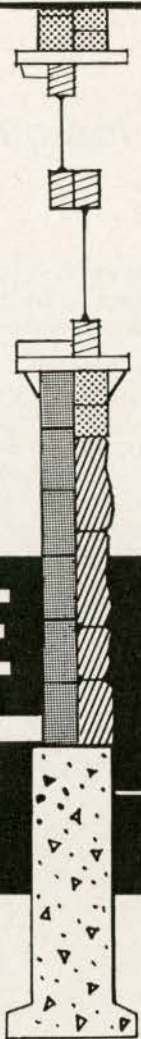
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**DESTRUCTIVE
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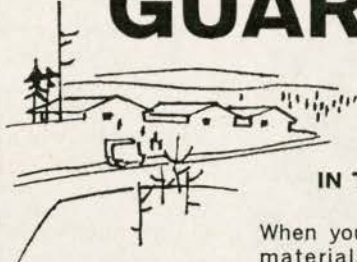
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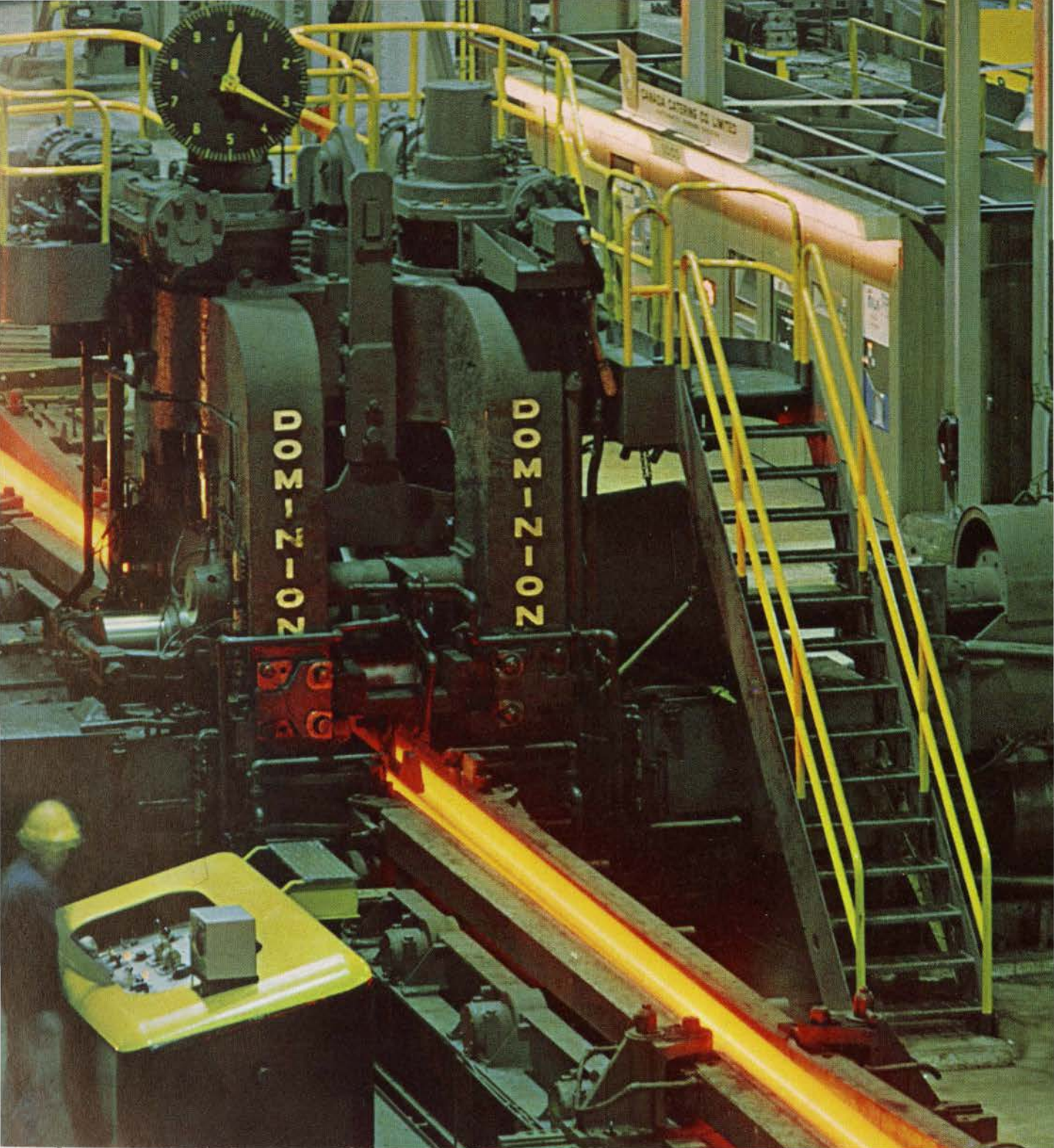
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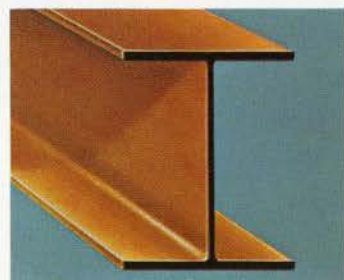


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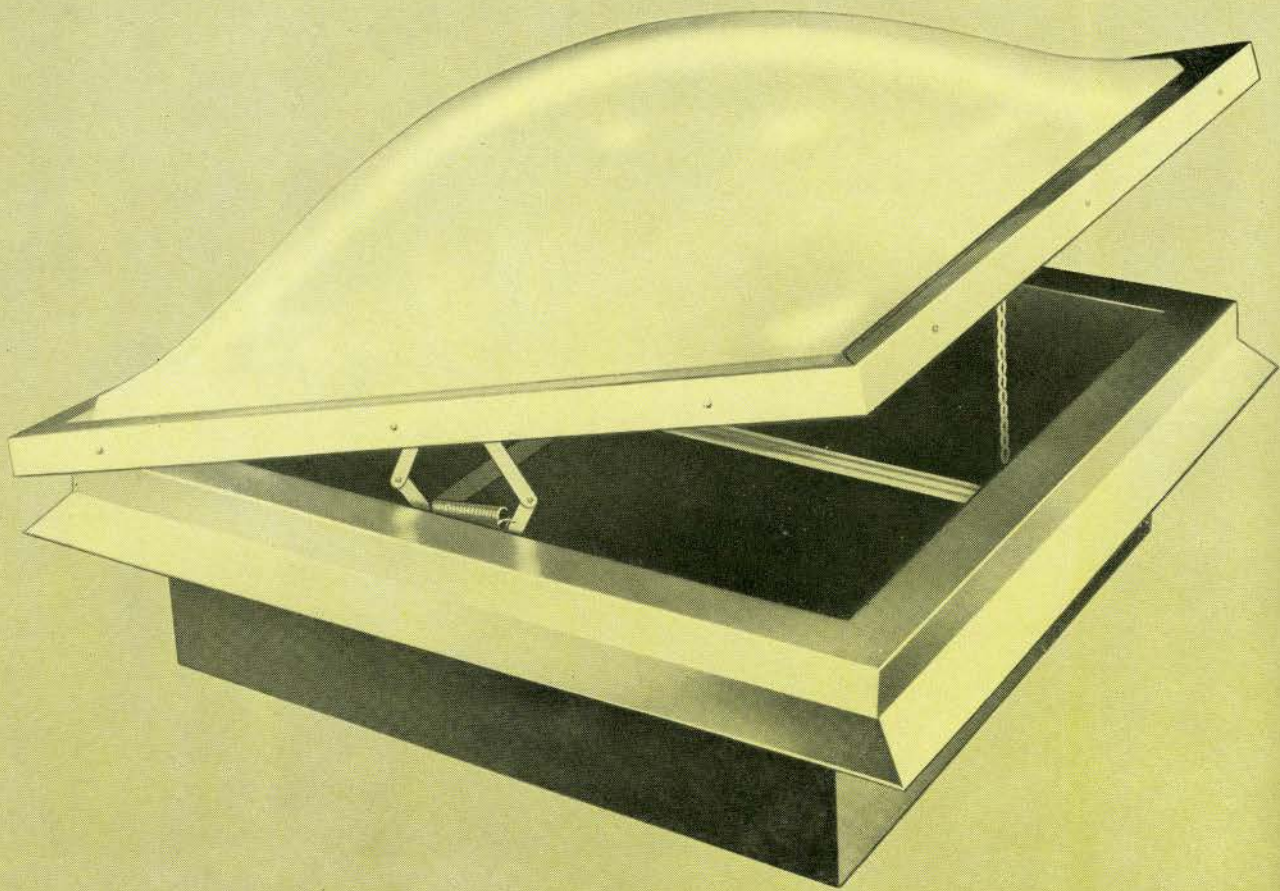
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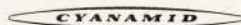
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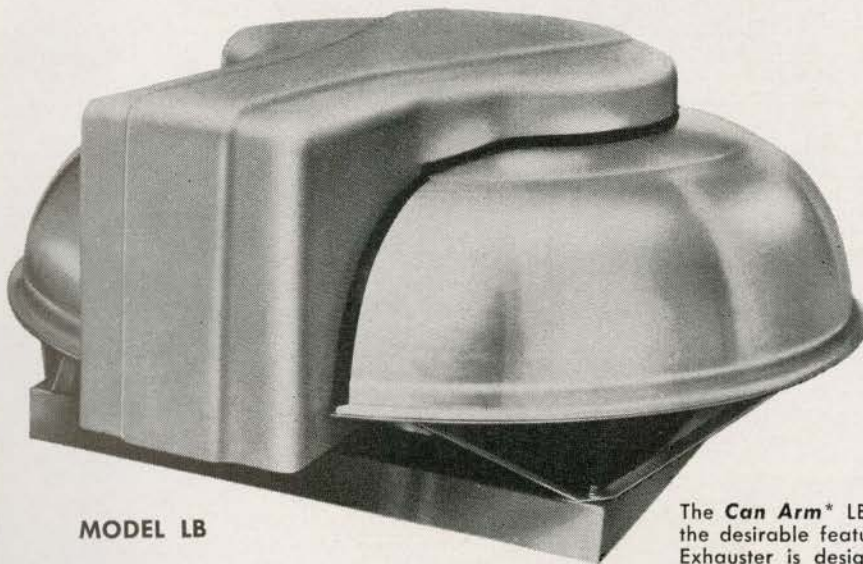


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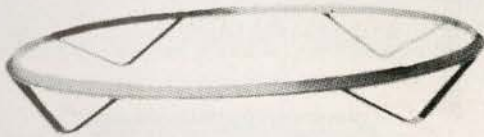
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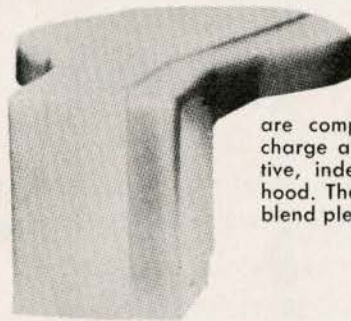
The *Can Arm** LB Roof Exhauster is designed to have all the desirable features wanted in a roof exhauster. The LB Exhauster is designed to be very low in silhouette, constructed with a heavy gauge aluminum discharge shroud, complemented by an indestructible housing for the bearings, drive belts, and motor.



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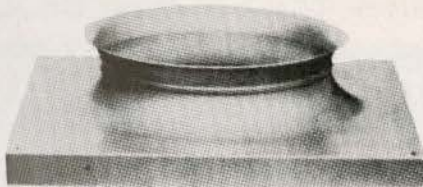
The *Can Arm** LB Unit is supported from the base with heavy gauge V-Type steel braces welded to an angle ring on which the spun aluminum hood is supported.

This *Can Arm** engineered design gives the LB Unit tremendous strength and rigidity and leaves the discharge area free of obstruction.



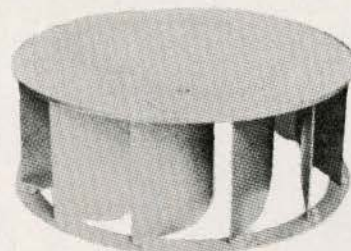
MOTOR COVER

The motor, belt, bearings, and drives on the *Can Arm** LB, Low Silhouette Exhauster are completely isolated from the discharge air and protected by an attractive, indestructible, Fiberglass weather hood. The hood is smartly sculptured to blend pleasingly with the roof line.



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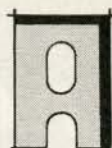


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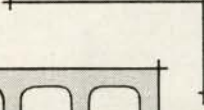
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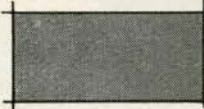


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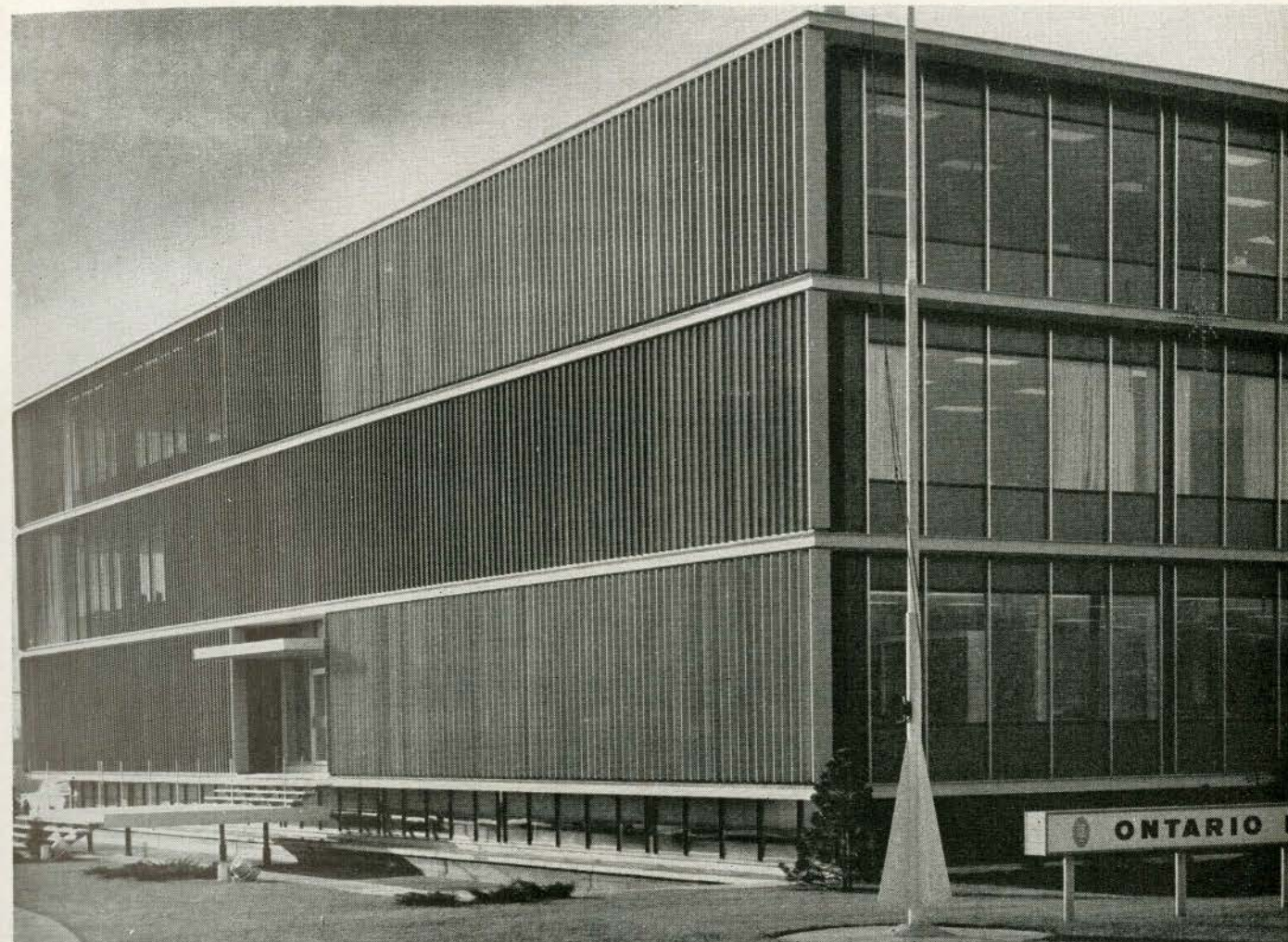
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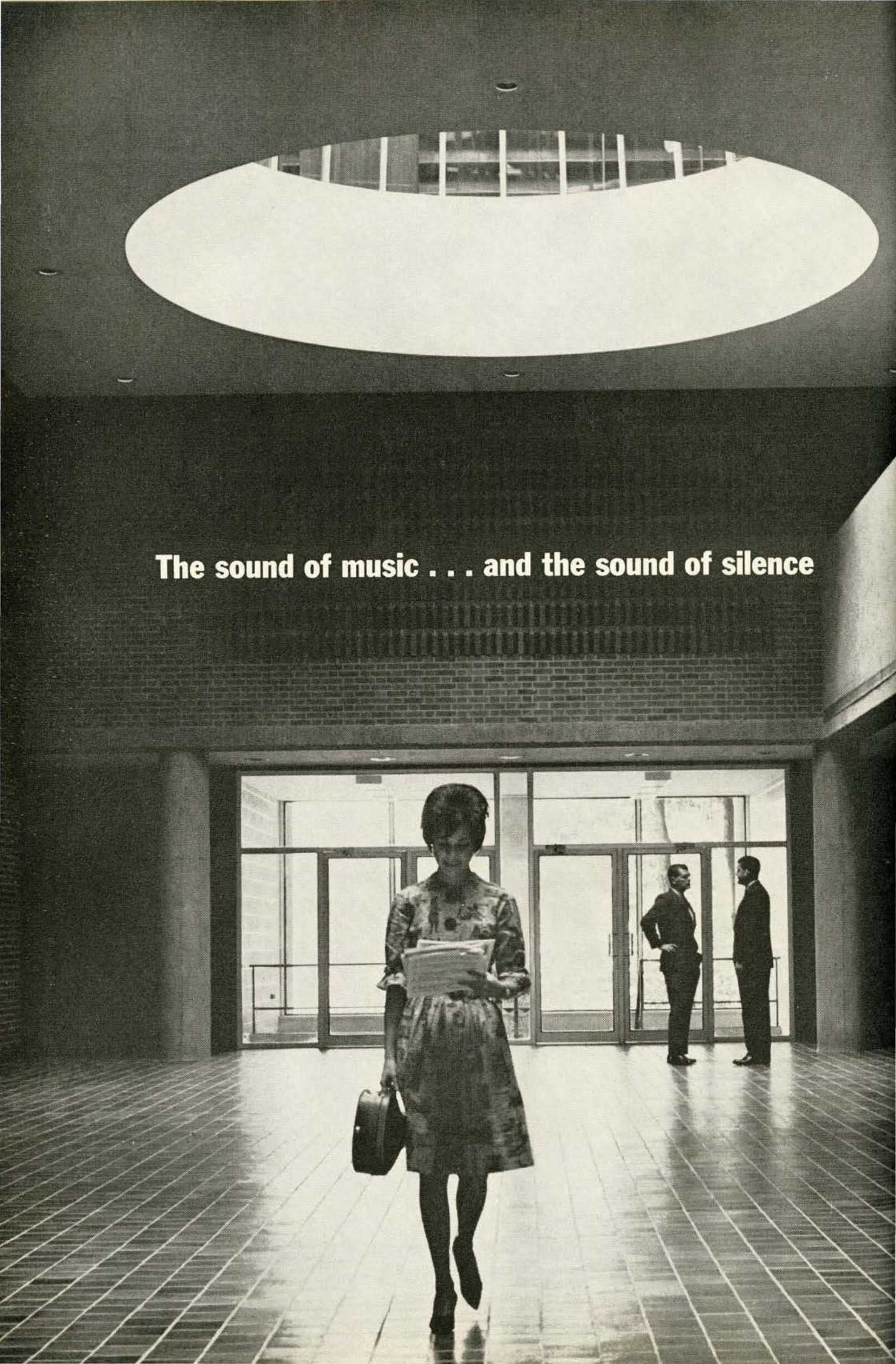
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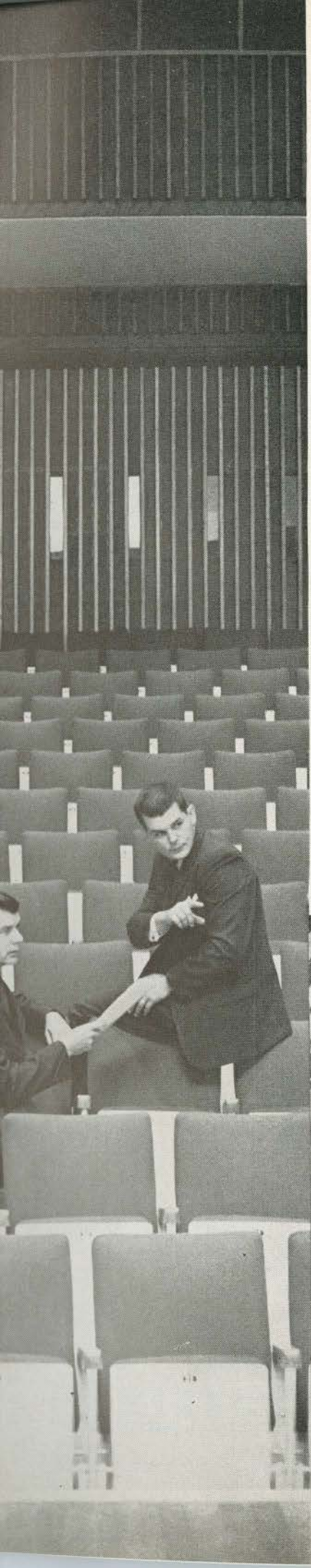
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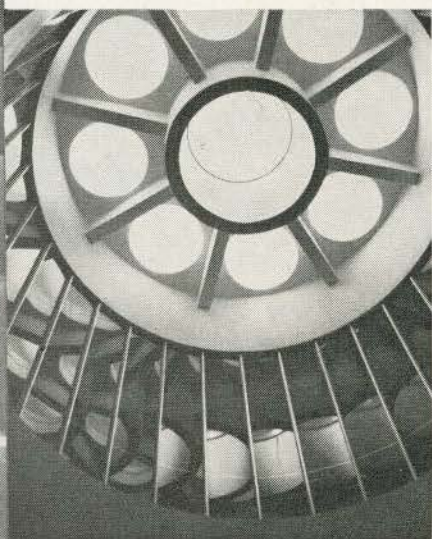




(Above) J-M Spintone panels were selected for the upstairs library. (Extreme left) A Permacoustic ceiling graces the main lobby. (Left) No. 61 Sound Absorbing Elements were installed in the back of the concert hall.

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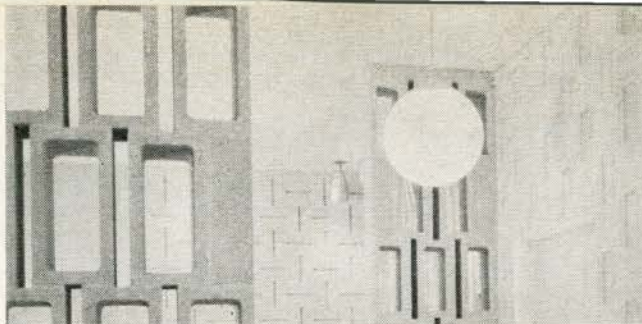
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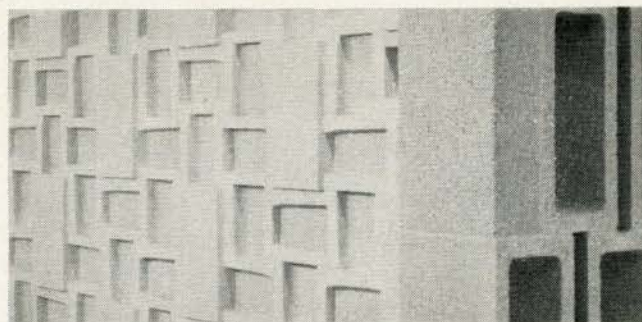
*Architects: Gordon S. Adamson & Associates
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Sound Engineering Consultant: Prof. V. L. Henderson*



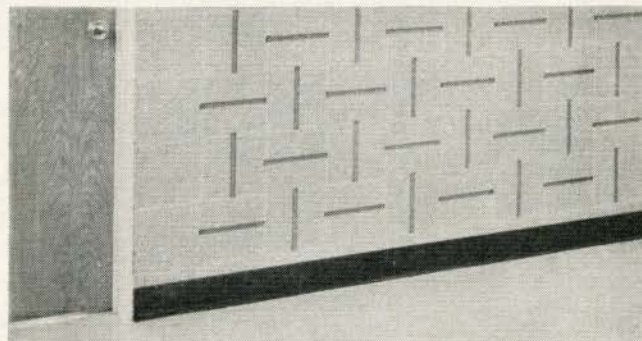
Here's an interesting effect.



Here's another



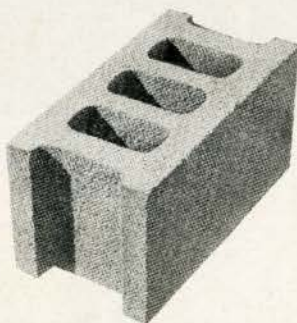
and another.



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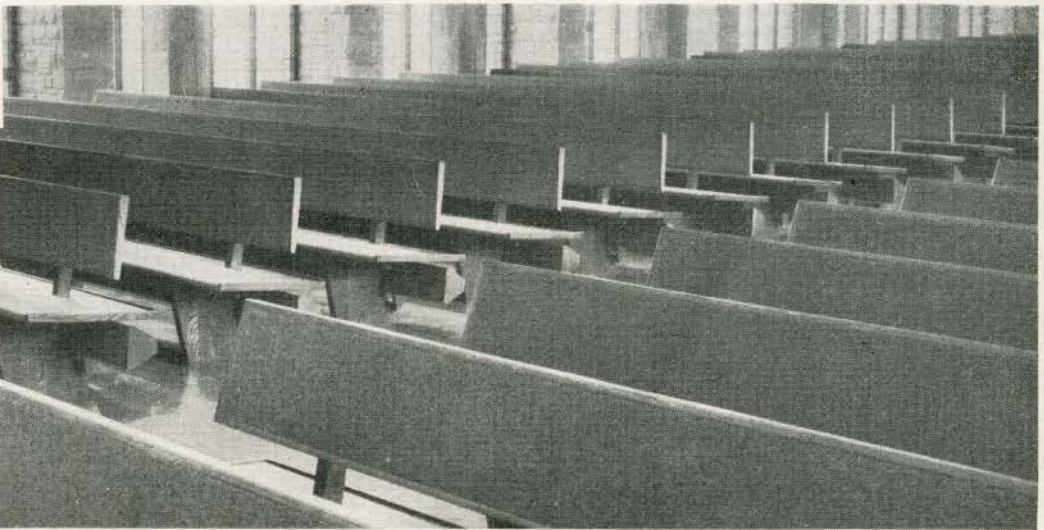
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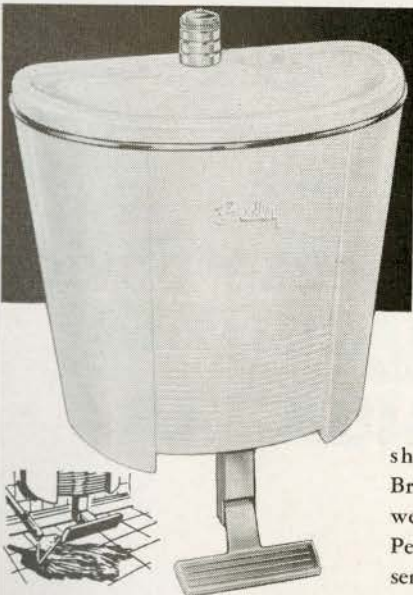
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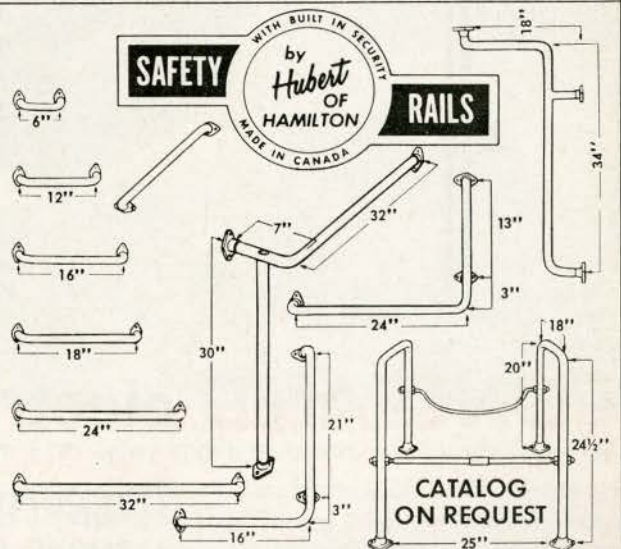
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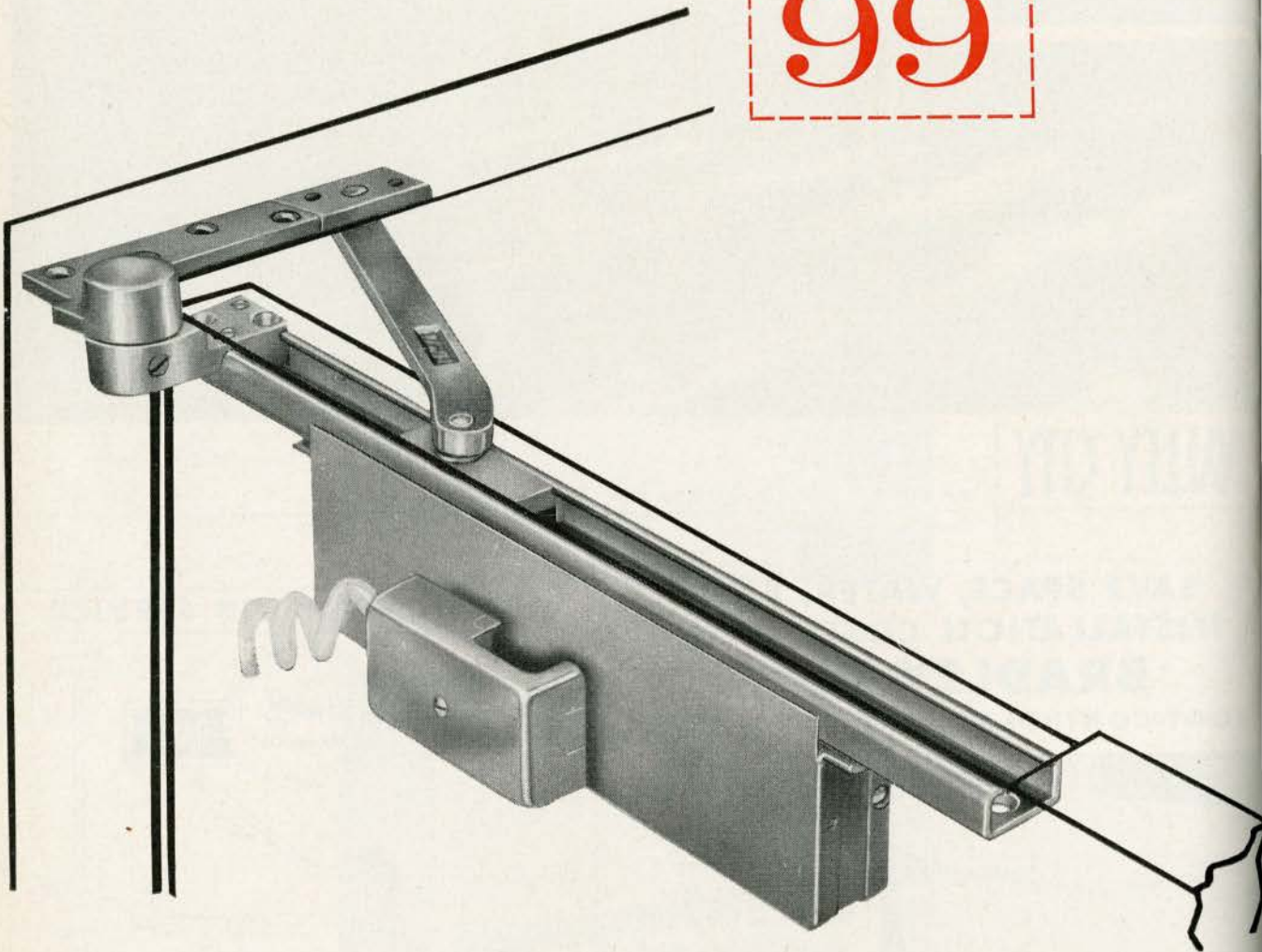
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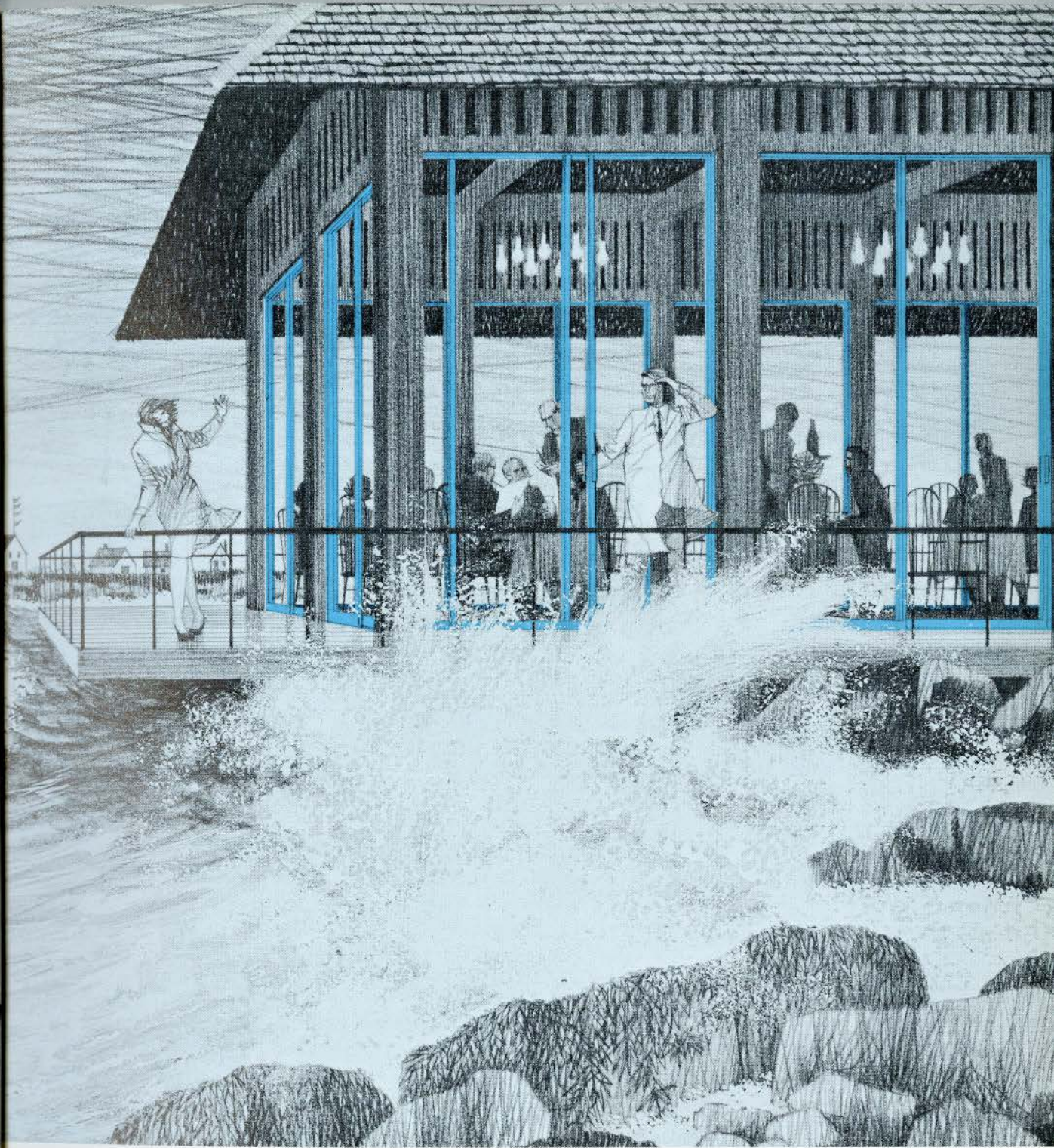
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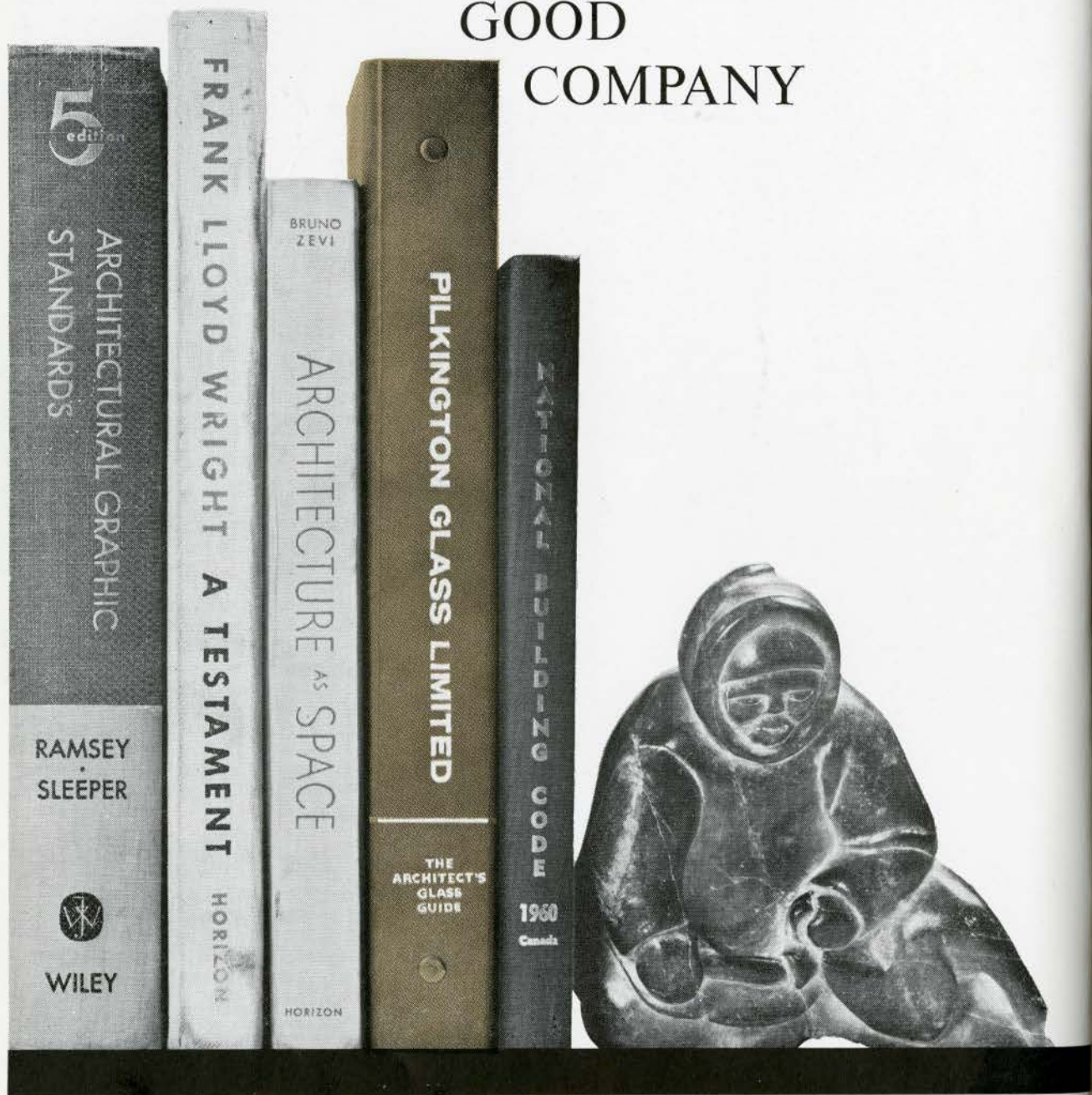
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University of Waterloo

