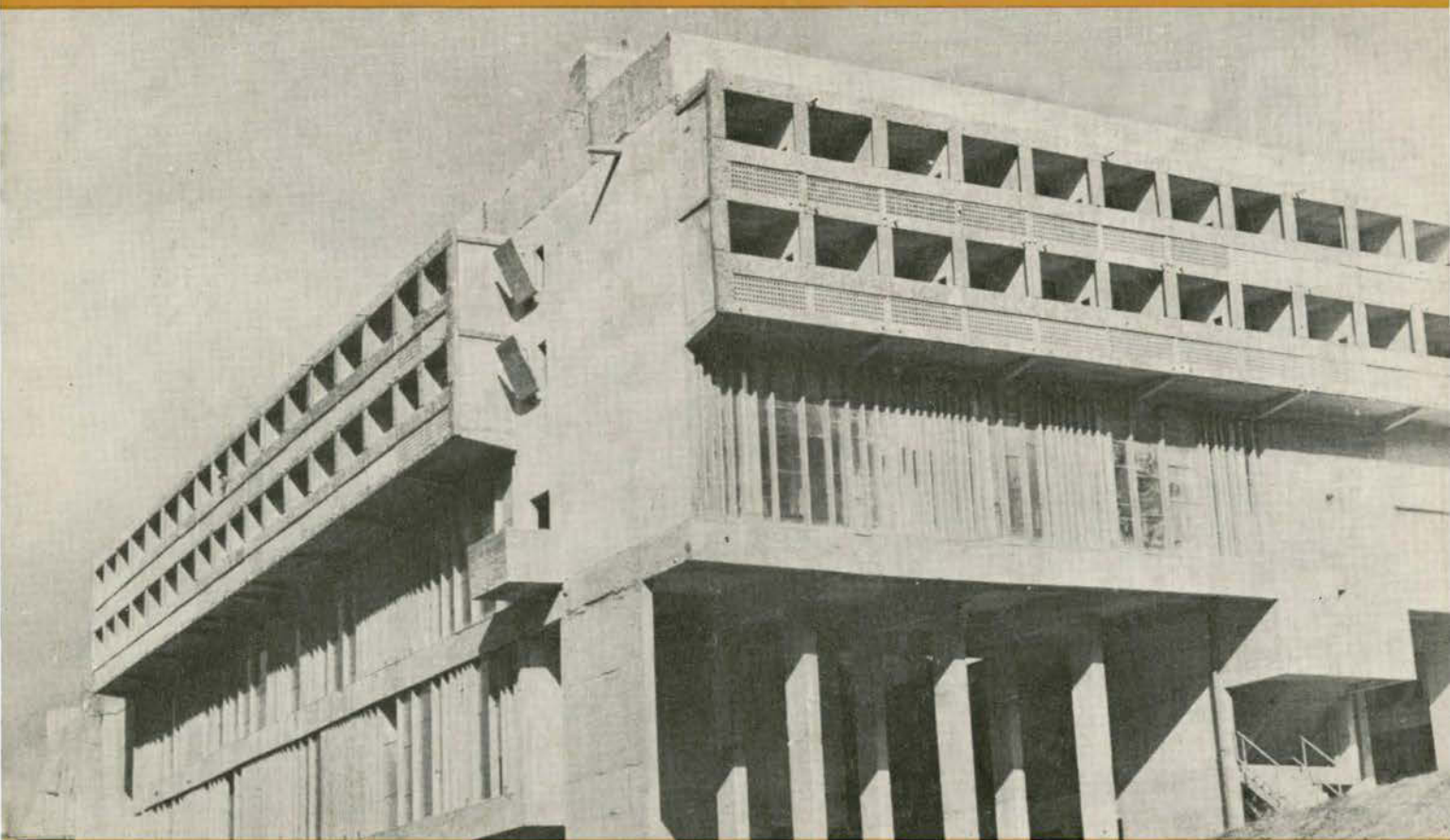


# ROYAL ARCHITECTURAL INSTITUTE OF CANADA JOURNAL



JANUARY 1961

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

## FORECAST:

year-round  
working comfort  
in this *modern*  
structure,

*thanks to air-conditioning and heating by*

**H**amilton's new City Hall will always be one of the most outstanding civic buildings in Canada.

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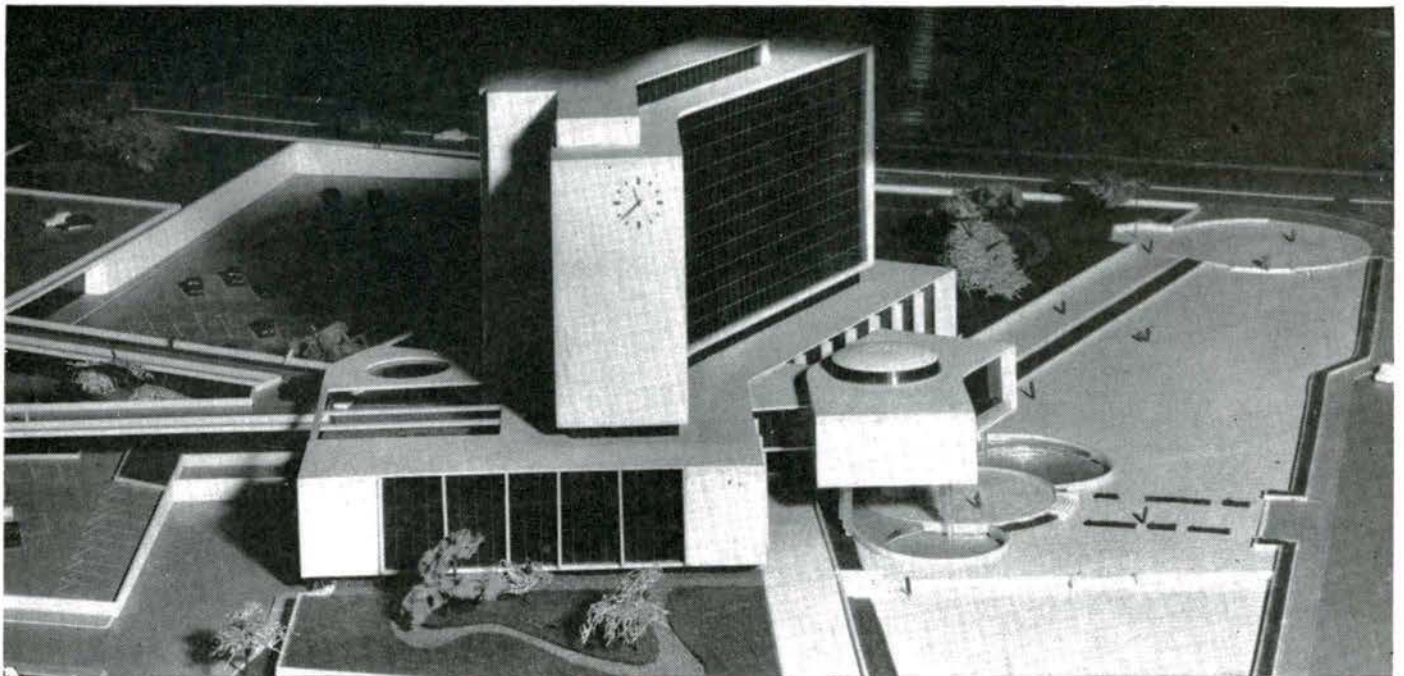
Modern TRANE equipment in Hamilton's new City Hall:

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<i>Coil</i>	<i>Torrivent</i>	<i>Induction UniTrane</i>

# TRANE

COMPANY OF CANADA LIMITED, TORONTO 14

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



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*Architect:* S. M. Roscoe, Hamilton  
*Consulting Architect:* Fleury, Arthur & Barclay, Toronto  
*Consulting Mechanical Engineer:*  
L. H. Schwindt Co. Ltd., Hamilton  
*Associate Consulting Engineer:* C. S. Leopold  
Engineers Inc., Philadelphia  
*Mechanical Contractor:* Goodram Brothers Ltd.,  
Hamilton

1961 Annual Convention  
Ontario Association of Architects

Royal York Hotel, Toronto

February 9-11 1961

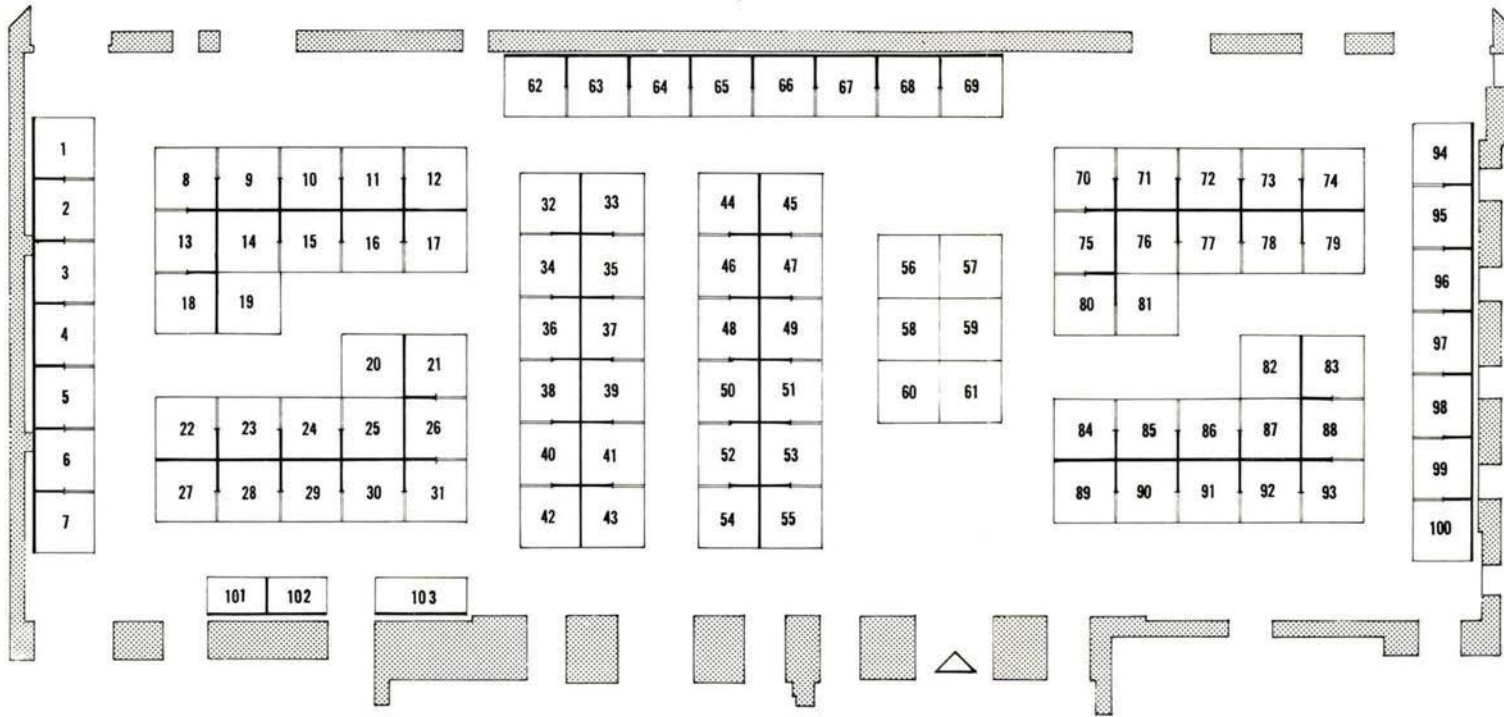
*EXHIBITION OF NEW  
BUILDING MATERIALS  
AND TECHNIQUES*

Canadian Room  
Royal York Hotel

The attention of members attending the convention  
is drawn to the following exhibitors whose  
advertisements appear in this issue of the Journal

BOOTH	NAME	PAGE
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90	Barwood Sales (Ontario) Limited	59
29	Bishop Products Limited	17
52	Brick and Tile Institute of Ontario	19
79	Canadian Laboratory Supplies Limited	77
76 to 81	Conn-Arts Studio Limited	63
72 & 73	Davidson, J. Lorne, Limited	62
7	Dominion Oilcloth & Linoleum Company Limited (The Canada Oil Mills Limited)	14
15	Dominion Sound Equipments Limited	4
67 & 68	General Steel Wares Limited	18
94	Hunter Douglas Limited	2
26	Master Builders Company Limited, The	Inside Back Cover
92	Multitone of Canada Limited	63
14 & 19	Otis Elevator Company Limited	23
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64	Wilson and Cousins Limited	5

# EXHIBITION OF NEW BUILDING MATERIALS AND TECHNIQUES CANADIAN ROOM, ROYAL YORK HOTEL



## Ontario Association of Architects 1961 Annual Convention, Toronto, February 9-11, 1961

### LIST OF EXHIBITORS AND BOOTH NUMBERS

- |  |   |   |  |
|--|---|---|--|
| <p>Aikenhead Hardware Ltd [70]<br/>                     Alanco (Ontario) Ltd [38-39-40-41-42-43]<br/>                     Atlas Steels Ltd [38-39-40-41-42-43]<br/>                     Chubb Safe Co, Ltd [38-39-40-41-42-43]<br/>                     Dalite Corporation (Canada) Ltd [38-39-40-41-42-43]<br/>                     International Nickel Co of Canada Ltd [38-39-40-41-42-43]<br/>                     Robertson-Irwin Ltd [38-39-40-41-42-43]<br/>                     Alseco Products of Canada Ltd [65 &amp; 66]<br/>                     Aluminum Company of Canada Ltd [83]<br/>                     Aluminum Star Products Ltd [50]<br/>                     American Biltrite Rubber Co (Canada) Ltd [2]<br/>                     American-Standard Products (Canada) Ltd [97 &amp; 98]<br/>                     Anaconda American Brass Ltd [53 &amp; 55]<br/>                     Anderson Corporation [44]<br/>                     The Arborite Company Ltd [75]<br/>                     Architectural Hardware Ltd [9]<br/>                     Aristocrat Manufacturing Co Ltd [34 &amp; 36]<br/>                     Armento Architectural Arts [69]<br/>                     Armstrong Cork Canada Ltd [100]<br/>                     Asbiton (Canada) Ltd [77]</p> | <p>Atlas Asbestos Company Ltd [54]<br/>                     Barwood Sales (Ontario) Ltd [90]<br/>                     Bishop Products Ltd [29]<br/>                     Brick and Tile Institute of Ontario [52]<br/>                     Building Products Ltd [3 &amp; 4]<br/>                     C &amp; M Products Ltd [6]<br/>                     Canadian Everguard Coatings Ltd [12]<br/>                     Canadian Industries Ltd [80]<br/>                     Canadian Johns-Manville Co [5]<br/>                     Canadian Laboratory Supplies Ltd [79]<br/>                     Canadian Pittsburgh Industries Ltd [16 &amp; 17]<br/>                     Canadian Steelcase Company Ltd [58]<br/>                     Canadian Thermowall &amp; Window Co [63]<br/>                     Cerametal Industries Ltd [47]<br/>                     Chenel Mosaic [101]<br/>                     Conn-Arts Studio Ltd [76 &amp; 81]<br/>                     Cooper Block Ltd [48]<br/>                     Crane Associates [33 &amp; 35]<br/>                     Cresswell-Pomeroy Ltd [21]<br/>                     J. Lorne Davidson Ltd [72 &amp; 73]<br/>                     Desco Vitro-Glaze (Ontario) Ltd [11]<br/>                     Dominion Linoleum Products<br/>                     (The Canada Linseed Oil Mills Ltd) [7]</p> | <p>Dominion Sash Ltd [103]<br/>                     Dominion Sound Equipments Ltd [15]<br/>                     Dow Chemical of Canada Ltd [30]<br/>                     Dunco Limited [84]<br/>                     The T. Eaton Co Ltd [60 &amp; 61]<br/>                     Fairbank Hardware Ltd [85]<br/>                     Fiberglas Canada Ltd [45]<br/>                     Fisher &amp; Burpe [78]<br/>                     Fleet of America Sales Corporation [22]<br/>                     Flintkote Company of Canada Ltd [49]<br/>                     Flintridge Canada Ltd [8]<br/>                     General Steel Wares Ltd [67 &amp; 68]<br/>                     The Glidden Company Ltd [86]<br/>                     E. A. Horton Sales Ltd [71]<br/>                     Hunter Douglas Ltd [94]<br/>                     Hydro Electric Power Commission of Ontario [95]<br/>                     The Imperial Flo-glaze Paints Ltd [37]<br/>                     International Business Machines Company Ltd [88]<br/>                     Kawneer Company Canada Ltd [46]<br/>                     Lepage's Limited [74]<br/>                     Gordon A. MacEachern Ltd [96]</p> | <p>The Master Builders Co Ltd [26]<br/>                     Modernfold (Ontario) Ltd [27]<br/>                     Moffats Limited [28]<br/>                     Multitone of Canada Ltd [92]<br/>                     Murray-Brantford Ltd [99]<br/>                     Walter Nugent Designs [59]<br/>                     Otis Elevator Company Ltd [14 &amp; 19]<br/>                     Pilkington Glass Limited [1]<br/>                     Pratt &amp; Lambert-Inc [62]<br/>                     Ram Distributors Ltd [93]<br/>                     Rosco Metal &amp; Roofing Products Ltd [91]<br/>                     P. A. Sherwood Windows Ltd [51]<br/>                     The Robert Simpson Co Ltd [56 &amp; 57]<br/>                     Siproex Limited [13 &amp; 18]<br/>                     Jerry Smith &amp; Company [31]<br/>                     Stainton Office Supply Ltd [32]<br/>                     Harvie Thompson and Steven Waring Ltd [102]<br/>                     Toronto Carpet Manufacturing Co Ltd [10]<br/>                     Trans-Canada Pipe Lines Ltd [20 &amp; 25]<br/>                     Wasco Products (Canada) Ltd [89]<br/>                     Westeel Products Ltd [82 &amp; 87]<br/>                     Albert White Associates [23 &amp; 24]<br/>                     Wilson &amp; Cousins Co Ltd [64]</p> |
|--|---|---|--|

(\*—combined exhibit)

# Have window coverings kept pace with architectural trends?

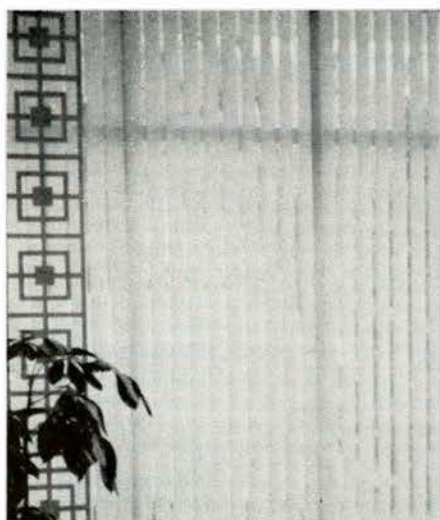
More glass. More daring, dramatic use of glass. This certainly is the trend in commercial building. The Flexalum people have matched new building trends with new window covering designs and innovations. Among them — “fixed-tilt” blinds adjusted to open only at pre-set angles in order to maintain uniform exterior appearance . . . fixed position blinds which open or close to specially

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Makers of Flexalum window coverings, aluminum awnings and siding, and Klad Koil coated metals.