Waterloo, Ontario

Architects & Engineers: Shore & Moffat and Partners

The following is taken from comments by the architects on the planning and design of the University of Waterloo and campuses in general.

It is imperative that a campus plan be flexible. Growth of a university is an evolutionary process with future decisions being based on knowledge gained as a result of development founded on earlier policies. Establishment of a curriculum to meet the educational requirements of an expanding student population often parallels or follows, rather than precedes the design and construction of buildings to house physical needs. A formal plan inhibits future expansion and tends to subjugate the students and faculty who should receive primary consideration in planning a university. Modulation of

Present enrolment in the faculties of arts, science, engineering, and graduate studies is 1,651, with 125 faculty members and a staff of 230. By 1965 enrolment is expected to be 2,500, and by 1970, as high as 6,000.

varied spaces and the blending of landscape and architecture, with restriction and control over the intrusion of vehicular traffic and visually distracting influences (such as vast parking areas), enhance the intellectual experience of the student and set a pattern for the scale of university design.

Individuality in the design concept is influenced by the nature of the site. At Waterloo, a creek that wanders through the site was dammed, forming a small lake surrounded by rolling hills. A philosophers walk in natural surroundings is part of the contemplative thought process, and a necessary contrast to the architecture. On the central and highest knoll of the campus a prominent space was set aside as the heart of the pedestrian precinct. Here the Library, Student Centre, and Arts Building, at the cross-roads of the University, are within short walking distance of the Engineering, Science, and Arts quadrangles, which enclose more intimate and lesser scaled spaces. In these spaces landscaping is as important to the campus environment as the buildings surrounding and forming them. Buildings should be a background for the pursuit of knowledge rather than academic monuments; have the flexibility to meet changing and temporary uses as the building program progresses.

Heavy capital expenditure for new construction in the University implied a need for buildings with low maintenance costs in order to conserve valuable annual funds. At the same time the requirements for rapid growth indicated a need for construction methods and materials that could be assembled quickly. Neither of these premises could compromise the long term economy nor the aesthetic framework of the whole campus. The general aim was to produce a simple and orderly, yet bold architecture, with dignity and restraint where function in its broadest sense dictated — to produce buildings of lasting beauty designed with compatible materials generally common to all and within a predetermined architectural discipline.

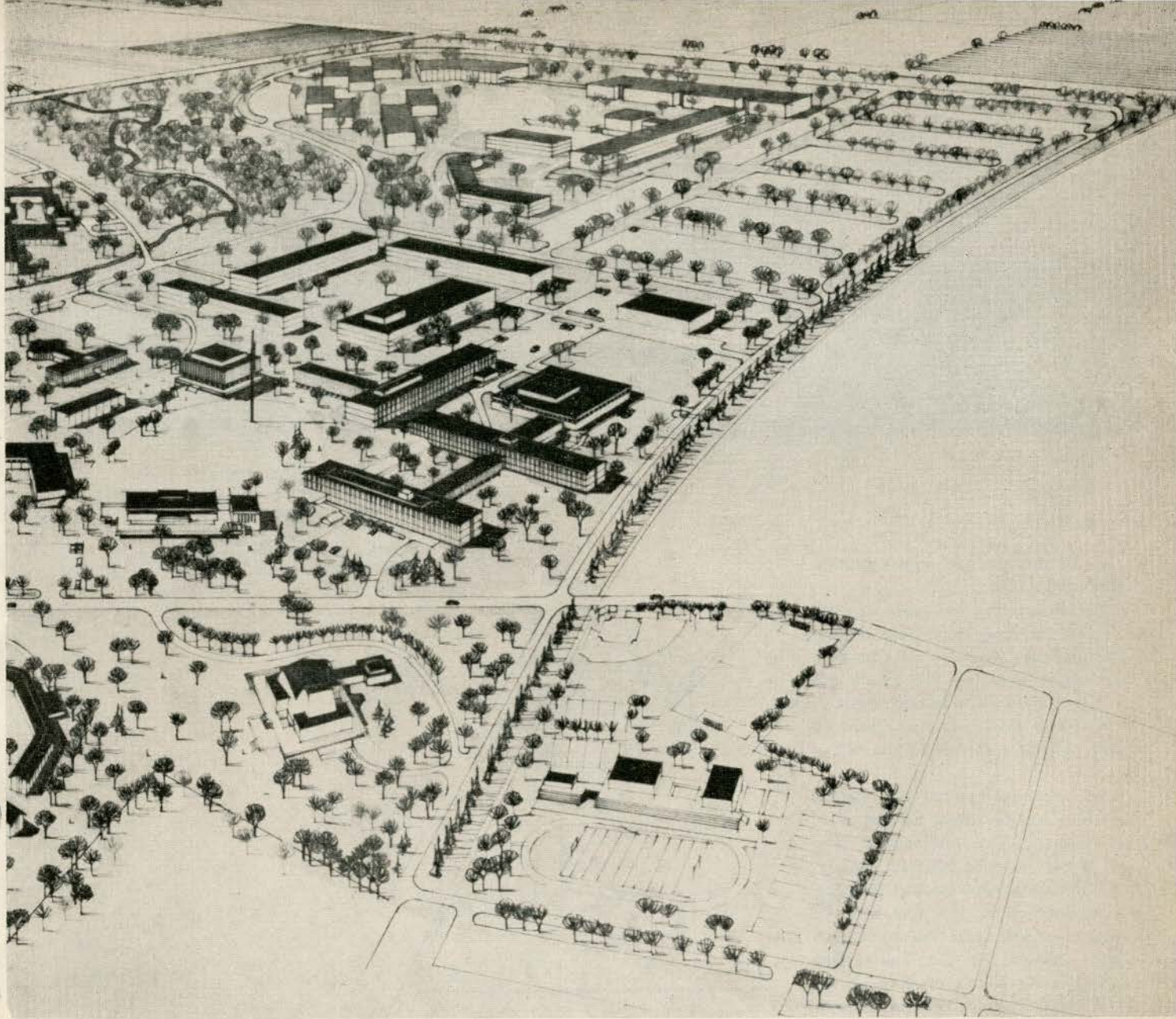
Each building in a university plan should be designed to contribute to the unity of the campus and none should singly proclaim the architectural vogue of the moment at the expense of the principles of the master plan. Success or failure can only be evident as the physical reality is established in the



An aerial view taken before construction of the Arts Buildings and the start of a progressive plan of landscaping.

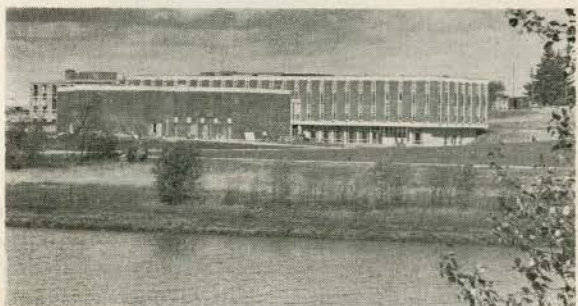


UNIVERSITY OF WATERLOO

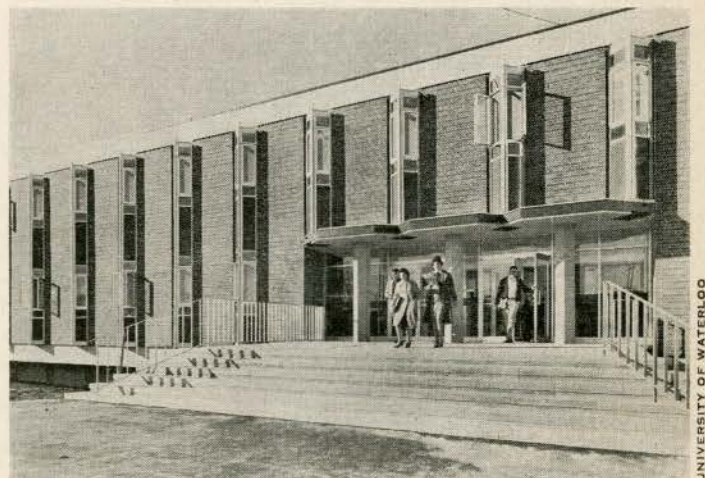


Campus master planners were Shore & Moffat and Partners. Landscape architects were Sasaki, Strong & Associates Ltd.

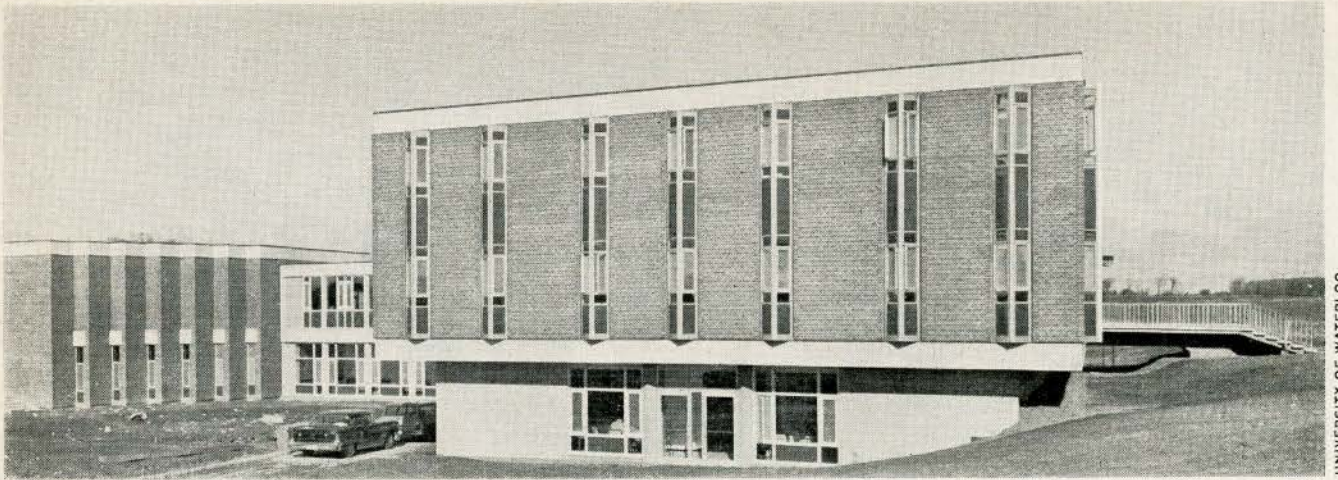
Below: the Arts Building from across the lake showing the theatre, which is still under construction. Right: the entrance to the Arts Building, facing the heart of the campus, near the location of the future library.



UNIVERSITY OF WATERLOO



UNIVERSITY OF WATERLOO



UNIVERSITY OF WATERLOO

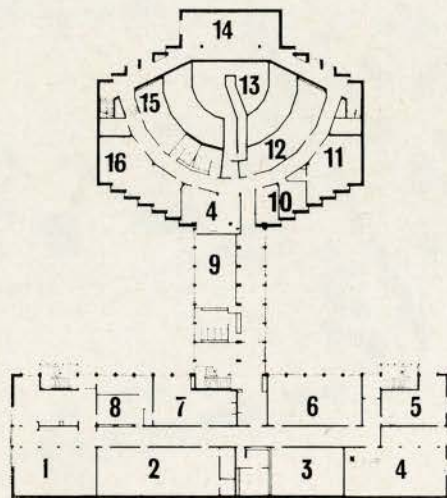
The upper two floors house (in a double corridor system) faculty offices, seminar rooms, and classrooms. The dean's office is in the link leading to the art gallery and theatre foyer on the second floor.

course of the gradual implementation of the master plan.

The 240 acre site was acquired early in 1958. Building began late in that winter and the Chemistry and Chemical Engineering Building was ready for occupancy the following September. It is expected that the Arts Building theatre will be complete by the end of this year.

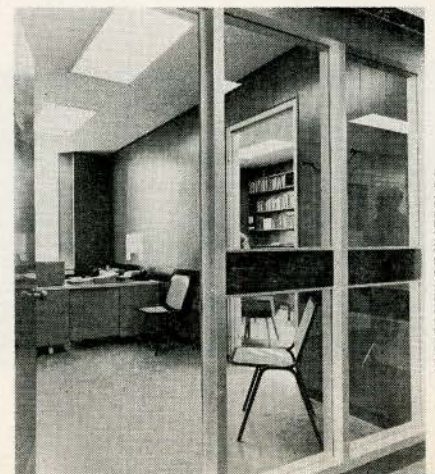
The structural system of a typical classroom wing is similar to that of all the buildings. The substructure consists of cast in place concrete foundation walls on shallow spread footings; the superstructure, of a cast in place concrete corridor spine flanked on each side by precast concrete. The precast framing is completely exposed on the interior and includes precast columns and spandrels supporting prestressed double T slabs. This system permitted rapid construction of the interior corridor of the building. All buildings are air-conditioned because they are in use twelve months of the year.

Interior materials consist of: brick, clay facing tile walls, terrazzo, porcelain enamel, plastic laminate and glazed plastic painted concrete. Colors are in warm tones of gray and brown with accents of color in doors and bulkhead panels. Wherever possible prefabricated, prefinished materials such as mineral and asbestos board acoustic tile, porcelain and baked enamel metal panels have been used. Wood panelling was used in faculty offices and common rooms. Lecture theatres and the arts theatre are equipped with a sound system for special effects and television production.



First Floor Plan: 1 coffee shop. 2 language lab. 3 classroom. 4 mechanical. 5 electrical. 6 study. 7 faculty common room. 8 kitchen. 9 women's common room. 10 offices. 11 art. 12 storage. 13 tunnel. 14 back stage. 15 dressing. 16 workshop.

The office of the secretary for the department head.



UNIVERSITY OF WATERLOO



UNIVERSITY OF WATERLOO

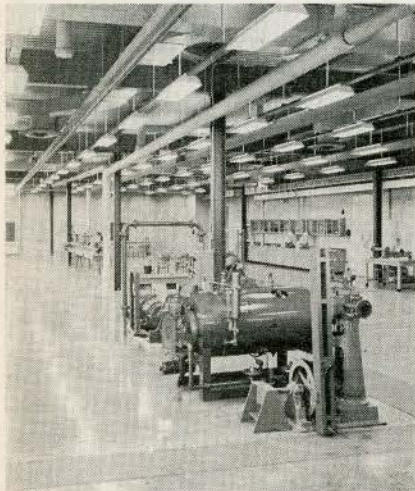
Arts Building

View of the central lobby showing the skylight and second floor gallery. Floor area of the Arts Building is 55,000 sq. ft and cost was \$19.15 per sq. ft. General contractor was Cooper Construction Co. (Eastern) Limited.

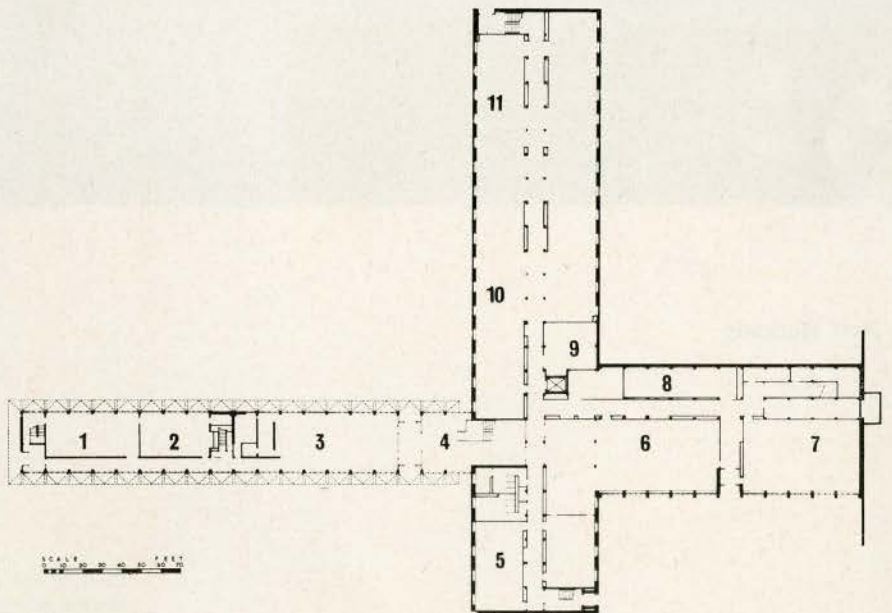


The lobby, entered from both sides, is located beneath the faculty office wing.

Engineering Building

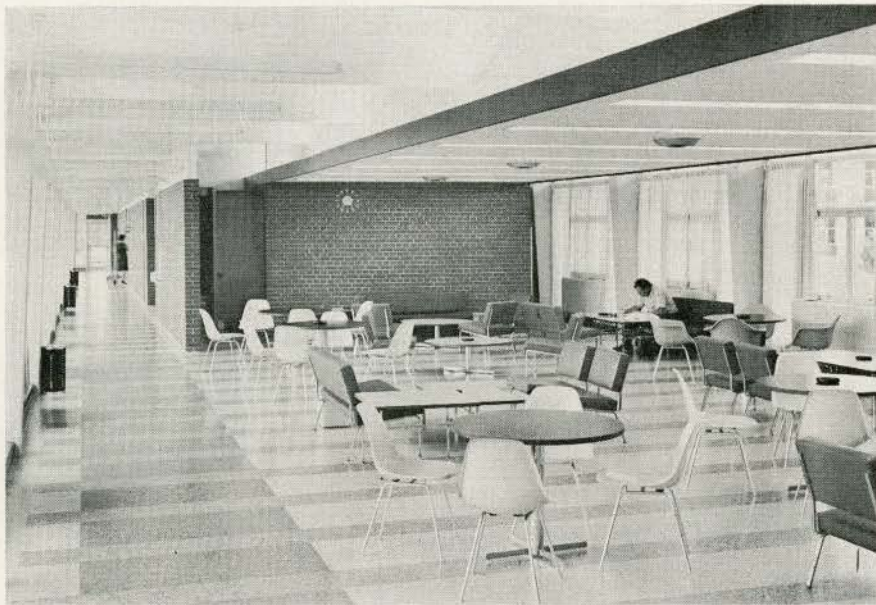


The heat engine and fluid mechanics laboratory, the largest in the university, is situated in a separate wing, not shown on the plan.



First Floor Plan: 1 board room. 2 faculty common room. 3 students' common room. 4 lobby. 5 lecture. 6 bookstore. 7 freshman drawing. 8 electrical. 9 mechanical. 10 design. 11 library.

*A student common room. Vending machines are beyond the rear wall, concealed from view.
 Floor area of the Engineering Building is 133,000 sq. ft and the cost was \$18.51 per sq. ft. General contractor was Robertson-Yates Corporation Limited.*



KEN FOSBERY

Below: faculty offices are on the second floor, above the common rooms, in a separate wing of the building. Right: a reflecting pool and bridge with the adjacent paved area — one of the features of the quadrangle.



KEN FOSBERY

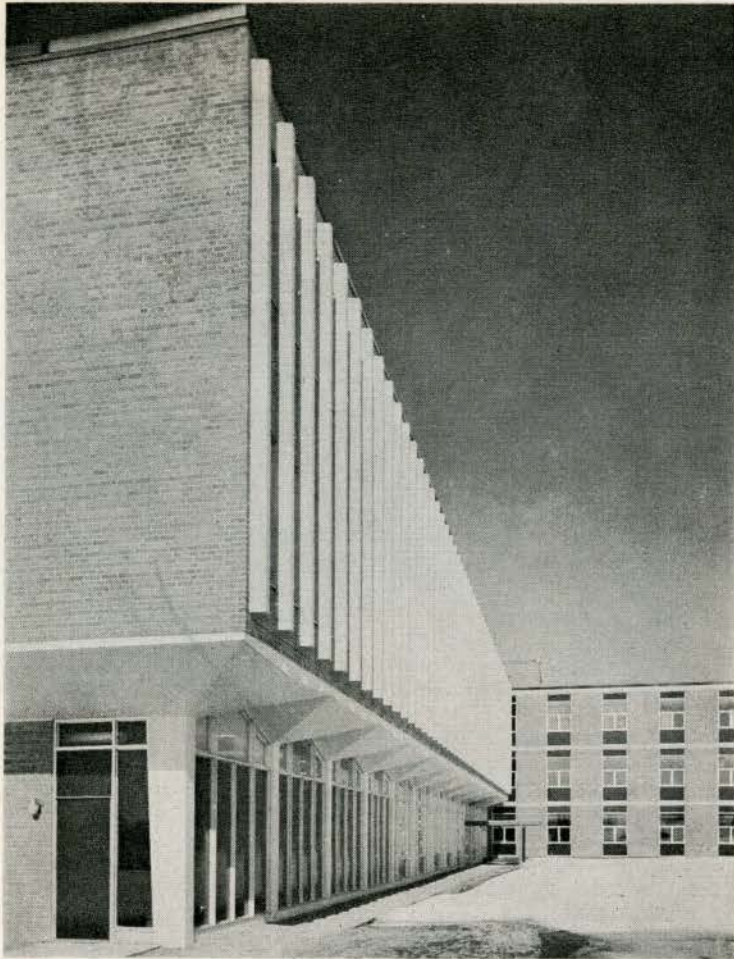


KEN FOSBERY



The Physics Building, framed by the Chemistry (left) and Engineering (right) buildings. This is the first quadrangle, and shows the beginning of landscaping.

Physics and Mathematics Building



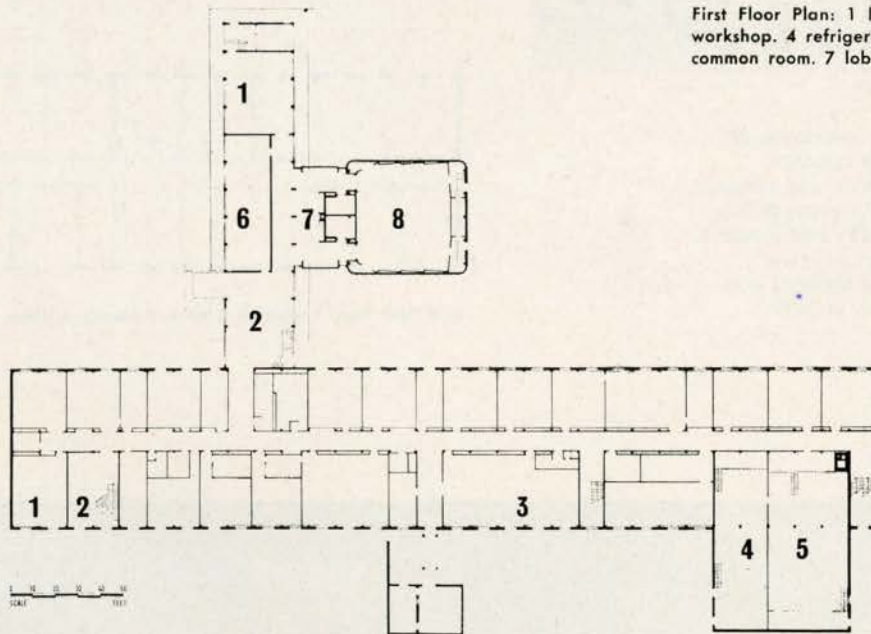
MAX FLEET



MAX FLEET

Faculty offices are located on the third and second floors of a separate wing. Floor area of the Physics and Mathematics Building is 110,000 sq. ft and the cost was \$16.94 per sq. ft. General contractor was the Foundation Company of Ontario Limited.

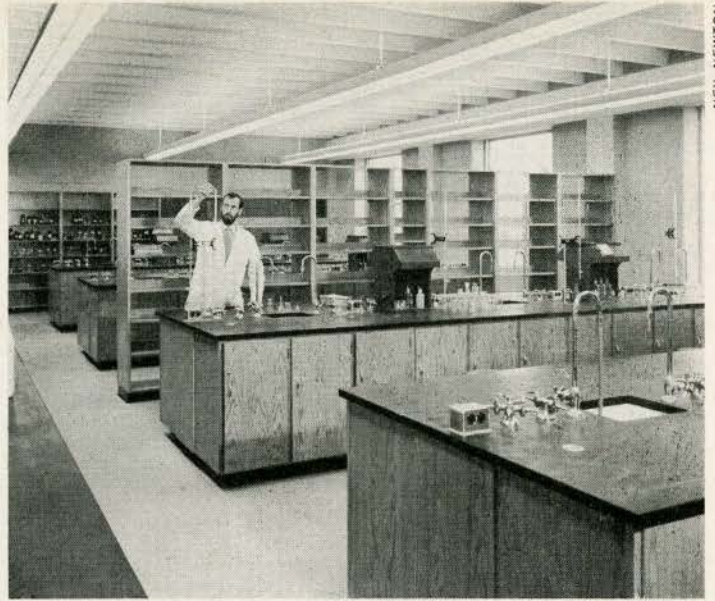
First Floor Plan: 1 lecture. 2 entrance hall. 3 workshop. 4 refrigeration. 5 boiler. 6 students' common room. 7 lobby. 8 auditorium.



MAX FLEET

The students' common room.

Chemistry and Chemical Engineering Building



NEIL NEWTON

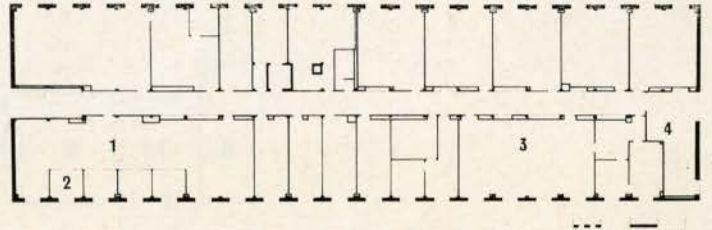
Laboratory desks are serviced from below where pipes are placed between the exposed double T floor slabs and are fed from pipe shafts on each side of the central corridor.

Floor area of the Chemistry and Chemical Engineering Building is 49,400 sq. ft and the cost was \$15.83 per sq. ft. General contractor was Ball Bros. Limited.

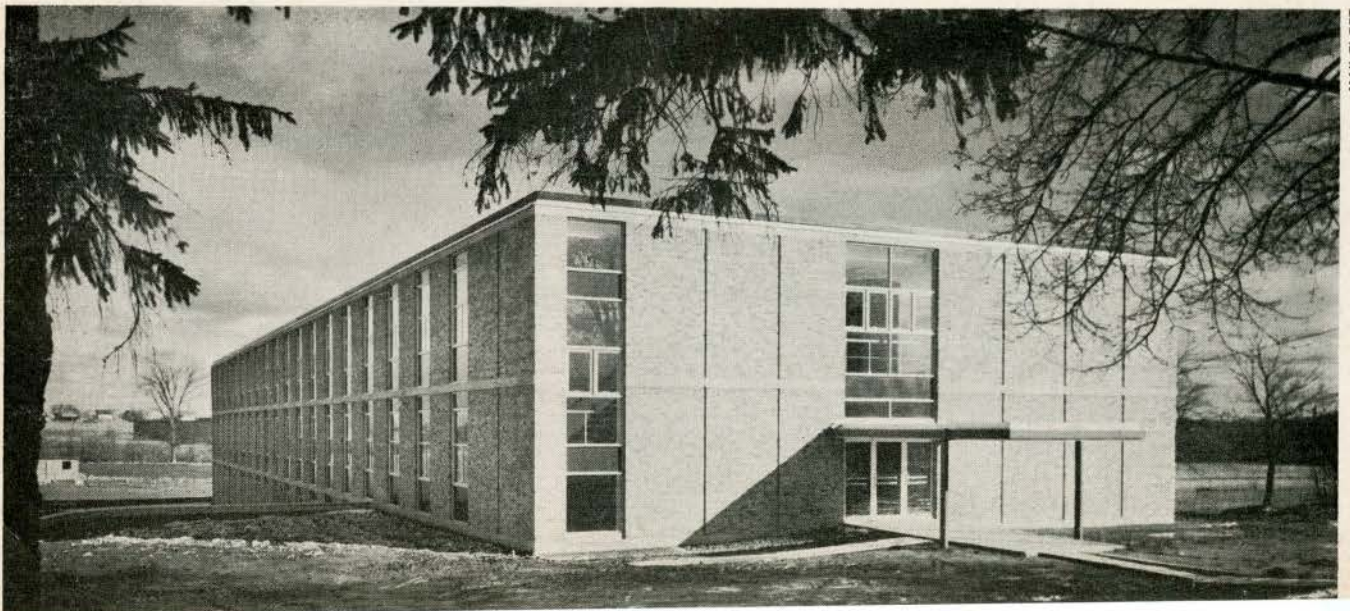


ROY PURKIS

Illustrated above — the simultaneous erection of cast in place concrete, precast concrete members, and masonry, as well as the placing of services in the corridor ceiling. Simplicity and repetition permitted full occupancy in seven months. The Chemistry Building was the first to be completed, in 1959.