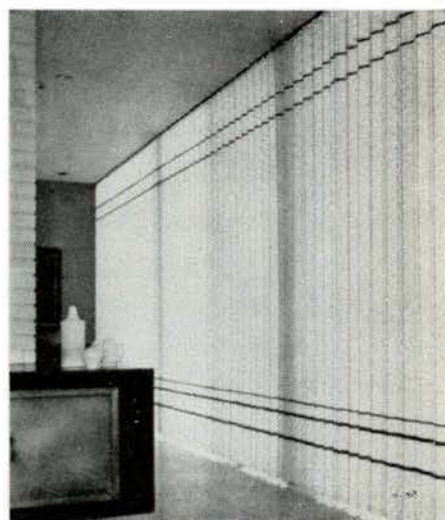
## Flexalum



Sun Vertikals . . . window louvres of fabric or aluminum rotate to give the effect — and effectiveness — of a vertical design sun shield. Cool and crisp-looking inside; decisive, striking from the outside. Ideal for lobbies, street level openings.

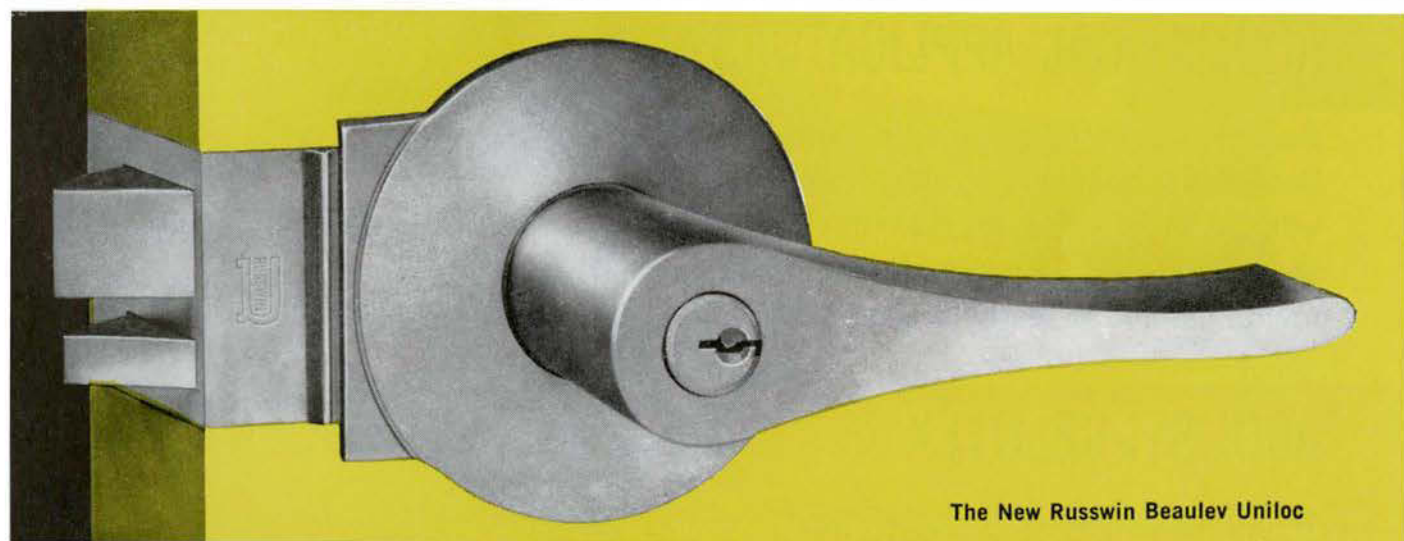
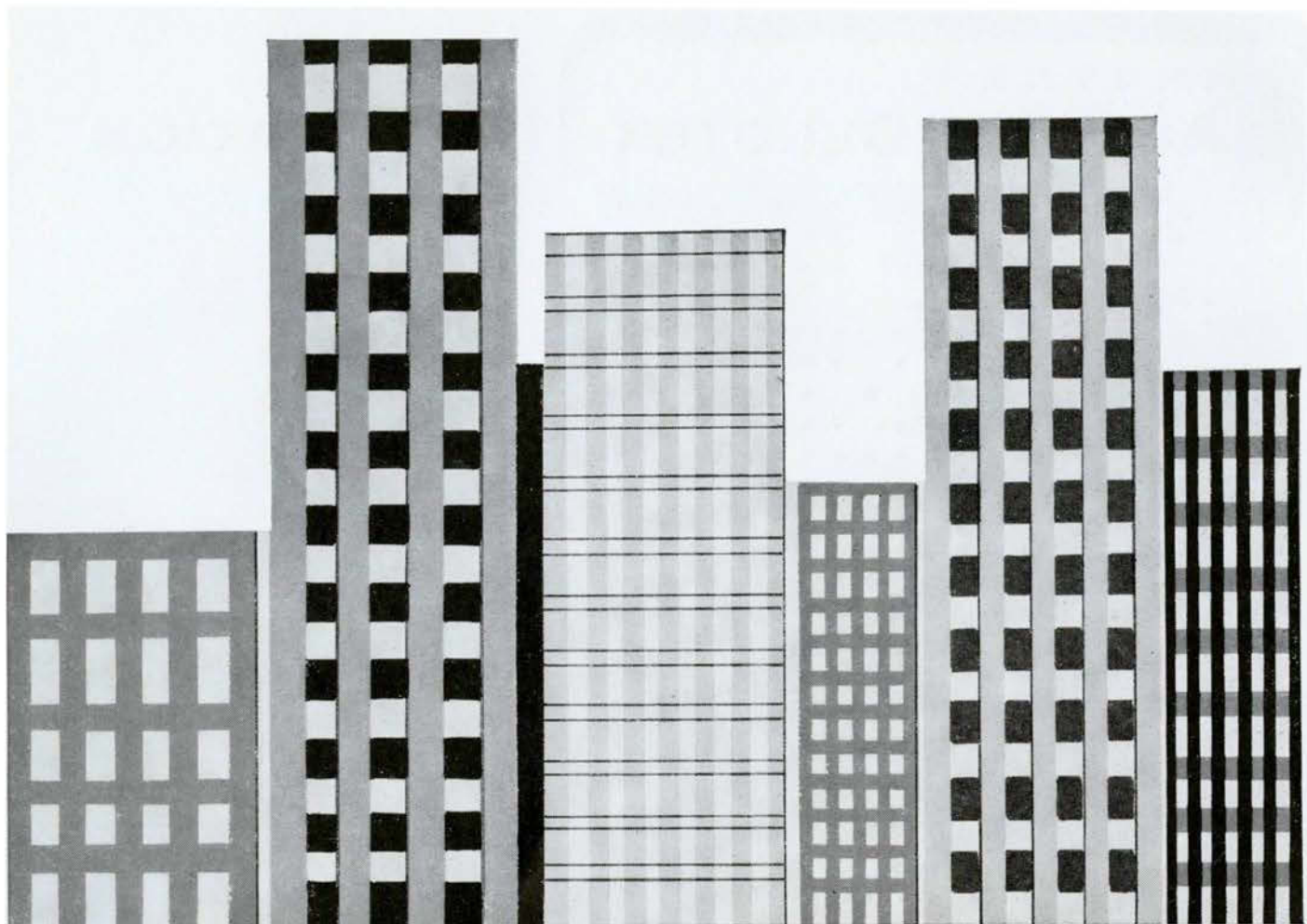


Flexalum verticals . . . louvre-like blinds to provide infinite range of light control, ventilation without drafts. Draw like drapes . . . to give classic vertical lines suited equally to contemporary and traditional architecture.



Flexalum Stellair . . . permanent window covering with a flair. Custom assembled of 3-inch translucent, fade-proof plastic modules. Admits light, air. Rejects glare. Most compact folding ratio available . . . one foot folds back into one inch!

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*Since 1881*

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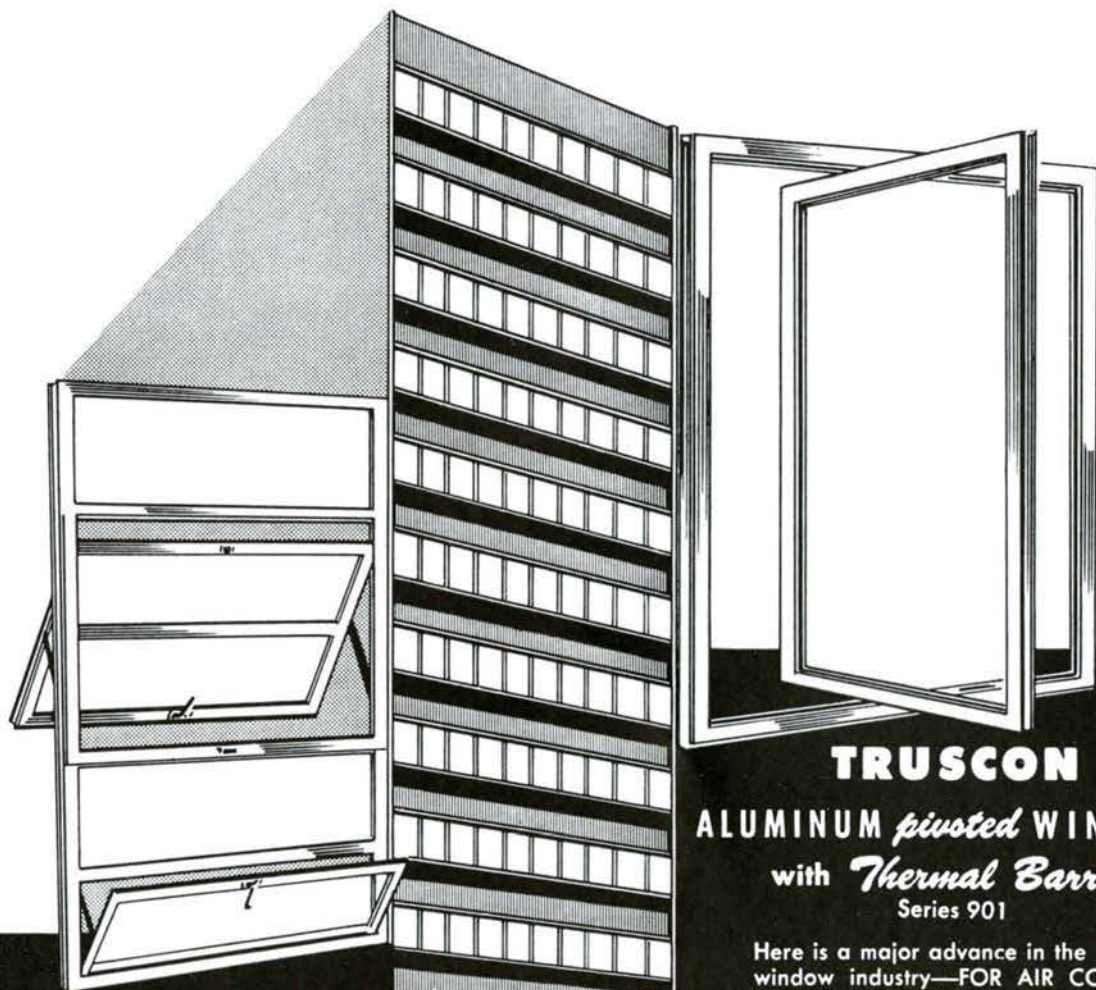
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ON DISPLAY AT BOOTH 64

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Designed especially for schools, offices, churches, public buildings, institutions, this TRUSCON window assures trouble-free performance. They are double weatherstripped around the entire perimeter, inside and out, reducing air infiltration to the absolute minimum.

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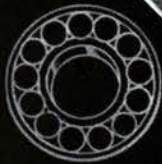
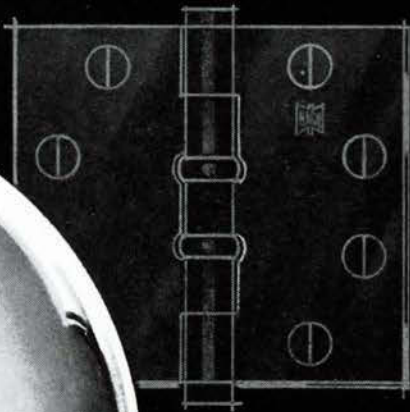
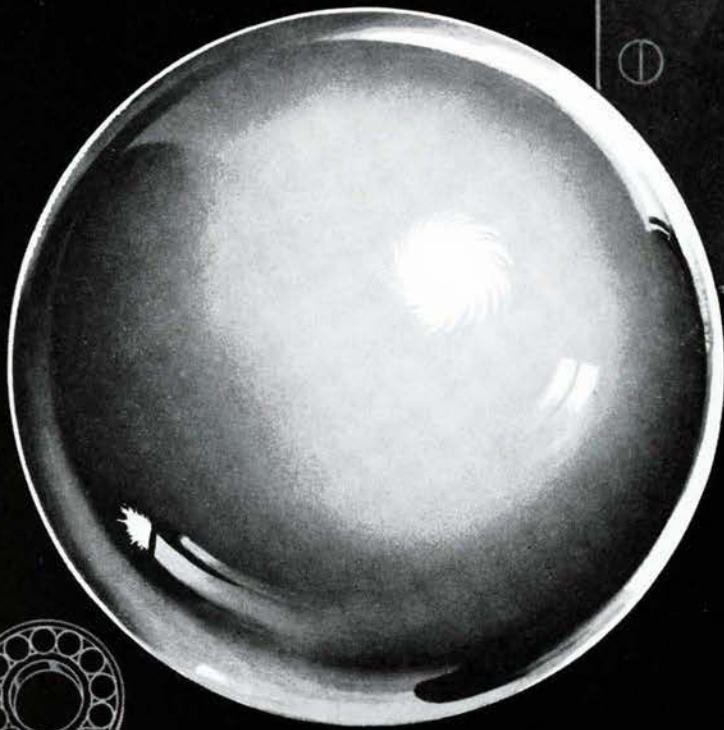
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**All 26 Keep Rolling Forever—not Part of the Time—  
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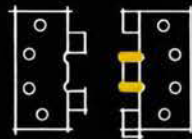
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You'd expect finer performance from *Hager* Ball Bearing Butt Hinges, naturally—and naturally, you have a right to!