First Floor Plan: 1 research. 2 office. 3 library. 4 lobby.

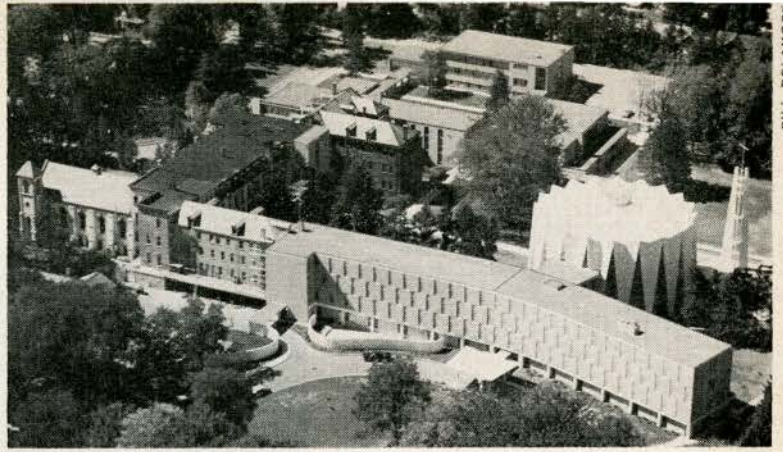


MAX FLEET

Construction of new buildings on the site of the original establishment marked the centennial of the Ursuline Order in Chatham. Because the development of the garden, walkways, shrines, and trees, surrounding the existing building is recorded in the written history of this teaching order, a conscious attempt was made, when designing the new buildings, to preserve the tradition of the site.

School buildings (housing a day school, a boarding school for girls, a music and a commercial school) were grouped around a quadrangle and connected to the west end of the existing building, and the motherhouse and chapel were connected to the easterly part, forming another quadrangle. Separation of the students and nuns gave privacy to each group in both the buildings and land. The chapel is the focal point of the scheme with access, by covered walkways, from the motherhouse for the nuns, and from the schools for the students. Elementary and secondary schools and the convent were designed to permit future expansion without affecting the other buildings or creating the need for internal rearrangement.

The four storey motherhouse is joined at each level to the original



BILL DOLANORE

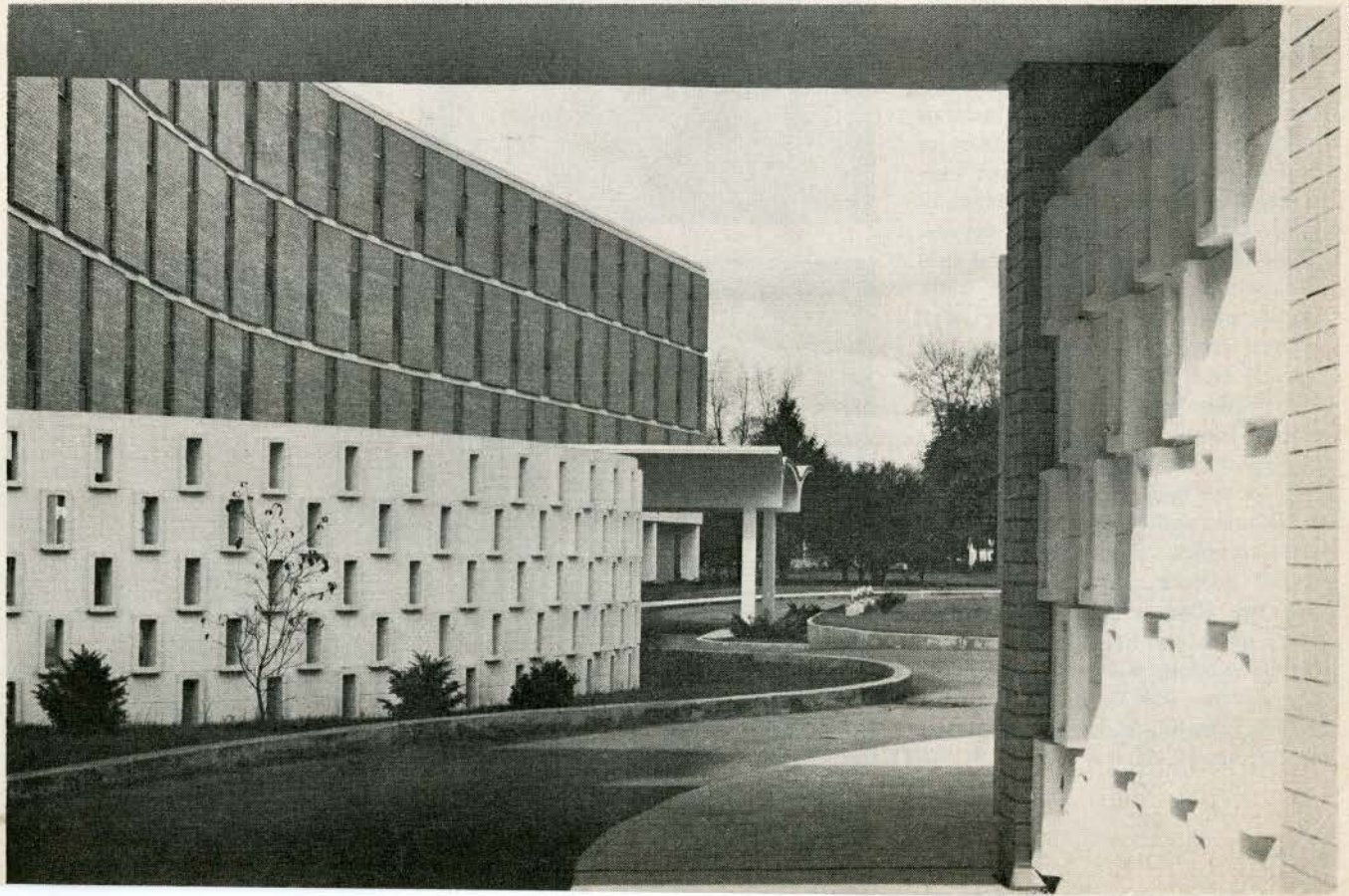
The Pines Chapel and Motherhouse

Chatham, Ontario

Architect: Joseph W. Storey

Consulting Engineers:
structural, Todgham and Case, and
Edgar A. Cross & Associates; mech-
anical, electrical, and acoustical,
Nicholas Fodor & Associates.

General Contractor:
Eastern Construction Co. Ltd.

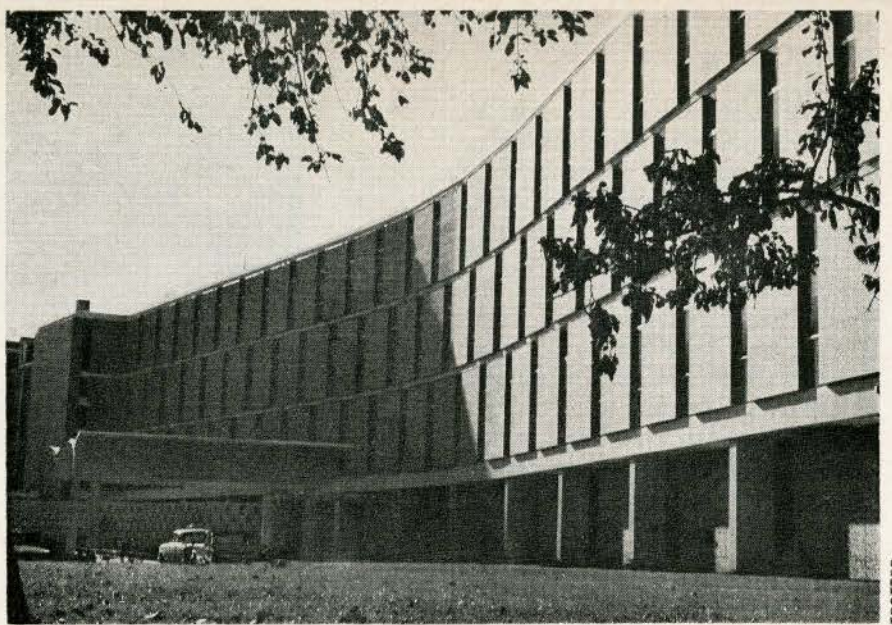


TROTTER

The Pines Chapel and Motherhouse

building. Structure is concrete frame with brick and tile exterior walls. Interior partitions are steel studs, lath and plaster. By requirement, the motherhouse was constructed of economical materials with a minimum of finishing materials (with the exception of the central part, which is not cloistered). The requirement of one small window of a predetermined size in each nun's cell was the governing factor in the design of the exterior.

While the design of the motherhouse was restricted due to the constitution of the order, the architect was free in his approach to the design of the chapel. The circular shape permitted the crucifix and altar to be the centre of interest, with no distracting elements — no pew or stall is further than 50 ft from the altar, creating an intimacy between the nave and the sanctuary. Seating was divided into two groupings — pews for 300 pupils, surrounded by stalls for 150 nuns. The shape does not overly enclose the adjacent quadrangle, as it was felt a long, high rectangular structure would have; it provides a contrast to the box like rectangular nature of the other buildings in the scheme, contributing to the relative importance of the chapel as the focal point of the site. Frame of the chapel is structural steel with poured in place concrete walls. Above main floor level, the wall sections were cast in two panels on the ground, and then lifted into place. Each section weighed 25 tons. On the interior, simple, neutral materials were used for the walls and ceilings to keep them in the background and enhance the richness and color of the windows. When complete, all windows will be of faceted colored glass. The skydome over the altar is the only constant source of natural light, so that various colored windows will be illuminated in turn as the sun moves around the building, creating a changing emphasis throughout the day.



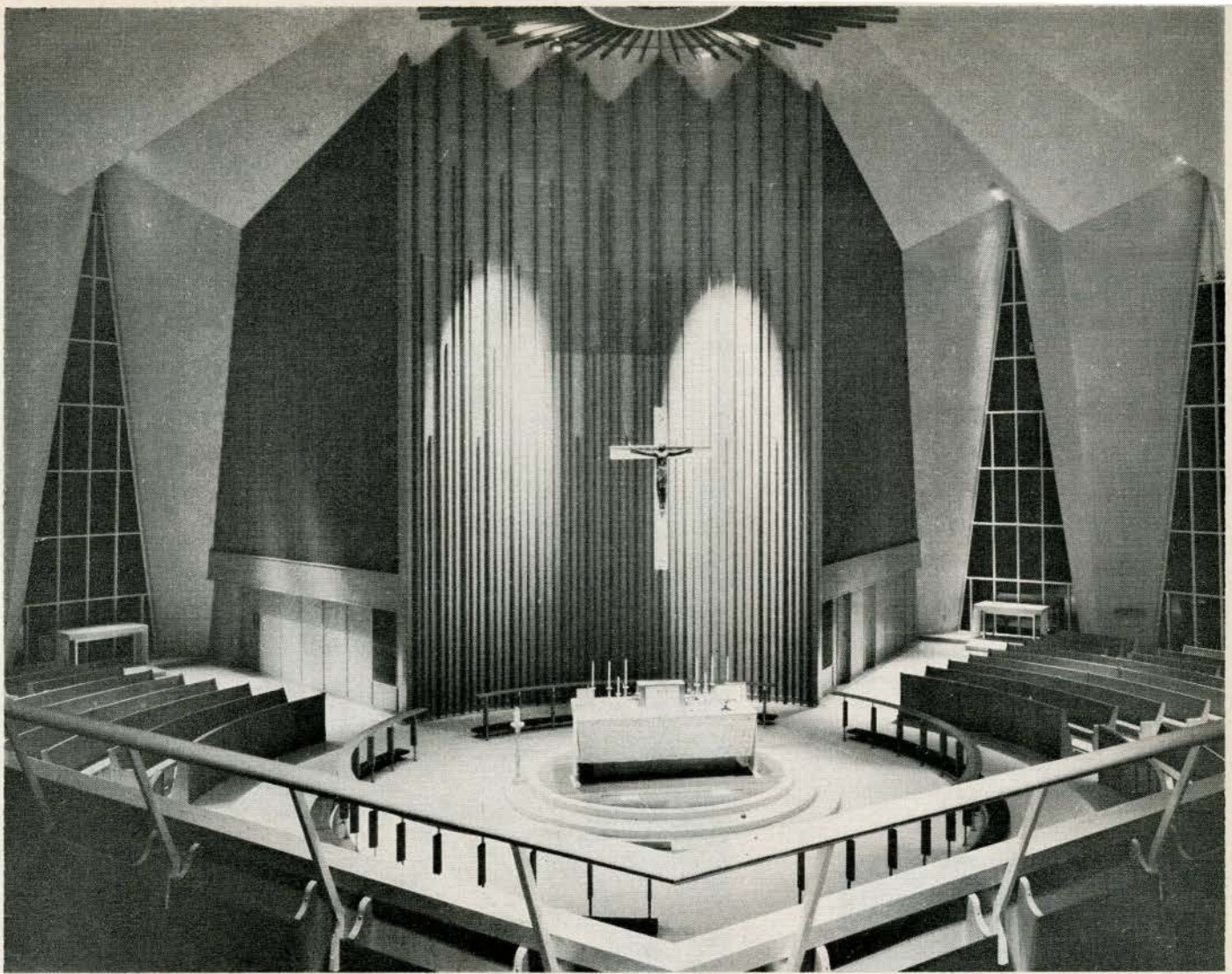
TROTTER



Above: view of the motherhouse looking south. Left: the bell tower and cross, constructed of poured in place concrete. Below: view of the chapel from the nun's quadrangle. The crown on the roof, encircling the dome, is of gold anodized aluminum.

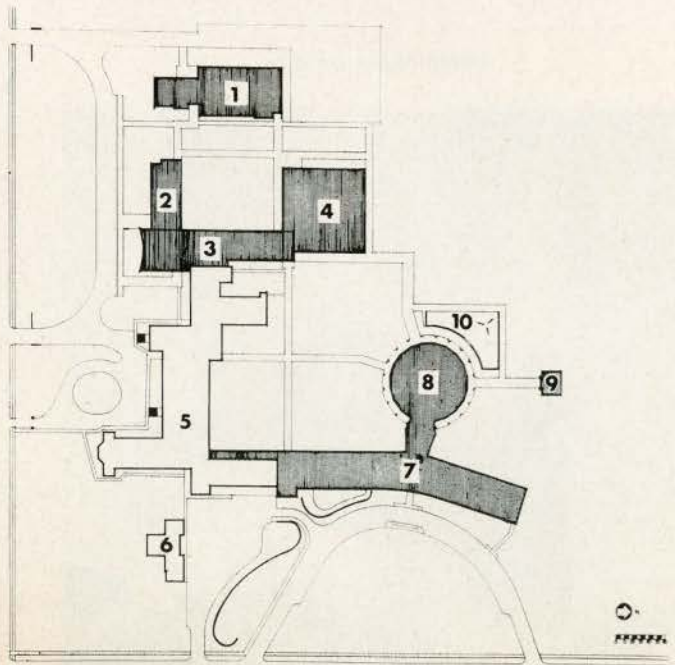


ERIC JAHN



Above: general view from the gallery. The altar is solid limestone and was carved on the site. Below: view looking east showing the pool.

Site Plan: 1 junior school. 2 administration. 3 high school. 4 auditorium. 5 existing building. 6 existing laundry. 7 motherhouse. 8 chapel. 9 compressor house. 10 pool and bell tower.



The Pines Chapel and Motherhouse

Designers:

altar, crucifix, stations of the cross, and altar accoutrements, Dora de Pedery Hunt, Toronto; faceted windows, Rev. Anthony Lauck of the University of Notre Dame, Indiana.

Below: a window detail of the Holy Family. Faceted windows are composed of slab glass (approximately one in. thick) and an epoxy type binder material. The glass, being thicker than the binder, leaves an edge available for chipping, allowing the manufacturer to highlight certain areas.



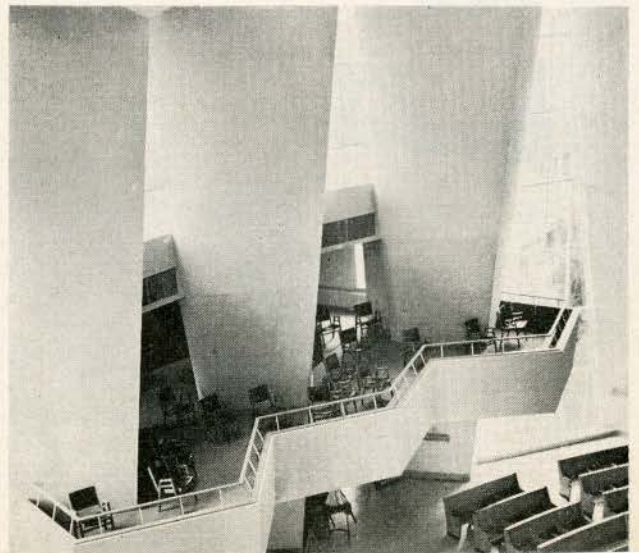
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ERIC JAHN

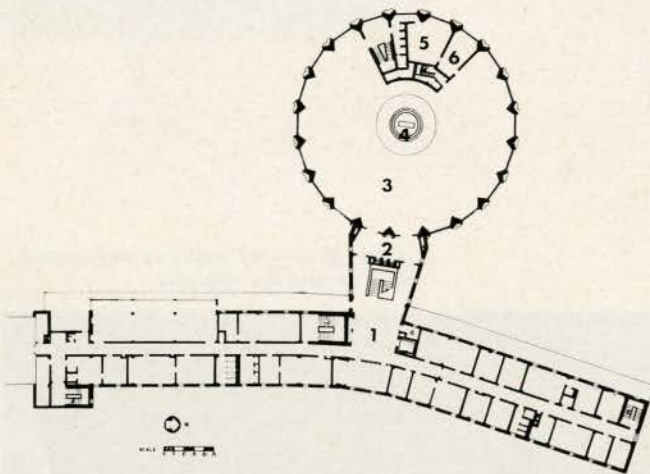
View of the sanctuary from the gallery. Carving on the four sides of the altar portrays the four seasons in the life of Christ.

Detail of the gallery.



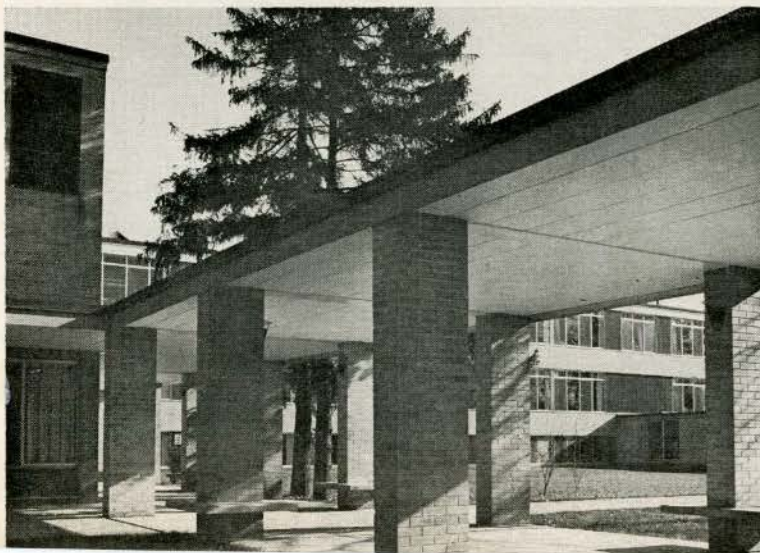


The reredos is covered with glass fibre cloth, verticals are oak.

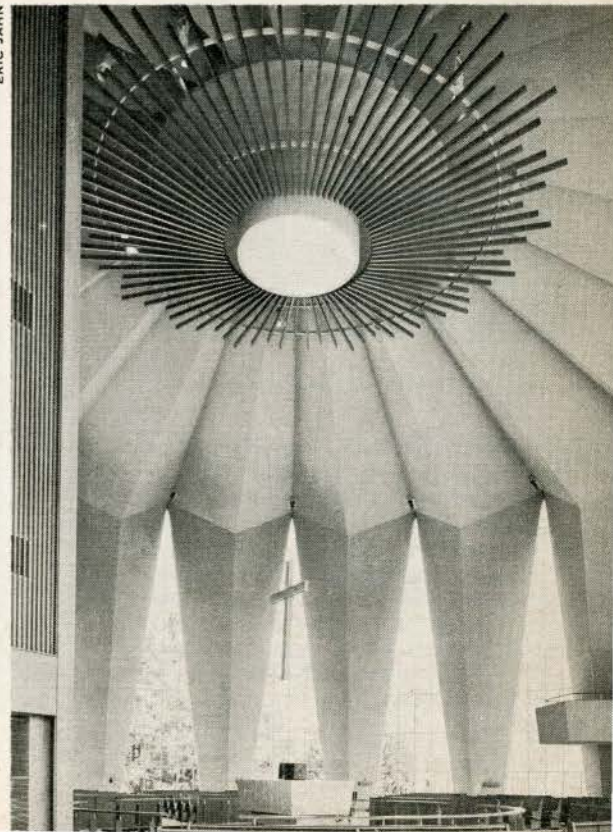


Second Floor Plan: 1 corridor. 2 narthex. 3 nave. 4 sanctuary. 5 priest's sacristy. 6 sacristy.

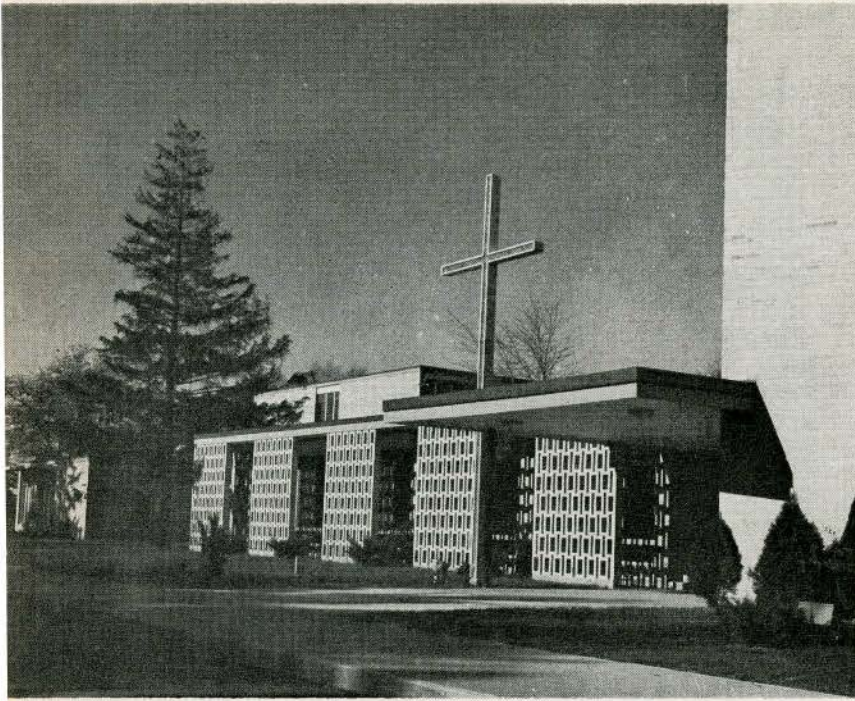
Below left: view of a walkway, looking toward the main section of the secondary school. Below: the baldachino under the dome is gold anodized aluminum.



ERIC JAHN



FROTTER



TROTTER

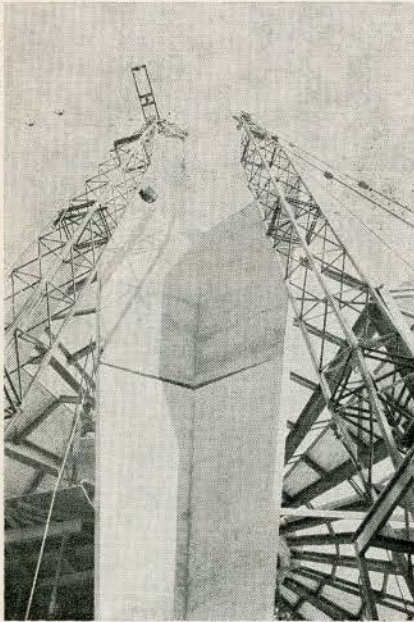
Left: view of the administration section of the secondary school. The concrete block screen is to give privacy to the offices beyond. Below: one of the stations of the cross.



TROTTER

The Pines Chapel and Motherhouse

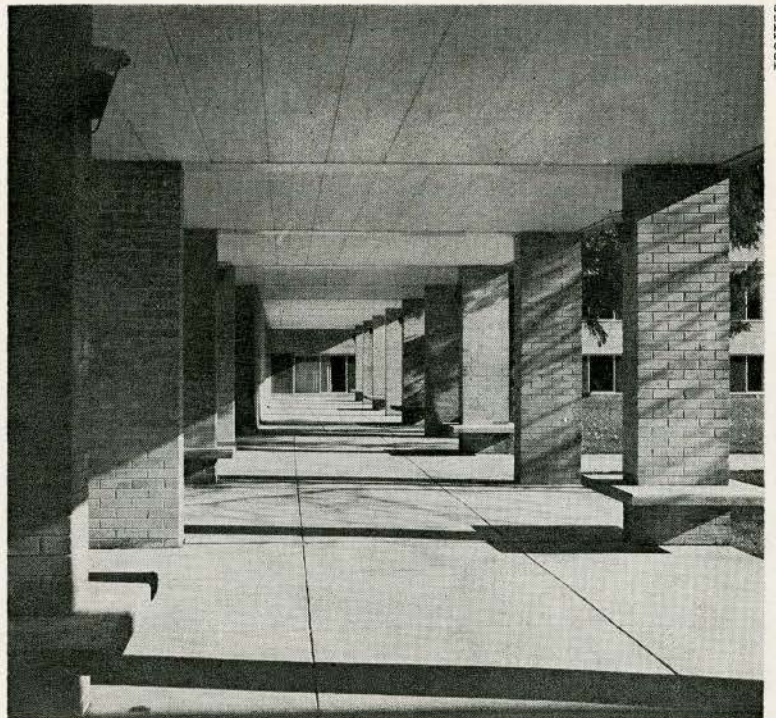
GEORGE JAMES



Lifting the precast sections into place.

Materials & Suppliers — for all buildings
 Steel: *Canadian Bridge Works*. Brick: *Diamond Clay Products Ltd.*; *Cooksville-LaPrairie Brick Ltd.* Windows: *Dunco Ltd.*; *Flintridge Windows*; *Vampco Co. Ltd.*; faceted windows fabricated by *Conrad Schmitt Studios Inc.* Steel studs: *Canadian Gypsum Co. Ltd.* Chalkboards: *Cermetal Industries Ltd.* Organ: *Casavant Frères Ltée*. Carillons: *Schulmerich Carillons Inc.*

A typical covered walkway with seating built around the columns.



TROTTER

CANADIAN BUILDING DIGEST



DIVISION OF BUILDING RESEARCH • NATIONAL RESEARCH COUNCIL

CANADA

Temperature Gradients Through Building Envelopes

by J. K. Latta and G. K. Garden

UDC 697.133

The temperature existing at any point in a wall under any given exterior and interior temperature conditions is of great significance in designing problem-free building enclosures. An ability to calculate the thermal gradient permits the designer to forecast the magnitude of the movements caused by external temperature changes, to predict the location of condensation and freezing planes in the wall, and to assess the suitability of any construction. The temperature gradient will not, in itself, give the designer all the information he requires to select and assemble building components, but it is an essential first step. The purpose of this Digest is to show how the thermal gradient can be determined and to indicate why this knowledge is important and how it may be used by building designers.

It is the function of a building envelope when acting in conjunction with heating and ventilating equipment to maintain a more or less uniform internal environment regardless of weather conditions. The first and most obvious effect of a difference of temperature between the inside and outside is that heat flows from the side of high temperature to the side of low temperature; adequate cooling or heating equipment must be provided to counterbalance the over-all gain or loss in order to maintain the desired internal temperature. The determination of the total heat exchange through a wall is accepted as part of the normal mechanical design of any building and will not be discussed further. Emphasis will be placed instead upon the equally important but less obvious effects of the temperature differential that must be taken into account by the building designer.

The warping effect of a bimetallic strip such

as that used in a thermostat is well known, but the similar effect which might be produced by a homogeneous material having its opposite faces exposed to different temperatures is not so apparent. Serious distortion can occur in a component subjected to a temperature differential because the warm side expands relative to the cold side. Since the external surface of the building envelope will be subject to a range in temperature which may be more than 200° whereas the internal surface will be subjected to a much smaller range, there will be a continuing tendency for a solid wall to deflect in and out. In the case of a wall made of many different layers, one layer may slide over the other.

The quantity of water vapour that can be held by air is governed by the temperature of the air. As the temperature drops, the ability of the air to hold water vapour is reduced. Air in contact with a surface that is below its dew-point temperature loses water in the form of condensation on the cold surface. Thus, moisture-laden air circulating in spaces in the wall or passing outward through cracks or other passages in the building envelope will deposit some of its moisture on surfaces within the wall that are below the dew-point temperature. This water often produces stains or moisture accumulations that may cause serious building deterioration.

Interior surfaces of windows, inadequately insulated walls and ceilings and other cold surfaces with temperatures below the dew-point of the air will experience surface condensation. When this occurs, considerable quantities of liquid water can be produced that may in turn cause many forms of damage and deterioration. By calculating surface tempera-

tures the designer can check on the suitability of the proposed enclosing elements of the building.

From the few examples discussed above it is obvious that a knowledge of the thermal gradient will aid the designer to guard against problems that might arise from these causes when the building is placed in operation. The calculation that must be performed to determine the temperature gradient under steady-state parallel heat flow is simple and can be performed either arithmetically or graphically. Under these conditions all parallel paths through the wall have the same conductivity and all the components have reached steady temperatures, neither storing nor releasing heat. It follows then that all the heat that enters the warm side of the wall must flow through each component in turn and be carried away from the cold side. As with many cases of uniform flow such as this, the rate of flow is directly proportional to the magnitude of the driving force and inversely proportional to the resistance. The driving force is provided by the difference in temperature

and the thermal resistance is a property of the materials and of the construction of the component being considered, i.e.,

$$\text{Heat Flow} \propto \frac{\text{Temperature Difference}}{\text{Thermal Resistance}}$$

Thus it follows that the temperature drop through each component of the wall is proportional to its thermal resistance.

Thermal resistances (R) for many building materials and combinations of materials are listed in the Guide of the American Society of Heating, Refrigerating and Air Conditioning Engineers; the appropriate chapter of the 1960 edition of this Guide is available as a publication of the Division of Building Research (NRC 5596). It should be noted that the values quoted are for dry materials and that moisture will reduce the thermal resistance. In those cases where a resistance is not given it can easily be obtained by taking the reciprocal of the thermal conductance, $R = 1/C$. The thermal conductance can in turn be obtained for any given thickness of a uniform material by dividing the conductivity (k) of

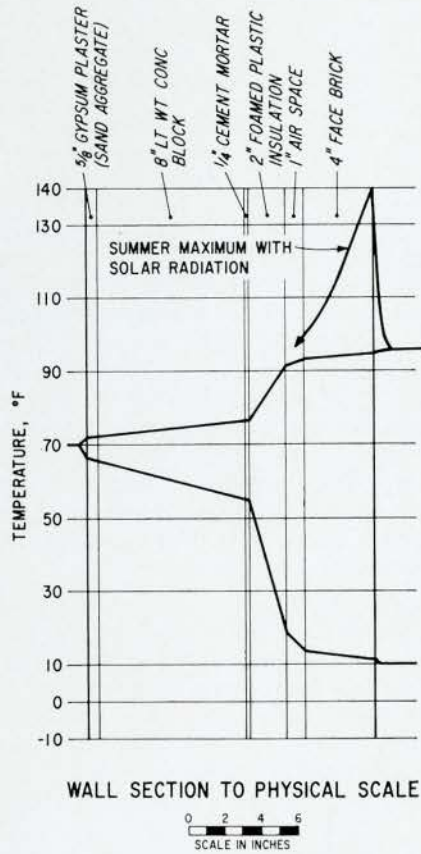


Figure 1

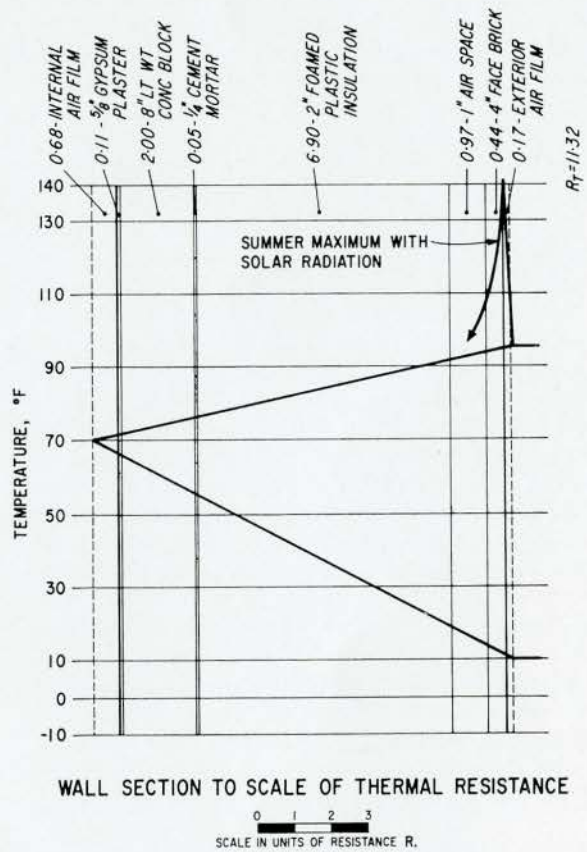


Figure 2

the material by the thickness (n) in inches, $C = k/n$. Alternatively, the resistance per inch of thickness is given by $1/k$ and the resistance for n inches is given by $n \times 1/k$. As more layers of material are added the resistance of each of them must be added to give the total resistance.