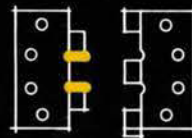
If it's expected to *stay for life*, then, of course

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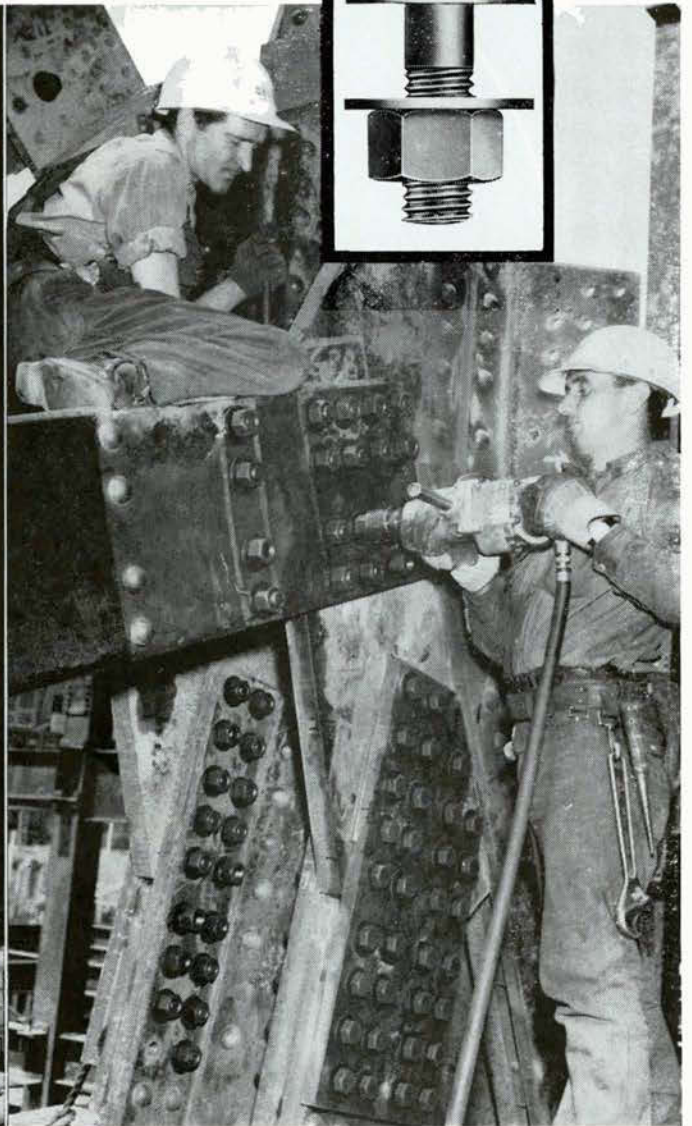
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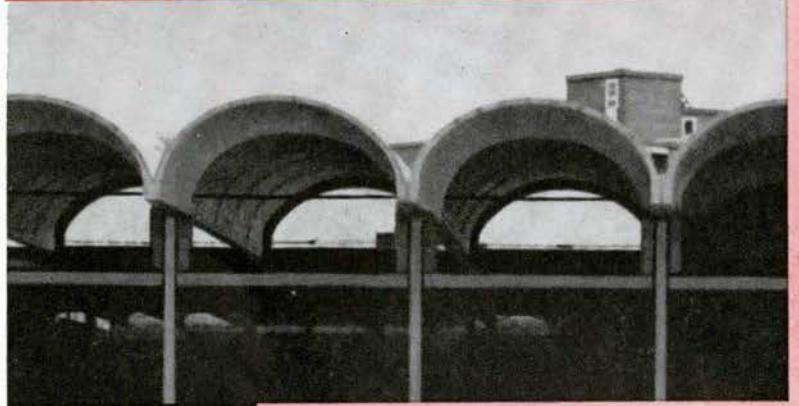
Architects and engineers are freeing themselves from the limitations of conventional roof design. The results of this liberation are many: great beauty; wide spans over large, column-free areas; surprising economy; and, above all, a new challenge to the architect's and engineer's creative imagination. All this with one versatile material—Concrete.

With the introduction of the Third Dimension into concrete roof design many variations in shape and functional applications are now possible.

# CONCRETE ROOFS

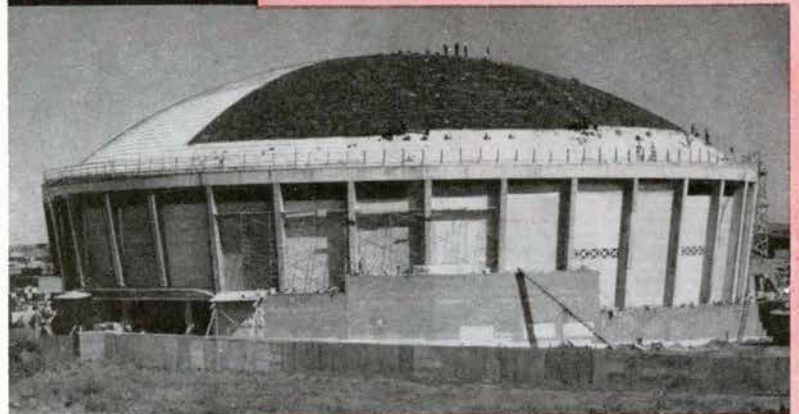
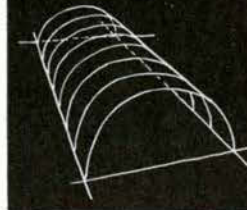
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1

**BARREL SHELLS** can often be precast and hoisted into place, with great savings in construction costs. Their functional efficiency is matched by the commanding yet graceful character they lend to any building (schools, public and commercial buildings) where they are used.



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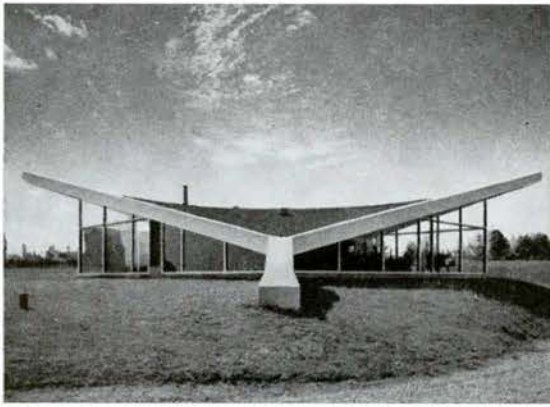
**DOMES** express lightness and symmetry. Their thin, ribless shells need only be supported at three points. The 275 ft. dia. dome roof of the new Maurice Richard Arena, an outstanding example of concrete domes is one of the largest inside column-free roofs of its kind on the Continent.



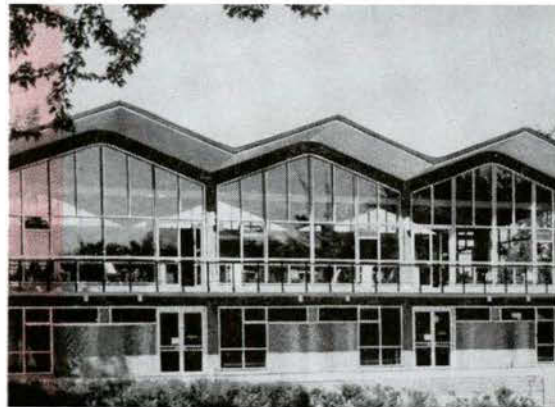
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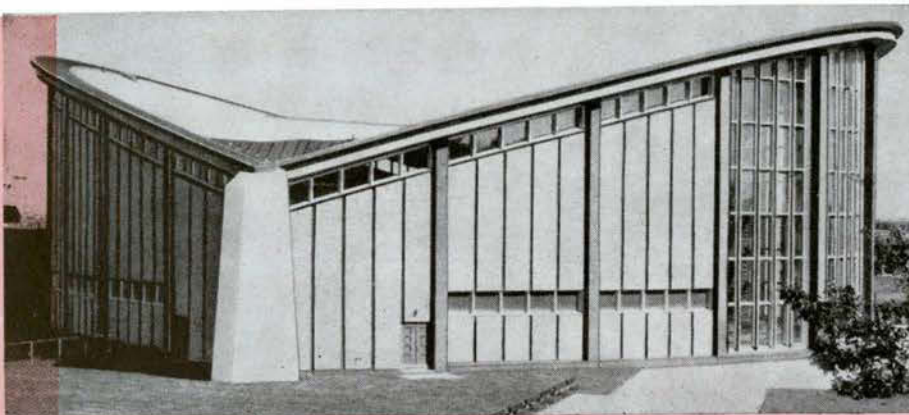
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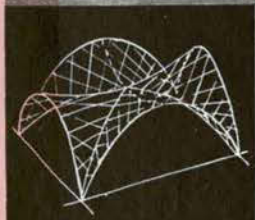
3



4



5



**HYPERBOLIC PARABOLOIDS**, with their double curvature, have tremendous spanning and load-carrying ability, combined with unusual architectural beauty. Yet their shape is composed entirely of straight lines. Forms and reinforcements can therefore be built of straight lumber and steel, obviously resulting in great construction economies.



6



**FOLDED PLATE** roofs also offer amazing spanning and load-carrying capabilities. The three basic types—V-shape, Z-shape and modified W-shape—can again be varied in many ways, and adapted to all kinds of buildings. In addition, their ability to cantilever has been capitalized upon in the design of schools, stores and industrial buildings.

**1.** Construction view of precast concrete thin shell roof sections for Steinberg's new store at Riverside Shopping Centre, Eastview, Ontario. *Architects:* Dawson & Baker. *Consulting Engineer:* Dr. Felix M. Kraus. *Manufacturer of Precast Concrete Shells:* Hochelaga Precast Structures, Ltd. *General Contractor:* Beta Construction Ltd.

**2.** Maurice Richard Arena, Montreal. *Architect:* Jean Julien Perreault. *Consulting Structural Engineers:* Brouillet & Carmel, *General Contractor:* Charles Duranceau, Limitée. *Precast Coloured Concrete Wall Panels:* Creaghan & Archibald Ltd. *Concrete Gunite Dome Roof:* Geocon Ltd.

**3.** Hyperbolic Paraboloid roof on the home of Mr. Cleeve Horne and Mrs. Jean Horne, Pickering Township near Toronto. *Consulting Architects:* Michael Clifford and Kenneth Lawrie. *Consulting Engineer:* Morden Yolles. *Contractor:* Nils Ericksson. The roof consists of a 2" concrete shell, supported by a frame of steel I-beams, and balanced by two reinforced concrete buttresses.

**4.** Folded Plate roof for Beaver Lake Pavillion, City of Montreal. *Architects:* Hazen Sise and Guy Desbarats of the firm of Affleck, Desbarats, Dimakopoulos, Lebensold & Sise. *Structural Engineer:* Antoni Martynowicz. *General Contractor:* Duroc Construction Inc.

**5.** New Montreal Sports Centre, featuring Hyperbolic Paraboloid roof design. *Architect:* Paul E. Lambert. *Structural Engineers:* Beaulieu, Trudeau & Associates. *General Contractors:* Omega Construction Co. Ltd. *Manufacturer of Precast Concrete Roof Slabs:* Porete Co. (Canada) Ltd.

**6.** Folded Plate roof, for Adath Jeshurun Hadrath Kodesh Synagogue, Montreal.

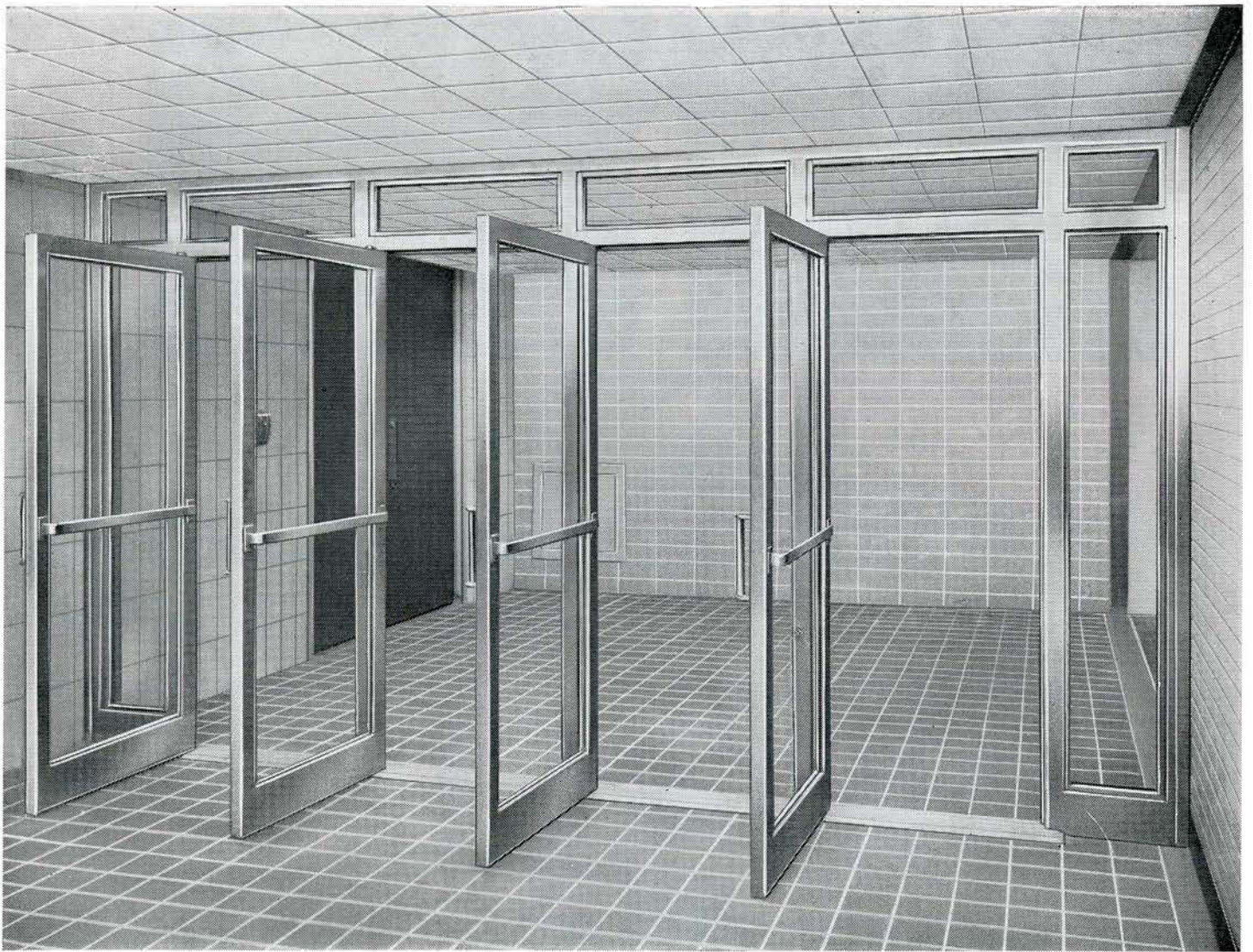
*Architects:* Mayers & Girvan, *Consulting Engineer:* Bernard Geller, *General Contractors:* Louis Donolo, Inc.

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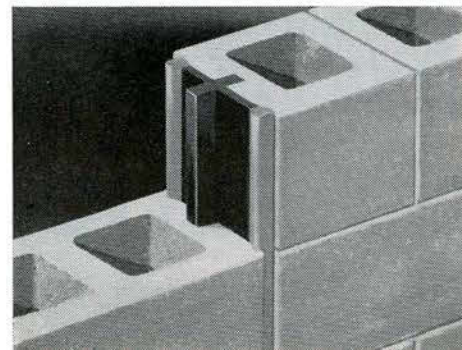
# DUR-O-WAL®

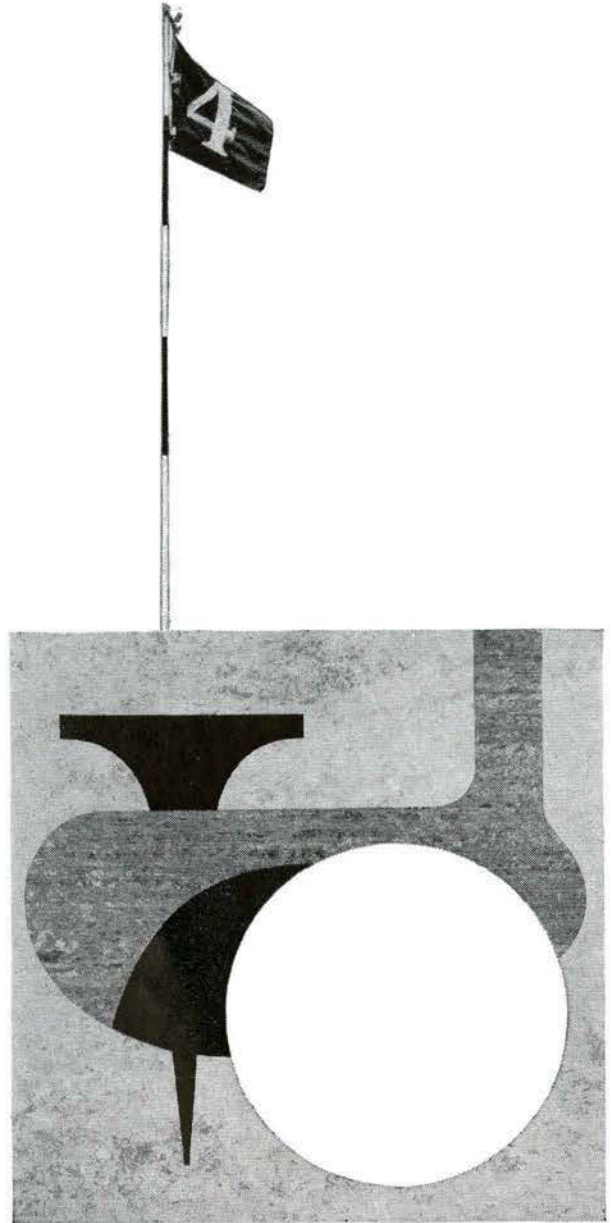
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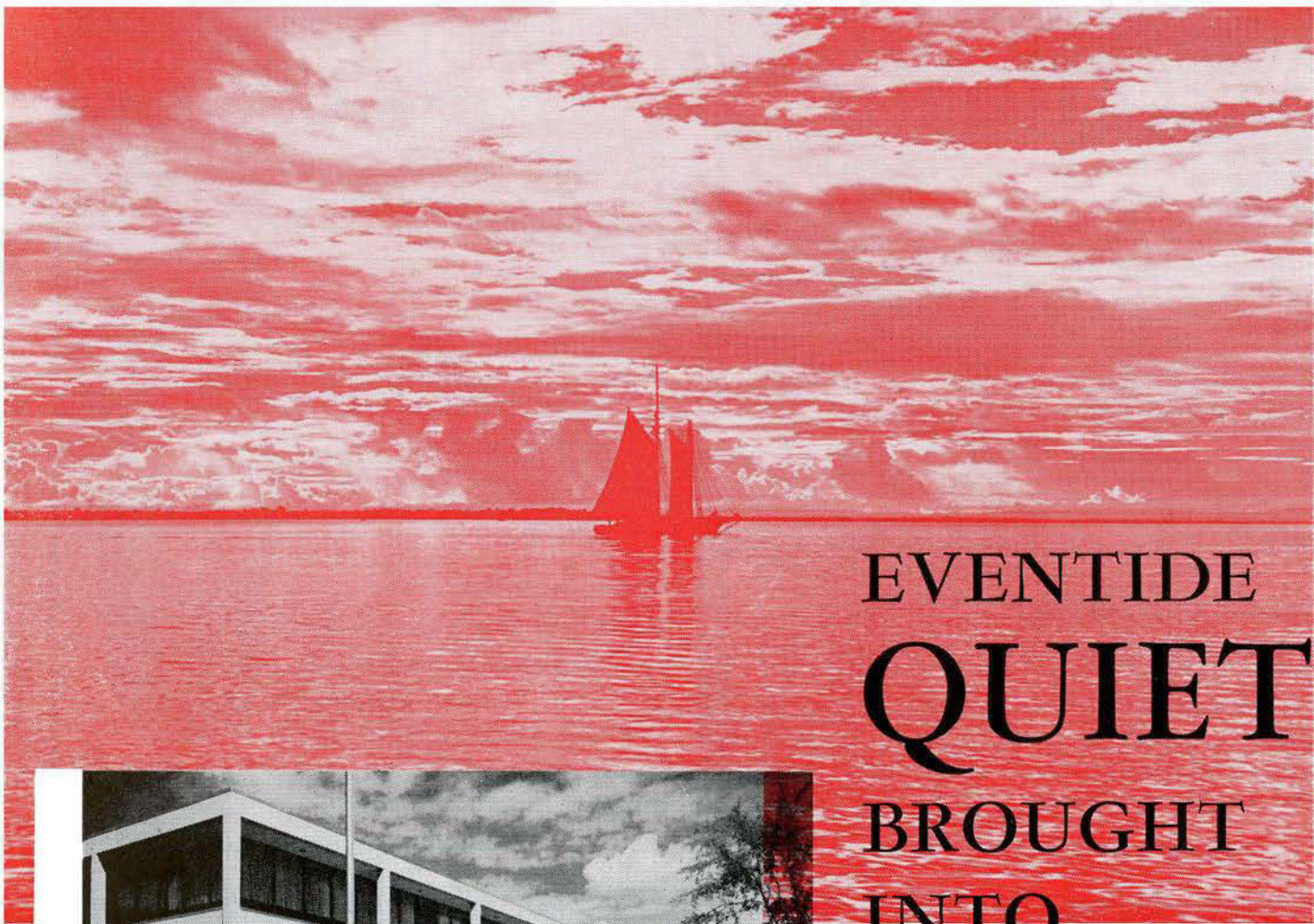
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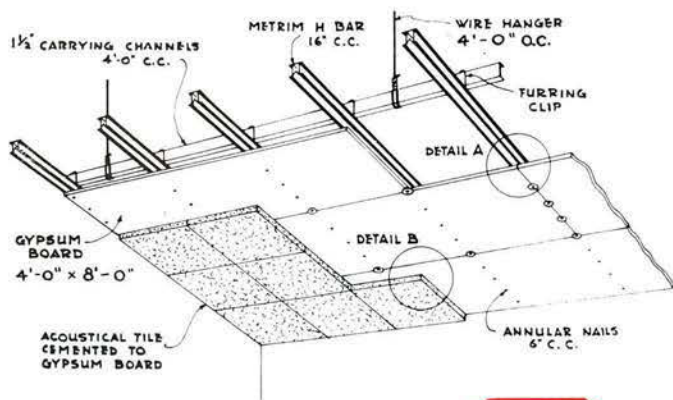


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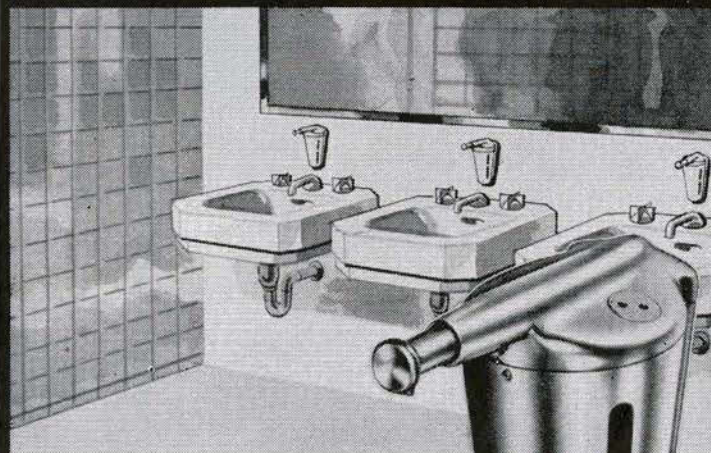


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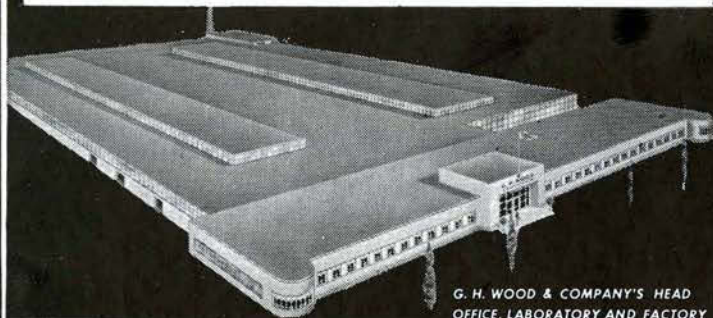
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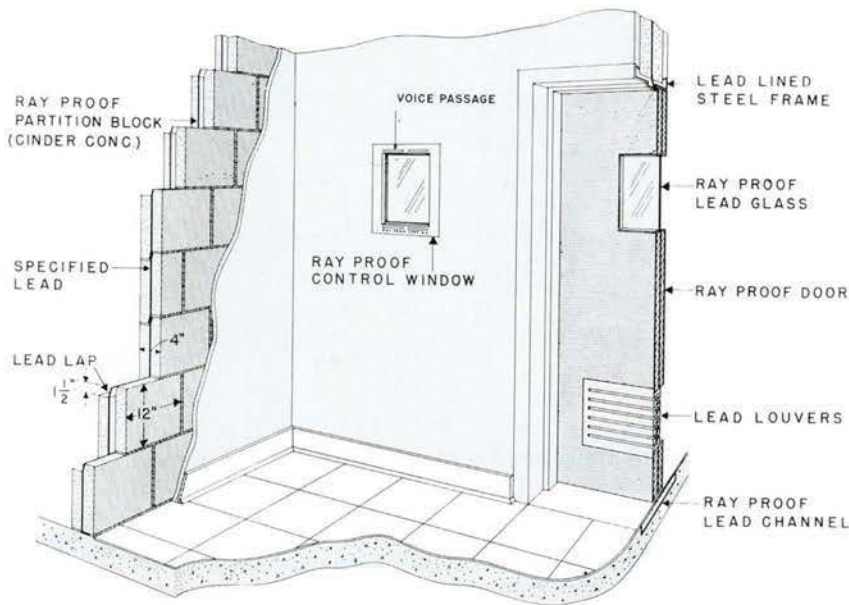
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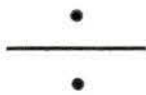
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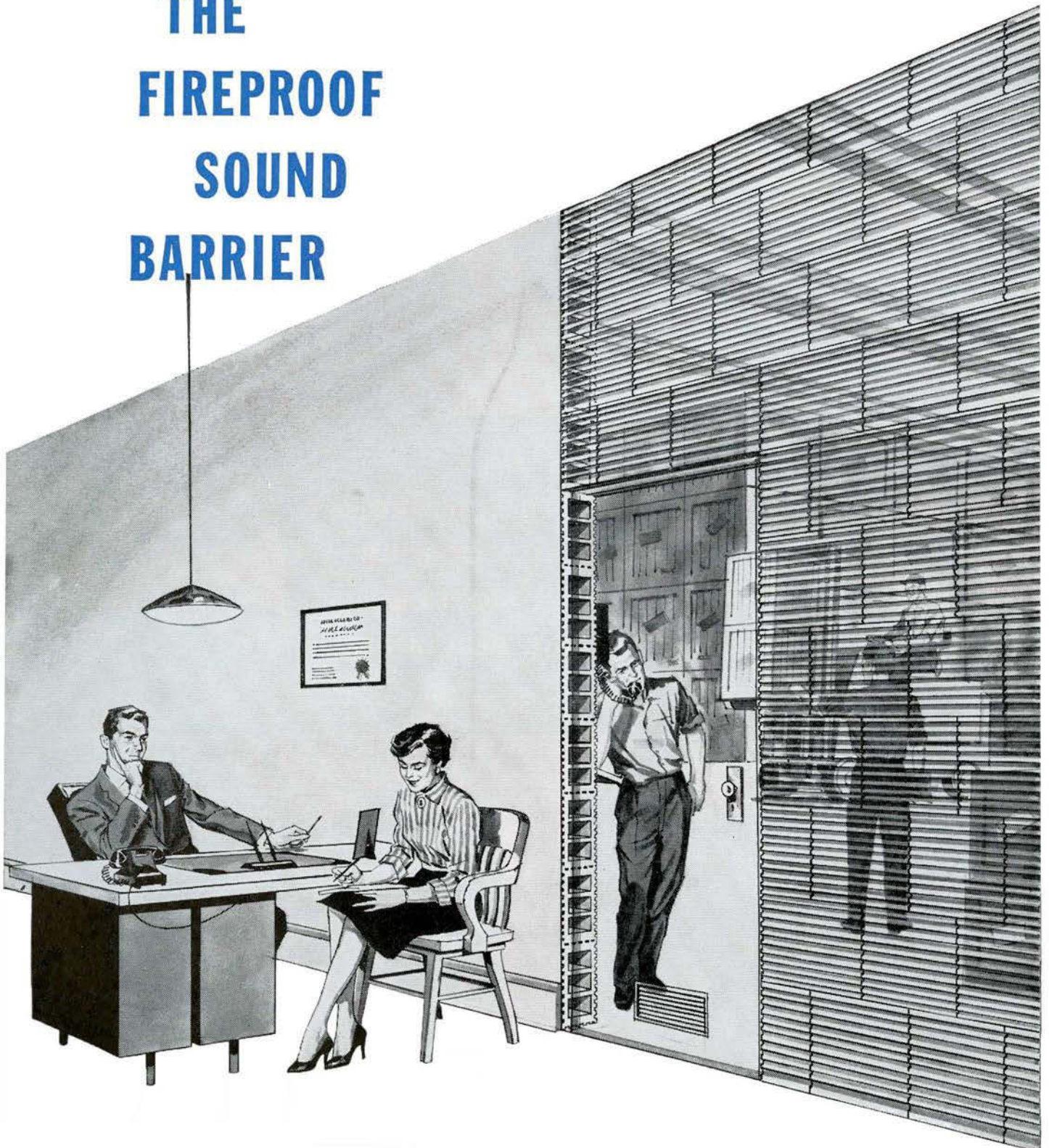
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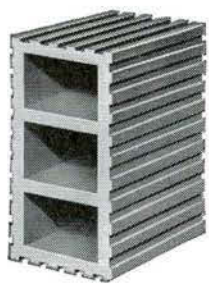
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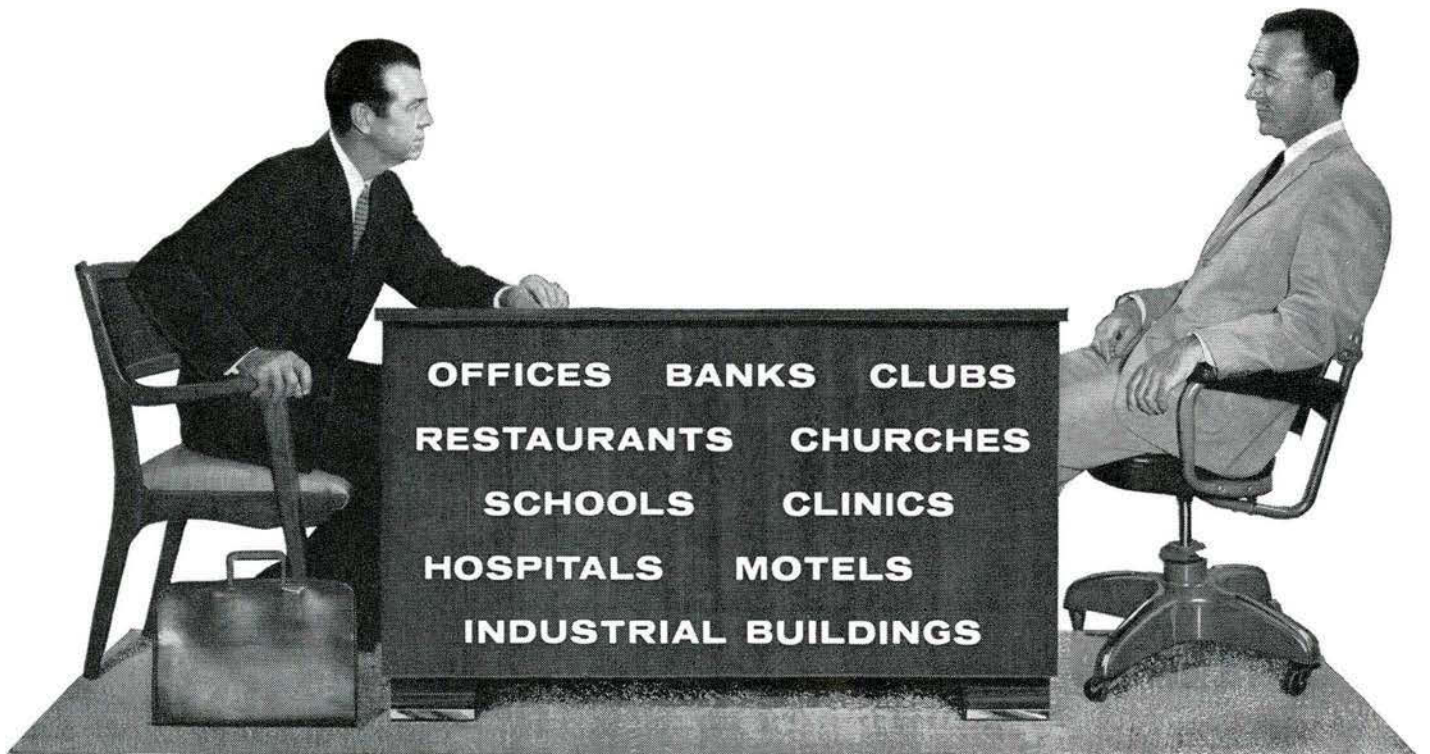
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# What Engineers and Architects Ask Us About Temperature Controls for Smaller Buildings



**Q.** Isn't it unusual to recommend pneumatic controls for the smaller installations? I always thought pneumatic controls were for the big jobs only.

**A.** Not at all. Johnson has always done work in buildings of all sizes. Naturally, you hear more about the big "name" jobs, but every year Johnson also furnishes pneumatic controls for hundreds of small and medium-size heating and air conditioning installations.



**Q.** To be practical, how small can a building be and still use a pneumatic control system?

**A.** Since building *size* has nothing to do with building *quality*, size isn't the problem at all. A quality-built *small* building needs just as good a control system as a first-class *big* building. That means *pneumatic* controls if you want to give your clients big-system standards of comfort, efficiency, and economy.



**Q.** What help does Johnson offer the engineer, the architect, and the contractor?

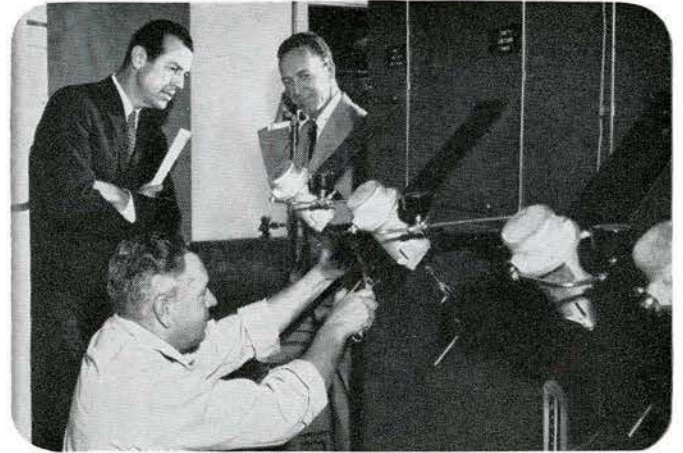
**A.** Johnson accepts complete responsibility for all control work. A Johnson engineer will plan a control system to meet your exact needs, no matter how small the job. His recommendations are backed by the Johnson organization's

49 years' experience with all types of systems and all makes of equipment. Likewise important, all installation work is done by Johnson's own full-time installation mechanics. There's no need for you to spend valuable time on planning, estimating, supervisory, or installation details. Thus, Johnson helps simplify your work, saves your time, and gives your client a top-notch control system.