Thermal conductivity is a measure of the rate at which heat will flow through a homogeneous material, or materials such as lumber, brick and stone, which may be considered to be homogeneous. The conductivity or k value is the number of British Thermal Units (Btu) of heat that will pass through 1 square foot of a 1-inch thickness of material in 1 hour under a temperature differential of 1°F. Thermal conductance or C value is a term also used to express the rate of heat flow through a material, but it is applied to the specific thickness of the material used in the construction and not to each inch of thickness. It is expressed in the same terms as thermal conductivity, except that the unit temperature difference is across the stated thickness. The term "conductance" is used with materials such as hollow concrete blocks or building papers that are of non-uniform cross-section or are thin; and with air spaces and the air films at the interior and exterior surfaces of constructions.

To illustrate the procedure, using both the arithmetical and graphical methods, the tem-

perature gradient through the wall shown in Fig. 1 will be calculated assuming a monthly average outside temperature of 10°F and a controlled inside temperature of 70°F. To perform the calculation arithmetically a tabular layout is used as shown in Table I. All the components of the wall, including the internal and external air films on the faces of the wall, are listed in sequence with their thermal resistances (R) listed opposite. It is normally necessary to list only resistances and temperatures. Conductivities and conductances have been shown in this example to further clarify some of the text.

The total temperature drop through the wall in this case is 60°F and can be distributed among the individual components in proportion to their resistances. The interface temperatures can then be determined and recorded in the last column and the temperature gradient plotted as shown on Fig. 1. Should the total heat loss through the wall be required, the over-all coefficient of heat transmission (U) is given by the reciprocal of the total resistance.

The arithmetic determination of the temperature gradient is not a lengthy calculation. It is probably the easier one to use if a wall is being designed to meet fixed internal and external temperature conditions and the components of the wall are selected to suit. On the other hand, if a tentative wall design is

TABLE I — ARITHMETIC DETERMINATION OF TEMPERATURE GRADIENT

| Component | Thickness, n, in. | Conductivity, k | Conductance, $C = k/n$ | Resistance, $R = 1/C$ | Temperature Drop, deg F | Interface Temperature, deg F |
|---------------------------------|-------------------|-----------------|------------------------|-----------------------|-------------------------|------------------------------|
| Internal Air Film (still air) | | | 1.46 | 0.68 | 4 | 70 |
| Gypsum Plaster (sand aggregate) | 5/8 | | 9.10 | 0.11 | 1 | 66 |
| Concrete Block | 8 | | 0.50 | 2.00 | 11 | 65 |
| Cement Mortar | 1/4 | 5.0 | 20.00 | 0.05 | 0 | 54 |
| Foamed Plastic Insulation | 2 | 0.29 | 0.145 | 6.90 | 36 | 54 |
| Air Space | 1 | | 0.13 | 0.97 | 5 | 18 |
| Face Brick | 4 | 9.0 | 2.25 | 0.44 | 2 | 13 |
| External Air Film (15 mph wind) | | | 6.00 | 0.17 | 1 | 11 |
| TOTAL | | | | 11.32 | 60 | 10 |

∴ The Over-all Coefficient of Heat Transmission, $U = 1/R = 1/11.32 = 0.09$ Btu/sq ft/°F/hr

chosen and the effects of varying temperature conditions are to be studied, the graphical method may be more convenient.

In the graphical method, a cross-section of the wall is drawn wherein the thickness shown for each component is proportional to its thermal resistance. Then by plotting a temperature scale on the cross-section and a straight line joining the inside and outside temperatures (representing the temperature gradient) the temperature at any point in the construction can be read. This method is illustrated in Fig. 2 for the same wall section as was used in the arithmetical method.

These methods of calculating the temperature gradient employ conductance values that depend upon the assumption that all components in the envelope, including the air films, have fixed values for their thermal conductivities. In fact, heat is transferred by radiation and convection as well as by conduction. For the conditions involved in any given case, these conductances, C , are not true constants but may actually be functions of temperature, temperature difference, velocity and surface roughness, emissivity and absorptivity. Furthermore, the assumed steady-state conditions are seldom reached owing to fluctuations in the temperatures to which the envelope is exposed and to the heat storage capacities of the material. Unless simplified procedures are followed the solution of practical cases of heat flow through walls and roofs can become very complicated. Some inaccuracies may be introduced by these simplifications, but the results obtained provide a valuable guide for design of walls and roofs. The determination of the interface temperatures to a precision greater than 1°F or 2°F is, however, unwarranted. Paths of high conductivity, called thermal bridges, do produce inaccuracies that often require special consideration.

The selection of appropriate outside air temperatures requires considerable judgement, but much valuable information will be found in the Climatological Atlas of Canada (NRC 3151). The effects of heat storage in materials must be recognized, as must the fact that wall or roof surface temperatures can be higher than air temperature because of "solar radiation" and colder than air temperature because of "clear sky radiation." These temperature modifications vary with the colour, texture, thickness, weight and orientation of the sur-

face materials and with the intensity of the radiation. The effect produced by radiation is indicated in Fig. 2, which shows that the temperature range in a material may be greater than that resulting from the influence of air temperature alone.

It should be emphasized that temperature gradients derived from these simple calculations, although not precise, are of great value in improving a designer's ability to select and locate insulation and vapour barriers and to estimate where freezing may occur in a wall or roof. This information is also of considerable value in analysing a wall or roof construction with respect to water and water vapour behaviour. A designer making these calculations will soon realize that although adding insulation may alleviate some problems it may produce others. An increase of insulation in a wall will raise the interior surface temperature and minimize the risk of surface condensation. A decrease in the insulation value, although increasing the heat loss and lowering the interior surface temperature, will raise the exterior surface temperature, thereby reducing the risk of condensation or freezing within the wall construction. It is important that the services of a consultant skilled in thermal analysis be obtained when the use of a particularly complicated wall construction is contemplated.

The building designer with an appreciation of the temperature variations in wall elements can estimate the magnitude of movements or stresses that may be induced in the components by expansion and contraction. He can then determine the required number and width of movement-control joints or amount of reinforcement necessary to prevent failure.

Determination of the thermal gradient throughout a building element that separates two environments that have different properties is the first step toward designing problem-free walls. Information pertaining to thermal bridges, psychrometry, moisture migration, rain penetration and differential air pressures is also necessary for optimum design. Perfection in buildings is not readily achieved and the quest for it is often hampered, for financial reasons. With a good working knowledge of the matters discussed in this Digest, however, a designer can more readily determine the best solution within the limitations established by cost and availability of materials.

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IT WOULD BE HARD TO FIND TWO contemporary churches of distinction which offer such an interesting subject for comparison as the new Greek Orthodox church in Montreal by Dimitri Dimakopoulos & his partners, and the new Greek Orthodox church at Wauwatosa, by Frank Lloyd Wright. Both are conscientious and elegant attempts to be orthodox in the ecclesiastical, if not in the artistic sense; yet apart from the presence of vaguely Byzantine domes, they would appear to have little visibly in common with one another — despite the fact that both were designed to fulfil the same strict liturgical, social and ethnic needs. To what extent, therefore, can it be said that they justify the doctrine so brilliantly expounded by Sir John Summerson, in the RAIC Journal of October 1957, that “the source of unity in modern architecture is in the social sphere, in other words, in the architect’s program”? For Summerson claims that it is such obedience to the program that constitutes “the one new principle involved in modern architecture” — a principle which, he says, gives that unity to contemporary architecture for which Wright preferred the term “organic”, but which the art historians of the future will one day recognize as constituting a unity of style.

To judge this question objectively, it is best not to be too much concerned with the names of architects involved, but simply to analyse each building, and try to understand each designer’s point of view. To compare a building by anybody under forty, however eminent, with a work specifically by Frank Lloyd Wright clearly prejudices the issue by introducing all sorts of values alien to the problem. It is impossible, for example, unless one makes a deliberate attempt to do so, to divorce a building by Wright from the context of the revolution which occurred in the first quarter of this century, and of which he was one of the prime movers, if not the motive force. The issue here is not, however, concerned with historical values in the sense intended by those who compile pictorial histories of Modern Architecture; it is concerned simply with the extent to which these two churches fulfil the religious and social needs of two Greek Orthodox communities in North America. This can be decided best by examining each building in turn without concern for the personality and historical prestige

of those responsible.

Let us begin, therefore, with the church at Wauwatosa. The architect of this building has himself stated the policy on which his design was based. “The building is not a copy of Byzantine architecture”, he has written. “It is better than a copy. It is in proper scale and feeling to reflect the beauty of the architectural heritage of that ancient period without copying a single feature”.

An examination of the plan shows fairly clearly the way in which the designer sought to be both original and traditional at the same time. He evidently decided that the essential element of the Byzantine heritage was the Greek “cross-in-square” plan, and that the most masterly architectural expression of Greek Orthodox ideals was the dome of Hagia Sophia in Istanbul. He therefore made the dome of Hagia Sophia the basis of his design, but instead of using this as simply a central feature, he fitted the whole of a Greek “cross-in-square” (or to be more precise, a quadrilateral with concave sides) inside.

The fact that the dome of Hagia Sophia constituted, ostensibly at least, the basis of his conception seems clear from the correspondence in the dimensions, since both have a diameter of about 106 ft. But whereas the earlier brick dome was externally only the central climax to a building with a total ground area of some 55,000 square feet, the cruciform church under the new reinforced concrete dome covers only a tenth of this space.

The solution adopted displays extraordinary brilliance and ingenuity in the disposition of the parts. By planning the design with the cross inside the circle, rather than the circle inside the cross (as in mediaeval Byzantine domed churches), it has been possible not only to diminish the interior volume to one suited to a congregation of less than 700 worshippers, but to achieve a dramatic expression of structural virtuosity in full harmony with modern aspirations, by cantilevering the dome over the cruciform nave.

Moreover the architect has not simply designed an extravagantly spectacular shell with a small building inside it, as has been done so often by lesser contemporary spirits searching for the same effect. He has here justified a large dome by making it cover a big circular gallery corresponding to the

Orthodoxy

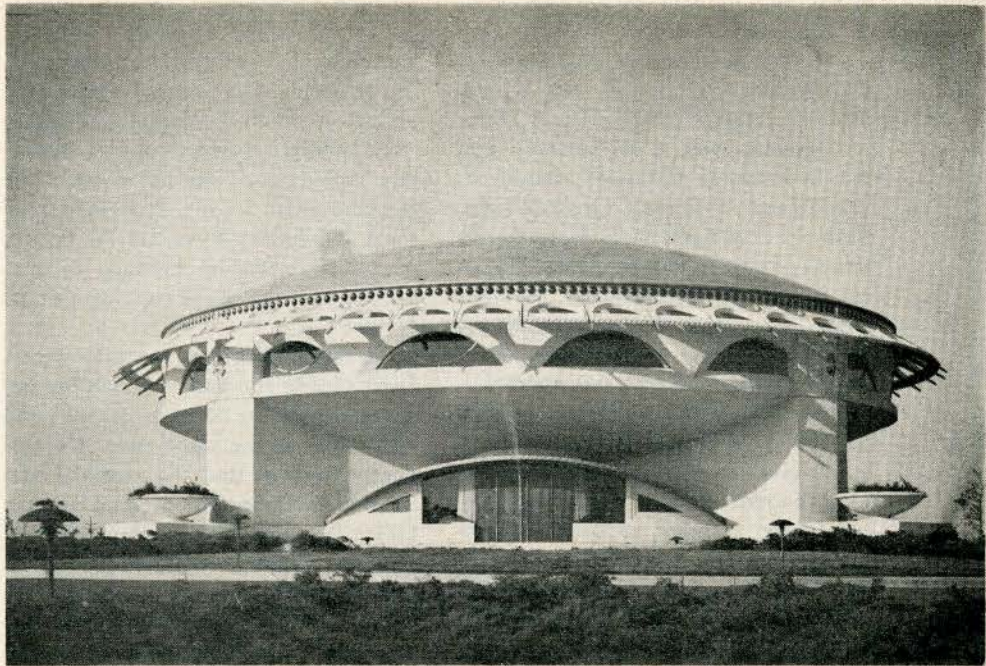
by Peter Collins

traditional Byzantine "gynaekonitis", though different in shape and much greater in size. The cylindrical volume of this upper gallery communicates directly with the smaller cruciform volume below by means of an open circular well. Thus the whole of the interior constitutes an intricate complex of related spaces and vistas, expanding upwards towards the light, which must make it one of the most stirring and unusual church interiors of any age.

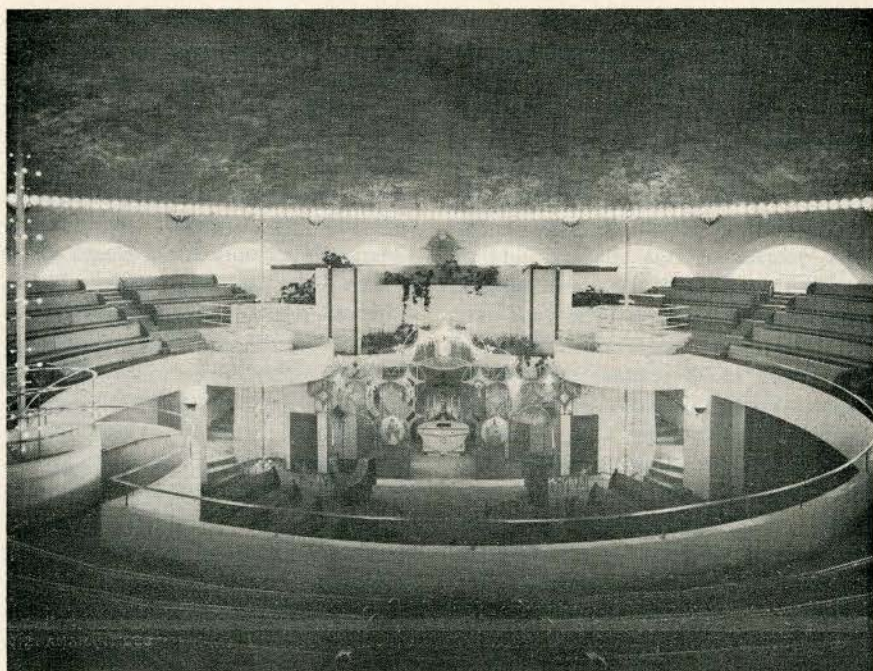
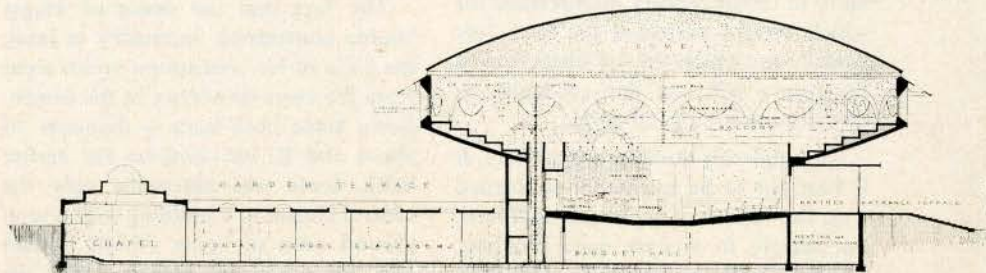
At the same time, when one looks at the literally revolutionary arrangement of the concentric seating, at the uncouth equilibrium of the external composition (which inevitably reminds one of a truncated water tower), and at the disproportion between the area of the gallery and that of the principal floor, one may wonder whether the considerations which produced such a brilliant solution were in fact derived essentially from the program, or whether they were derived from other, more formal ideas of shape and space.

Such a reflection seems especially pertinent when one turns to consider the other church, which was built to fulfil exactly the same conditions and constructed for half the cost. No one would suggest that there is any comparison to be made between the two as regards the vivacity of creative talent displayed. But unless one considers that the essence of architecture is simply the creation of exciting spaces and unusual shapes, it is worth while forgetting for a moment the verve of the tour-de-force at Wauwatosa to ask oneself what does in fact constitute the ideal program for a Greek Orthodox church on this continent and in this age.

Two facts are clear. One is that for a thousand years there has been a traditional liturgical three-dimensional shape for Greek Orthodox worship which has little affinity with that of Hagia Sophia, and certainly none with its dome. Indeed, this famous building seems to have been something of an eccentricity, and had few antecedents and few successors, except Muslim mosques. The other is that for the highly conservative Greek Orthodox communities in North America, their churches constitute the only visible communal ties they have with the traditions of their former homeland. How strong these ties are is well exemplified by the fact that in the com-



Greek Orthodox Church at Wauwatosa, Wisconsin,
by Frank Lloyd Wright



JOHN AMARANTIDES



Greek Orthodox Church in Montreal,
by Affleck/Desbarats/Dimakopoulos/Lebensold/Sise



munity hall of the Greek Orthodox Cathedral in Montreal, the portrait of the Queen is flanked by portraits of the King and Queen of Greece.

It seems unlikely that the spirit of Hagia Sophia means much to even the most cultivated Greek immigrants and their descendants, who have probably never even been to Turkey. What they presumably expect is a Greek place of worship which they can identify as such. Thus the problem for any ordinary architect, as opposed to one who considers himself singled out by destiny to be a "Form-Giver", must therefore presumably be: how can one respond to this problem faithfully, yet at the same time translate it into the architectural language, the universal tectonic vocabulary, current in our own day?

In Montreal, this problem has been answered by simply enclosing the traditional rectangular space corresponding to the traditions established for the Greek liturgy, and using a modern structural system assembled by modern structural techniques. We have only to look at even sixth century Byzantine churches to see what tremendous efforts their architects made to maintain this rectangularity, in spite of the fact that they were using circular domes. Naturally, the evolution of new structural systems since that date has meant that the forms have also had to change to a certain degree. Here, the lamella-type roof, with its dome piercing the centre, is cantilevered from relatively widely spaced columns, whilst the hollow brick walls, being designed acoustically to form wedge-shaped cavities, are serrated instead of straight. But the general form of this church is as traditional as the liturgy to which it ministers, and its only defects seem to be firstly, the somewhat excessive insistence on secondary hexagonal plan patterns (which gives it a curiously Wrightian flavor, though this was doubtless inspired, quite logically, by the pattern of the structural ceiling), secondly, the slight coarseness of some of its brick and concrete interior details, and thirdly, the excessive amount of light. The coarseness of detailing will probably constitute its principal shortcoming in the eyes of the congregation, though it corresponds to one of the most deeply-rooted convictions of the age, namely the belief (derived essentially from Jean-Jacques Rousseau) that only primitive and brutal architectures are expressive of social authenticity, purity

of moral intentions, masculine vigour and unvarnished truth. The excess of light is of no consequence whatever, since it could easily have been rectified — and still can be — by introducing other types of glass.

By comparison, the church at Wauwatosa, even in its ostensible choice of Hagia Sophia's dome as a source of inspiration, seems mainly symptomatic of the non-programmatic forces affecting the evolution of modern architecture. Hagia Sophia may be regarded not so much as the supreme achievement of Byzantine architecture but as something of a "biological sport" in the organic evolution of European tectonic forms. "So exceptional does this great structure appear" wrote James Fergusson, "that with our present knowledge we might almost feel inclined at first sight to look upon it as the immediate creation of the individual genius of its architect". Fergusson, being a firm believer in architectural evolution, had little sympathy with individual genius, and doggedly asserted that there must in fact have been prototypes for "every feature of the design", which had subsequently been lost. But today it is the individual genius, the so-called "Form-Giver", who seems to be the hero of the more popular architectural historians, and one may wonder to what extent the traditional belief in the functional evolution of standardized forms, as preached forty years ago by Le Corbusier and Walter Gropius, is still widely and sincerely held.

For we can see perfectly well what was the real prototype for the church at Wauwatosa. It was not a Byzantine church, but the architect's own Guggenheim Museum, which in turn derived from a Unitarian church designed by him in Illinois in 1906, based on his mail-order office built in Buffalo in 1904. Thus its contribution to the evolution of church architecture is at best a brilliant lesson in dextrous adaptation. If it captures the affection of the American public, it is simply because

it has the same kind of ecclesiastical and architectural importance as the leaning tower of Pisa. Already, "so many people want to see it that the problem of arranging tours and providing guides, without interfering with worship and church activities, looms as a large administrative problem for the church staff". Fortunately, its attractiveness to tourists pays good dividends, and it is hoped that the contributions of pilgrims (*i.e.* the Sunday drivers of southern Wisconsin) will soon liquidate the rest of the one and a quarter million dollars which still has to be paid.

It may be argued that there is no reason why Orthodox Christians cannot worship just as well in a modified museum or office building as in a building of more traditional shape. After all, the earliest churches were only converted law-courts, and the transition from these Constantinian basilicas to the domed churches which eventually replaced them in Constantinople must have seemed equally incongruous in their own day. But let it not be claimed that the shapes of the churches now being designed by the "Form-Givers" have anything much to do with the program, for they emanate and evolve from archetypal abstractions conceived quite arbitrarily; abstractions which obey evolutionary laws of their own, and are applied and adapted to any program which may offer itself as a commission.

The most publicized modern churches, like all the other highly-publicized buildings of the decade, are essentially a reflection of their authors' faith in the primacy of personal sculptural originality. It is this, I suspect, which constitutes "the one new principle involved in modern architecture", and it is instructive to see how often it is applied by misusing new building techniques, from whose evolution it fallaciously draws so much of its theoretical justification, and from whose adaptability it parasitically draws so much of its strength.

RAIC

L'IRAC

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A Brief History of the RAIC

AT THE TURN OF THE CENTURY there was a growing awareness of the need for closer professional ties between the provincial groups of architects throughout Canada, and it became evident that the prestige of the architectural profession could be securely established and enhanced only by the creation of a national organization. As the result of a series of meetings held over a period of about twelve months between *D. Ewart*, Chief Architect of the Department of Public Works at Ottawa; *Edmund Burke*, President of the Ontario Association of Architects; and *Alcide Chaussé*, President of the Province of Quebec Association of Architects, it was decided that the time was, indeed, opportune for the formation of a national organization. There seems to be little doubt that *M. Chaussé* was the staunchest advocate of this proposal,

Bref Historique de l'IRAC

AU TOURNANT DU SIECLE, le besoin de resserrer les liens entre les groupements provinciaux d'architectes se faisait de plus en plus sentir et il était devenu manifeste que le seul moyen d'assurer et de relever le prestige de la profession était de former une association nationale. Au cours d'une série d'entretiens échelonnés sur une période de douze mois entre *MM. D. Ewart*, architecte en chef au ministère fédéral des Travaux publics *Edmund Burke*, président de l'Association des architectes de l'Ontario, et *Alcide Chaussé*, président de l'Association des architectes de la province de Québec, il a été décidé qu'en effet le moment était venu de procéder à la création d'un tel organisme. De tous les auteurs du projet, *M. Chaussé* semble avoir été nettement le plus déterminé et c'est en grande partie à ses efforts infati-

and it was largely due to his untiring efforts that a positive decision was reached, and a national institute of architects founded.

In April, 1907, a circular letter was sent to 500 architects practising in the Dominion inviting them to join the proposed Institute as Charter Members upon payment of a fee of \$10.00. M. Chaussé, as secretary pro tem, stated in his letter that "It is thought by some architects that the time has arrived for the organization of a society embracing the whole Dominion. It is also felt that such a society has become a necessity in order to promote and conserve the honor and dignity of the profession; also that it will help to unify the various local organizations and be of service to practitioners in localities having no local organizations."

The response was encouraging and a provisional board of organization was formed with *A. F. Dunlop*, RCA, PQAA, Montreal, as President. Vice-Presidents were *Edmund Burke* of Toronto; *Maurice Perrault*, PQAA, Montreal, Member of the Province of Quebec Legislature; *S. Frank Peters* of Winnipeg, President of the MAA. The Secretary was *M. Chaussé*, Past President of the PQAA; and the Treasurer *J. W. H. Watts*, RCA, Ottawa, Vice-President of the OAA and Chairman of the Ottawa Chapter of the OAA. There were fourteen members of Council drawn from provincial associations right across the country, and legal advice was sought from *J. C. Walsh*, Member of Parliament for the St Ann's Division of Montreal.

The Act of Incorporation

The next, and most important step was to draft an act in order to obtain government approval for formal incorporation. Under Mr Walsh's guidance, a "Project of an Act to Incorporate the Institute of Architects of Canada" was prepared; this workmanlike and comprehensive document was devised to restrict the use of the title "architect," and the practice of architecture to corporate members of the Institute. The qualifications of individuals wishing to be admitted as corporate members were carefully defined and it was proposed that a board of not less than seven examiners be set up in order to review the qualifications of candidates, and to administer the preliminary and final examinations proposed for the Institute. An educational program was described briefly and it is interesting to note that candidates were required to pass an examination in the following subjects: nature of soils and foundations, strength of materials and construction, architectural history, ornament and design, hygiene and sanitation of buildings, architectural jurisprudence, heating and ventilation, acoustics and specification of works.

The provisional board of organization proposed that a congress, or convention of Canadian architects be held in Montreal from August 19th to 23rd, 1907, so that the draft of the Act could be discussed in detail. This proposal was welcomed by the profession although the secretary's hope that "every architect in Canada will find it to his interest to attend the first national meeting" was not realized. It is evident, however, from the reports of the meetings and correspondence that the provinces were well represented, and lively discussions ensued.

The letter of invitation to attend the first congress

gables que nous devons aujourd'hui cette décision et la formation d'un institut national d'architecture.

En avril 1907, une lettre circulaire fut envoyée à 500 architectes pratiquant leur profession au Canada les invitant à devenir membres fondateurs en versant une contribution de \$10 chacun. Dans cette lettre, M. Chaussé, secrétaire provisoire, déclarait: "*De l'avis de certains architectes, le moment est arrivé de fonder une société pour tout le Canada. Une telle société semble également nécessaire pour défendre et relever l'honneur et la dignité de la profession. Elle permettra aussi de grouper les diverses associations locales et de servir les architectes qui exercent leur profession dans des endroits où il n'y a pas d'organisation locale.*"

La réponse ayant été favorable, un comité provisoire d'organisation fut constitué ainsi qu'il suit: président, *M. A. F. Dunlop*, R.C.A., AAPQ, de Montréal; vice-présidents, *MM Edmund Burke* de Toronto, *Maurice Perrault*, AAPQ, membre de la Législature de la province de Québec, *S. Frank Peters*, de Winnipeg, président de l'AAM; secrétaire, *M. Chaussé*, ancien président de l'AAPQ; trésorier, *M. J. W. H. Watts*, RCA, d'Ottawa, vice-président de l'AAO et président de la section d'Ottawa de la même association, et quatorze membres recrutés dans toutes les associations provinciales du Canada. *M. J. C. Walsh*, député fédéral de la circonscription de Sainte-Anne, Montréal, remplissait les fonctions de conseiller juridique.

Loi de Constitution

L'initiative suivante, en somme la principale, consistait à rédiger un projet de loi en vue d'obtenir l'approbation du gouvernement à une constitution officielle. Sous la direction de M. Walsh, un "Projet de loi visant à constituer en société l'Institut des architectes du Canada" a été préparé. Une disposition de ce document très complet, portant la marque d'hommes pratiques, visait à restreindre l'emploi du titre "Architecte" et à limiter l'exercice de la profession aux membres titulaires de l'Institut. On avait pris soin de bien déterminer les qualités requises des personnes demandant à devenir membres titulaires et proposé la formation d'une commission d'au moins sept membres pour l'examen des qualités des candidats et pour la tenue des examens préliminaires et définitifs projetés pour l'Institut. On mentionnait brièvement aussi un programme de formation et il y a lieu de noter que parmi les sujets sur lesquels les candidats devaient subir des examens se trouvaient: la nature du sol et des fondations, la résistance des matériaux et des constructions, l'histoire de l'architecture, les ornements et dessins, l'hygiène et la salubrité des bâtiments, la jurisprudence en architecture, le chauffage et la ventilation, l'acoustique et la préparation des devis.

Le comité provisoire a alors proposé la tenue d'un congrès ou d'une convention des architectes canadiens à Montréal du 19 au 23 août 1907 en vue d'une étude détaillée de l'avant-projet de loi. La proposition a été favorablement accueillie par la profession bien que l'espoir du secrétaire "que tous les architectes au Canada estimeront qu'il y va de leur intérêt d'assister à cette première réunion nationale" n'ait pas été réalisé. Toutefois, il ressort des procès-verbaux et de la correspon-

of Canadian architects carried the heading "Forward always, banded together for the protection of our fellow citizens and the advancement of our art (*Gervais*)."

Members were advised that they would receive a card of identity, a congress badge, all the literature issued in connection with the congress, the final compte-rendu of the congress and invitations to several social functions. There does not appear to have been a registration fee, or any other payment of the kind and tickets for the members' dinner were \$2.50. Of eleven hotels listed the charges ranged from \$1.50 to \$3.00 on the American plan. Members coming from the west by the Grand Trunk, or Canadian Pacific Railways were offered the alternative of a trip from Toronto or Kingston down the St Lawrence River, and through the Thousand Islands by the boats of the Richelieu and Ontario Navigation Company on payment of an additional \$8.00 from Toronto or \$4.50 from Kingston. The board of the Engineers' Club of Montreal elected all delegates to the congress honorary members of the club for the duration of the meetings, and the management of the new Bennett's Theatre invited the ladies to one of their performances of "Refined Vaudeville."

The First Convention

The first congress of Canadian architects and the first annual convention of the Institute of Architects of Canada was opened on Monday, August 19th, 1907 at 2.30 p.m. by the President, *A. F. Dunlop*, who introduced the *Honorable W. A. Weir*, Minister of Public Works of the Province of Quebec. In his opening address, the Minister encouraged his audience to press for protective legislation for the whole Dominion, and he gave an assurance that careful consideration would be given to any suggestions that might be made for amending the laws of the province of Quebec to further the objectives they had in view. The President, Mr Dunlop, spoke of progress made by the PQAA, not only in the field of protective legislation but in education. He said: "*The students of today have a future before them equal to any of the professions and I would impress upon them the great advantage of a collegiate education. I consider that our future architects will require to be men of much higher attainment than heretofore, to secure the respect and confidence of the rising generation.*"

dance que les provinces étaient bien représentées et que les délibérations ont été animées.

La lettre d'invitation au premier congrès des architectes canadiens portait le titre "En avant toujours, unis pour la protection de nos concitoyens et l'avancement de notre art (*Gervais*)".

On annonçait aux membres qu'ils recevraient une carte d'identification, un insigne du congrès, tous les écrits préparés pour la circonstance, le compte rendu définitif du congrès et des invitations à diverses réunions mondaines. Il semble n'y avoir eu aucuns frais d'inscription ni autres; le prix des billets pour le dîner offert aux membres était de \$2.50. Le coût des chambres, plan américain, aux onze hôtels mentionnés sur une liste préparée à l'intention des congressistes variait de \$1.50 à \$3.00. Les membres venant de l'Ouest par le Grand-Tronc ou le Pacifique-Canadien avaient le choix de faire le voyage depuis Toronto ou Kingston par la voie du Saint-Laurent et des Mille-Iles dans des navires de la Richelieu and Ontario Navigation Company contre un supplément de \$8 depuis Toronto ou de \$4.50 depuis Kingston. Le conseil du Club des ingénieurs de Montréal a accordé aux délégués le titre de membres honoraires pour la durée des délibérations et les autorités du nouveau Théâtre Bennett ont invité les dames à une représentation de "vaudeville de grande classe."

Premier Congrès

Le premier congrès des architectes canadiens, qui était en même temps la première assemblée annuelle de l'Institut des architectes du Canada, a été ouvert le lundi 19 août 1907 à 2h.30 de l'après-midi par le président, *M. A. F. Dunlop*, qui a présenté le ministre des Travaux publics de la province de Québec, l'honorable *W. A.*

Seated, left to right, Randolph C. Betts (F), Montreal, Honorary Secretary; F. Bruce Brown (F), Toronto, Vice President; John L. Davies (F), Vancouver, President; Robbins Elliott, Executive Director and Maurice Holdham, MBE, Secretary; standing, Gordon Arnott, Regina; James W. Strutt (F), Ottawa; C. A. E. Fowler (F), Halifax, Honorary Treasurer; Harland Steele (F), Toronto, Past President; James W. Searle, Winnipeg; Gerard Venne (F), Quebec; Francis J. Nobbs (F), Montreal; and G. Everett Wilson (F), Toronto.

THE RAIC EXECUTIVE COMMITTEE 1962-63



Edmund Burke, the President of the Ontario Association of Architects, drew attention in his speech to the extraordinary fact that this was the first time that English and French-speaking architects had met together—"never before" he said "as far as I am aware, have we of the West, English-speaking members of the profession, had the pleasure of meeting in convention our friends and confrères of the Province of Quebec." Toronto, it will be noted, was considered to be "of the West" at this time. Mr Burke, too, stressed the importance of education and he said: "If we train our students thoroughly and see that none but first class men are permitted to enter the profession, I think the rest will take care of itself." He pointed out also that in addition to the Province of Quebec, which had had restrictive legislation for many years, the Province of Alberta had obtained it in 1906, and Manitoba expected to follow very shortly.