**Q.** What advantages does the owner get from pneumatic temperature control systems?

**A.** They are much simpler and involve fewer components than other types. They require less supervision and are easier and less costly to maintain. Since each system is specially planned, they assure the greatest long range economy in the operation of heating and cooling systems. And, of course, nothing else combines the accuracy and dependability of pneumatic controls.



**Q.** Who does the owner look to for service when he uses pneumatic controls?

**A.** A good question and especially important to the smaller owner. Johnson backs its systems the way you wish all manufacturers could—by our own full-time, factory-trained mechanics, whose only job is the maintenance and repair of Johnson equipment. These men are stationed in all principal cities across Canada. Nobody in industry gives better or more complete service than Johnson.

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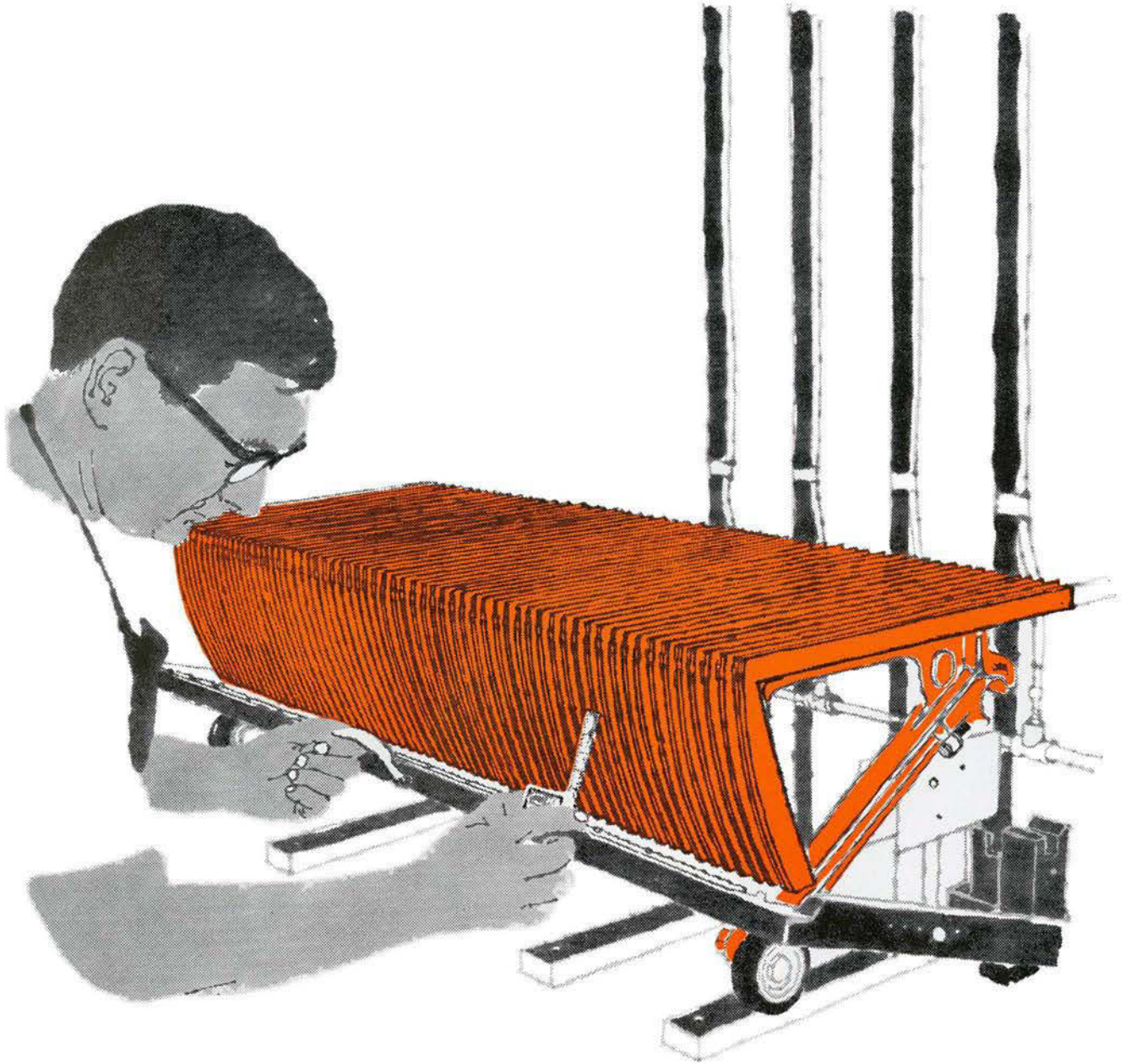
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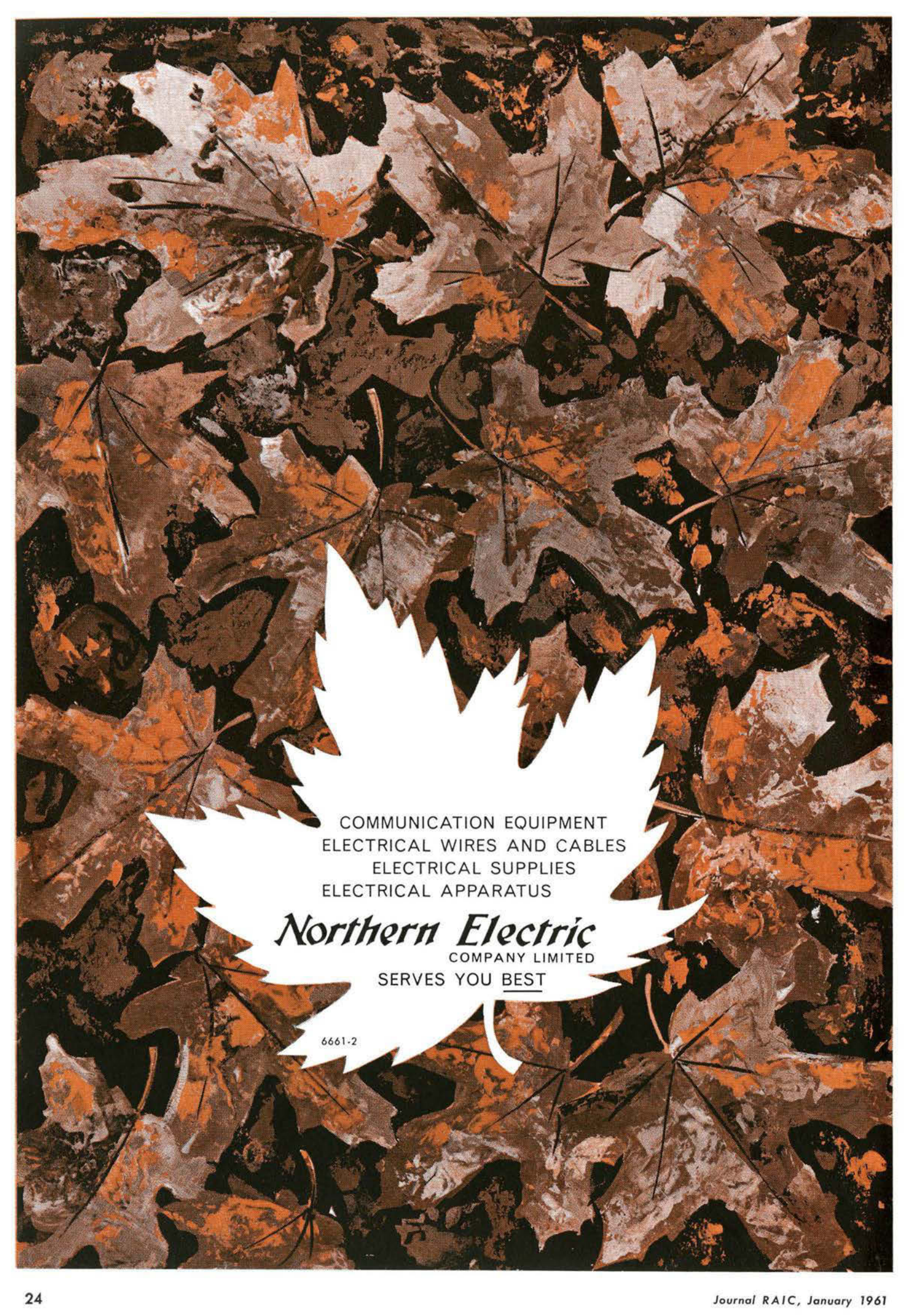
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SERIAL 425, VOLUME 38, NUMBER 1, JANUARY, 1961

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ONCE EACH YEAR the Chairman of the Editorial Board is called upon to try his luck on the editorial page. Put more soberly, it should be stated that this is a privilege bestowed upon the Chairman, and he traditionally honors this trust by penning a no-nonsense piece on accomplishments of the past and plans for the future. While I would not presume to break with this custom, I should like to offer a few random observations as a preliminary gesture and as a fond reminder of 1960.

The reader survey of the *Journal's* August 1960 issue evoked comments both provocative and illuminating. Topping the list of respondents were the heroic few who look eagerly for the dawn of a New Canadian Architecture, and who urge us to indulge in boldly avant-garde leadership in our editorial pages. We are commended too for publishing what has been described by Professor Milton Osborne as "one of the distinguished periodicals representing the architectural profession in the world today". We are informed bluntly by some that the *Journal* pursues a safe course in publishing the dullest and most mediocre of architectural works, while the real gems are seldom recorded on our pages. By contrast, others give the opinion that the *Journal* offers the best record of notable works of architecture in Canada. A plea is made for more critical writing, and for what might be termed as a more responsible concern for urban planning, housing, the Architect in Society, etc. Others submit that aesthetic criticisms and value judgments of specific works have no place in a professional *Journal*. We are told that advertising is an important part of the *Journal*, and that the design of advertisements should receive more critical attention. One member claimed that the *Journal* "contributes little toward the general artistic environment", and deplored the absence of any "vital discussion which would contribute to the development of a dynamic architecture in Canada". It would seem that this last salvo missed the *Journal* entirely, and landed smack in the middle of a small company of architects at which it was unwittingly aimed. Your *Journal* equals SAGE in efficiency as it listens eagerly for those faint signals heralding any vital discussion approaching from foreign shores, or of our own making; the *Journal* scours the land for the slightest trace of architectural works contributing in any sense to a general artistic environment which, by the way, shows every indication of worsening with the passing of time.

Not everyone would agree that a reader-survey can give practical guidance to those entrusted with the publication of a first rate professional magazine. Taken together, however, the survey replies yield up a strong and vital sketch of divergent views on architecture, on the state of the nation, and on our place in the scheme of things. In an age when Madison Avenue invents the word "prestige" as a cliché to describe a building which dares to be known by good taste alone, we would do well to think of our place in the scheme of things, for a profession too long in the land of milk and honey sometimes tends to worship a commercial image of itself. The *Journal* salutes all survey repliers and gives thanks to well wishers and critics alike.

Much was accomplished in the past year, as the *Journal* has enjoyed an increasing recognition by the profession at large, and we gratefully acknowledge that advertiser-interest has increased in proportion. Outright ownership of the *Journal* by the Institute opened the way for an appraisal of practices and attitudes acquired in thirty-seven years of publication. The new responsibilities of Ownership and an enterprising management have joined to bring about many notable improvements in editorial presentation and publication methods. The success of the *Journal* in 1960 is the work of many hands. On behalf of the Editorial Board, I should like to thank our Managing Editor, Mr Walter Bowker, and his staff, the *Journal's* Editorial Adviser, Dr Eric Arthur, the Institute's Executive Director, Mr Robbins Elliott, the regional assistant Editors and the provincial Editorial Committees, and all members of the RAIC who contributed to the *Journal* in the past year.

*Robert C. Fairfield*  
Chairman

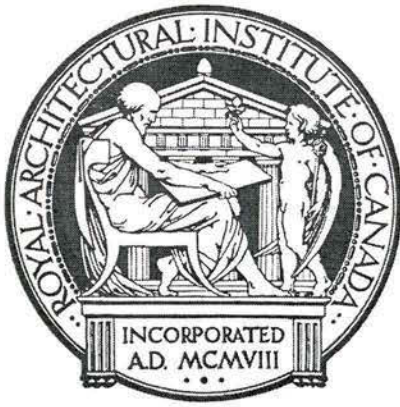
UNE FOIS L'AN, le président du comité de rédaction vient risquer sa prose en page éditoriale. Disons plutôt, pour parler avec décorum, que la tradition lui confère le privilège d'y aller de ses plus sérieuses considérations sur le passé et sur l'avenir. Pour ne pas rompre complètement avec la coutume, je me permettrai de faire ici quelques observations à bâtons rompus sur les événements survenus en 1960.

Le questionnaire qui a paru dans notre numéro d'août 1960 nous a valu des commentaires aussi stimulants que révélateurs. Mentionnons d'abord les quelques héroïques qui attendent ardemment l'aube d'une nouvelle architecture canadienne, et nous engageant à arborer résolument l'étendard de l'avant-garde. D'autres nous félicitent de nous classer, selon le mot du professeur Milton Osborne, "parmi les meilleures revues professionnelles d'architectes dans le monde actuel". Certains nous accusent carrément de craindre le risque: selon eux, nous faisons de la réclame aux oeuvres ternes et médiocres et passons sous silence les oeuvres vraiment marquantes. D'autres trouvent, par contre, que nous signalons très fidèlement les réalisations les plus remarquables de l'architecture canadienne. Quelques-uns nous demandent d'adopter un point de vue plus critique et de nous intéresser davantage à l'urbanisme, à l'habitation, à la place de l'architecte dans la société, etc. D'autres affirment qu'il n'appartient pas à une revue professionnelle de faire de la critique d'art, ni de se prononcer sur la valeur des oeuvres. Les annonces, nous disent certains, tiennent une place importante dans le *Journal* et devraient être mieux présentées. Un de nos membres, enfin, trouve que le *Journal* "n'aide guère à relever le niveau esthétique de notre milieu" et lui reproche de ne pas aborder de questions vitales et de ne pas favoriser l'avènement d'une architecture dynamique au Canada. Cette dernière critique, semble-t-il, portait complètement à faux et s'adressait plutôt à une petite société d'architectes. Avec l'efficacité d'un réseau d'alerte électronique, le *Journal* se tient à l'affût de tout ce qui, chez nous ou à l'étranger, pourrait stimuler les esprits; dans tout le pays, il s'intéresse au moindre bâtiment susceptible de contribuer tant soit peu à l'esthétique générale de notre milieu, qui, soit dit en passant, paraît décidément s'enlaidir avec les années.

Tout le monde n'admet pas l'utilité de consulter le lecteur pour publier une revue professionnelle de premier ordre. Les opinions de nos lecteurs soulignent néanmoins avec force les divergences de vues qui existent sur l'architecture, sur la conjoncture nationale et sur notre place dans la société. Quand les magnats du commerce mettent en honneur le mot "prestige" pour désigner un immeuble qui ose ne se distinguer que par son bon goût, il est temps pour nous de réfléchir sur notre rôle dans la société, car en pays de cocagne, une profession tend à la longue à ne plus s'intéresser qu'aux valeurs commerciales. Le *Journal* tire donc son chapeau à tous ceux qui ont répondu à son questionnaire et remercie au même titre ses admirateurs et ses critiques.

Depuis l'an dernier, le *Journal* jouit d'un crédit croissant au sein de la profession, ce qui, fort heureusement, aide à attirer les annonceurs. L'acquisition du *Journal* par l'Institut nous a fourni l'occasion de passer au crible les pratiques adoptées et les habitudes acquises sur une période de trente-sept ans. Le changement de mains et le dynamisme de la nouvelle direction ont permis d'apporter des améliorations sensibles aux éditoriaux et aux méthodes de publication. Le succès que le *Journal* a remporté en 1960 est l'oeuvre de nombreux artisans. Au nom du comité de rédaction, je remercie notre rédacteur gérant, M. Walter Bowker, et les membres de son équipe; le conseiller à la rédaction, M. Eric Arthur; le Directeur exécutif de l'Institut, M. Robbins Elliott; les rédacteurs adjoints régionaux et les comités provinciaux de rédaction; et tous les membres de l'IRAC qui se sont dépensés pour le *Journal* au cours de l'Année.

Robert C. Fairfield,  
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 W. G. RAYMORE, H. STEELE (F), G. E. WILSON (F).  
 PROVINCE OF QUEBEC ASSOCIATION OF ARCHITECTS —  
 M. PAYETTE (F), R. C. BETTS (F), H. MERCIER (F), P. MORENCY (F),  
 G. VENNE (F), F. J. NOBBS (F), H. A. I. VALENTINE (F),  
 P. G. BRASSARD (F), R. E. BOLTON (F), E. FISET (F).  
 SASKATCHEWAN ASSOCIATION OF ARCHITECTS — G. H. KERR,  
 J. PETTICK, G. R. FORRESTER.
- CHAIRMEN OF STANDING AND SPECIAL COMMITTEES** ARCHITECTURAL EDUCATION, JOHN L. DAVIES (F), *Vancouver*  
 BUILDING RESEARCH, S. A. GITTERMAN, *Ottawa*  
 PROFESSIONAL USAGE, HARLAND STEELE (F), *Toronto*  
 SCHOLARSHIPS, A. T. GALT DURNFORD (F), *Montreal*  
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 RAIC-CCA COMMITTEE ON BUILDING MATERIALS, ERNEST J. SMITH,  
*Winnipeg*  
 PLANNING FOR 1967 CENTENARY, PETER THORNTON (F), *Vancouver*

SIGNIFICANCE OF THE RAIC  
SALARY AND INCOME SURVEY

AS THE FIRST STEP toward acquiring relevant salary and income data concerning the architectural profession in Canada, the RAIC, in co-operation with the Economics and Research branch of the Federal Department of Labor, at the latter part of January initiated the first full-scale annual survey of employment and earnings in architecture. The Institute believes the profession has been handicapped in the past by lack of valid statistical data.