A roll call indicated that 72 members were in attendance, with 20 guests mainly drawn from Quebec; the remainder of the congress was taken up with a careful study of the draft of the proposed Act.

On Wednesday, November 20th, 1907, the draft of the proposed Bill, or Act to Incorporate the Institute of Architects of Canada, was deposited with the Clerk of the House of Commons at Ottawa, and petitions praying for the incorporation under the name of the Institute of Architects of Canada were sent to the House of Commons, to the Senate and to the Governor-General in Council.

The Bill had a stormy passage through Parliament and was strongly opposed by those who saw in it an attempt to create not only a closed corporation but a high professional standard throughout the Dominion to the disadvantage of building contractors, engineers, manufacturers and others who wished also to function as architects.

The Royal Architectural Institute of Canada

However, after much revision, a Bill was finally approved and the Institute of Architects of Canada was incorporated by a special act of the Dominion Parliament on June 16th, 1908 under the title "The Architectural Institute of Canada" — the change in name having some political significance. An alliance with the Royal Institute of British Architects was completed on May 15th, 1909, and Royal assent to the adoption of the prefix "Royal" to its corporate name was granted in a letter from the Governor-General dated June 2nd, 1909.

The Charter of the RAIC was amended by a special Act of Parliament on April 1st, 1912, and again on June 10th, 1929. The present Act of Incorporation consolidating and amending Acts relating to the Institute was passed on May 4th, 1955.

Growth of The Institute

One hundred and thirty-nine architects were admitted as charter members when the Institute was founded in 1907. At the end of the first fifteen years, in 1922, membership had grown to just over 600, and it wasn't until the late 1940's that the thousand mark was reached. The membership figure has grown steadily from 1,170 in the year 1950 to 1,638 in 1955, until today 2,293 architects hold membership in the RAIC.

Weir. Au cours de son allocution, le Ministre a instamment invité ses auditeurs à travailler afin d'obtenir une loi qui les protégerait d'un littoral à l'autre du Canada et a promis une considération favorable à tous les projets tendant à modifier les lois de la province de Québec en vue d'atteindre plus facilement les objets recherchés. A son tour, le président, M. Dunlop, a parlé des progrès de l'AAPO non seulement dans le domaine de la protection législative mais aussi dans celui de la formation des architectes. "Les étudiants d'aujourd'hui, a-t-il dit, ont devant eux un avenir comparable à celui des membres de toutes les autres professions et j'aimerais leur faire bien comprendre les avantages d'une instruction collégiale. Pour mériter le respect et la confiance des générations de demain, nos futurs architectes devront répondre à des exigences inconnues jusqu'ici."

Le mercredi 20 novembre 1907, l'avant-projet de loi intitulé "Loi visant à constituer en société l'Institut des architectes du Canada" était déposé chez le greffier de la Chambre des communes, à Ottawa, et des pétitions demandant la constitution sous le titre d'Institut des architectes du Canada étaient envoyées à la Chambre des communes, au Sénat et au Gouverneur général en conseil.

Le débat au Parlement a été orageux. Le bill a été l'objet d'une opposition acharnée de la part de ceux qui y voyaient une tentative non seulement de créer une corporation fermée mais d'exiger dans tout le Canada de hautes normes professionnelles au détriment des entrepreneurs en bâtiment, des ingénieurs, des fabricants et autres, désireux d'exercer également les fonctions d'architecte.

L'Institut Royal d'Architecture du Canada

Enfin, après de nombreux amendements, le bill fut approuvé et le 16 juin 1908 l'Institut des architectes du Canada a été constitué par une loi spéciale du Parlement canadien sous le titre "Institut d'architecture du Canada." Le changement de nom n'était pas sans importance politique. Le 15 mai 1909 une alliance avec le Royal Institute of British Architects était conclue. L'approbation royale à l'inclusion du mot "royal" dans le titre officiel de l'Institut a été accordée dans une lettre au Gouverneur général en date du 2 juin 1909.

La charte de l'IRAC a été subséquemment modifiée par des lois spéciales du Parlement le 1^{er} avril 1912 et le 10 juin 1929. La loi actuelle consolidant et modifiant les lois relatives à l'Institut a été sanctionnée le 4 mai 1955.

Essor de l'Institut

Au moment de sa fondation en 1907, l'Institut comptait 139 architectes comme membres fondateurs. Quinze ans plus tard, en 1922, le nombre des membres dépassait encore à peine 600 et ce n'est que vers la fin des années 1940 qu'il a enfin touché 1,000. Depuis lors, il a continuellement grandi, de 1,170 en 1950 à 1,638 en 1955 et à 2,293 aujourd'hui.

The Act of Incorporation of the Royal Architectural Institute of Canada

3-4 Elizabeth II, 1955 (Canada) Chap. 87

An Act to consolidate and amend Acts relating to The Royal Architectural Institute of Canada.
(Assented to 4th May, 1955)

1908, c. 82;
1912, c. 64;
1929, c. 96;

WHEREAS The Royal Architectural Institute of Canada, a corporation incorporated by an Act of the Parliament of Canada, has by its petition prayed that it be enacted as hereinafter set forth and it is expedient to grant the prayer of the petition: Therefore Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

Short title

1. This Act may be cited as *The Royal Architectural Institute of Canada Consolidation Act, 1955*.

Repeal

2. Chapter 82 of the statutes of 1908, chapter 64 of the statutes of 1912 and chapter 96 of the statutes of 1929 are repealed and their provisions are replaced by the provisions of this Act.

Corporate existence preserved.

3. The said repeal shall not in any way affect the corporate existence of the Royal Architectural Institute of Canada, hereinafter called "the Royal Institute", and the Royal Institute shall continue to be the same corporation under the same name as that constituted by the said chapter 82 of the statutes of 1908, as amended by chapter 64 of the statutes of 1912 and by chapter 96 of the statutes of 1929, and to be composed of the existing members of the Royal Institute whose rights and liabilities, except as modified by this Act, shall not be affected by the said repeal, and hereafter of those who from time to time are members of the Royal Institute, and to be the owner of and entitled to the property and estates of the Royal Institute, and subject to the undertakings and liabilities of the Royal Institute.

Head office.

4. (1) The head office of the Royal Institute shall be in the city of Ottawa, in the province of Ontario, or in such other place as is from time to time determined by a vote of two-thirds of all the members of the Council of the Royal Institute.

Notice of change.

(2) Notice in writing shall be given to the Secretary of State by the Royal Institute of any change of the head office and such notice shall be published forthwith in *The Canada Gazette*.

Objects.

5. The objects of the Royal Institute shall be

- (a) to establish and maintain a bond between the societies recognized by the Royal Institute as component associations and to promote the welfare of the architectural profession in Canada;
- (b) to establish and maintain a bond between the Royal Institute and societies or institutes having similar objects;
- (c) to promote a knowledge and appreciation of architecture and of the architectural profession;
- (d) to promote and make available to the members of the Royal Institute knowledge pertaining to the practice of the architectural profession;
- (e) to promote encouragement and recognition of worthy aspirants to the profession.

Members.

6. (1) All persons who are Members, Fellows, Honorary Fellows or Honorary Members of the Royal Institute as of the date of the passing of this Act, and all persons thereafter admitted to membership in the Royal Institute shall continue as such until such membership lapses or is suspended or cancelled.

Members may designate class of membership by certain abbreviations.

(2) The Members of the Royal Institute in the following classes may designate their class of membership by appending to their names the following abbreviations:

| | |
|---|---------------------|
| Members of the Royal Architectural Institute of Canada | —M.R.A.I.C. |
| Fellows of the Royal Architectural Institute of Canada | —F.R.A.I.C. |
| Honorary Fellows of the Royal Architectural Institute of Canada | —Hon.F.R.A.I.C. |
| Honorary Members of the Royal Architectural Institute of Canada | —Hon.M.R.A.I.C. |
| Honorary Corresponding Members of the Royal Architectural Institute of Canada | —Hon.Cor.M.R.A.I.C. |

and members of such other classes as may be created, by such abbreviations as may be authorized by the by-laws of the Royal Institute.

Qualifica-
tions of
members.

(3) Except in the case of Honorary Fellows, Honorary Members, Honorary Corresponding Members and any other type of honorary member, no one shall be admitted to membership who is not a member in good standing in an Association of Architects in Canada recognized by the Royal Institute as a component association.

Associations
of Architects
recognized
by the
Royal
Institute.

7. The following associations of architects and such other associations of architects in Canada as may be recognized by the Royal Institute in accordance with its by-laws shall be component associations of the Royal Institute until their status as such has been terminated by withdrawal or by cancellation of the Royal Institute's recognition:

The Newfoundland Association of Architects,
The Nova Scotia Association of Architects,
The Architects' Association of New Brunswick,
The Province of Quebec Association of Architects,
The Ontario Association of Architects,
The Saskatchewan Association of Architects,
The Alberta Association of Architects,
The Architectural Institute of British Columbia and
The Manitoba Association of Architects.

Council.

8. There shall be a Council of the Royal Institute, consisting only of members of component associations, and the present members of the Council shall hold office until the first annual meeting following the passing of this Act, and their successors shall be chosen in the proportions and in the manner provided by the by-laws of the Royal Institute.

By-laws.

9. The Council of the Royal Institute may from time to time make, repeal, amend or re-enact by-laws and rules not contrary to law, nor inconsistent with the provisions of this Act, for

- (a) defining the terms and conditions of membership and of classes of membership in the Royal Institute, and the qualifications for admission, the grounds for expulsion and the rights, duties and privileges of Members;
- (b) defining the terms and conditions on which an Association may be recognized as a component association, and on which such recognition may be withdrawn;
- (c) fixing the number of members which each component association may appoint to the Council of the Royal Institute and the method of making such appointments;
- (d) the administration, management and control of the property, business, and other affairs of the Royal Institute, and for the delegation of these powers to an executive committee during the intervals between meetings of the Council of the Royal Institute;
- (e) the appointment, the designation and the determination of the functions, duties and remuneration of all officers, agents and servants of the Royal Institute;
- (f) the appointment of committees and the designation of their power and duties;
- (g) the calling of meetings, annual or special, of the Royal Institute, and of meetings, periodical or special, of the Council of the Royal Institute and of committees;
- (h) the fixing of the quorum necessary at, the procedure in all respects at or concerning, and all other requirements of, any meeting of the Royal Institute, or of its Council or committees;
- (i) maintaining the honour and dignity of the Royal Institute and the various classes of members thereof, and for carrying out the objects of the Royal Institute.

Real
property.
Value.

10. The Royal Institute may acquire and hold such real property as is necessary to carry out its objects: Provided that the total value of such property held at any time for actual use of the Royal Institute shall not exceed five hundred thousand dollars.

Affiliation.

11. The Royal Institute may affiliate with any society or association of architects having objects similar to those of the Royal Institute.

Rights
preserved.

12. Nothing in this Act shall be deemed to encroach upon the rights and privileges conferred upon any association of architects having a charter or which may hereafter have a charter from the legislature of any province of Canada.

L'Acte d'Incorporation de l'Institut Royal d'Architecture du Canada

3-4 Elizabeth II, 1955 (Canada) Chap. 87

Loi consolidant et modifiant les lois relatives à l'Institut Royal d'Architecture du Canada.
(Sanctionnée le 4 mai, 1955)

1908, c. 82;
1912, c. 64;
1929, c. 96;

CONSIDÉRANT que l'Institut Royal d'Architecture du Canada, corporation constituée par une loi du Parlement du Canada, a, par voie de pétition, demandé que soient établies les dispositions législatives ci-dessous énoncées, et qu'il est à propos d'accéder à cette demande: A ces causes, Sa Majesté, sur l'avis et du consentement du Sénat et de la Chambre des Communes du Canada, décrète:

Titre abrégé.

1. La présente loi peut être citée sous le titre de *Loi de consolidation de l'Institut Royal d'Architecture du Canada, 1955.*

Abrogation.

2. Sont abrogés le chapitre 82 des statuts de 1908, le chapitre 64 des statuts de 1912 et le chapitre 96 des statuts de 1929, et leur sont substituées les dispositions de la présente loi.

Existence corporative maintenue.

3. Cette abrogation n'affecte aucunement l'existence corporative de l'Institut Royal d'Architecture du Canada, ci-après dénommé "l'Institut Royal"; et l'Institut Royal continue à être la même corporation portant le même nom que celle qui a été constituée par le chapitre 82 des statuts de 1908, tel que modifié par le chapitre 64 des statuts de 1912 et par le chapitre 96 des statuts de 1929, et devant se composer des membres existants de l'Institut Royal dont les droits et obligations, sauf dans la mesure où la présente loi les modifie, ne sont aucunement atteints par cette abrogation, ainsi que des personnes qui de temps à autre deviendront membres de l'Institut Royal et devant être le propriétaire des propriétés et biens de l'Institut Royal et y avoir droit, subordonnement aux engagements et obligations de l'Institut Royal.

Siège social.

4. (1) Le siège social de l'Institut Royal est en la cité d'Ottawa, province d'Ontario, ou en telle autre localité déterminée à l'occasion par un vote des deux tiers de tous les membres du Conseil de l'Institut Royal.

Avis de changement.

(2) L'Institut Royal doit donner avis par écrit au Secrétaire d'Etat de tout changement de la situation du siège social, et cet avis doit être immédiatement publié dans la *Gazette du Canada.*

Objets

5. Les objets de l'Institut Royal consistent:

- (a) à établir et maintenir un lien entre les sociétés reconnues par l'Institut Royal comme associations constituantes, et à promouvoir l'intérêt de la profession d'architecte au Canada;
- (b) à établir et maintenir un lien entre l'Institut Royal et les sociétés ou instituts dont les objets sont semblables aux siens;
- (c) à favoriser la connaissance et le goût de l'architecture, ainsi que de la profession d'architecte;
- (d) à répandre et à procurer aux membres de l'Institut Royal les connaissances se rapportant à la pratique de la profession d'architecte;
- (e) à encourager et à reconnaître les aspirants méritants de la profession.

Membres.

6. (1) Toutes les personnes qui sont Membres, Agrégés, Agrégés Honoraires ou Membres Honoraires de l'Institut Royal, à la date de l'adoption de la présente loi, de même que toutes les personnes par la suite admises à faire partie de l'Institut Royal, continueront à y appartenir à leur titre respectif jusqu'à ce que leurs titres cessent ou soient suspendus ou annulés.

Les membres peuvent désigner leur titre par abréviations.

(2) Les Membres de l'Institut Royal des classes suivantes peuvent désigner leur classe d'association en ajoutant à leurs noms les abréviations suivantes:

| | |
|--|-------------------|
| Membres de l'Institut Royal d'Architecture du Canada | —M.I.R.A.C. |
| Agrégés de l'Institut Royal d'Architecture du Canada | —A.I.R.A.C. |
| Agrégés Honoraires de l'Institut Royal d'Architecture du Canada | —Hon.A.I.R.A.C. |
| Membres Honoraires de l'Institut Royal d'Architecture du Canada | —Hon.M.I.R.A.C. |
| Membres Correspondants Honoraires de l'Institut Royal d'Architecture du Canada | —Hon.Cor.I.R.A.C. |

et les membres de toutes autres classes qui pourront être créées, par telles abréviations qu'autoriseront les règlements de l'Institut Royal.

Eligibilité
des membres.

(3) Sauf dans le cas des Agrégés Honoraires, des Membres Honoraires, des Membres Correspondants Honoraires et de toute autre catégorie de membres honoraires, aucune personne ne sera éligible à devenir membre, à moins d'être un membre en règle d'une association d'architectes au Canada reconnue par l'Institut Royal comme association constituante.

Associations
d'architectes
reconnues par
l'Institut
Royal.

7. Les associations d'architectes suivantes et telles autres associations d'architectes au Canada qui peuvent être reconnues par l'Institut Royal conformément à ses règlements, sont des associations constituantes de l'Institut Royal jusqu'à ce que l'Institut Royal ait mis fin à leur statut comme telles, en leur retirant sa reconnaissance ou en la révoquant :

The Newfoundland Association of Architects,
The Nova Scotia Association of Architects,
The Architects' Association of New Brunswick,
L'Association des Architectes de la Province de Québec,
The Ontario Association of Architects,
The Saskatchewan Association of Architects,
The Alberta Association of Architects,
The Architectural Institute of British Columbia, et
The Manitoba Association of Architects.

Conseil.

8. Est établi un Conseil de l'Institut Royal, composé seulement de membres des associations constituantes; et les membres actuels du Conseil resteront en fonctions jusqu'à la première assemblée annuelle suivant l'adoption de la présente loi; et leurs successeurs devront être choisis dans les proportions et de la manière auxquelles pourvoient les règlements de l'Institut Royal.

Règlements.

9. Le Conseil de l'Institut Royal peut à discrétion établir, abroger, modifier ou rétablir des règles et règlements qui ne contrarient point les lois en général et ne soient pas incompatibles avec les dispositions de la présente loi, aux fins :

- (a) de définir les termes et conditions de l'adhésion à l'Institut Royal, de déterminer les classes d'adhésion, ainsi que l'éligibilité des membres, les motifs d'expulsion, de même que les droits, devoirs et privilèges des membres;
- (b) de définir les termes et conditions auxquels une association peut être reconnue comme association constituante, et auxquels cette reconnaissance peut être retirée;
- (c) de fixer le nombre de membres que chaque association constituante peut nommer au Conseil de l'Institut Royal, ainsi que le mode de faire ces nominations;
- (d) d'administrer, gérer et contrôler les biens, opérations et autres affaires de l'Institut Royal, et de déléguer ces pouvoirs à un comité exécutif dans les intervalles entre les assemblées du Conseil de l'Institut Royal;
- (e) de nommer et désigner tous fonctionnaires, agents et serviteurs de l'Institut Royal, et déterminer leurs fonctions, leurs attributions et leur rémunération;
- (f) de nommer des comités et déterminer leurs pouvoirs et obligations;
- (g) de convoquer des assemblées annuelles ou extraordinaires de l'Institut Royal, ainsi que des assemblées périodiques ou spéciales de l'Institut Royal et des comités;
- (h) de fixer le quorum requis à toute assemblée de l'Institut Royal, de son Conseil ou de ses comités, et de préciser la procédure concernant les assemblées ou qui doit y être suivie à tous égards, ainsi que les autres formalités relatives à ces assemblées;
- (i) de sauvegarder l'honneur et la dignité de l'Institut Royal et des diverses classes de ses membres, et de poursuivre les objets de l'Institut Royal.

Biens.

10. L'Institut Royal peut acquérir et détenir les biens qui lui sont nécessaires pour la poursuite de ses objets. Toutefois, la valeur totale de ces biens détenus à n'importe quel moment pour l'usage réel de l'Institut Royal ne doit pas dépasser cinq cent mille dollars.

Valeur.

Affiliation.

11. L'Institut Royal peut s'affilier avec toute société ou association d'architectes ayant des objets semblables à ceux de l'Institut Royal.

Sauvegarde
des droits.

12. Aucune disposition de la présente loi ne doit être interprété comme empiétant sur les droits et privilèges conférés à une association d'architectes possédant une charte ou pouvant subséquemment obtenir une charte de la législature d'une province du Canada.

The Benefits That Accrue

Les Bienfaits Qui Résultent

BY RANDOLPH C. BETTS, FRAIC, HONORARY SECRETARY

AT THE VANCOUVER ASSEMBLY LAST MAY retiring RAIC President *Harland Steele*, in commenting on his period in office, stated: "... over nearly two years I have witnessed at first hand the benefits which accrue from having a vigorous and alert Institute office to represent our interests at the National level." Mr Steele said: "... we have seen the national society gain a new confidence and assume for the first time responsibilities which fall within architectural terms of reference, and which, taken in total, bolster the prestige and influence of the profession."

Members of the RAIC are entitled to know specifically what "benefits" have developed from the RAIC program of activities over the past four years. Because of the hard realism of Canadian geography, the majority of Institute members (unlike those of the RIBA) have relatively little direct contact or involvement with the RAIC unless they serve on an RAIC committee or attend the Annual Institute Conventions.

However, the RAIC is attempting, by a variety of methods, to bridge the gap between the individual architect and his national society, for example, by directing welcoming letters to new members from the President of the RAIC; issuing a newly developed membership certificate in both languages, utilizing the editorial space in the *Journal*, and by periodic visits to Association and Chapter meetings by the President and Executive Director.

But what of the "benefits" mentioned above?

The gains recorded by the RAIC can be listed in three liaison categories: (a) liaison with provincial associations; (b) liaison with other associations or institutes; and (c) liaison with government.

However, the "new confidence" Past President Steele referred to can be traced to the fact that while 13 RAIC committees of long standing—such as Building Research, Architectural Education and Public Information—maintain their programs, new vigour comes from nine committees formed since early 1959. Chief among these are the Canadian Joint Committee on Construction Materials (affiliated with the Canadian Construction Association and Association of Consulting Engineers), the National Joint Architect-Engineer Committee, the Committee on the Profession, the Committee on Preservation of Historic Buildings, the International Relations and Centenary Planning Committees. The others are Competi-

L'ASSEMBLEE DE VANCOUVER, en mai dernier, le président sortant de l'Institut, *M. Harland Steele*, a déclaré, en rendant compte de son mandat: "... pendant plus de deux années, j'ai pu constater par moi-même les bienfaits qui résultent du fait que l'Institut possède un bureau énergique, toujours sur le qui-vive, pour servir nos intérêts sur le plan national." Il a ajouté: "... nous avons vu la société nationale prendre confiance en elle-même et, pour la première fois, assumer des responsabilités qui sont véritablement du ressort de l'architecture et qui, dans l'ensemble, contribuent au prestige et à l'influence de la profession."

Les membres de l'Institut ont bien le droit de savoir exactement quels sont ces "bienfaits" qui ont résulté de l'activité des quatre dernières années. A cause des conditions géographiques difficiles qui existent au Canada, la majorité de nos membres, contrairement à ceux de la RIBA, ont relativement peu de contacts directs avec l'Institut et son activité à moins qu'ils ne fassent partie de comités ou qu'ils n'assistent aux assemblées annuelles.

Pendant, l'Institut s'efforce par divers moyens, notamment par l'envoi de lettres de bienvenue du président aux nouveaux membres, par la remise de nouveaux certificats de membre dans les deux langues, par l'emploi de la page éditoriale du *Journal* et par l'assistance périodique du président et du directeur administratif aux assemblées des associations et des sections, d'établir un rapprochement entre les architectes particuliers et leur société nationale.

Mais quels sont ces "bienfaits" mentionnés plus haut?

Les progrès réalisés par l'Institut peuvent être énumérés en partant de trois catégories de relations: (a) relations avec les associations provinciales; (b) relations avec d'autres associations et instituts; et (c) relations avec le gouvernement.

Toutefois, cette nouvelle "confiance" dont a parlé M. Steele peut être attribuée au fait que pendant que 13 comités de longue date, dont ceux de la recherche en bâtiment, de la formation des architectes et de l'information publique, continuent leur travail, une nouvelle vigueur nous vient des neuf comités constitués depuis le début de 1959. Parmi ces derniers, il y a lieu de mentionner notamment le Comité mixte sur les matériaux de construction (affilié à la Canadian Construction Association et à l'Association des ingénieurs-conseils), le Comité national mixte des architectes et ingénieurs, le Comité

tions (to review proposals for architectural competitions), Premises (to establish in Ottawa a suitable site for a future RAIC Headquarters building), and Uniform Fees, created to produce a fee structure acceptable to all provincial associations.

*The RAIC Has Recorded
Many Gains in Two Years*

Over the past 48 months, operating directly through committees or by indirect action, the RAIC has recorded the following gains: (1) closer Institute direction of RAIC *Journal* management; (2) more direct liaison between the Institute and provincial associations; (3) provision by the Department of Public Works at Ottawa of a revised fee schedule (1960); (4) inaugurated minimum syllabus examinations for use by provincial associations (1959); (5) established the Committee of Enquiry into the Design of the Residential Environment with a \$30,000 CMHC grant, and organized an implementation program at a cost to the profession of \$12,000 (1960-61); (6) on recommendation of the RAIC-CMHC Housing Committee, created a zoning study committee with a \$7,500 CMHC grant; (7) launched a survey of underground wiring systems applied to residential subdivisions (1961); (8) formed a committee on the profession to examine the status of the profession in society today (1961); (9) secured a \$3,500 grant from Canada Council comprising a preliminary step toward a national inventory of buildings possessing architectural and historic merit, and successive \$900 grants from the Historic Sites Division of the Department of Northern Affairs for the students of the School of Architecture, University of Toronto, in measuring projects at Kingston (April 1961) and Wentworth County (April 1962); (10) established Canadian membership in the International Union of Architects (1961); (11) created a closer liaison with the American Institute of Architects and the Royal Institute of British Architects; (12) improved RAIC administration of the Massey Medals for Architecture Competitions and published 4,500 copies in French and English of a 1961 Massey Medals for Architecture catalogue for sale in Canada and abroad; and arranged 1962-63 American tour of the 1961 exhibition under the auspices of the Smithsonian Institution; (13) formed a Centenary Planning Committee to assess the potential contribution of the architectural profession to the 1967 Anniversary (1960); (14) organized meetings to review a scheme for introduction of increasing amounts of art and sculpture to public architecture (1960 and 1962); (15) established an RAIC film library (1959); (16) created a sub-committee to encourage and promote wintertime construction (1962); (17) aided the establishment by the Emergency Measures Organization of a technical advisory committee on technical and administrative aspects of emergency measures (1962).

sur la profession, le Comité pour la conservation des édifices historiques, le Comité des relations internationales et les Comités de préparation du centenaire. Les autres sont celui des concours (chargé d'examiner les projets de concours en architecture) celui de l'immeuble (chargé de trouver à Ottawa un emplacement convenable pour le futur siège de l'Institut) et celui du tarif uniforme dont la tâche consiste à préparer un tarif d'honoraires qui conviendra à toutes les associations provinciales.

Par l'entremise de ces comités ou par des moyens indirects, l'Institut a, au cours des 48 derniers mois: (1) renforcé sa participation à l'administration du *Journal*; (2) resserré ses relations avec les associations provinciales; (3) obtenu du ministère fédéral des Travaux publics un nouveau tarif d'honoraires (1960); (4) inauguré à l'intention des associations provinciales un régime d'exigences minimums aux examens (1959); (5) établi le Comité d'enquête sur les conditions de l'habitation grâce à une subvention de \$30,000 de la S.C.H.L. et organisé un programme de mise en oeuvre qui a coûté \$12,000 à la profession (1960-1961); (6) à la recommandation du Comité de l'IRAC et de la S.C.H.L. sur l'habitation, formé un comité d'étude sur le zonage auquel la S.C.H.L. a versé \$7,500; (7) lancé une étude des méthodes d'enfouissement des fils dans les subdivisions résidentielles (1961); (8) constitué un Comité sur la profession chargé d'étudier la place de la profession dans la société d'aujourd'hui (1961); (9) obtenu du Conseil des Arts une subvention de \$3,500 en vue des travaux préliminaires à un inventaire national des édifices d'une valeur architecturale et historique spéciale et, ultérieurement, des sommes de \$900 de la Division des lieux historiques du ministère du Nord canadien afin de rétribuer des élèves de l'École d'architecture de l'Université de Toronto chargés de travaux de mesurage à Kingston (en avril 1961) et dans le comté de Wentworth (en avril 1962); (10) fait admettre le Canada comme membre de l'Union internationale des architectes; (11) resserré les liens avec l'American Institute of Architects et le Royal Institute of British Architects; (12) amélioré l'administration des concours pour les Médailles Massey en architecture, publié 4,500 exemplaires en français et en anglais du catalogue des Médailles Massey en architecture 1961 en vue de la vente au Canada et à l'étranger et organisé pour 1962 et 1963 une tournée aux Etats-Unis de l'exposition de 1961 sous les auspices de la Smithsonian Institution; (13) formé un Comité de préparation du centenaire chargé de déterminer le rôle que la profession pourra jouer dans la préparation des fêtes de 1967 (1960); (14) organisé des réunions en vue d'examiner un plan visant à introduire plus d'art et de sculpture dans l'architecture publique (1960 et 1962); (15) établi une collection de films de l'Institut (1959); (16) constitué un comité chargé de stimuler et d'encourager les travaux de construction en hiver (1962); (17) contribué à l'établissement par l'Organisation des mesures d'urgence d'un Comité consultatif technique chargé des aspects techniques et administratifs des mesures d'urgence (1962).



Massey Medals

Les Médailles Massey

A Critical Examination of the Competition

Examen Critique du Concours

BY JOHN A. RUSSELL (F)

MORE THAN A YEAR HAS PASSED since the 1961 Massey Medals for Architecture exhibition was formally opened by the Governor-General at the National Gallery in Ottawa on November 2, 1961. During that period the 137 panels in the 1961 exhibition have been shown in Vancouver, Edmonton, Regina, Winnipeg, Windsor, Kingston, Sackville, and Halifax. On October 22, an American tour of the Massey Medals exhibition, under the sponsorship of the Smithsonian Institution, was opened at the AIA Octagon Gallery by His Excellency, Charles Ritchie, Canadian Ambassador to Washington. The Massey Medals exhibition, referred to as "Contemporary Canadian Architecture," represents the first major photographic showing of Canadian architecture to tour the United States. The exhibition will remain on American tour until December 31, 1963. Apart from the 1962-1963 tour by the 1961 exhibition through the United States, the 5th Massey Medals for Architecture competition and exhibition, administered wholly by the RAIC, has been featured by the production and sale, in both French and English, of 4,500 copies of a handsomely illustrated brochure. Helping to give the competition an international reputation, the Canada Council and the Department of External Affairs co-

PPLUS D'UN AN S'EST ECOULE depuis l'inauguration officielle, à la Galerie Nationale, de l'exposition "Médailles Massey en architecture, 1961" par le gouverneur général, le 2 novembre 1961. Au cours de cette période, les 137 panneaux composant la collection ont été exposés à Vancouver, Edmonton, Regina, Winnipeg, Windsor, Kingston, Sackville et Halifax. Le 22 octobre, la même exposition, intitulée "Architecture canadienne contemporaine" commençait, sous les auspices de la Smithsonian Institution, une tournée des Etats-Unis, inaugurée à la Galerie Octagon de l'AIA par Son Excellence Charles Ritchie, ambassadeur du Canada à Washington. C'est la première représentation photographique importante de l'architecture canadienne à faire une tournée des Etats-Unis; celle-ci se terminera le 31 décembre 1963. Le 5^e concours pour les Médailles Massey en architecture et l'exposition des oeuvres primées, dont l'administration a été assurée exclusivement par l'IRAC, ont valu, en plus de cette tournée de 1962-1963 aux Etats-Unis, la publication et la vente de 4,500 exemplaires, en anglais et en français, d'une brochure magnifiquement illustrée. Le Conseil des Arts du Canada et le ministère des Affaires extérieures ont aidé à donner à ce concours une réputation internationale en envoyant à l'étranger l'an dernier

operated last winter in sending 800 copies of the brochure abroad. The Royal Institute has shown commendable initiative in producing the Massey Medals brochure and arranging an exhibition tour through the United States.

Tentative plans have already been made by the RAIC to stage the sixth competition early in 1964. Notwithstanding the fact that the competition in 1961 received a record number of entries, it does not necessarily follow that it was the most successful to date or that it has yet achieved maximum fulfillment of its purpose.

The competition was first initiated by the Right Honorable Vincent Massey in 1950, on behalf of the Massey Foundation, with two aims in mind: (a) to recognize outstanding examples of Canadian achievement in the field of architecture, and (b) give encouragement to the members of the architectural profession and promote public interest in their work.

There can be no doubt that the five competitions held thus far have stimulated interest on the part of the public in Canadian architecture, but have they stimulated the maximum interest possible, and have the competitions succeeded in bringing the best Canadian architecture before the public? The large number of entries may indicate only that there is more building being done in Canada than ever before, while some entries may be withheld because of basic disagreement with the competition rules.

Following the conclusion of the 1961 competition, Mr Harland Steele, Immediate Past President of the Institute, wrote to a half dozen firms who had not participated in last year's competition. Based on the replies received, Mr Steele has commented as follows: "It may be asked if the rules of the competition create the proper and desired public conception of architects and architecture, and it should be known why some able architects and architectural firms did not enter the competition. In view of the number of letters I received following the last exhibition, I believe it is time for the RAIC and the profession at large to review the objectives of the competition and the extent to which these objectives are being achieved."

Accordingly, the Massey Medals Committee recommends that a cross-section of the opinions within the profession concerning the value of the Massey Medals competition in its present form be secured by means of a questionnaire. This sheet, which has been perforated for easy removal from the *Journal* and forwarding to the Secretary of the RAIC, 88 Metcalfe St, Ottawa, contains nine questions. Please answer them to the best of your ability and return this sheet to the national office. It is my hope that from the answers to the questionnaire, we shall receive some constructive opinions and advice to guide the Institute and the Massey Medals Committee in administering future competitions.

800 exemplaires de la brochure. L'Institut royal a fait preuve d'un esprit d'initiative qui lui fait honneur en produisant cette brochure et en organisant la tournée de l'exposition outre-frontière.

Déjà l'IRAC a pris certaines mesures préliminaires en vue de la tenue du 6^e concours au début de 1964. Même si l'an dernier les inscriptions ont atteint un nombre sans précédent, il ne faut pas nécessairement en conclure que le concours a été le mieux réussi jusqu'ici, ni qu'il a atteint pleinement son objectif.

Ces concours ont été lancés en 1950 par le très honorable Vincent Massey au nom de la Fondation Massey. Ils ont un double objet: (a) reconnaître les productions exceptionnelles dans le domaine de l'architecture au Canada, et (b) encourager les membres de la profession et intéresser le grand public à leur travail.