Members will already have received a letter from RAIC President Harland Steele, and a letter with accompanying questionnaire, from the Deputy Minister of Labor. A high rate of response is required. All members are urged to co-operate through prompt returns to the Department of Labor.

It is proposed that the survey be conducted in January of each year in future. In addition, summaries of results will be sent to all those who answer the survey.

The project applies to principals, self-employed or employed registered architects. However, other questionnaires are being sent to some 25,000 engineers and scientists. The survey program provides the only comprehensive set of statistics covering all architectural, engineering and scientific groups, and is carried out with the co-operation of the principal professional associations.

The previous survey covered the year 1959 and median earnings in the main professional groups, with comparisons for 1958, were as follows:

Field	Median Annual Earnings	
	1959	1958
Agriculture	\$6,400	\$5,900
Architecture	8,850	8,700
Engineering	8,100	7,900
Forestry	6,900	6,700
Natural Science	7,650	7,400
Veterinary Medicine	7,350	7,000

The survey will produce 1961 data about employment and education as follows: employment status by region, distribution by type of employer by region, sex and median age by region, and level of education by country of study. On earnings the survey will show: annual rates of remuneration by employment status, annual rates of remuneration by type of employer by region, annual rates of remuneration by function, and annual rates of remuneration by year of employment status by Province.

It is hoped that the salary and income data furnished by the survey will provide an effective answer to the incomplete and misleading statistics given annually by the Taxation Division of the Department of National Revenue concerning the average annual income of private architects in Canada.

L'IMPORTANCE DE L'ENQUETE DE L'IRAC  
SUR LE REVENU PROFESSIONNEL

VERS LA FIN DE JANVIER une première enquête annuelle, de grande envergure, sur l'emploi et les revenus des architectes professionnels a été mise en oeuvre par l'IRAC, avec le concours de la Direction de l'Economie et de la Recherche du Ministère du Travail Fédéral. A l'avis de l'institut, le manque de données statistiques valides a désavantagé les professionnels dans le passé.

Les membres auront déjà reçu la lettre du président de l'IRAC, M. Harland Steele—une lettre et un questionnaire du Ministère du Travail y étaient joints. Il est indispensable que la réponse soit générale et que les membres concourent par le prompt renvoi, du questionnaire rempli, au Ministère du Travail.

Il est proposé de faire l'enquête chaque année au mois de janvier. En outre, un résumé des résultats sera envoyé à ceux qui répondent à l'enquête.

L'enquête s'étend sur les architectes diplômés qui sont employeurs; qui opèrent à leur propre compte; et qui sont en emploi. De plus, d'autres questionnaires sont envoyés aux 25,000 ingénieurs et hommes de science. Exécuté avec le concours des associations professionnelles principales, le programme fournit une unique série de statistiques qui porte sur tous les groupes d'architectes, ingénieurs, et hommes de science.

Le revenu médian des groupes professionnels principaux pour 1959, extrait de l'enquête précédente pour une comparaison avec 1958 a été: —

Domaine	Revenu Médian Annuel	
	1959	1958
L'agriculture	\$6,400	\$5,900
L'architecture	8,850	8,700
Le génie civil & constructions	8,100	7,900
La sylviculture	6,900	6,700
La science naturelle	7,650	7,400
La médecine vétérinaire	7,350	7,000

Les données qui concernent l'emploi et l'éducation que l'enquête pour 1961 fournira, seront: la position régionale de l'emploi; la distribution régionale par employeur-type; de même de l'âge médian et des deux sexes; et le niveau de l'éducation par pays. En matière de revenu l'enquête montrera: les niveaux des rémunérations annuelles par emploi-type, par employeur-type et par région, par fonction-type, et par ancienneté et Province.

Il est à espérer que l'information fournie par l'enquête permettra la correction d'erreurs statistiques et qu'elle remplira les lacunes du rapport annuel de la Division de l'Impôt du Ministère du Revenu National, qui porte sur le revenu moyen annuel des architectes privés.



# York University

Toronto

BY THOMAS HOWARTH (F)

PREMIER FROST has stated that there will be 65,000 potential if not actual university students in the Province of Ontario by 1970, and possibly 120,000 by 1980. In an attempt to meet the growing demand for higher education, universities in the Province are expanding rapidly and new places of learning are being established, for example, Carleton University at Ottawa and the University of Waterloo. It would seem inevitable, however, that the great metropolitan centre of Toronto will continue to attract a large proportion of these students. The University of Toronto's enrolment now stands at over fifteen thousand and it is expected that the new building programme will meet the needs of upwards of twenty-five thousand students by 1970.

There is a desirable limit to the size of any educational institution if standards are to be maintained, and it was essential, therefore, that a second university should be

established in the Metropolitan area as a matter of the utmost urgency.

During the academic year 1958-59 a new university, happily named York University, secured its charter with the Honourable Robert Winters as Chairman of its Board of Governors, and Dr Murray Ross, formerly Vice-President of the University of Toronto, as its first President. Academically this new foundation is closely linked with the University of Toronto and for at least the first four years of its life will have the same minimum admission requirements; its students will write the same examinations as University of Toronto students, and all its work during the difficult period of early growth will be limited to subjects taught in the Faculty of Arts. In the fall of 1960, York University enrolled its first students and initiated courses in the University of Toronto's Falconer Hall, a fine old house on Queen's Park Crescent where several important rooms were elegantly prepared and furnished by George Banz, architect, of Toronto.

*Dr Howarth, who is director of the School of Architecture, University of Toronto, was appointed architect-planner of York University last summer. The first sketch project, described here, was prepared to meet an essential deadline, and the research, plan, model, and a report were completed in under seven weeks.*

Aerial view of Glendon Hall site

PHOTOGRAPHIC SURVEY CORP





As a further gesture of goodwill, the University of Toronto transferred to York University the beautiful Glendon Hall site on Bayview Avenue, formerly the Wood Estate. The existing Italianate residence has for some years been used by the Faculty of Law, and the property has served also as a research centre for the Faculty of Forestry and the Department of Botany. It is on this site that York University is erecting its first permanent building.

During the past year President Ross has been able to determine more precisely the place of this new institution within the provincial and, indeed, within the national pattern of higher education, and he has proposed an imaginative tripartite programme which will include a liberal arts residential college, a major campus, and an evening college.

### *The Liberal Arts College*

This is to be a small residential college specializing in general and liberal education — the humanities, the social sciences, and the pure sciences — accommodating about twelve hundred to fifteen hundred students of whom, approximately 80% will be in residence. In a statement to the press on October 30th, 1960, Dr Ross said “this college, if well supported, might well become the brightest star in the Canadian university firmament”.

### *The Major Campus*

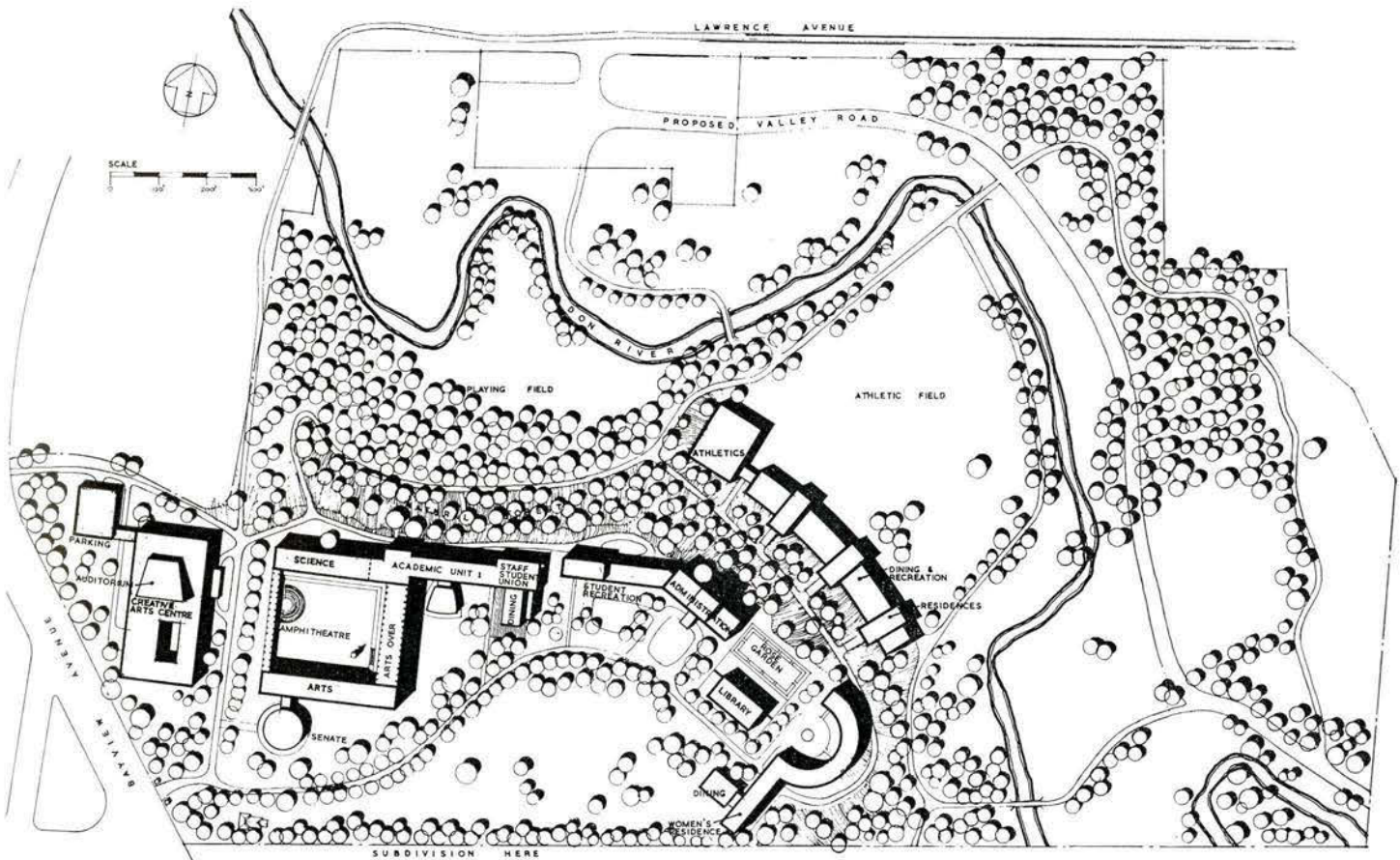
The major campus located somewhere in the greater Toronto area should be of 200-400 acres in extent and will serve from ten thousand to thirteen thousand commuting students. It will provide basic work in the arts

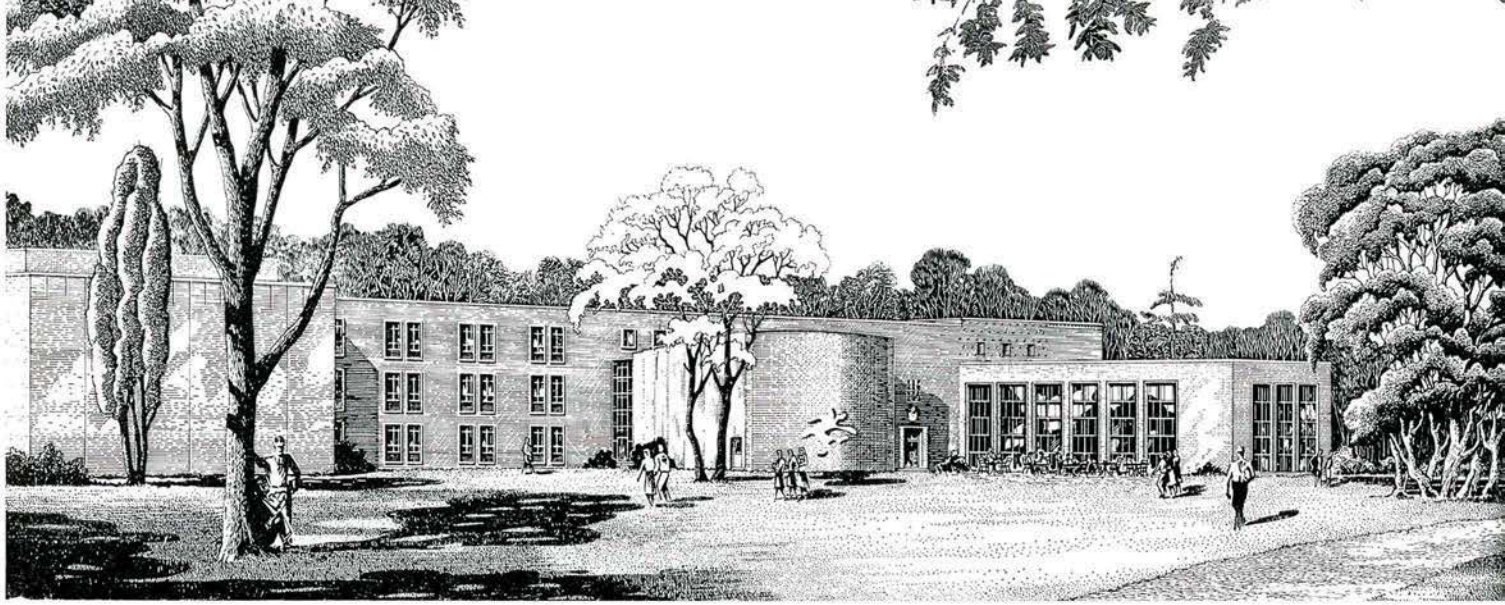
and sciences, and it will have professional schools and a graduate division.

### *Evening College*

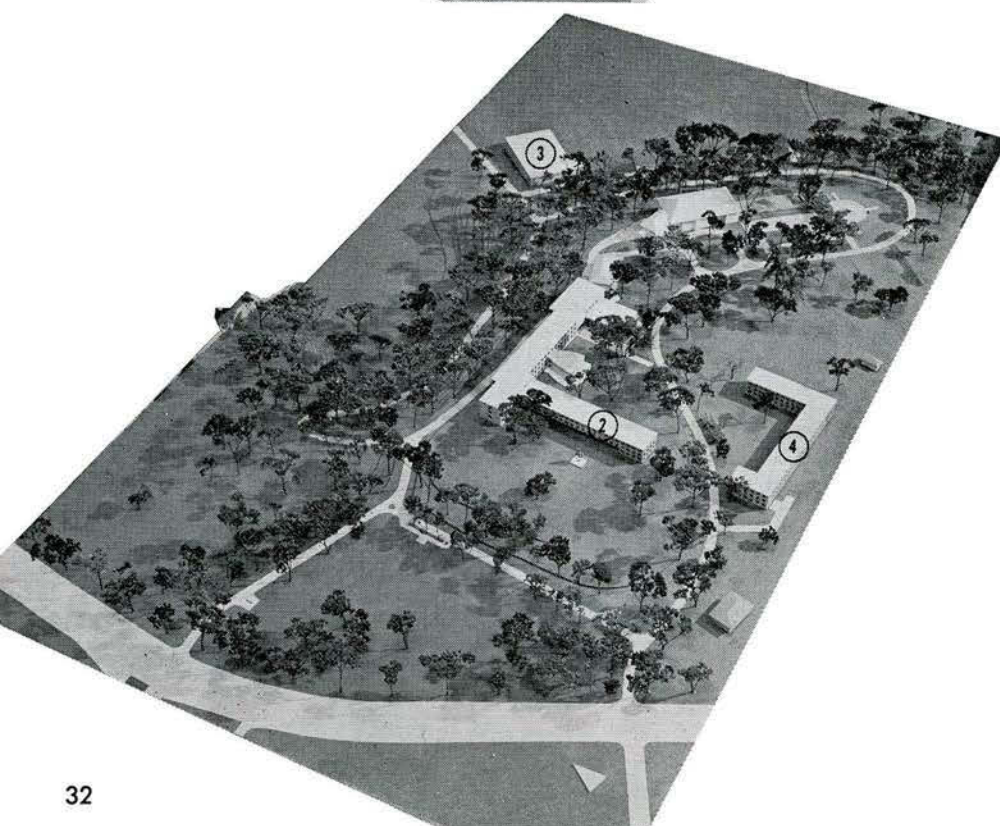
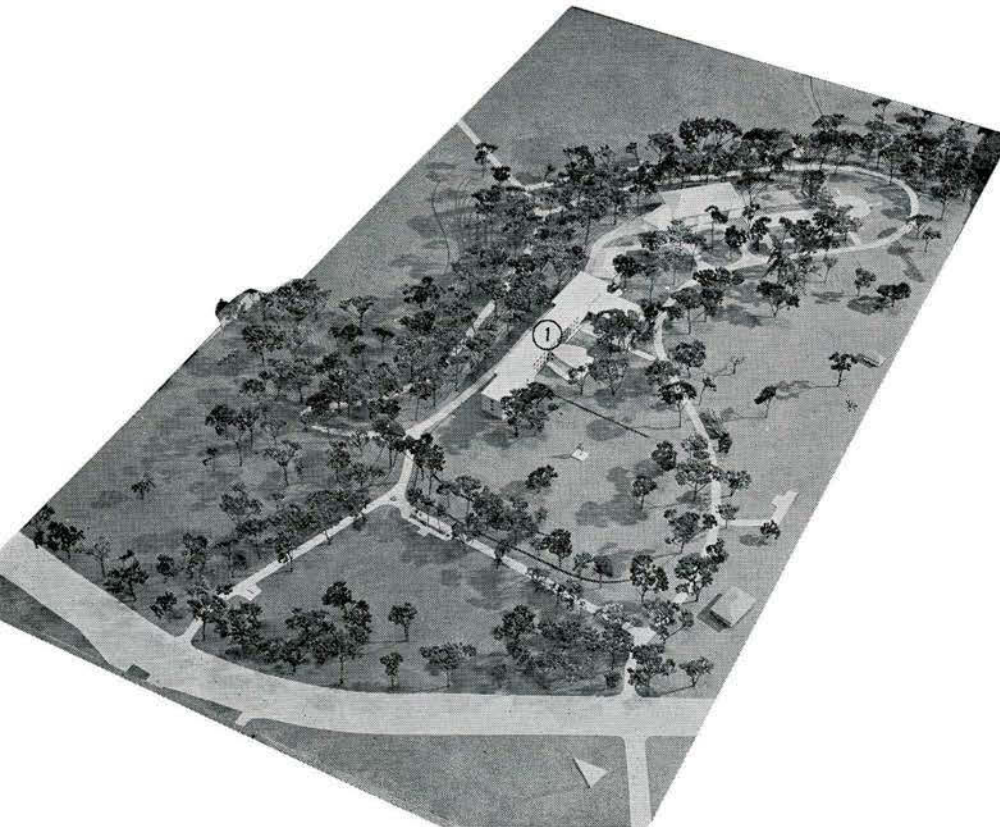
There is a great need in the Metropolitan area for evening courses leading to a University degree and an enrolment of from two to five thousand students could be anticipated in ten years time if adequate facilities were provided. This might constitute a third and separate campus, or it could be part of the major campus.

Since York University was committed to vacate its temporary quarters in Falconer Hall by September 1961 the Board of Governors decided to act with all expediency and begin this ambitious programme by building first a Liberal Arts College on the Glendon Hall site. The Toronto firm of Marani, Morris and Allen was commissioned by the Board to design the first building on the understanding that it would be completed and ready for occupation within a year; a program and a draft master plan for the whole development was then prepared by the writer in order to determine general principles and fix the location of the first building units. The draft plan, a rough design model (both illustrated here), a ten-year phased building programme and a report were submitted and approved in principle by the Board. The architects prepared working drawings for the foundations of the first building which were tendered separately and are now nearing completion according to schedule; working drawings and specifications for the superstructure have gone out to tender, and building should begin about February 1st, 1961.





The first buildings: architects, Marani, Morris & Allen, Toronto



### *The Glendon Hall Project*

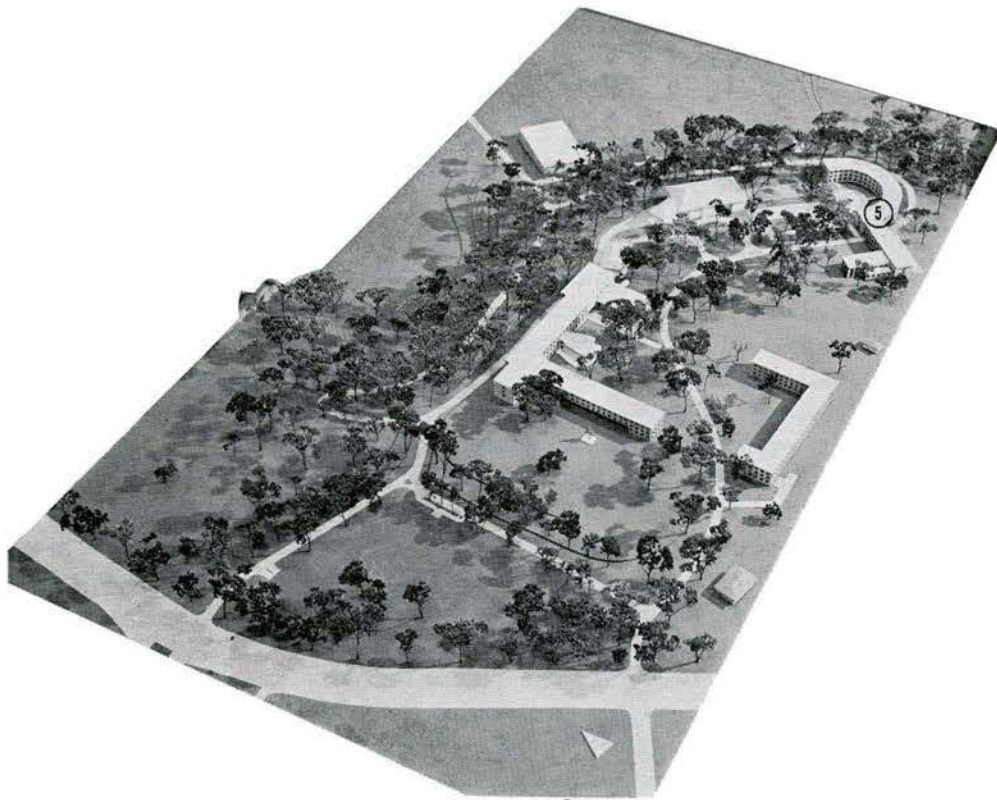
The site is situated about one mile east of Toronto's north-south artery Yonge Street, and about five miles north of the central area of the City. It is well served by public transport and is conveniently located on main north-south, east-west roads.

The property, about 81 acres is exceptionally attractive because of the variety of natural features it possesses; there is a park-like plateau of about 20 acres screened from a subdivision on the south by a belt of trees; there is fine valley land penetrated by the West Don River; and there are heavily wooded precipitous slopes, some of the only natural woodlands surviving in the Metropolitan Toronto region. The valley land is adjacent to the northern boundary of a large area controlled by the Metropolitan Toronto Region Conservation Authority which has done excellent work by limiting building development and preserving natural amenities. This area, too, forms part of a development projected by the Metropolitan Toronto Parks Department for recreational purposes with a valley road and spaces allocated for public parking and picnics.

The beautiful parkland at the upper level which is about a hundred feet above the valley has been developed and cared for by the Depart-

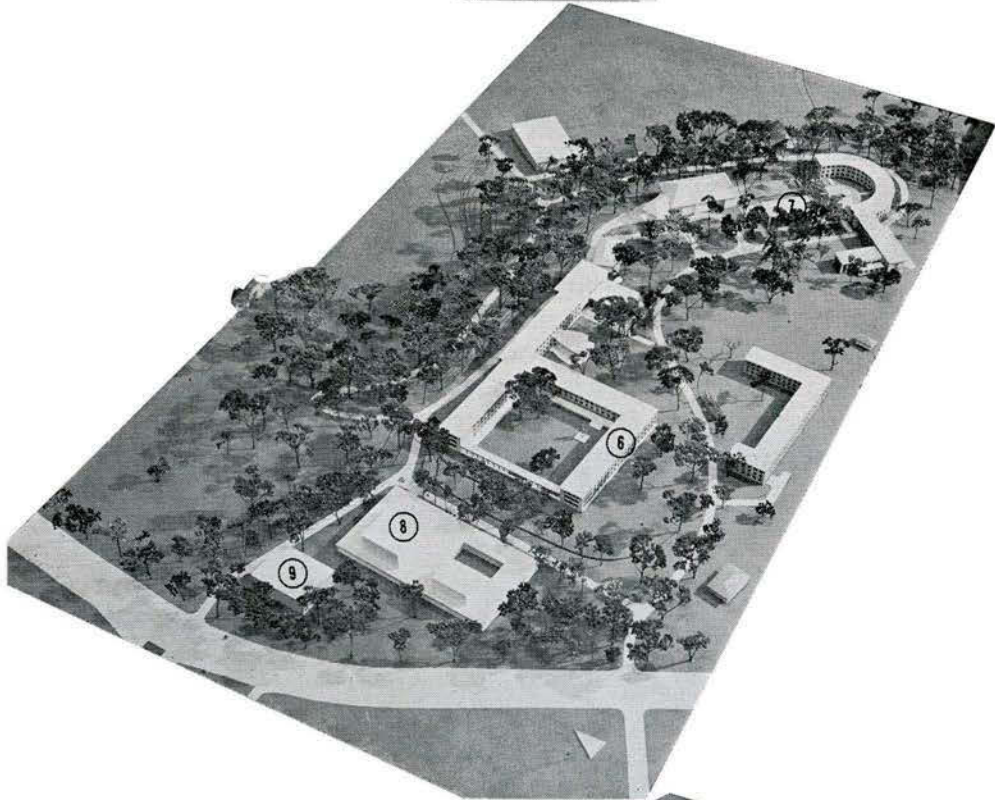
ment of Botany and the Faculty of Forestry at the University of Toronto for about ten years, and at one time it was expected that Glendon Hall might become a botanical garden and research centre but, for some reason, this project did not materialize.

The residence of the former owner is large, spacious, dignified, and in excellent structural condition. It is situated right on the edge of the plateau and commands a fine view over the lawns to the south and the valley lands to the north. It will be converted to house the president's suite



Left top: Perspective drawing by Marani, Morris & Allen of first building units. View from south showing dining hall, lecture room unit and main teaching block which contains faculty offices that are larger than usual to permit seminar teaching; some additional lecture rooms and seminar rooms; the faculty and student common-rooms (at the north east) and three laboratories to the west.

Left centre: PHASE I of proposed building program showing first academic units, (accommodating about five hundred students) and first dining hall by Marani, Morris & Allen (1). The former Wood residence can be seen to the north east.

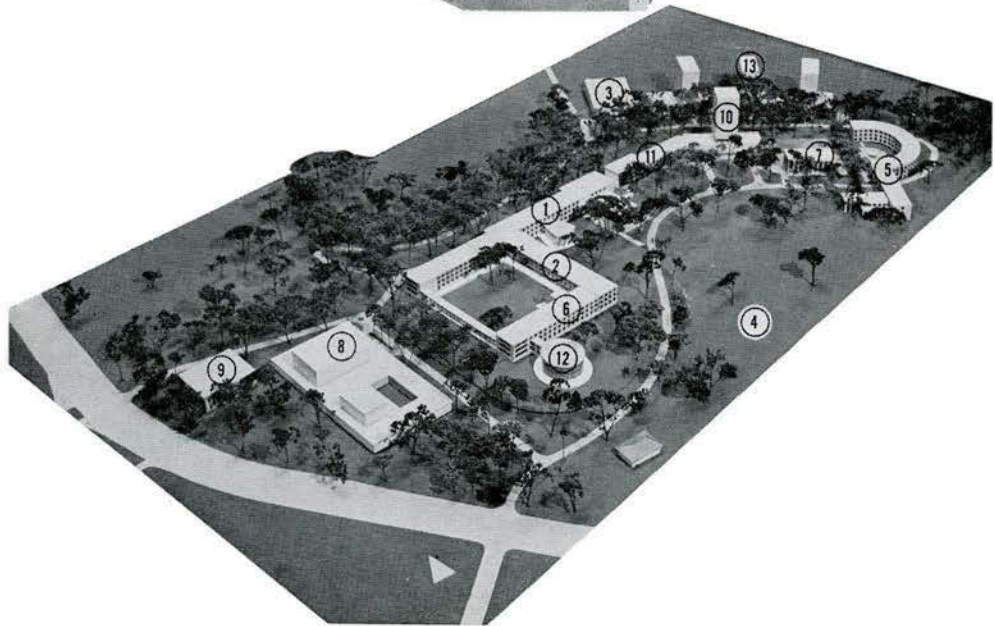


Left bottom: PHASE II. Possible extension of arts building with covered way below (2), athletic field house in valley (3). First residence (4), (see note in text).

Right top: PHASE III. Second residence and dining hall (5).

Right centre: PHASE IV. Major academic development. Completion of science wing and arts extension (6), library (7), creative arts centre and auditorium (8), with parking facilities (9).

Right bottom: PHASE V. New administrative building (10). New student and faculty unions (11). Senate chamber (12). Completion of residence program with dining and recreation facilities (13).



and administrative offices and temporarily, the library. The adjacent coach house will provide temporary recreational facilities for the students.

After a careful study of the site and the requirements of York University the following decisions were taken:

1. To retain the present character of the site by preserving as far as possible the lawns, magnificent trees and the natural forest areas.
2. To retain the existing road pattern since it would be adequate for a small campus where vehicular traffic would be discouraged, and since it is flanked throughout by well matured trees and is beautifully landscaped.
3. To confine buildings as far as practicable (in the light of 1 and 2 above) to the upper levels of the site, using the lower level for playing fields and athletics, and possibly for some students' residences against the hillside.

It was hoped by these means to preserve the openness of the site making it in effect an extension of the Metropolitan Park system whereby public pedestrian access could be freely obtained to the Don Valley lands from important residential areas west of Bayview Avenue.

The established road system subdivides the plateau into well-defined areas which have been retained and given clear identity. A creative arts centre and auditorium have been placed in the triangular area adjacent to Bayview Avenue where such buildings would be readily accessible to the public.

The main academic buildings would be grouped on the large level area immediately to the east of this which had no natural features of consequence. To provide shelter from the prevailing north-westerly wind and open up the campus to the south and west it is proposed to build right along the northern edge of the plateau where the ground falls precipitously into the valley.

Largely because of the severe climatic conditions that prevail through most of the present academic year it was suggested that all the academic units be connected, whatever form they may ultimately take, so that students and staff could walk from class to class, to the dining hall, and to the common-rooms under cover during inclement weather. A quadrangle could provide further sheltered areas, and the buildings defining it — more particularly those on the east and south — could be raised on piloti or suitably modelled to give spatial continuity and greater visual interest to this part of the project.

It is proposed to erect a senate chamber of circular or polygonal plan which could be an important sculptural feature directly facing the main pedestrian entrance to the site. This appears on the model as a low cylindrical building but its ultimate form cannot yet be determined.

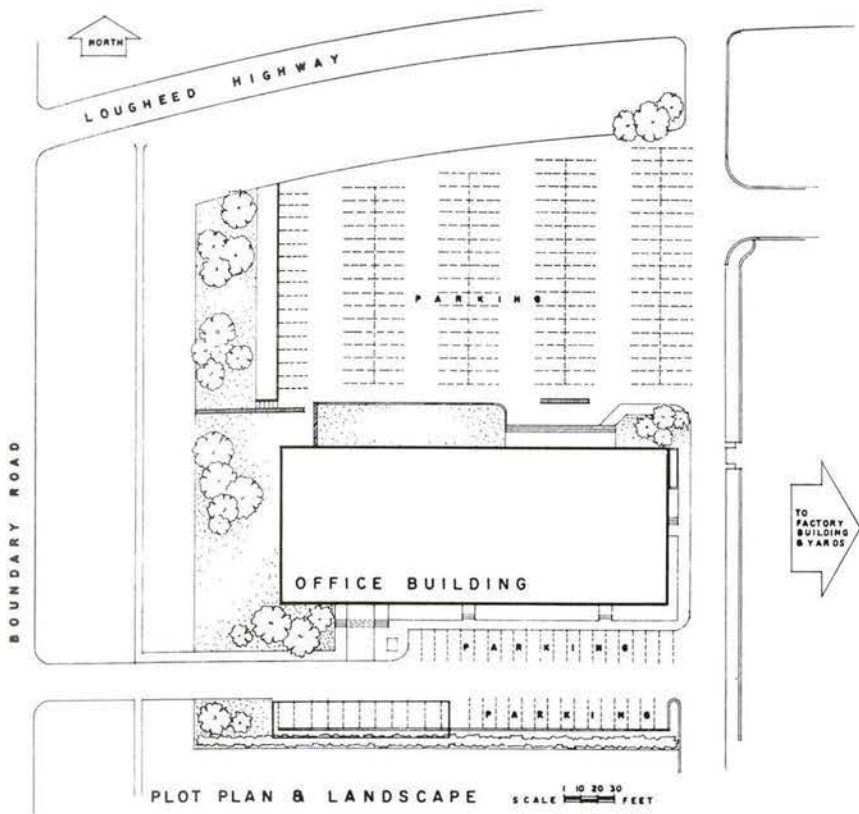
If it were ever necessary to demolish the old brick and stucco residence there would be considerable advantage in placing the administration in a tall building which would dominate and give focus to the whole development. The position of this building has been indicated on the model with a students' union and recreational facilities adjacent to it.

To the east of the existing house there is a formal rose garden that will be retained. The library has been placed on the bowling green to the south of this and there will be a paved terrace giving access to the rose garden. A heavy screen of trees will permit fairly large glass areas if required on the south side of the building and, of course, it will have excellent north light. This should provide an ideal setting for study and for conversation, especially during the spring and summer.