Que les cinq concours tenus jusqu'ici aient effectivement accru l'intérêt des Canadiens envers leur architecture, cela ne fait pas de doute. Cependant, ont-ils stimulé cet intérêt autant qu'ils auraient pu le faire et ont-ils valu la présentation au public des meilleures oeuvres canadiennes? Le grand nombre des inscriptions peut vouloir dire tout simplement qu'il y a plus d'activité dans l'industrie du bâtiment et peut-être certaines oeuvres n'ont-elles pas été présentées parce que leurs auteurs n'aimaient pas les règles du concours.

Après la fin du concours de 1961, M. Harland Steele, président sortant de l'Institut, a écrit à une demi-douzaine de maisons d'architectes qui n'avaient pas participé. Après avoir reçu les réponses, il a déclaré: "Il y a lieu de se demander si les règles du concours ont permis de donner au public l'idée juste qu'on voulait lui inculquer des architectes et de l'architecture et pourquoi certains membres ou certains bureaux compétents se sont abstenus de participer. D'après les nombreuses lettres que j'ai reçues, je crois qu'il est temps pour l'Institut et la profession en général de réexaminer les objectifs du concours et de se demander dans quelle mesure ils ont été atteints".

Voilà pourquoi le Comité des Médailles Massey a jugé opportun de consulter les membres de la profession au moyen d'un questionnaire afin de connaître leurs opinions quant à la valeur des concours Massey sous leur forme actuelle. La feuille, qui contient neuf questions, a été perforée afin qu'elle puisse être facilement détachée du *Journal* et adressée au Secrétaire de l'IRAC, 88 rue Metcalfe, Ottawa. Veuillez répondre au mieux de votre connaissance et envoyer la feuille au bureau national. J'espère que nous recevrons des conseils et des avis pratiques, de nature à éclairer l'Institut et le Comité des Médailles Massey dans la tenue des concours futurs.

Massey Medals Competition

QUESTIONNAIRE

| | Yes | No |
|---|-------|-------|
| 1. Should the Massey Medals Competition be continued in its present form? In an amended form?..... | | |
| 2. Should there be 2 judges from outside Canada and 1 from Canada? OR Should there be 1 judge from outside Canada and 2 from Canada?..... | | |
| 3. Should the majority of the judges be practising architects? OR Be chosen from academic field?..... | | |
| 4. Should the two-stage plan of judgment be continued, with the selection of 100 entries at the first stage?..... | | |
| 5. The last competition eliminated the former custom of grouping buildings in categories. Should categories be re-established in the Competition? | | |
| 6. Should all smaller works of architecture (shelters, bridges, garden furniture, etc.) be grouped and judged in a single or special category?..... | | |
| 7. Although travelling costs involved in the jury visiting <i>all</i> buildings would be prohibitive, should the jury visit the buildings tentatively selected for the Gold Medal before awarding same?..... | | |
| 8. Should a brochure containing the 100 entries selected for the second stage be published for each future Competition?..... | | |
| 9. As appointed by the initial terms of reference, establishing the Massey Medals Competition, the RAIC Committee was named to include the Directors of the Schools of Architecture and one practising architect. Should this membership be revised? | | |
| 10. Your personal comments would be welcome (below): | | |

*Please return completed questionnaire to:
Secretary, Royal Architectural Institute
of Canada, 88 Metcalfe St, Ottawa, Ont.*

Signature

Le Concours pour les Médailles Massey

QUESTIONNAIRE

| | Oui | Non |
|---|-------|-------|
| 1. Les concours pour les Médailles Massey doivent-ils être maintenus sous leur forme actuelle?..... | | |
| Sous une forme modifiée?..... | | |
| 2. Devrions-nous avoir 2 juges de l'extérieur et 1 du Canada?..... | | |
| OU Devrions-nous avoir 1 juge de l'extérieur et 2 du Canada?..... | | |
| 3. Les juges devraient-ils, pour la majorité, être des architectes pratiquants?..... | | |
| OU être choisis dans le domaine de l'enseignement?..... | | |
| 4. Y a-t-il lieu de maintenir le régime des deux jugements successifs et le choix de 100 oeuvres lors du premier jugement?..... | | |
| 5. Au dernier concours, on a abandonné la pratique de grouper les bâtiments par catégories. Y aurait-il lieu de rétablir ces catégories?..... | | |
| 6. Y aurait-il lieu de grouper les petites oeuvres d'architecture (abris, ponts, meubles de jardin, etc.) et de les faire juger dans une catégorie à part ou spéciale?..... | | |
| 7. A cause des frais de déplacement, le jury ne saurait aller examiner <i>tous</i> les bâtiments inscrits mais devrait-il aller voir ceux qui lui semblent mériter la médaille d'or avant de décerner effectivement cette médaille?..... | | |
| 8. Y a-t-il lieu de publier pour chacun des concours futurs une brochure illustrant les 100 oeuvres retenues pour le choix définitif des gagnants?..... | | |
| 9. Aux termes du document établissant les concours pour les Médailles Massey, le Comité de l'IRAC se compose des directeurs des écoles d'architecture et d'un architecte pratiquant. Y aurait-il lieu de modifier la composition de ce comité?..... | | |
| 10. Nous serions heureux de recevoir vos observations et des exposés de vos opinions personnelles (dans l'espace ci-dessous): | | |

*Veuillez retourner le questionnaire complète
au: Secrétaire de l'IRAC, 88 rue Metcalfe,
Ottawa, Ont.*

Signature

A Look at the RAIC Financial Position

Situation Financière de l'IRAC

BY C. A. E. FOWLER (F), HONORARY TREASURER, RAIC

This summary is based solely upon material presented in the September 4, 1962 report of the RAIC Committee on the Profession — H. H. G. Moody (F), Chairman; R. S. Morris (F), Peter Thornton (F), Henri Mercier (F), and Peter Dobush (F), which was presented to, and adopted by, the RAIC Council meeting in Montreal on Friday, September 21.

Le résumé qui suit est fondé exclusivement sur les données fournies dans le rapport du 4 septembre 1962 du Comité de l'Institut sur la profession (MM. H. H. G. Moody (F), président, R. S. Morris (F), Peter Thornton (F), Henri Mercier (F) et Peter Dobush (F)), soumis au Conseil de l'Institut et adopté par celui-ci à son assemblée tenue à Montréal le vendredi 21 septembre.

WHEN THE RAIC WAS CREATED 46 years ago to serve architects throughout Canada, Institute funds were derived by subscription fees paid directly to the new national society by individual members.

However, in 1913 — immediately prior to the outbreak of World War I — a system of per capita payments based on a fixed fee of \$2.00 per member was introduced with the co-operation of Provincial Associations.

The record shows that an effort was made in 1920 to increase the per capita contributions to \$5.00, but some component societies objected. Only the Ontario Association of Architects and the Province of Quebec Association of Architects concurred in the increase. During the twenties, per capita payments from the provinces ranged between \$2.00 and \$6.00, dependent upon ability to pay. But by 1929 all associations were contributing at the level of \$5.00 per member.

Twenty-two years passed until the 1951 RAIC Assembly at Quebec City when the Institute secured approval of an overall increase to \$10.00 per member. During the early fifties, with a national membership of about 1,800 architects, the annual Institute budget approximated \$25,000 to \$40,000, since small yearly profits had begun to result from the operations of the RAIC *Journal*. By 1955 the Institute's share of annual profits from the sale of *Journal* advertising reached a record total of more than \$40,000.

During the early fifties, the *Journal* operated almost entirely without opposition in the publishing field. In 1951 a substantial percentage of Institute operating funds were derived from *Journal* profits, with a minor proportion accruing from membership dues. Ten years later — following a 1960 increase in per capita payments from \$10.00 to \$20.00, the situation had been almost completely reversed, with 66% of the RAIC budget for 1961 resulting from membership contributions.

This trend in the past two years to reduce — and ultimately discontinue — the practice of relying on the sale of *Journal* advertising to support Institute activities, has coincided with a realization that the Institute cannot long continue to function on profits paid from year to year by the *Journal* to the RAIC — so long as such profits depend upon the prevailing market situation.

LORS DE SA FONDATION, il y a 46 ans, pour servir les architectes de tout le Canada, l'Institut obtenait ses fonds de souscriptions ou cotisations versées directement par ses membres individuels.

En 1913, immédiatement avant l'ouverture de la Première grande guerre, il est arrivé à établir avec la collaboration des associations provinciales un régime de cotisations fixes de \$2 par membre.

Les annales mentionnent en 1920 une tentative en vue de porter la cotisation individuelle à \$5 mais certaines sociétés constituantes s'y sont opposées. Effectivement, seules les associations de l'Ontario et du Québec y ont consenti. Ainsi, durant les années 1920, les cotisations reçues des provinces variaient entre \$2 et \$6 par membre, selon les moyens des diverses associations. Toutefois, en 1929, le montant était devenu uniformément de \$5 par membre.

La situation est demeurée la même pendant 22 ans, jusqu'en 1951, alors que l'Institut réuni en assemblée annuelle dans la ville de Québec a obtenu l'autorisation de porter la cotisation à \$10. Au cours des premières années 1950, l'Institut pouvait compter sur un budget annuel de l'ordre de \$25,000 à \$40,000 puisqu'il commençait à tirer certains bénéfices de l'exploitation de son *Journal*. En 1955, les recettes de l'Institut du chef de la vente d'annonces dans le *Journal* ont touché un sommet de plus de \$40,000.

Au cours de ces années, le *Journal* ne connaissait à peu près pas de concurrence dans le domaine de la publicité. En 1951, l'Institut tirait le gros de son revenu des bénéfices du *Journal* et une faible partie seulement des cotisations de ses membres. Dix ans plus tard, alors que la cotisation avait été relevée de \$10 à \$20 en 1960, la situation était presque complètement renversée et, en 1961, les cotisations ont représenté 66 p. 100 du budget global.

La tendance que l'on constate depuis deux ans à abandonner graduellement, et éventuellement tout à fait, la pratique de compter sur la vente d'annonces dans le *Journal* pour aider à maintenir l'activité de l'Institut a coïncidé avec la constatation que l'Institut ne peut continuer à compter sur les recettes de ce chef tant que celles-ci seront à la merci des conditions du marché de la publicité.

Imperative to Discontinue Fluctuation in RAIC Earnings

Although the \$10.00 per capita increase in membership dues introduced in 1960 bolstered RAIC revenue from a 1959 figure of \$44,165.18 to \$83,633.85 in 1960, and to \$74,156.33 in 1961, it was clear to the Executive Committee by September 1961 that further steps would soon be imperative to offset the fluctuations in *Journal* profits.

Administration of the 1961 and 1962 RAIC Budgets

The 1960 fee increase augmented the Institute budget by nearly \$24,000, but the significant improvement in the RAIC income position was soon substantially offset by a serious reduction in 1961 *Journal* earnings. At the end of the 1961 financial year the RAIC Council met at Montreal (January 27, 1962) and were advised that the 1961 operations would have produced a small surplus had *Journal* revenues for the year not dropped \$1,000.00 below the original estimate.

Council reviewed the financial situation in detail and instructed the Committee on the Profession to review the problem and submit recommendations. The Committee comprising Messrs. H. H. G. Moody (F), Chairman, R. S. Morris (F), Peter Thornton (F), Henri Mercier (F), and Peter Dobush (F), submitted an 11-page report to the Executive Committee and Council on April 23, 1962, and Council members were asked to record their written views respecting the proposals. Simultaneously, the proposals of the Committee were circulated to members of all Provincial Councils for study and comment. The detailed formula, calling for an increase in the scale of dues payable to Provincial Associations, established on a sliding basis, or calculated in accordance with ability to pay, was considered by members of RAIC Council and by the majority of Provincial Councils, to be extremely difficult to implement administratively. Several Provincial Associations expressed sympathy with the principle of taking prompt and effective action to establish RAIC revenue on a sound basis for the indefinite future.

Vancouver Assembly Unanimously Adopts Resolution Favouring General Fee Increase

When the 55th Annual RAIC Assembly convened at Vancouver last May, the Annual General Meeting unanimously adopted the following motion presented by Mr Moody: "Be it resolved that this General Assembly approve the principle of increasing the revenues of the RAIC organization to the extent of increasing the yearly budget to a minimum total sum of \$85,000, this sum to be exclusive of any revenues derived from the *RAIC Journal*; that all revenue from *The Journal* be allocated to a capital fund; that the Committee on the Profession give further study to a concrete formula by which this increased revenue may be raised. Further, be it resolved that the incoming Council (1962-1963) should arrive at a concrete solution for presentation to, and consideration by, each Provincial Association."

Committee on the Profession Submit Amended Proposal

Meeting in early July, the officers of the Institute requested the Committee on the Profession to re-study the problem, and in September the Committee submitted an amended proposal to Council on the following terms: "That the RAIC assessment for each member should be

Nécessité de Mettre Fin aux Fluctuations des Recettes de l'Institut

Bien que l'addition de \$10 à la cotisation de ses membres en 1960 ait permis à l'Institut d'augmenter ses recettes annuelles de \$44,165.18 en 1959 à \$83,633.85 en 1960 et à \$74,156.33 en 1961, il était devenu manifeste au Comité exécutif en septembre 1961 que de nouvelles mesures s'imposeraient bientôt pour compenser les fluctuations des bénéfices du *Journal*.

Administration des budgets de 1961 et 1962

L'augmentation de la cotisation en 1960 a ajouté au budget annuel de l'Institut près de \$24,000 mais ce supplément devait être en grande partie annulé dès 1961 par une baisse sensible des bénéfices du *Journal*. A la fin de l'exercice financier 1961 (le 27 janvier 1962), le Conseil de l'Institut s'est réuni à Montréal où il a appris que les opérations de l'année se seraient soldées par un léger excédent si les recettes du *Journal* n'avaient pas été de \$1,000 inférieures aux prévisions.

Après un examen détaillé de la situation, le Conseil a demandé au Comité sur la profession, sous la présidence de M. H. H. G. Moody (F) de Winnipeg, de faire une étude de la question et de formuler des recommandations. Le 23 avril 1962, le Comité, composé de MM. H. H. G. Moody, R. S. Morris (F), Peter Thornton (F), Henri Mercier (F) et Peter Dobush (F), a soumis au Comité exécutif et au Conseil un rapport de 11 pages; les membres du Conseil ont été invités à exprimer par écrit leurs opinions au sujet des recommandations formulées. En même temps, les propositions du Comité ont été envoyées aux membres des conseils provinciaux avec prière de les étudier et de faire connaître leurs impressions. La formule prévoyant une augmentation des cotisations payables aux associations provinciales selon une échelle mobile ou selon les moyens a semblé aux membres du Conseil de l'Institut et de la majorité des conseils provinciaux d'application très difficile du point de vue administratif. Plusieurs associations provinciales se sont prononcées en faveur du principe d'agir promptement et de prendre des mesures efficaces afin de placer le revenu de l'Institut sur une base solide pendant une période indéfinie.

Adoption à l'Unanimité à Vancouver d'une Résolution en Faveur d'un Relèvement de la Cotisation

Au cours de la 55^e assemblée annuelle de l'Institut à Vancouver, en mai dernier, M. H. H. G. Moody a proposé la motion suivante qui a été adoptée à l'unanimité: "Il est résolu que la présente assemblée générale approuve en principe l'accroissement des recettes de l'IRAC de façon à porter le budget annuel dudit Institut à un minimum de \$85,000 à l'exclusion de toute somme reçue du *Journal*, que toutes les recettes tirées du *Journal* soient versées à une caisse de capital et que le Comité sur la profession continue sa recherche d'une formule concrète permettant d'obtenir ce montant accru. Il est en outre résolu que le prochain Conseil (1962-1963) devra en arriver à une solution concrète à soumettre à l'étude de chaque association provinciale."

Nouveau projet soumis par le Comité sur la profession

Lors d'une réunion tenue au début de juillet, les dirigeants de l'Institut ont invité le Comité sur la profession à étudier de nouveau la question et, en septembre, celui-

raised from the present amount of \$20 per member to \$35 per year." At the September 21 meeting of RAIC Council, a motion by Mr Moody, seconded by Francis Nobbs (F), Montreal, proposed a concrete formula for assessing each member of the RAIC at the rate of \$35, the amount to be collected by each Provincial Association from its own members and forwarded to the Treasurer of the RAIC for the purpose of conducting Institute affairs. After discussion within the Council, the motion was amended to suggest that Provincial Associations might follow the formula and could use an "ability to pay" method so long as the total amount remitted to the RAIC is equal to an amount calculated on the basis of \$35 per member of that Association. The motion was duly endorsed by Council.

In the meantime, four Provincial Associations — Newfoundland, New Brunswick, Saskatchewan and, in semi-annual convention, Nova Scotia, have notified the RAIC that their full membership supports the proposed increase in per capita fees. It is expected that the fee increase proposal will be submitted by the remaining associations to the following provincial conventions: Manitoba Association of Architects, Winnipeg, January 19; Alberta Association of Architects, Edmonton, January 25-26; Province of Quebec Association of Architects, Lac Beauport, January 24-26; Nova Scotia Association of Architects, Halifax, February 1-2; Ontario Association of Architects, Toronto, February 7-9.

ci a présenté une nouvelle proposition au Conseil en ces termes: "Que la cotisation de chaque membre à l'Institut soit portée, de son chiffre actuel de \$20, à \$35 par année". A l'assemblée du Conseil de l'Institut, le 21 septembre, *M. Moody*, appuyé par *M. Francis Nobbs (F)* de Montréal, a proposé une formule précise visant à obtenir de chaque membre une cotisation de \$35 perçue par les diverses associations provinciales et remise au trésorier de l'Institut pour la bonne conduite des affaires de ce dernier. Après discussions au Conseil, la motion a été modifiée de façon à permettre aux associations provinciales de suivre la formule proposée ou d'adopter une méthode fondée sur les moyens de chacun pourvu que le montant global remis à l'Institut soit égal à \$35 pour chaque membre de l'association en cause. Cette dernière motion a été approuvée par le Conseil.

Entre-temps, trois associations provinciales, celles de Terre-Neuve, du Nouveau-Brunswick et de la Saskatchewan, ont avisé l'Institut que tous leurs membres approuvaient l'augmentation proposée. On espère que les autres associations étudieront la questions à leurs assemblées générales qui auront lieu ainsi qu'il suit: Association du Manitoba, à Winnipeg le 19 janvier; Association de l'Alberta, à Edmonton les 25 et 26 janvier; Association de la province de Québec, au Lac Beauport du 24 au 26 janvier; Association de la Nouvelle-Ecosse, à Halifax les 1 et 2 février; Association de l'Ontario, à Toronto du 7 au 9 février.

RAIC Publications, Documents, Films

ONE OF THE ESSENTIAL SERVICES OF THE RAIC, and one which has been taking on increasing significance year by year, is the circulation of documents, legal contract forms and publications of various kinds to members of the profession, to students at various levels of academic interest and to the general public.

In the past twelve months, the demand for quantities of legal documents has increased by approximately fifty per cent, and the dollar sales of contract documents of all kinds has materially increased. In addition, the undertaking by the Royal Institute of new activities, for example, the Report of the Committee of Inquiry into the Design of the Residential Environment and its ultimate implementation program, and the administration of the periodic Massey Medals for Architecture Competitions, has resulted in the publication of brochures and printed material offering considerable interest to architects and laymen alike.

The growing public relations program within the Institute has stimulated the acquisition of eight films and film strips, which, over the past four years, have been given wide circulation in architectural chapters across Canada and to lay audiences.

In order to better acquaint the national membership with the scope of the legal documents, publications and films available from the Institute, the following listing is provided:

Publications

Act of Incorporation and By-Laws of the RAIC*
Architecture as a Vocation*

UN DES PRINCIPAUX SERVICES DE L'INSTITUT, et il prend chaque année de plus en plus d'importance, consiste à mettre à la disposition de ses membres, des étudiants de divers niveaux scolaires et du public en général des documents, des formules-types de contrat et des publications de toutes sortes.

Au cours des douze derniers mois, la demande de documents juridiques a augmenté d'environ 50 p. 100 en volume et on a noté une hausse sensible du montant des ventes de diverses formules de contrat. En outre, par suite de nouvelles initiatives, comme la préparation du rapport du Comité d'enquête sur les conditions de l'habitation et le programme de mise en oeuvre qui en est résulté, ainsi que l'administration des concours périodiques pour les Médailles Massey en architecture, l'Institut a été amené à publier diverses brochures et autres imprimés de grand intérêt à la fois pour les architectes et pour le grand public.

Enfin, pour répondre aux besoins de son programme accru de relations publiques, l'Institut a fait l'acquisition de huit films et courts métrages qui, au cours des quatre dernières années, ont été en forte demande dans les associations locales d'architectes et dans les milieux profanes de tout le Canada.

Afin de faire mieux connaître à tous les membres la nature des documents juridiques, des publications et des films que l'Institut met à leur disposition, nous en donnons ci-après la liste:

Publications

Loi constitutive et règlements de l'IRAC
L'architecture comme carrière

Guide to the Preparation of Effective Product Literature*

Massey Medals for Architecture 1961*

RAIC Annual Report 1961-62*

RAIC List of Members 1962

Report of the Committee of Inquiry into the Design of the Residential Environment*

Standard Filing System and Alphabetical Index

A Suggested Guide to Bidding Procedure*

A Suggested Minimum Syllabus of Study

(*available in French and English)

Documents

RAIC Document No. 6AQ – The Standard Form of Agreement Between Client and Architect

RAIC Document No. 6AQ-F – French version of No. 6AQ

RAIC Document No. 10 – Canadian Standard Form of Construction Tender

RAIC Document No. 10-F – French version of No. 10

RAIC Document No. 12 – Canadian Standard Form of Construction Contract – Stipulated Sum

RAIC Document No. 12-F – French version of No. 12

RAIC Document No. 13 – Canadian Standard Form of Construction Contract – Cost Plus or Fixed Fee

RAIC Document No. 13-F – French version of No. 13

Films

Buildings for Business: This film provides information to clients concerning the various procedures necessary in securing competent design services for the erection of factory-type buildings. (14 minutes; sound; colour; 16 mm.; 1959.)

Designing a Better Tomorrow – A Career in Architecture: Produced as a vocational guidance aid for showings to high and junior high school students. The film provides a graphic short course on the meaning of architecture in general and is highly recommended for civic, service and other lay groups. The film explains to both youth and adult groups the attitudes, interests and educational preparation which are desirable for the study of architecture as a career. (14 minutes; sound; colour; 16 mm.; 1959.)

Form, Design and the City: This film depicts the role of city planning in the development of Philadelphia. Under the guidance of Edmund Bacon, AIA, Executive Director of the City Planning Commission one learns what has been done and what is planned for the future. The film may serve as an example to other cities and stimulate their own planning activities. (57 minutes; sound; colour; 16 mm.; 1961.) (Available 1 Jan. 1963.)

A New Age of Architecture: Presents the view of sixteen leading architects, builders and planners on accommodating the tremendous population growth expected in the United States during the ten year period 1957-67. The film provides an introduction to some of the architects "who are shaping the new face of America and influencing building design all over the world". The late Frank Lloyd Wright discusses his approach to problems of site and construction; Eero Saarinen, Edward Stone, Buckminster Fuller, Mies van der Rohe, explain the principles on which their work is based. (30 minutes; sound; black and white; 16 mm.; 1957.)

A Place to Worship: This film strip explains to public groups, and primarily to the average church building

Guide pour la documentation efficace des matériaux de construction

Médailles Massey en architecture, 1961

Rapport annuel de l'IRAC, 1961-1962

RAIC List of Members 1962

Rapport du Comité d'enquête sur les conditions de l'habitation

Standard Filing System and Alphabetical Index

Guide du soumissionnaire

Suggested Minimum Syllabus of Study

Documents

Document de l'IRAC no 6AQ-F – Formule-type de convention entre client et architecte

RAIC Document No. 6AQ – Version anglaise du no 6AQ-F.

Document de l'IRAC no 10-F – Formule-type de soumission pour travaux de construction

RAIC Document No. 10 – Version anglaise du no 10-F

Document de l'IRAC no 12-F – Formule canadienne type de contrat de construction – Somme stipulée

RAIC Document No. 12 – Version anglaise du no 12-F

Document de l'IRAC no 13-F – Formule-type de contrat de construction – Coût plus pourcentage ou somme déterminée

RAIC Document No. 13 – Version anglaise du no 13-F

Films

Buildings for Business: Indique aux clients comment obtenir de bons services de dessinateurs pour la construction d'usines. (14 minutes, sonore, en couleurs, 16 mm, 1959)

Designing a Better Tomorrow – A Career in Architecture: Produit pour aider à l'orientation professionnelle des élèves d'écoles secondaires. Ce film présente en abrégé un cours sur le sens de l'architecture en général et est fortement recommandé pour les services publics et autres groupes de profanes. Il indique les goûts, les intérêts et la formation scolaire que doit avoir celui qui songe à étudier l'architecture en vue d'en faire une carrière. (14 minutes, sonore, en couleurs, 16 mm, 1959)

Form, Design and the City: Expose le rôle qu'a joué l'urbanisme dans l'aménagement de Philadelphie. Sous la direction de M. Edmund Bacon, AIA, directeur administratif de la Commission d'urbanisme, le spectateur apprend ce qui a été accompli et ce qui a été préparé pour l'avenir. Ce film peut servir d'exemple à d'autres villes et stimuler leur activité dans le domaine de l'urbanisme. (57 minutes, sonore, en couleurs, 16 mm, 1961) (Disponible à compter du 1^{er} janvier 1963)

A New Age of Architecture: Présente les opinions de seize architectes, constructeurs et aménageurs éminents sur les moyens de faire face à l'augmentation considérable de la population des Etats-Unis prévue pour la période de 1957 à 1967. Ce film fait connaître sous un nouveau jour certains des architectes "qui préparent l'Amérique de demain et exercent une grande influence sur les formes des bâtiments dans le monde entier". Feu Frank Lloyd Wright expose sa façon de résoudre les problèmes d'emplacement et de construction. Eero Saarinen, Edward Stone, Buckminster Fuller et Mies van der Rohe indiquent les principes qui les guident dans

committee, the manner in which the planning of religious architecture should be approached. Emphasis is placed upon the relationship between the building group and the architect. The architect's role and function are described in point-by-point fashion. The film blends a free-hand drawing technique in limited animation with the use of colour photography illustrating both past and present examples of religious architecture. (14 minutes; sound; colour; 16 mm.; 1958.)

A School for Johnny: This film addresses itself to the problem of filling the need for more schools without overstraining community resources. It explains in detail how the architect goes about designing a school for Johnny. Prevalent misconceptions about cost comparisons and "low cost" designs are cleared up in the process. The Disney-like semi-animated colour cartoons and charts are designed to entertain as well as educate. (14 minutes; sound; colour; 16 mm.; 1958.)

What is a House?: To illustrate the architect's essential role in residential design, this film traces the evolution of the American house from the "carpenter classic" to the residence of the future. It briefly acquaints the audience with some of the problems of site planning, orientation, and building technology as well as the social and economic needs which must be considered to make a house a home. Several colour photographs of typical contemporary homes are included. The story itself is told in Disney-like, gay and graphic cartoons. (14 minutes; sound; colour; 16 mm.; 1958.)

Members who wish to acquire any of the publications, documents and films available from the Institute, may do so by writing to Maurice Holdham, Secretary of the RAIC, 88 Metcalfe Street, Ottawa, Ont.

leur travail. (30 minutes, sonore, noir et blanc, 16 mm, 1957)

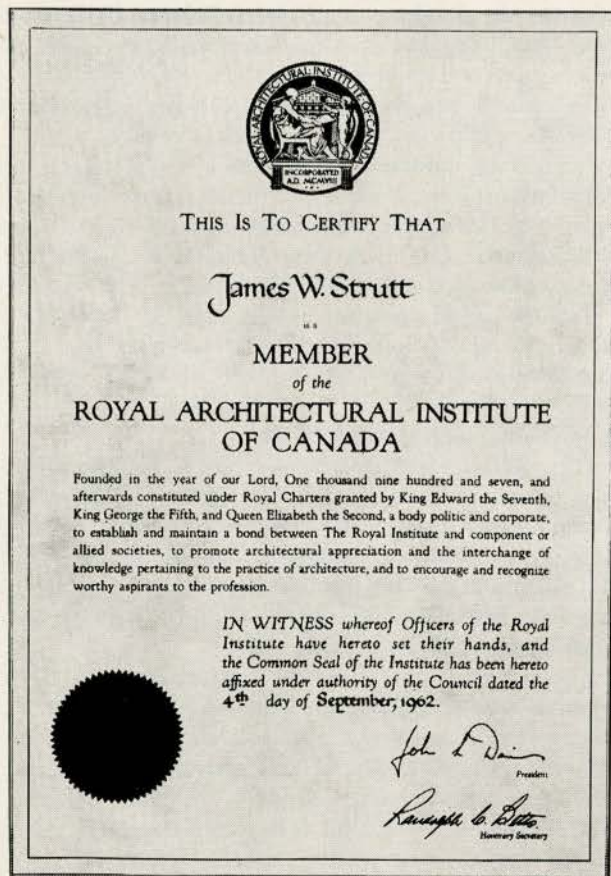
A Place of Worship: Ce court métrage expose au public et en particulier aux comités ordinaires chargés de la construction d'églises les principes à suivre en architecture religieuse. Il insiste sur les relations entre le comité de construction et l'architecte et décrit point par point le rôle et les fonctions de ce dernier. Le film allie le dessin à main levée à la photographie en couleurs de modèles passés et présents d'architecture religieuse. (14 minutes, sonore, en couleurs, 16 mm, 1958)

A School for Johnny: Ce film porte sur le problème qui consiste à construire les écoles nécessaires sans grever outre mesure les ressources d'une localité. Il expose en détail les moyens que prend l'architecte pour établir les plans d'une école et, ce faisant, élimine les idées fausses qui ont cours sur les frais de construction et les modèles dits "à bon marché".

Ce film composé de dessins mi-animés et de graphiques est tout aussi amusant qu'instructif. (14 minutes, sonore, en couleurs, 16 mm, 1958)

What is a House?: Afin d'illustrer la nécessité de l'architecte dans la préparation des plans des habitations, ce film suit l'évolution de la maison américaine depuis les "constructions de charpentiers" jusqu'à la maison de demain. Il expose brièvement certains problèmes d'emplacement, d'orientation et de techniques de construction et indique les facteurs sociaux et économiques dont il faut tenir compte pour faire d'une maison un véritable foyer. Il contient des photographies en couleurs de plusieurs maisons contemporaines typiques. Le film proprement dit est en gais dessins animés. (14 minutes, sonore, en couleurs, 16 mm, 1958)

Les membres désireux d'obtenir ces publications, documents et films peuvent les demander par écrit à M. Maurice Holdham, Secrétaire de l'IRAC, 88 rue Metcalfe, Ottawa (Ont.).



RAIC Membership Certificate

AFTER 46 YEARS OF EXISTENCE, the RAIC has created a membership certificate which is calculated to fill a long felt need for a means of professional identification.

The new certificate, measuring 22" x 15," is printed and lettered in black, with the seal of the Institute in dark blue. It is available in English or French. The first copy of the new certificate of membership in the Royal Architectural Institute of Canada was issued in September to James W. Strutt (F), of Ottawa. During the past two months more than 100 certificates have been ordered by Institute members. They may be obtained from the RAIC Secretary at a cost of \$5.00. After October 1, 1962, certificates were being issued to new members without charge.

The Federal Government and the RAIC

Le Gouvernement Fédéral et l'IRAC

BY ROBBINS ELLIOTT, EXECUTIVE DIRECTOR

AFTER RESIDING IN OTTAWA for more than fifteen years and having the opportunity to observe the complexities of our federal government system, from both inside the government and out, I am perhaps qualified to comment on the relationship between the architectural profession and the vast machinery of government in the National Capital.

Nine out of ten members of the RAIC will be surprised to learn that, month in and month out, whether infrequently or on a regular basis, the Institute office conducts business of one kind or another with at least 22 federal departments or agencies.

With its annual expenditure of over \$7 billion, the construction industry is the leading Canadian industry. Unfortunately, the construction industry is incapable of cohesive organization such as is enjoyed by the transportation, automotive and air industries. Of American architects, *Ned Purves* (former Executive Director of the American Institute of Architects) has said: "*The architects, like others, naturally see themselves as leaders, forgetting for a moment that in a democracy control is generally by numbers. . . . That the architectural profession enjoys a uniquely universal respect in the industry can be attributed to the architect's technical knowledge, his imagination, his energy and the recognition of his qualities as a just and learned man*".

However, with only 2,300 architects in Canada it is rather obvious that if all practitioners in this land voted the same way it would not make any difference. Taking an overall look at the construction industry from the government's point of view, we are not so far aware of any sentiment to regard the industry as unified or as a single entity capable of wielding its power as such. The elements of the industry do, however, have a singular way, when their leaders are intelligent and knowledgeable, of banding together for a common cause.

In the act of creating, with the Canadian Construction Association and the Association of Consulting Engineers of Canada, the Canadian Joint Committee on Construction Materials; and in forming with the Canadian Council of Professional Engineers a National Joint Architect-Engineer Committee, we have found common cause.

But the unilateral contacts, which now exist between the RAIC office and dozens of helpful and co-operative officials at all levels of government responsibility in Ottawa, are perhaps worth reviewing in detail. RAIC-government liaison can be divided into two categories, the group of agencies with whom association is frequent and close, and those with whom contact is occasional only.

APRES AVOIR VECU à Ottawa pendant plus de quinze ans et avoir eu, durant cette période, l'occasion d'examiner de l'intérieur et de l'extérieur les complexités de notre régime de gouvernement fédéral, je pense être en mesure de parler des relations qui existent entre la profession d'architecte et la vaste administration qui a son siège dans la capitale nationale.

Neuf sur dix des membres de l'Institut apprendront avec surprise que chaque mois le bureau de l'Institut doit traiter de questions quelconques, soit de façon occasionnelle soit de façon régulière, avec au moins 22 ministères et organismes fédéraux.

Par son chiffre d'affaires de plus de 7 milliards de dollars par année, la construction est la principale industrie au Canada. Malheureusement, elle est incapable de présenter la même mesure de cohésion que les industries du transport, de l'automobile et des services aériens. M. Ned Purves, ancien directeur administratif de l'American Institute of Architects, disait des architectes américains: "Les architectes, comme les autres citoyens, ont naturellement tendance à se considérer comme des chefs, oubliant qu'en démocratie l'influence vient généralement du nombre. . . Si la profession d'architecte jouit dans l'industrie d'un respect universel inégalé, elle le doit aux connaissances techniques, à l'imagination et à l'énergie de ses membres et au fait que ceux-ci sont reconnus comme des hommes justes et éclairés".

Cependant, comme il y a à peine 2,300 architectes au Canada, il est assez évident que, même si tous s'unissaient pour voter, les répercussions n'en seraient pas très sensibles. Pour ce qui est de l'ensemble de l'industrie de la construction, rien ne porte à croire que le gouvernement y voit une entité distincte, solide, capable d'exercer sa puissance comme telle. Cependant, lorsque leurs chefs sont intelligents et ont l'esprit ouvert, les divers éléments de cette industrie ont une façon bien à eux de s'unir pour la défense d'une cause commune.

C'est précisément une de ces causes communes que nous avons trouvée lorsqu'il s'est agi de former avec la Canadian Construction Association et l'Association des ingénieurs-conseils du Canada le Comité national mixte des matériaux de construction ou, avec le Conseil national des ingénieurs professionnels, un Comité national mixte des architectes et ingénieurs.

Cependant, il peut être bon d'examiner en détail les relations que le bureau de l'Institut maintient de son propre chef avec des douzaines de hauts fonctionnaires très bien disposés à aider et à collaborer, à tous les échelons de l'administration à Ottawa. Du point de vue de cette liaison entre l'Institut et le gouvernement, les organismes fédéraux peuvent être répartis en deux catégories:

Public Archives

The RAIC has worked in co-operation with the Dominion Archivist and National Librarian in developing long-term plans for a permanent inventory of historic buildings to be maintained in the Public Archives of Canada.

Canada Council

Starting in 1959, the Canada Council has contributed \$3,500 to the first stage of an inventory program, a sum of \$1,500 toward the publication of the 1961 Massey Medals for Architecture illustrated brochure, and a sum of \$1,400 to aid school of architecture faculty members to attend the 1962 RAIC Assembly in Vancouver.

Central Mortgage and Housing Corporation

In 1957-58 CMHC and RAIC established a Joint Committee on Housing; in 1959-60 the Corporation made a grant of \$30,000 to create the Committee of Enquiry into the Design of the Residential Environment; in 1961 the Corporation gave a \$1,000 grant to aid publication of a Massey Medals Brochure, and in 1962 contributed \$7,500 to finance the creation of an RAIC Zoning Study Committee.

Canadian Broadcasting Corporation

In radio and television programming relating to architecture, planning and construction, the RAIC maintains close contact with officials at head office and in the local Ottawa stations.

Citizenship and Immigration

Consultation is carried on with Immigration authorities on government policy about entry of qualified architects from abroad on a temporary or permanent basis.

ceux avec qui nous sommes en relations étroites et fréquentes et ceux avec qui nous communiquons à l'occasion seulement.

Affaires extérieures

En mars 1958, l'Institut a nommé, à la demande du Sous-secrétaire d'Etat aux Affaires extérieures, trois représentants à un Comité consultatif sur l'architecture à l'étranger créé par suite du désir du gouvernement d'accélérer l'établissement des plans et la construction des bâtiments requis par les représentants du Canada outre-mer. L'Institut a aussi des consultations avec le ministère des Affaires extérieures au sujet de la circulation d'expositions d'architecture à l'étranger et du choix des personnes déléguées aux conférences internationales.

Aide extérieure

Par l'entremise de son comité des relations internationales, l'Institut étudie les moyens d'établir un service de nature à répondre aux besoins croissants des pays sous-développés, soit en envoyant des spécialistes canadiens à l'étranger, soit en faisant venir au Canada des étudiants méritants.

Archives publiques

L'Institut a travaillé en étroite collaboration avec l'archiviste du Canada et le bibliothécaire national à la préparation de plans à longue échéance en vue du maintien aux Archives publiques du Canada d'un inventaire permanent des édifices historiques.

Bureau fédéral de la statistique

Des dirigeants du Bureau fédéral de la statistique ont étudié la possibilité d'organiser des relevés annuels du volume des diverses catégories de travaux confiés aux bureaux d'architectes.

Citoyenneté et Immigration

L'Institut a des consultations avec les autorités de l'immigration au sujet de la politique du gouvernement en ce qui a trait à l'admission, à titre provisoire ou permanent, d'architectes diplômés de l'étranger.

Commerce

L'Institut a étudié l'à-propos de faire inclure des architectes dans les missions commerciales envoyées à l'étranger.

Commission de la capitale nationale

Par l'entremise de comités consultatifs, la profession est en relations constantes avec la Commission en ce qui a trait aux plans d'aménagement de la région de la capitale nationale. On prévoit la tenue d'un colloque de

Certificat de membre de l'IRAC

Après 46 ans d'existence, l'Institut vient de préparer un certificat de membre qui, croit-on, répondra à un besoin d'identification professionnelle qui se faisait sentir depuis longtemps. Le nouveau parchemin, de 22 pouces sur 15, est imprimé et écrit en noir et porte le sceau de l'Institut en bleu foncé. Il est offert en anglais ou en français. Le premier exemplaire français a été remis à M. Gérard Venne (F), de Québec. Au cours des deux derniers mois, des commandes ont été reçues de plus de cent membres. Le certificat peut être obtenu du secrétaire de l'Institut au prix de \$5. Depuis le 1^{er} octobre 1962, il est remis gratuitement aux nouveaux membres.



Civil Service Commission

The RAIC has been proposing that Commission advertisements for architects to fill positions should stipulate that the candidate must be registered in a provincial association, which practice is not now mandatory.

Division of Building Research (National Research Council)

Over many years the Division of Building Research, under the efficient direction of Mr R. F. Legget, has maintained effective liaison with the RAIC Standing Committee on Building Research. A joint DBR-RAIC Committee meeting is scheduled for Ottawa next February.

Dominion Bureau of Statistics

DBS officers have discussed the development of annual surveys of work volume in various categories going through architectural offices.

Exhibition Commission

The Commission has offered assistance in creating and displaying a proposed \$10,000 exhibition of 60 representative Canadian buildings of architectural and historic merit to illustrate the proposed National Inventory Program.

Emergency Measures Organization

After the engineering and architectural professions offered their services to the Prime Minister in September 1961, further staff liaison led to two courses at Arnprior, Ont., specially prepared for participation by architects and engineers, and the creation of a technical advisory committee in November 1962 (two RAIC representatives).

External Aid

Through the International Relations Committee, the RAIC is exploring ways and means of providing a service to meet the growing requirements of underdeveloped countries, either by taking Canadian skills abroad or bringing qualified students to Canada.

External Affairs

At the request of the Under Secretary of External Affairs in March 1958, the RAIC named three representatives to an Advisory Committee on Architecture Abroad which had resulted from the government's desire to accelerate the design and erection of structures for Canadian representatives overseas. The RAIC also consults with External Affairs on the circulation of architectural exhibitions abroad, and the selection of persons to attend international conferences.

Justice (Commissioner of Penitentiaries)

The Institute maintains liaison with the Office of the Commissioner relative to the design of penitentiaries and custodial institutions.

Labor

In conjunction with the Department of Labor and with the Unemployment Insurance Commission, the RAIC operates a sub-committee on wintertime construction, encouraging year-round tendering; the Economics and Research Branch co-operates with the Institute on periodic wage and salary surveys.

National Capital Commission

Through advisory committees the profession main-

tenées professionnelles (IRAC, EIC et TPIC) en 1963 en vue d'une étude approfondie du Plan de la capitale nationale.

Commission des expositions

La Commission a offert d'aider à la préparation et à la présentation d'une exposition de \$10,000 comprenant des illustrations de 60 édifices canadiens choisis pour leur valeur architecturale et historique et destinée à faire connaître le programme projeté d'inventaire national.

Commission du service civil

L'Institut a fait des démarches afin d'obtenir que les annonces de concours de la Commission pour le recrutement d'architectes portent que les candidats doivent être membres inscrits d'une association provinciale, ce qui n'est pas de pratique obligatoire en ce moment.

Commission du tarif

En février 1961, l'Institut a présenté à la Commission du tarif du Canada un mémoire demandant le maintien du *status quo* en matière d'évaluation douanière des plans, dessins et bleus importés. Lorsque le président de la Commission a présenté son rapport au ministre des Finances au printemps de 1962, l'Institut a fait connaître à ce dernier sa vive opposition aux recommandations formulées.

Conseil des Arts

Depuis 1959, le Conseil des Arts du Canada a versé \$3,500 comme contribution à la première étape du programme d'inventaire, \$1,500 pour la publication d'une brochure illustrée à l'occasion du concours pour les Médailles Massey en architecture de 1961 et \$1,400 pour permettre aux membres du personnel enseignant des écoles d'architecture d'assister à l'assemblée générale de l'Institut à Vancouver en 1962.

Division de la recherche en bâtiment (Conseil national de recherches)

Depuis plusieurs années, la Division de la recherche en bâtiment, sous l'habile direction de M. R. F. Leggett, maintient d'étroites relations avec le Comité permanent de l'Institut sur la recherche en bâtiment. Une réunion du Comité mixte du Conseil national de recherches et de l'IRAC doit avoir lieu à Ottawa en février prochain.

Galerie Nationale

Tous les trois ans, la Galerie Nationale reçoit l'Institut à l'occasion de l'inauguration officielle de l'exposition "Médailles Massey en architecture" par le gouverneur général.

Justice (Commissaire des pénitenciers)

L'Institut maintient des relations avec le bureau du Commissaire des pénitenciers en ce qui a trait aux plans de pénitenciers et autres institutions de détention.

Musée National

L'an dernier, le Musée a été pour l'Institut d'une aide précieuse dans le montage de l'exposition "4,000 ans d'architecture mexicaine" offerte à l'Institut par la Société des architectes du Mexique.

Nord canadien

Par l'entremise de sa Division des lieux historiques, ce ministère a versé des sommes de \$900 à l'École d'architecture de l'Université de Toronto pour des travaux de mesurage à Kingston en 1962 et dans le comté de Wentworth (Hamilton) en 1962.

tains continuous contact with the Commission on plans for the development of the National Capital area. It is expected that a symposium of representatives from professional societies (RAIC, EIC and TPIC) will be convened in 1963 to assess the National Capital Plan in depth.

National Gallery

The National Gallery acts as host every third year for the formal opening by the Governor-General of the Massey Medals for Architecture Exhibition.

National Museum

The Museum gave valuable aid last year in assisting the RAIC to mount the "4,000 Years of Mexican Architecture" exhibition presented to the Institute by the Mexican Society of Architects.

National Film Board

The RAIC has asked the Government Film Commissioner to produce a Centenary film about the historical growth of architecture in Canada; it seeks to have the NFB stills photo section in Ottawa maintain a central registry of negatives of outstanding buildings entered in Massey Medals and other competitions of direct interest to the profession.

National Revenue

Customs Division: Concerning tariff items 180e and 180f, the Institute maintains contact with the Customs Division on the valuation established for imported plans, drawings and blueprints.

Taxation Division: Representations have been made to the Deputy Minister regarding the method employed in releasing information about the average income of tax paying members of the profession. This contact will continue to be investigated closely.

Northern Affairs

Through the Historic Sites Division \$900 increments were provided for the school of Architecture, University of Toronto measuring projects at Kingston in 1961 and Wentworth County (Hamilton) in 1962.

Public Works

After representations made to the Minister of Public Works in early 1959, the Institute secured (effective May 1st, 1960) a revised fee structure applying to future federal commissions. The RAIC is consulted about the availability of senior architects to serve on selection boards for the review of applications for architect vacancies.

Trade and Commerce

The Institute has explored architectural participation on exploratory trade missions going abroad.

Tariff Board

The Institute submitted a brief to the Tariff Board of Canada in February 1961 asking that the status quo in respect to the valuation on imported plans, drawings and blueprints be maintained. As a result of a report made by the Chairman of the Tariff Board to the Minister of Finance in the Spring of 1962, strong representations have been made to the Minister of Finance in opposition to the recommendations submitted by the Chairman of the Tariff Board.

Office national du film

L'Institut a demandé au Commissaire du film du gouvernement de produire à l'occasion du Centenaire un film sur l'évolution de l'architecture au Canada. Il cherche aussi à obtenir de la section des photographies de l'O.N.F. le maintien d'un casier central comprenant les négatifs des principaux bâtiments inscrits aux concours pour les Médailles Massey et autres concours d'intérêt immédiat pour la profession.

Organisation des mesures d'urgence

Les relations établies entre les membres des personnels après que les professions d'ingénieur et d'architecte eurent offert leurs services au premier ministre en septembre 1961 ont abouti à la tenue à Arnprior (Ontario) de deux cours spécialement préparés à l'intention des architectes et des ingénieurs, ainsi qu'à la création en novembre 1962 d'un comité consultatif technique comprenant deux représentants de l'Institut.

Revenu national

Division de la douane: L'Institut se tient en relations constantes avec la Division de la douane au sujet de l'évaluation pour fins douanières des plans, dessins et bleus importés sous le régime des postes tarifaires 180e et 180f.

Division de l'impôt: Des représentations ont été faites au sous-ministre au sujet de la méthode employée pour publier des renseignements sur le revenu moyen des contribuables membres de la profession. Ces relations seront maintenues.

Société centrale d'hypothèques et de logement

En 1957-1958, la S.C.H.L. et l'Institut ont établi un comité mixte sur l'habitation; en 1959-1960, la Société a versé la somme de \$30,000 pour la formation d'un comité d'enquête sur les conditions de l'habitation; en 1961, elle a contribué \$1,000 à la publication de la brochure sur les Médailles Massey et, cette année, elle a fait un don de \$7,500 en vue d'aider à financier la création au sein de l'Institut d'un comité d'étude sur le zonage.

Société Radio-Canada

L'Institut maintient des relations étroites avec les dirigeants de l'administration centrale et des postes locaux d'Ottawa de Radio-Canada pour la préparation des émissions à la radio et à la télévision portant sur l'architecture, la planification et la construction.

Travail

L'Institut a établi, avec le concours du ministère du Travail et de la Commission d'assurance-chômage, un comité de construction en hiver chargé d'encourager les demandes de soumissions pendant toutes les saisons de l'année. La Direction de l'économique et des recherches collabore aussi avec l'Institut à l'égard de relevés périodiques des salaires.

Travaux public

A la suite de représentations faites au ministre des Travaux publics au début de 1959, l'Institut a obtenu, à compter du 1^{er} mai 1960, un nouveau tarif d'honoraires applicable aux futures commissions fédérales. L'Institut est consulté quant au choix d'architectes pour faire partie des commissions chargées d'examiner les candidatures aux concours en vue du recrutement d'architectes.

The College of Fellows

Le Collège des Agrégés

BY DR THOMAS HOWARTH (F), DIRECTOR,
SCHOOL OF ARCHITECTURE, UNIVERSITY OF TORONTO

ACCORDING TO ARTICLE IV of the By-laws of the Royal Architectural Institute of Canada, "A member who is over 35 years of age and who has achieved professional eminence or rendered distinctive service to the profession, shall be eligible for nomination to Fellowship". At the present time the College of Fellows consists of 162 Fellows from among the approximately 2,300 members of the Royal Institute. The number of Fellows at any one time is maintained now at about eight per cent of the total membership of the Institute.

Nominations for Fellowship must be made by a Fellow supported by two other Fellows. The nomination paper must set forth the grounds — professional eminence, services to the profession and artistic ability — on which the claim to recognition is put forward.

The choice of the quasi-academic title of "College of Fellows" is not easy to account for. It seems to have had no precedent in a professional organization and those who played an active part in its foundation claim that the College was the first of its kind. Certainly no precedent is offered by the Royal Institute of British Architects, in which the conferring of the Fellowship is dealt with in a dignified and straightforward manner. At the Annual General Meeting, senior members of the profession so honoured merely advance to receive their diploma from the President, who greets them with a handshake. The American Institute of Architects at this time offered no parallel either, although, in recent years, the proceedings have been formalized and a ritual has been established similar to that practiced by the College of Fellows of the RAIC.

A meeting of the Executive Committee of the RAIC on January 17, 1941, authorized the creation of "*The College of Fellows*". It was further agreed that the head, or presiding officer be designated "*Chancellor*", the vice-head "*Dean*", and the Secretary, or Recording Officer "*Registrar*", with a Council or Board of eight members appointed from the eight largest geographical centres of membership. This group would have the title of "*Senate*". The principal convocation of the College was to be held at the time and place of the Annual Meeting of the RAIC, when the installation of new Fellows would take place; and at this time also the regular business of the College would be transacted. The Annual Meeting of Fellows was to be in two parts; the first, known as the ritual of installation would be private and would take place in the

AUX TERMES DE L'ARTICLE IV des Règlements de l'Institut royal d'architecture du Canada, "Un membre de plus de trente-cinq années d'âge et qui a atteint un certain degré de distinction dans la profession ou rendu de grands services à la profession peut être nommé fellow (agrégé)". A l'heure actuelle, le Collège des Agrégés compte 162 membres choisis parmi les quelque 2,300 membres de l'Institut. On vise aujourd'hui à maintenir une proportion d'environ 8 p. 100.

Chaque candidature doit être présentée par un membre du Collège et appuyée par deux autres. Elle doit préciser les motifs, haute réputation professionnelle, services rendus à la profession ou grandes qualités artistiques, sur lesquels la demande d'admission est fondée.

Pourquoi ce titre de "Collège des Agrégés" qui semble plutôt du domaine de l'enseignement? Il n'est pas facile de le dire. Il semble n'avoir eu aucun précédent dans une association professionnelle et ceux qui l'ont choisi prétendent que c'est la première fois que le terme "collège" est employé en ce sens. On ne le trouve sûrement pas dans l'Institut royal des architectes britanniques où le titre d'agrégé ou "fellow" est conféré de façon digne et simple à l'assemblée annuelle. Le membre reconnu de la profession qui est l'objet de cette distinction s'avance tout simplement afin de recevoir son parchemin du président qui l'accueille en lui donnant une poignée de main. A l'heure actuelle, l'Institut américain n'offre non plus rien de semblable quoique, au cours des dernières années, des formalités et un rituel aient été établis dans le genre de ceux du Collège des Agrégés de notre Institut.

La fondation du "Collège des Agrégés" a été autorisée à une assemblée du Comité exécutif de l'Institut tenue le 17 janvier 1941. Il a aussi été convenu que le chef ou président porterait le nom de "chancelier", le vice-président celui de "doyen" et le secrétaire ou archiviste celui de "secrétaire-archiviste" et qu'il y aurait un conseil ou bureau composé de huit membres choisis dans les huit régions géographiques comptant le plus grand nombre de membres. Ce dernier groupe devait être connu sous le nom de "sénat". Le Collège devait tenir son assemblée générale pour l'admission de nouveaux membres et la conduite des affaires régulières aux temps et lieu de l'assemblée annuelle de l'Institut. Cette assemblée annuelle du Collège devait être divisée en deux parties; la première, consacrée au rituel d'installation, aurait lieu à huis clos en présence des seuls membres du Collège,

presence of Fellows only, whereas the second, the presentation of diplomas of Fellowship, would be open to all members of the Institute. Now both parts have been brought together in a single open ceremony.

The 34th Annual Assembly of the RAIC, and the first Convocation of the College of Fellows, was held at the Arts and Letters Club in Toronto on February 21, 1941. Mr Forsey Page, of Toronto, occupied the chair by reason of his position as Chairman of the Committee appointed by the Council of the RAIC "for the purpose of preparing a scheme of organization of the College of Fellows".

Since its inauguration in 1941, the College of Fellows has maintained its form of ritual with few modifications, and the senior body is keenly aware of its responsibilities in maintaining high professional standards. In 1948 the College of Fellows Scholarship was established in the amount of \$1,500 (now \$2,500) open to graduates of Canadian Schools of Architecture. Fellows' fees and bequests are used for this laudable purpose. The Scholarship will be awarded again in 1964.

The College of Fellows today has three main functions:

1. To honor members of the Institute and distinguished laymen;
2. To serve as the senior advisory body of the Institute;
3. To encourage research and scholarship, which is one of the major concerns of the RAIC as laid down in the Act of Incorporation.

There can be little doubt that the College has now reached the point in its development where, as the ties of national unity are strengthened, it can play an even more significant part in the affairs of the Royal Architectural Institute of Canada.

alors que la seconde, comprenant la présentation du parchemin aux nouveaux agrégés, serait ouverte à tous les membres de l'Institut comme c'était l'habitude depuis quelques années.

La première assemblée générale du Collège, qui coïncidait avec la 34^e assemblée annuelle de l'Institut, a eu lieu au Club des Arts et Lettres de Toronto le 21 février 1941. M. Forsey Page de Toronto occupait le fauteuil présidentiel en sa qualité de président du comité chargé par le Conseil de l'IRAC "de préparer un plan d'organisation du Collège des Agrégés".

Depuis sa fondation en 1941, le Collège a maintenu son rituel presque sans modification et cet organisme supérieur est à la fois très respecté et très conscient de sa responsabilité professionnelle. Le versement des cotisations et des legs des Agrégés à une caisse de bourses d'études est sûrement un geste louable en soi. En 1948, le Collège a établi une bourse d'études de \$1,500 accessible à tous les diplômés des écoles d'architecture du Canada et en 1959 il en a porté le chiffre à \$2,500. Cette bourse sera décernée de nouveau en 1964.

Aujourd'hui, les trois principales fonctions du Collège sont:

1. D'honorer les membres de l'Institut ainsi que des profanes distingués;
2. De servir d'organisme consultatif supérieur de l'Institut; et
3. De favoriser la recherche et l'établissement de bourses d'études, ce qui constitue d'après sa loi de constitution un des principaux objets de l'Institut.

Le Collège des Agrégés en est sûrement rendu aujourd'hui à un point d'évolution où, à mesure que se resserreront les liens de l'unité canadienne, il pourra jouer un rôle de plus en plus important dans les affaires de l'Institut royal d'architecture du Canada.

A Convocation of The College of Fellows



An Honorary Fellowship is awarded Sir Basil Spence, former RIBA president, at the Convocation of The College of Fellows in Winnipeg, 1960. Left to right: Dr F. Bruce Brown, registrar; Sir Basil Spence; John Russell (F), dean; T. Galt Durnford, chancellor.

Les Architectes sont des collaborateurs précieux

DEPUIS PLUSIEURS ANNÉES déjà le ministère fédéral du Travail, en collaboration avec le Service national de placement, mène une campagne publicitaire intense auprès du public pour le convaincre de la possibilité de construire davantage en hiver.

La publicité qui a découlé de la campagne "Faites-le maintenant" a fortement insisté sur l'entière possibilité d'entreprendre des travaux intérieurs de construction en hiver. En même temps, mais par des moyens différents, on a continué de propager l'idée de la construction accrue, à l'extérieur, en hiver. Il a été établi, dès le début, que la construction à l'extérieur, en hiver, tout en étant elle aussi pratique, exige une préparation soignée et le recours à des techniques spéciales si les entrepreneurs et les propriétaires d'immeubles veulent être satisfaits des résultats obtenus.

En suivant ce raisonnement, les organisateurs de la Campagne d'emploi d'hiver ont choisi de travailler surtout par l'intermédiaire d'organismes comme l'Association des constructeurs canadiens, la *National House-builders' Association* et d'autres agences en mesure de parler avec autorité des problèmes de la construction à l'extérieur, en hiver. Il en est résulté une connaissance générale beaucoup plus répandue du problème de la construction en hiver et l'acceptation par un grand nombre, au sein même de l'industrie de la construction, de l'idée de la poursuite des travaux à l'année longue.

Il reste à faire accepter aux propriétaires éventuels de nouveaux immeubles les principes que l'industrie de la construction accepte maintenant de façon générale. Ici l'architecte peut jouer un rôle important. Etant une des premières personnes consultées en matière de construction, il est on ne peut mieux placé pour lutter contre une façon surannée de penser et pour organiser et échelonner les travaux de manière à en assurer l'exécution efficace durant les mois d'hiver.

Bien qu'il soit généralement admis que la construction en hiver puisse être un peu plus onéreuse, les frais additionnels peuvent être réduits au minimum grâce à une organisation appropriée et le propriétaire éventuel peut être encouragé à comparer ces frais supplémentaires aux autres frais qu'il serait exposé à encourir s'il tardait à entreprendre la construction de son nouvel immeuble. Les économies réalisées en loyers et en programmes de production commencés plus tôt peuvent souvent amplement contrebalancer les frais additionnels inhérents à la construction en hiver.

La Division des recherches en bâtiment du Conseil national de recherches a préparé une brochure intitulée "Bien bâtir — Les travaux d'hiver No 6", laquelle renferme une foule de renseignements sur les techniques de la construction en hiver. On peut obtenir cette brochure en écrivant à: la Direction de l'information du ministère du Travail, Ottawa.

Pourquoi Attendre au Printemps — Faites-le Maintenant!

Annonce autorisée par l'hon. Michael Starr,
ministre du Travail, Canada

"FAITES-LE MAINTENANT" "DO IT NOW"

(PAR ANDRÉ BLOUIN, DPLGF, MIRAC,
ARCHITECTE ET URBANISTE)

CELA POURRAIT s'appliquer à beaucoup de choses comme la phrase "Ne remettez pas au lendemain ce que vous pouvez faire le jour même". Mais la phrase "Faites-le maintenant" est consacrée, il s'agit des travaux d'hiver.

Le slogan est bon, reste à mettre en pratique ce programme fédéral, provincial, municipal, lequel vise à augmenter les travaux d'hiver et à diminuer le chômage.

POURQUOI TRAVAUX D'HIVER?

- Continuité économique améliorée.
- Intérêt accru du client par amélioration de son planisme budgétaire.
- Protection de la main-d'oeuvre qualifiée et suppression du chômage saisonnier.

QU'EN PENSENT LES CONSTRUCTEURS?

- Les constructeurs sont assez avertis des méthodes concernant les travaux d'hiver, mais ne les utilisent pas.
- Malgré les facilités mises à leur disposition, ils préfèrent attendre.
- Ils hésitent à s'engager, peut-être en fonction d'essais malheureux.
- Un manque de planification de l'entreprise fait qu'ils se désintéressent de cet aspect de leurs activités.
- Certains attendent la reprise du printemps mais les conditions du dégel ne sont guère plus propices.
- L'année de construction se réduit donc de un tiers.

ALORS?

- Les méthodes actuelles doivent permettre d'oublier les saisons.
- A ce sujet, remarquons le travail important fait par le Conseil de recherches à Ottawa sur les méthodes des travaux d'hiver et malgré ce que disait en mai dernier, M. Hugh Montgomery, Président de l'Association des Constructeurs de Saskatoon, que "le volume de construction d'hiver, per capita, est plus élevé au Canada que n'importe où dans le monde", nous considérons qu'il est encore loin de ce qu'il devrait être.
- Si les étrangers sont surpris de voir l'activité de nos chantiers sous la neige, les Canadiens, par contre, se doivent d'être surpris d'un ralentissement incompatible avec les moyens que les gouvernements mettent à la disposition des municipalités pour cette période de l'année.
- M. R. Elliott dit, juil. 62 "il faut féliciter le Ministère du Travail pour avoir donné à temps, aux Municipalités, le programme leur permettant de prendre leurs dispositions d'hiver".
- Le sous-comité du RAIC a été informé que les catégories de travaux d'hiver avaient été élargies cette année (voir brochure "Municipal Winter Works Incentive Program 62-63). Routes, rues, trottoirs, ponts, services d'eau, d'égoût, drainage, parcs et terrains de jeux, immeubles.

- Tous les gens intéressés à la construction doivent faire de la publicité: verbale, articles dans les journaux, conférences, etc.
- L'Association des Architectes de l'Ontario a fait remarquer à Ottawa que les trottoirs pouvaient être faits l'hiver.
- M. Lyon pense que le public serait prêt à consentir aisément à faire les travaux d'hiver si les architectes voulaient les en convaincre.
- Il a été suggéré que deux fois l'an se tienne un meeting conjoint, tenu par le RAIC et le Conseil canadien des Ingénieurs pour augmenter les travaux d'hiver.
- M. Armstrong suggère qu'un effort soit fait pour qu'à l'aide de brochures, slides, radio, télévision, le public soit encore plus averti et que des experts en la matière produisent des articles dans les revues techniques d'octobre à mars. Cent douze associations ont vu les trois films de l'Office national du Film, soit 4,212 personnes.

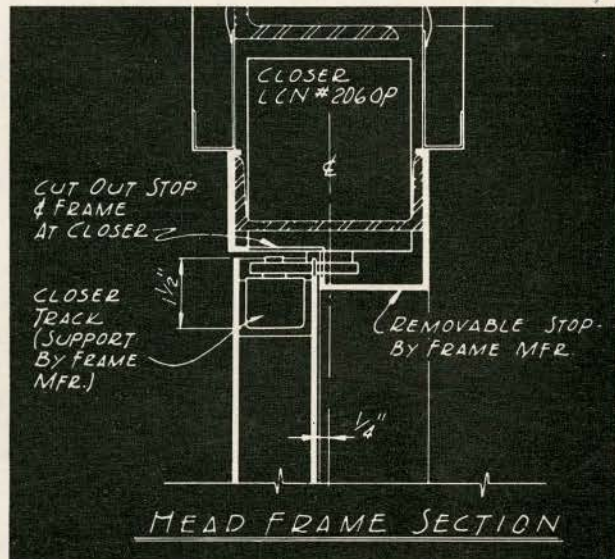
Il faut absolument aider à vaincre le chômage d'hiver et penser que: "LE TRAVAIL DE CHACUN FAIT LE BONHEUR DE TOUS".



COMING EVENTS

- Ontario Association of Architects Exhibition
Toronto Art Gallery
January 11 - February 10
- Alberta Association of Architects
Macdonald Hotel, Edmonton
January 25-26
- RAIC 56th Annual Assembly
Sheraton-Connaught, Hamilton
May 15-18
- Manitoba Association of Architects
Winnipeg
January 19
- Ontario Association of Architects
Royal York Hotel, Toronto
February 7-8-9
- Province of Quebec Association of Architects
Manoir St Castin, Lac Beauport
January 24-25-26
- New Brunswick Association of Architects
Saint John
February 15-16
- Nova Scotia Association of Architects
Halifax
February 1-2
- Newfoundland Association of Architects
St John's, Newfoundland
January 31
- EIC with co-operation of the AIBC and
Extension Department, UBC
UBC, Vancouver
February 14-16
- Symposium on Prestressed and Precast Concrete.

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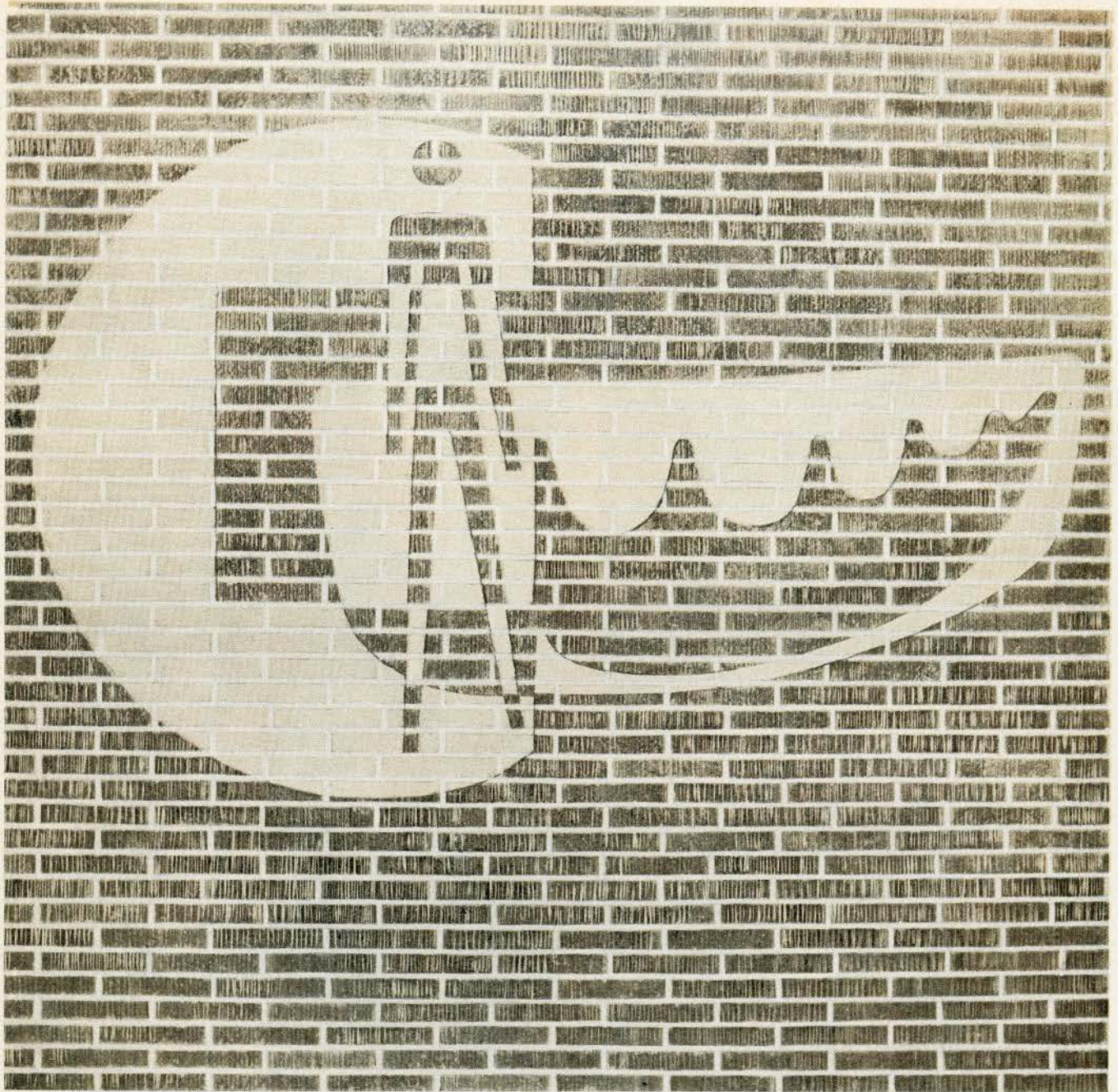
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Luke Lindoe mural from Calhoun Library, Calgary.
Architects: J. H. Cook and Associates.

Technical Section

Edited by Douglas H. Lee

Water-reducing Admixtures

(Second of Two Parts)

by Richard C. Mielenz

WATER-REDUCING ADMIXTURES can be grouped according to their effect on rate of hardening of concrete. Some are retarders, some are accelerators, and some produce little effect on rate of hardening of concrete. A water-reducing admixture is an admixture which reduces the water content of concrete or mortar necessary to achieve a given consistency and does so to an extent greater than that which would be achieved by the observed change in air content of the mixture. Viewed conversely, a water admixture will increase the fluidity (slump) of a concrete mixture at given water content to a degree greater than that which would be achieved by the observed change in air content of the mixture.

Water-reducing and set-controlling admixtures are admixtures which delay or accelerate the development of initial and final setting of cementitious mixtures, as well as reduce water requirements of concrete. After final setting or hardening of the mixture, the rate of strength gain may or may not be affected by the presence of the admixture.

By far the most important examples of water-reducing admixtures are organic substances which can be covered by a fourfold classification:

1. Lignosulfonic acids and their salts;
2. Modifications and derivatives of lignosulfonic acids and their salts;
3. Hydroxylated carboxylic acids and their salts; and
4. Modifications and derivatives of hydroxylated carboxylic acids and their salts.

Typical commercial water-reducing admixtures may be classified as follows in this system:

| Class 1 | Class 2 |
|---------------------------------------|--|
| Pozzolith 8 Daratard | WRDA Pozzolith 8 Improved Pozzolith 4L |
| Class 3 | Class 4 |
| Plastiment Retardwel Placewel R | Silkacrete Placewel Y Placewel W |

Admixtures of these types, especially the Pozzolith line and Plastiment, have been widely used in progressively increasing amounts for the past 30 years. They originated in research by Tucker, Scripture, and Winkler. These admixtures have been included in an estimated 300 million cubic yards of concrete in the United States and Canada, and they are being used now in about 30 million cubic yards of concrete per year. In addition, admixtures of these chemical types are being used extensively in Europe and Asia, as well as in North and South America.

The characteristic constituent of water-reducing admixtures of classes 1 and 2 are calcium, sodium, or ammonium salts of lignosulfonates produced during the sulfite process of wood pulping. Lignosulfonates produced during the kraft (alkaline) process of paper manufacture constitute a very small proportion of admixture sales. In general, the effluent from the pulping operation is not suitable for use in concrete; the raw sulfite liquor solids must be refined to produce a uniform product containing a minimum of impurities. For example, lignosulfonates contain varying proportions of wood sugars; the proportion of such sugars occurring in waste sulfite liquor should be reduced to small proportions during

the processing of lignosulfonates for use in concrete.

The essential constituent of admixtures of classes 3 and 4 are sodium, calcium, or triethanolamine salts of such compounds as hydroxylated adipic acid and gluconic acid; compounds of this class can be produced by fermentation or oxidation of carbohydrates like glucose, dextrose, or starch. In classes 2 and 4 these compounds are combined with organic or inorganic compounds which act as accelerators, retarders, catalysts, air-entraining agents, or possibly air-detraining agents to produce special effects in performance of the admixtures.

The essential active constituents of water-reducing admixtures are surface-active agents which are positively adsorbed at the interface between water and cement or between water and certain constituents of aggregates. Such adsorption is in large measure a chemisorption which is irreversible and develops around each particle of cement a tightly bonded film of the organic substance, probably of monomolecular thickness at ordinary rates of use. As a result of the adsorption, the physical-chemical forces acting at this interface between water and the solid or between adjacent solids are modified. Electrophoretic studies of migration of cement particles, negatively charged by adsorption of the organic compound, indicate an effect which not only produces a repulsion of one such charged particle for another but also causes development about each particle of a sheath or hull of oriented water molecules, which prevent the close approach of the particles one to another.

These phenomena cause the disaggregation of flocculent clusters of

cement grains and effect their dispersion in the concrete mixture. Although the forces effecting the dispersion are relatively weak and are insufficient to prevent settlement and consolidation of cement in a water mixture, they decrease interparticle interference during manipulation of the mixture and water freed from the interstices of the flocculent clusters of cement granules is free to lubricate the mixture. As a result, the fluidity of the mixture is increased, or the water content of the mixture can be reduced below that of a similar mixture not containing the surface active agent, without loss of fluidity. Moreover, the fluidity (slump) can be increased with smaller increments of water.

The superficial deposits of lignosulfonates and hydroxylated carboxylic acids reduce initially the rate at which the cement hydrates, causing a decrease in rate of hardening and in the rate of temperature rise of the mixture unless the effect of the retarder is compensated by presence of a catalyst or accelerator. In spite of the decrease in rate of hardening, the proportion of cement hydrated at 24 hours and later is increased by the use of such admixtures. The precise effect of the admixture depends upon the composition and other properties of the cement, particularly the content of tricalcium aluminate and alkalis. Use of these admixtures does not change perceptibly the composition and identity of hydration products. On the other hand, all available evidence indicates that the texture and structure of the cement paste are changed markedly.

Water-reducing admixtures are available as water-soluble powders, powders containing a high proportion of water-insoluble fillers, or water solutions of varying concentration. The powders may be added to the batch of concrete with the cement or the aggregate before or during mixing. Water-soluble powders commonly are dissolved in water and added as a solution. For more accurate control, the solution form is preferred. Liquids, including job-mixed solutions, may be added with the mixing water or separately after the other constituents of the concrete have been partially mixed. They can be added to non-absorptive aggregate prior to addition of the aggregate to the mixer. They should not be allowed to contact the cement prior to addition of the mixing water. For

any given project, a fixed procedure should be adopted for control of the dispensing operation. Mixing of the concrete should be continued long enough after addition of the admixture to assure that it is distributed uniformly throughout the batch.

Since relatively small quantities (1 to 13 fluid ounces or 0.2 to 1.0 lb per sack of cement) are used, accurate dispensing equipment appropriate to the batching system must be used to insure that the intended rate of addition is maintained uniformly. A variety of dispensing devices is available. The preferred types are automatic, so designed as to prevent multiple additions to any single batch of concrete and permitting visual checking of the volume or weight of admixture being introduced into the batch of concrete.

A variety of admixtures, such as air-entraining agents, accelerators, and water-reducing retarders, can be added to the same concrete mixture in the relative proportions required to achieve optimum properties. Within limits, it is possible to vary the rate of addition of any one of the admixtures without significantly affecting the action of other admixtures.

Unless tests demonstrate that the several admixtures to be used simultaneously are mutually compatible when intermixed prior to their addition to the concrete, the individual admixtures should not be intermixed in a dispensing tank. Incompatibility of such admixtures when intermixed alone or in water, does not indicate that such admixtures will not be individually fully effective when combined in the concrete mixture.

Water-reducing admixtures may be used in combination with any portland cement or portland-blast-furnace cement; with pozzolans; with other admixtures, such as air-entraining agents, chlorides, or air-detraining agents; and aggregates of any type, including natural sand and gravel, manufactured stone aggregate, lightweight or heavy-weight aggregates, and blast-furnace slag. They have been used successfully with aluminous cement.

The optimum rate of use of any admixture may vary with characteristics of the concrete mixture and the properties to be modified. Manufacturers of some class 1, 2 and 4 admixtures recommend that so far as feasible a fixed proportion of their admixture be used for each sack of cement. Some manu-

facturers of class 1 and 2 products supply several formulations so constituted that the effect of differing temperature can be controlled by using a different admixture for various temperature conditions but at a constant proportion. In this way, the benefits of substantial water reduction are always available, regardless of the effect desired on rate of hardening. Manufacturers of class 3 retarders and of some class 1 products recommend that the dosage of their product be increased as the temperature increases in order to maintain similar rate of hardening at all temperatures.

The performance of water-reducing admixtures varies with many factors, although in general with experience in use of specific combinations of concrete-making materials under job conditions few problems are encountered. Variables affecting such properties as water reduction, retardation or acceleration, air entrainment, and strength development, include the type and brand of cement, the ambient temperature, the composition and grading of aggregate, slump of the concrete, and use of other admixtures.

In general, trial mixes should be prepared and tested to determine the type and rate of use of the admixture to achieve optimum properties of concrete containing the concrete-making materials available at the concrete plant or job. Provisions should be made to determine that the admixture is uniform from shipment to shipment. Unproved products should be avoided unless investigated in detail to ascertain the effect of the admixture on such properties of concrete as water reduction, air entrainment, working qualities, rate of hardening, early and ultimate strength, resistance to freezing and thawing, and volume stability under conditions pertinent to the work.

Water-reducing admixtures produce many important modifications of the properties of concrete. Admixtures based upon salts of lignosulfonates commonly are used to decrease the time of hardening to about 50 percent or to extend the time of hardening up to about 200 percent of that of equivalent plain concrete. These types of admixtures generally entrain 2 to 4 percent of air, although some types entrain more air under given conditions. If air entrainment is excessive, an air-detraining admixture may be employed. Bleeding and tendency toward segregation are typically de-

creased. In general, at equal cement content and slump, lignosulfonate-type admixtures reduce water requirements 5 to 15 percent. Compressive strength at 48 hours is usually higher than that of similar plain concrete and is 15 to 25 percent higher at 28 days and greater ages.

Hydroxylated carboxylic acid salts are non-air-entraining retarders, although the proportion of an air-entraining admixture required to entrain a given proportion of air is less than that required to entrain that proportion of air in plain concrete. Retardation can be varied over a wide range by use of differing formulations or proportions of the admixture product with respect to the cement content. Water reduction effected ranges typically from 5 to 8 percent at given air content. The rate and capacity of the concrete to bleed and settle is increased. Compressive strength during the first 24 hours may be reduced but after 3 days typically is higher and at 28 days and later ages is 15 to 25 percent over that of equivalent plain concrete at ordinary rates of use.

Flexural strength typically is increased to lesser degree than is compressive strength by use of a water-reducing admixture.

Although it might be expected that water-reducing admixtures, especially water-reducing retarders, would consistently decrease the rate of slump loss, such is not necessarily the case. The effect of water-reducing admixtures upon rate of slump loss is widely variable, depending primarily upon the composition and fineness of the cement. For most concrete mixtures, the rate of slump loss is modified to minor degree or is decreased by addition of a water-reducing admixture. In a minority of instances, slump loss is increased, possibly so severely as to require either use of a different cement or admixture. In some instances, the loss of slump is not a true measure of the degree to which the concrete can be made mobile by vibration; in these instances, admixture concrete can be placed and integrated into previously deposited concrete at surprisingly low slump.

If other properties of the concrete are held essentially constant, resistance of concrete to freezing and thawing correlates well with the spacing factor of the void system as determined by microscopical procedures on hardened

concrete in accordance with ASTM Recommended Practice C 457. Spacing factor is an index related to the maximum distance that any point in the cement paste lies from the periphery of an air void. For concrete containing an air-entraining agent as the only admixture, durability as measured by rapid freezing and thawing in water decreases slowly as spacing factor increases from about 0.003 in. to about 0.009 in. and then abruptly with increase above about 0.010 in. The average size of the air voids and the magnitude of the spacing factor are increased by use of certain water-reducing admixtures in combination with conventional air-entraining admixtures, but available data indicate that the increase in void size and spacing does not effect a decrease in freezing and thawing resistance of concrete, at least if the spacing factor does not exceed about 0.0085 in. Also, spacing factor does not necessarily correlate closely with freezing and thawing resistance in water if water-cement ratio is varied over a wide range.

One of the great events in the field of concrete admixtures was the acceptance this year of Designation: C 494-62, Proposed Tentative Specifications for Chemical Admixtures for Concrete, by the American Society for Testing and Materials. These specifications are the product of more than 5 years of

active development by Committee C-9 on concrete and concrete aggregates. Without doubt, the requirements will be modified with experience and continuing research.

The specifications cover five types of chemical admixtures, namely, water-reducing admixtures, retarding admixtures, accelerating admixtures, water-reducing and retarding admixtures, and water-reducing and accelerating admixtures. The technical requirements imposed by the specifications are based exclusively on the effect of the admixture upon the properties of concrete. The methods of test are prescribed on two bases: (1) For evaluation of an admixture for use in specific work, the cement, aggregates, and any air-entraining admixtures proposed for use should be employed and the concrete should be proportioned in accordance with the requirements of the job; and (2) for general evaluation of an admixture, a blend of three cements, aggregates of prescribed quality and grading, and (if air entrainment is required) neutralized Vinsol resin are to be employed in the concrete mixture and the concrete is to be proportioned in a prescribed manner in accordance with ACI Recommended Practice 613.

The requirements provide limitations on the effect of the admixture upon time of setting; compressive strength at 3, 7, and 28 days, 6 months, and 1

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year; flexural strength at 3, 7, and 28 days; bond strength at 28 days; volume change (drying shrinkage) at 28 days; durability factor under freezing and thawing conditions; and bleeding of the concrete. Water-reducing admixtures of the three types are required to reduce water requirement of concrete a minimum of 5 percent at constant slump and air content.

These requirements are unusually detailed, require long-time testing, and the procedures require assembly of substantial amounts of cements and specially graded aggregates. Moreover,

few laboratories are equipped to perform all of the tests in accordance with requirements of the ASTM procedures.

Consequently, it will not be possible for some time for manufacturers and suppliers to certify that their products have been tested under these specifications and it is to be hoped that practicable procedures can be developed whereby the value of the specifications can be made available without impairing the beneficial application of chemical admixtures.

The purposes for which water-reducing admixtures and set-controlling

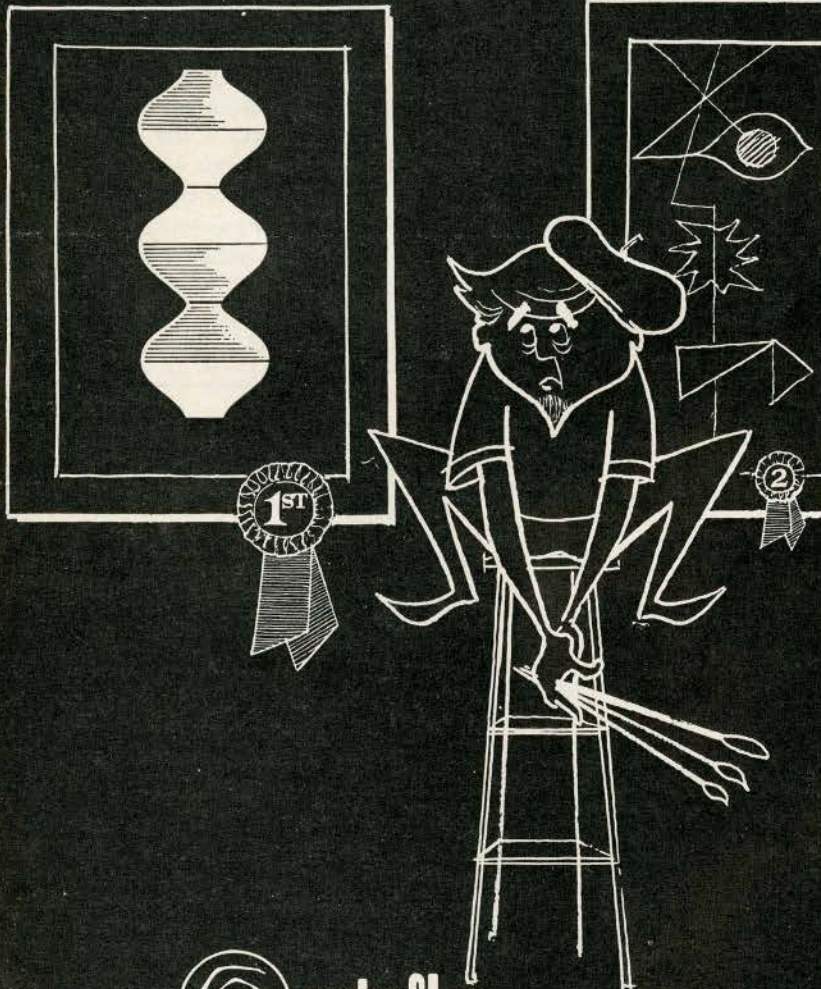
admixtures are used in concrete construction are: (1) To improve the quality of the concrete as a material in such features as strength, working qualities, crack resistance, and durability; (2) to permit or to facilitate certain construction methods, such as early form removal in fabrication of precast units, pumping of concrete, placing of large masses of concrete as homogeneous units, and control of finishing operations on large slabs; and (3) to reduce the cost of concreting operations, including the cost of concrete-making materials and the reduced cost of more efficient operation or of new procedures.

Many of the ingredients of water-reducing admixtures can be purchased from prime manufacturers by consumers or prospective admixture suppliers as finished or crude products, by-products, or waste products and used or sold for use in concrete. Many of the materials or combinations are covered by extant patents concerning their use in concrete. There is no doubt that with proper selection of the raw materials and control of the formulation of multicomponent admixtures satisfactory results can be obtained. The decision must remain with those responsible for the concrete-making operation as to whether they wish to (1) depend upon a manufacturer of these admixtures, (2) deal with a vendor of raw chemical materials packaged for use as admixtures for concrete, or (3) assume the tasks of locating sources of suitable raw materials, determining the composition and properties of successive shipment, and formulating and storing the admixtures. Unless chemicals from specific sources are tested in concrete as a basis for acceptance, severe deleterious effects may be derived. Moreover, the properties of waste or by-products chemicals may vary from time to time.

What should a consumer expect to obtain from the somewhat higher cost paid for manufactured admixtures in contrast to purchase of the raw materials? Use of a manufactured admixture will provide the following benefits to varying degrees, depending upon the policies and practices of the admixture manufacturer: (1) Selection of raw materials from prime chemical suppliers; (2) quality control over raw materials received for purity, performance, and uniformity; (3) processing or modification of chemicals to

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WARMTH WITHOUT WASTE—Twindow's double glazing acts as an insulator in winter. Interiors are warm right up to the windows. There are no openings for heat to escape or drafts to enter. No heating the great outdoors. As a result, boiler capacity in C-I-L House was reduced by 150 boiler horse power. Additionally, the higher inside temperature of the glass permits relative humidity to be maintained at 35% to 40% without condensation—even when temperatures outside plunge to 20° below! With single glass the relative humidity would have to be maintained around 7% to 10% in order to prevent condensation at -20°F. outside temperature.

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suit the needs of the finished product; (4) blending or reaction of constituents of multicomponent admixtures; (5) quality control of the finished product to assure that satisfactory standards of composition, quality, performance, and uniformity are met; (6) packaging in convenient containers or packages to assure freedom from contamination and deterioration; (7) storage at strategically located points for ready availability by the consumer in the limited quantities required for use; (8) development and supplying of suitable dispensing equipment; (9) assistance in use of the admixtures and in other operations pertinent to the manufacture and use of concrete, and providing technical literature; and (10) continuing research to improve the versatility and performance of admixtures.

CONCLUSION

Water-reducing admixtures, air-entraining admixtures, and other admixtures provide means to control and improve the quality and durability of concrete, reduce costs of concrete without loss of quality, and make feasible design and construction procedures not ordinarily practicable without use of such materials and methods. Proper selection and use of these materials and of the procedures necessary for their application improve the competitive position of portland cement concrete and broaden its application.

Portland cement concrete and portland cement as a product are competitive with an increasing array of other construction materials — bituminous concrete, steel, aluminum, compacted earth materials, and even plastic and resin compositions. Nevertheless, the position of portland cement concrete as a superb engineering material will remain secure if the knowledge of its properties and manufacture developed during the past two decades is reflected in improved quality, economy, and versatility of concrete construction. An important role in such progress is being played by admixtures of proved effectiveness and reliability.

Competition – Concours

TOWN PLANNING COMPETITION FOR REDEVELOPMENT OF CENTRAL AREA OF TEL AVIV-YAFO

(Approved by the Competitions Committee of the RAIC.)

Achuzot Hachof Company, together with the Central Competition Committee of the Association of Engineers and Architects in Israel, and with the approval of the Competition Committee of the "Union Internationale des Architectes", invite architects, town planners and engineers, to participate in an international open competition, and invite designs for a town planning scheme for the central area of Tel Aviv-Yafo.

The purpose of this competition is to determine the character and the shape of the central area of Tel Aviv-Yafo. This town planning scheme must allow for: the redevelopment of residential quarters, designated partly for rehousing the present inhabitants of the area and partly for new inhabitants from other areas; a zone for public administrative buildings; a zone for offices and buildings for commerce; a zone for hotels and the entertainment industry; recreation areas and the utilization of the beach for the benefit of the town citizens, guests and tourists.

| | | | |
|--------------|-------|------------|---------------|
| First Prize | - - - | 50,000 I.£ | (\$17,930.00) |
| Second Prize | - - - | 30,000 I.£ | (\$10,758.00) |
| Third Prize | - - - | 20,000 I.£ | (\$ 7,172.00) |
| *Mentions | - - - | 30,000 I.£ | (\$10,758.00) |

*The jury will decide the number of mentions and the division of the respective payments.

The jury includes: Mr Levi Eshkol, Minister of Finance and Mr Mordechai Namir, Mayor of Tel Aviv-Yafo; professionals – Sir William Holford ARA FRIBA MTPI, past president RIBA, London, Mr Louis Kahn, AIA, Philadelphia, and Professor Bruno Zevi; assessor – Mr F. Darnell, ARIBA AMTPI.

Those interested in taking part should immediately advise Achuzot Hachof Co, Tel Aviv-Yafo, Rechov Lurie 8, of their intention to submit a scheme, including the name and mailing address of the competitor. Application for registration should be accompanied by a draft for 100 Israeli pounds (\$35.86). Notification of registration of intention to compete must reach the sponsor by January 15, 1963. *The date set was December 31, 1962, but representation has been made by the RAIC to extend the date to January 15, 1963.* Deposits will be returned to competitors submitting bona fide schemes after final results have been announced.

Competitors may send questions in writing to the sponsor not later than February 10, 1963. The last date for receipt of entries is July 31, 1963, 12:00 noon. Entries qualifying for the first three prizes will become the property of the sponsoring company. Unsuccessful entries will be returned on request.

CONCOURS D'URBANISME POUR LE PROJET DE REAMEAGEMENT DU CENTRE DE TEL AVIV-YAFO.

(Approuvé par le Comité des Concours de l'IRAC.)

La société Achuzot Hachof et la Comité Central des Concours de l'Association des Ingénieurs et Architectes d'Israel, avec l'approbation du Comité des Concours de l'Union Internationale des Architectes, invitent les architectes, urbanistes et ingénieurs à participer à un concours international et à soumettre les plans d'un projet d'urbanisme pour le centre de Tel Aviv-Yafo.

L'objet du concours est de déterminer la nature et la forme de la région centrale de Tel Aviv-Yafo.

Le projet d'urbanisme doit prévoir le réaménagement des quartiers résidentiels de façon à assurer de nouveaux logements à la population actuelle de la région et des logements aux nouveaux habitants venant d'autres régions, l'établissement d'une zone de bureaux administratifs, d'une zone de bureaux et d'immeubles commerciaux, d'une zone pour les hôtels et l'industrie du spectacle, des centres de récréation et l'emploi de la plage au bénéfice des habitants de la ville, des visiteurs et des touristes.

| | | | |
|----------------|-----|-------------|---------------|
| Premier prix | - - | 50,000 £.I. | (\$17,930.00) |
| Deuxième prix | - - | 30,000 £.I. | (\$10,758.00) |
| Troisième prix | - - | 20,000 £.I. | (\$ 7,172.00) |
| *Mentions | - - | 30,000 £.I. | (\$10,758.00) |

*Le jury fixera le nombre des mentions et les montants attribués dans chaque cas.

Le jury comprend: M. Levi Eshkol, Ministre des Finances et Mordechai Namir, Maire de Tel Aviv-Yafo; professionnels – Sir William Holford, ARA, FRIBA, MTPI, ancien président de RIBA, Londres, M. Louis Kahn, AIA, de Philadelphie, et le professeur Bruno Zevi; juge – M. F. Darnell, ARIBA, AMTPI.

Ceux qui désirent participer au concours devraient en aviser immédiatement Achuzot Hachof Co., Tel Aviv-Yafo, Rechov Lurie 8, en donnant leur nom et leur adresse postale. Les demandes d'inscription doivent être accompagnées d'une traite de cent livres Israéliennes (\$35.86). L'avis d'intention de participer au concours ou demande d'inscription doit parvenir à l'organisateur au plus tard le 15 janvier 1963. *La date limite avait été fixée au 31 décembre 1962 mais l'IRAC a demandé de la reporter au 15 janvier 1963.* Les dépôts seront remboursés aux concurrents qui soumettront des projets sérieux après que les résultats définitifs auront été annoncés.

Les concurrents pourront envoyer par écrit des questions à l'organisateur jusqu'au 10 février 1963. Le délai prévu la réception des travaux des concurrents se terminera le 31 juillet 1963 à midi. Les projets acceptés pour les trois premiers prix deviendront la propriété de la société qui organise le concours. Les projets qui n'auront pas mérité de récompense à leurs auteurs seront retournés sur demande.

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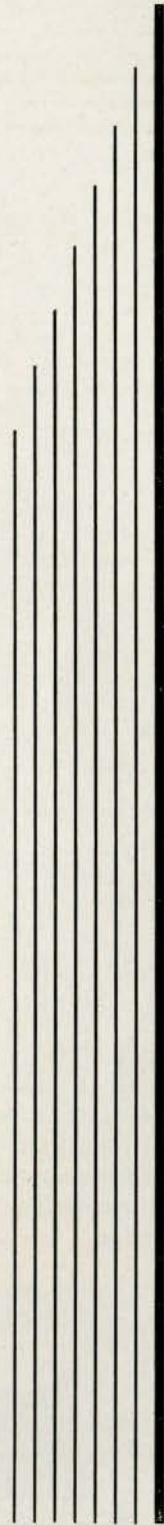
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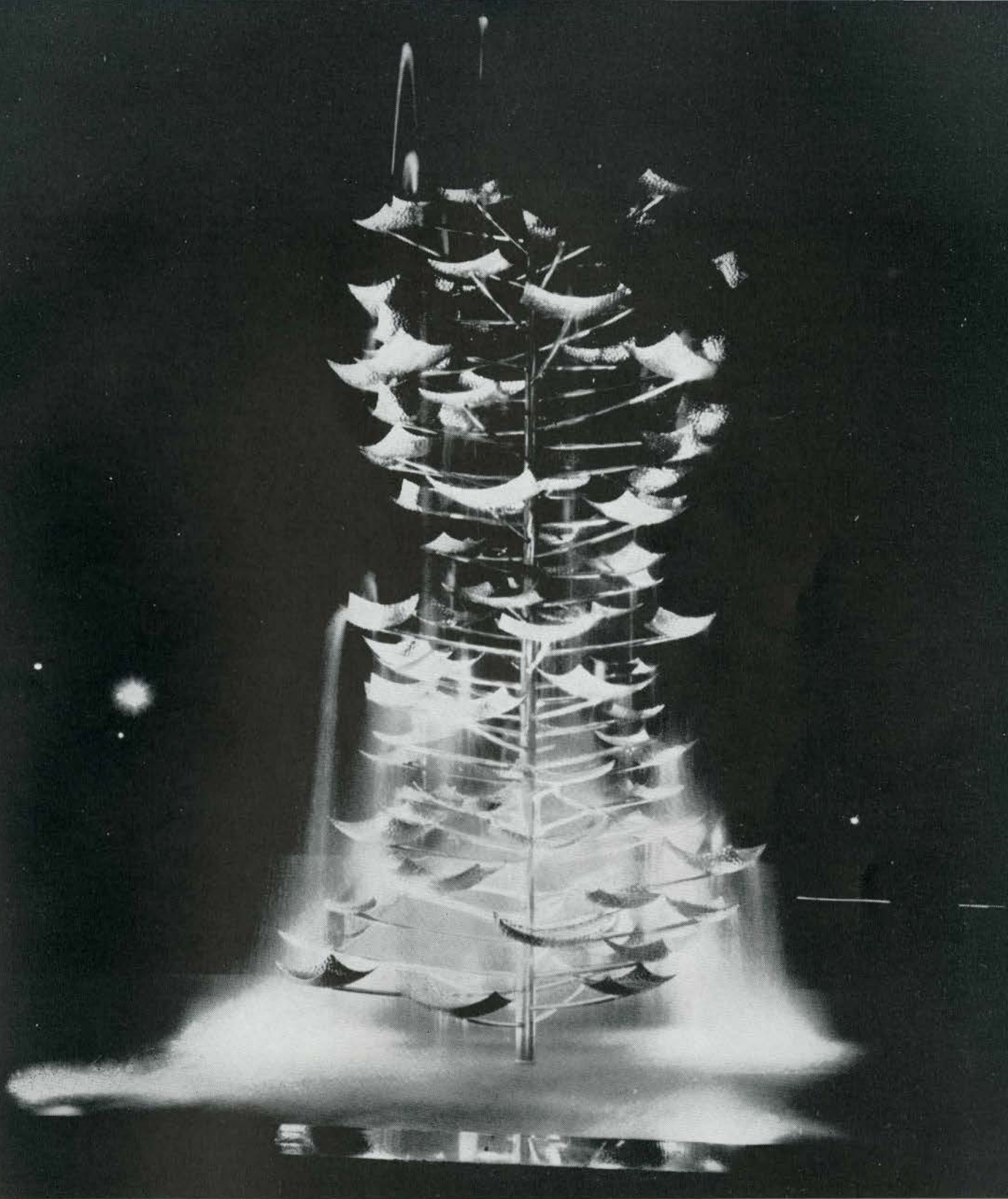
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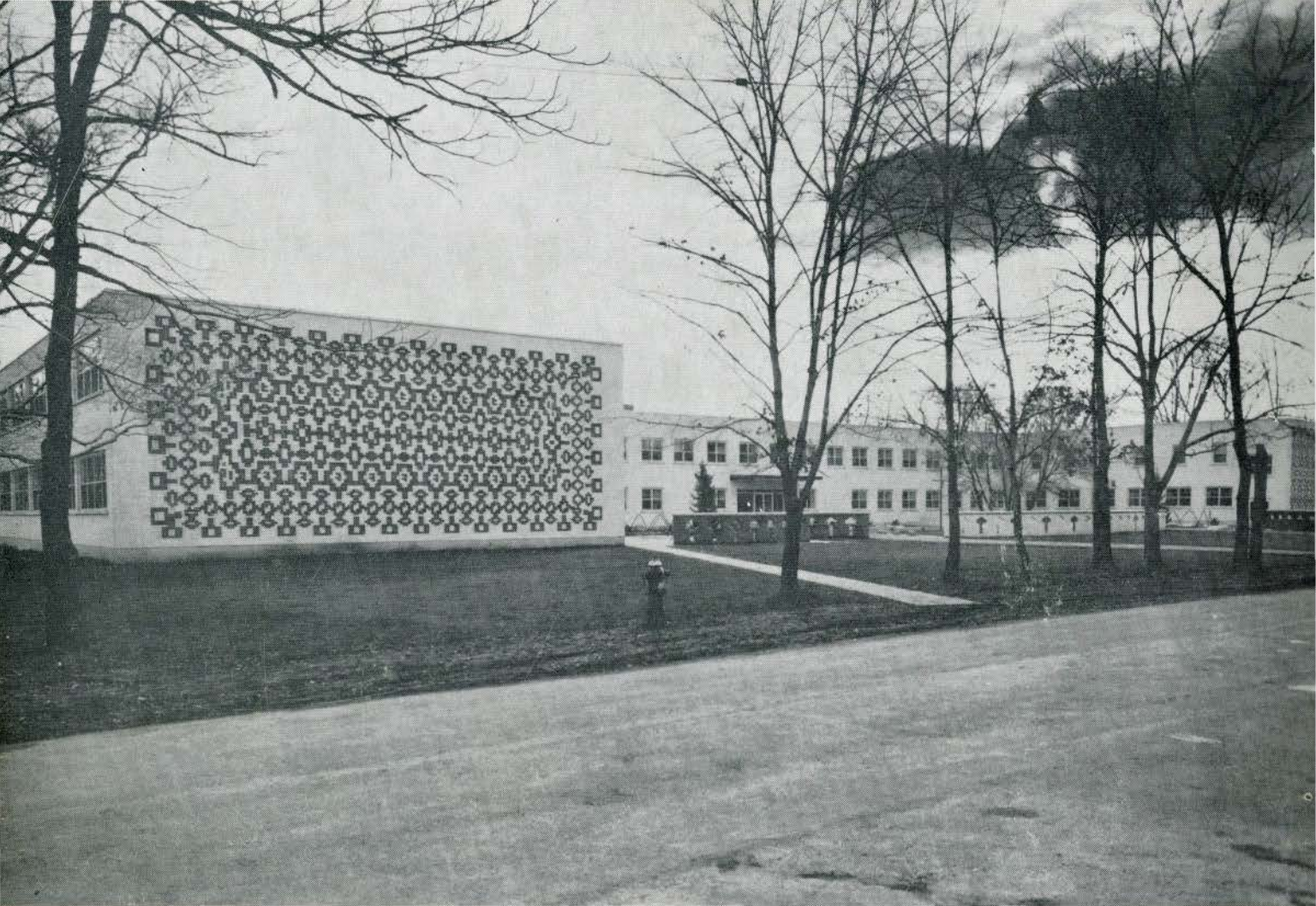
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