It is hoped that the large lawn with its magnificent trees on the south side of the main driveway will be kept relatively free of buildings, although it may be necessary to erect two halls of residence here. On the model one of these shaped like a question mark — possibly a women's residence — has been placed on the existing iris garden which is semi-circular in shape with a steep fall to the east; the roadway passes below the building and its dining hall has been placed on the lawn. A second residence to the west might have an irregular or a serpentine form more sympathetic to the line of the road, which would be preferable to the rectilinear block that was used on the model to indicate ground coverage and the volume of a three-storey unit housing about two hundred students (this building is not shown on the photograph of the model, phase 5). The three residence buildings shown in the valley would accommodate from 200 to 250 students each, and would be about a hundred and ten or a hundred and twenty feet high. It is proposed that they should be linked by low dining halls and recreation rooms all of which would enjoy fine prospects over the valley; secondary access to the towers might be obtained by footbridges from the roadway on the hillside. If well designed and carefully sited against the hill these buildings should detract not at all from the amenities of the valley lands. They would be situated above the flood plain level and would be so constructed as to be unaffected by any conceivable flood danger. In the valley adjacent to the playing fields there would need to be an athletic field house.

A parking consultant has advised that parking facilities close to Bayview Avenue, with some surface parking in the valley near to the proposed extension to Lawrence Avenue, and near the administrative building, would be quite adequate for a residential college of this size. All the grounds would be open to the public, but through vehicular traffic from Bayview Avenue to the valley roads would not be permitted.

The initial sketch project illustrated here will inevitably undergo many changes in the light of further study as York University develops and clarifies the details of its academic and residential policy, and none of the buildings — other than that by Marani, Morris and Allen — has been designed in detail. In its final form it is hoped that the college will, in the words of President Ross, "reflect the ideals of the contemplative life" — but not, one might add, the life of the cloister, for in a natural setting such as this there is no need for buildings to turn their backs upon the world.



Architects &  
Consulting Engineers:  
*McCarter, Nairne & Partners*

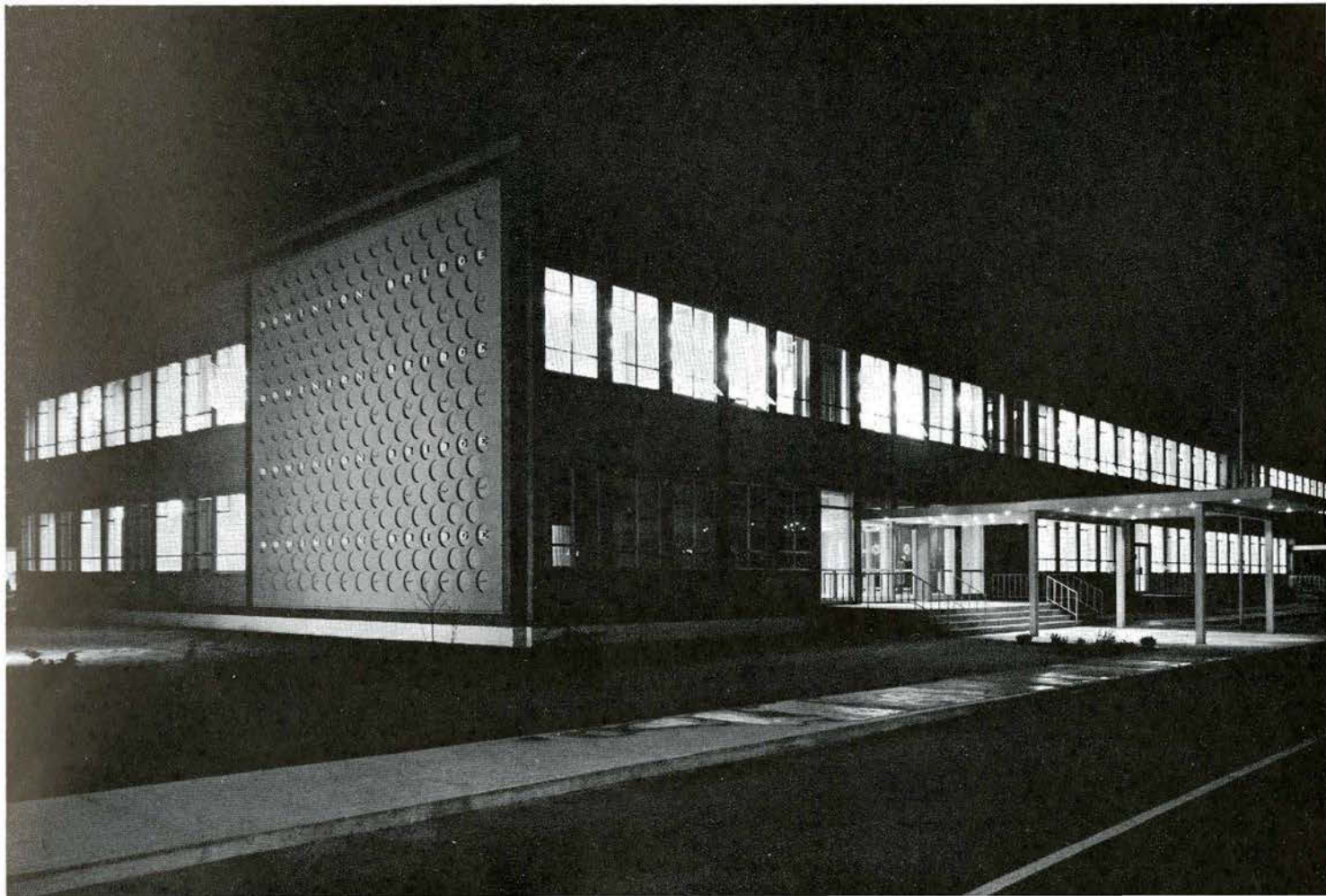
Heating & Ventilating:  
*D. W. Thompson & Company Limited*

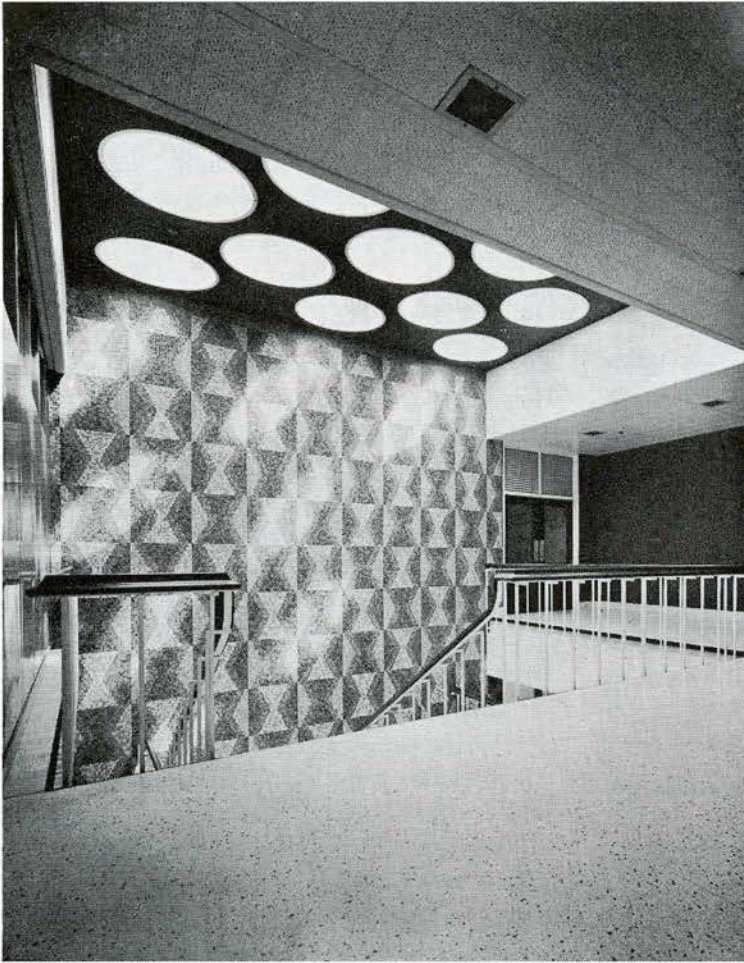
Electrical:  
*Simpson & McGregor*

General Contractors:  
*Smith Brothers & Wilson, Limited*

*Vancouver Offices of the Dominion Bridge Co. Ltd.*

HARRY CANTLON





*Main interior stair showing the mosaic tile pattern stair wall*

*Night view of main entrance looking towards the lobby*

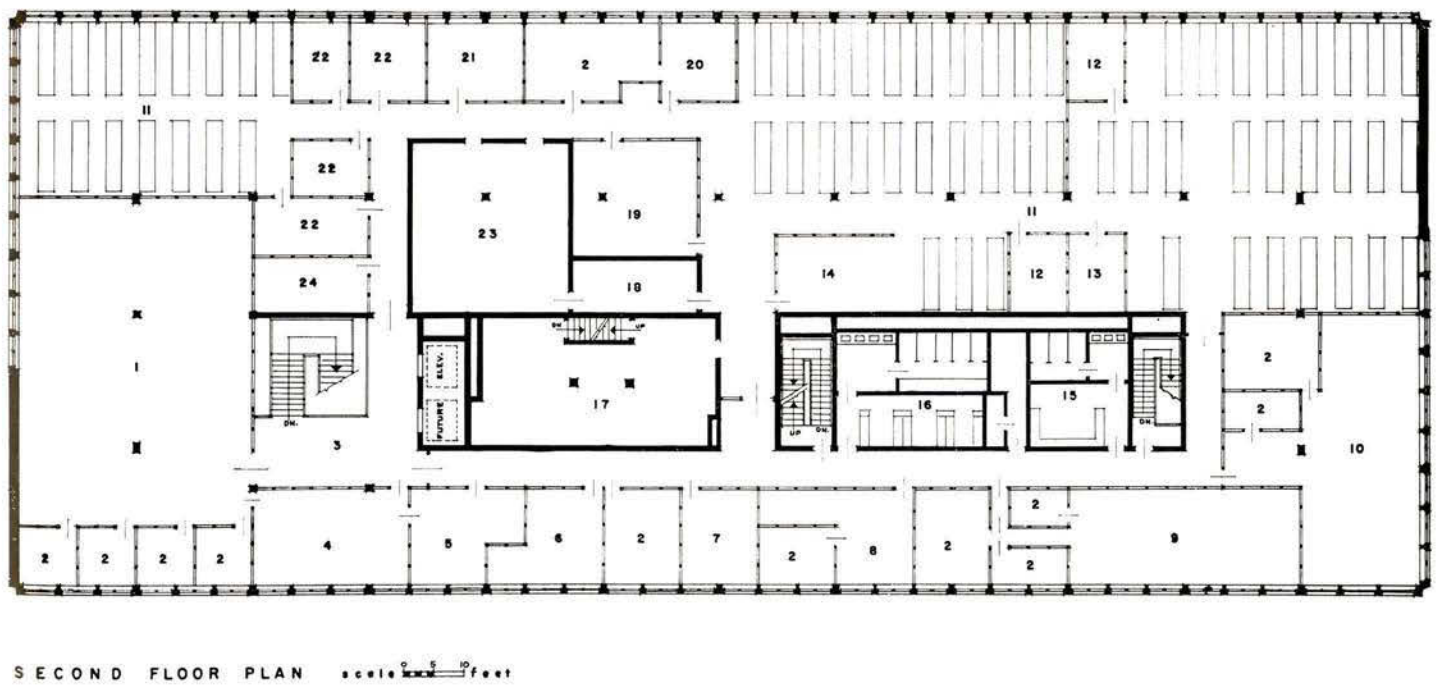
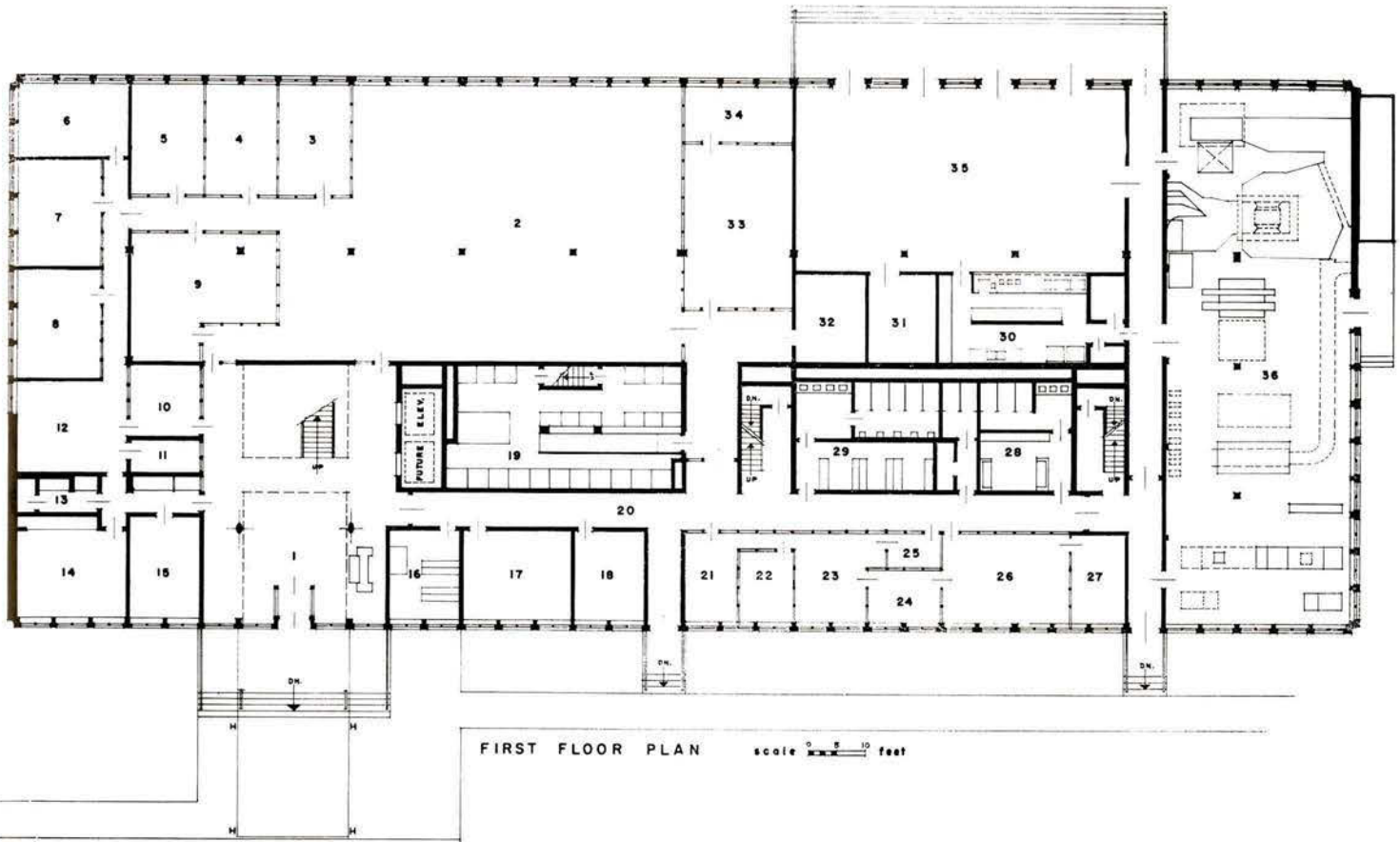


## KEY TO FIRST FLOOR PLAN

1. Entrance Hall
2. General Office
3. Accountant & Cost Accountant
4. Office Manager
5. Auditor
6. Executive
7. Executive
8. Comptroller
9. Secretaries, Cashier & Payroll Department
10. Waiting
11. Stationery
12. Secretaries
13. Toilet
14. Manager
15. Board Room
16. Telephone Equipment
17. Industrial Public Relations
18. Women's Rest Room
19. Vault
20. Corridors
21. Manager
22. Assistant Manager & General Superintendent
23. General Office
24. Erection Engineer
25. Waiting
26. Engineering & Drafting Office
27. Superintendents
28. Women's Locker Room & Toilets
29. Men's Locker Room & Toilets
30. Kitchen — Storage & Toilet Rooms
31. Table
32. Stationery
33. Purchasing
34. Office
35. Lunch & Meeting Room
36. Mechanical Room

## KEY TO SECOND FLOOR PLAN

1. Contract Office
2. Offices
3. Upper Lobby
4. Stenographers' Files
5. Contract Engineer
6. Sales Manager
7. Conference Room
8. Production Office
9. Warehouse Office
10. Steel Office
11. Drawing Office
12. Engineers
13. Catalogues Specifications
14. Liaison
15. Women's Locker Room & Toilets
16. Men's Locker Room & Toilets
17. Vault
18. Photostating
19. Computers
20. Chief Draftsman
21. Chief Engineer
22. Engineers
23. Blue Printing Room
24. Library & Stationery



The building is situated in the north-west corner of a large tract of land devoted to the manufacturing operations of Dominion Bridge Company's Western Division. This land, which was formally an old lake bed, required about 4' of fill over its entire area as the water table lies only a few inches below existing grades. The departments housed here include Executive, Administrative, Design, Sales Engineering, Accounting and Purchasing. Provision has been made for the addition of two future storeys at which time two elevators will be installed. A 3'-3" module was used throughout, allowing complete flexibility of arrangement around the reinforced concrete central core. The drawing vaults are designed to be extended upwards at the time of expansion and are protected by an automatic carbon dioxide extinguishing system.

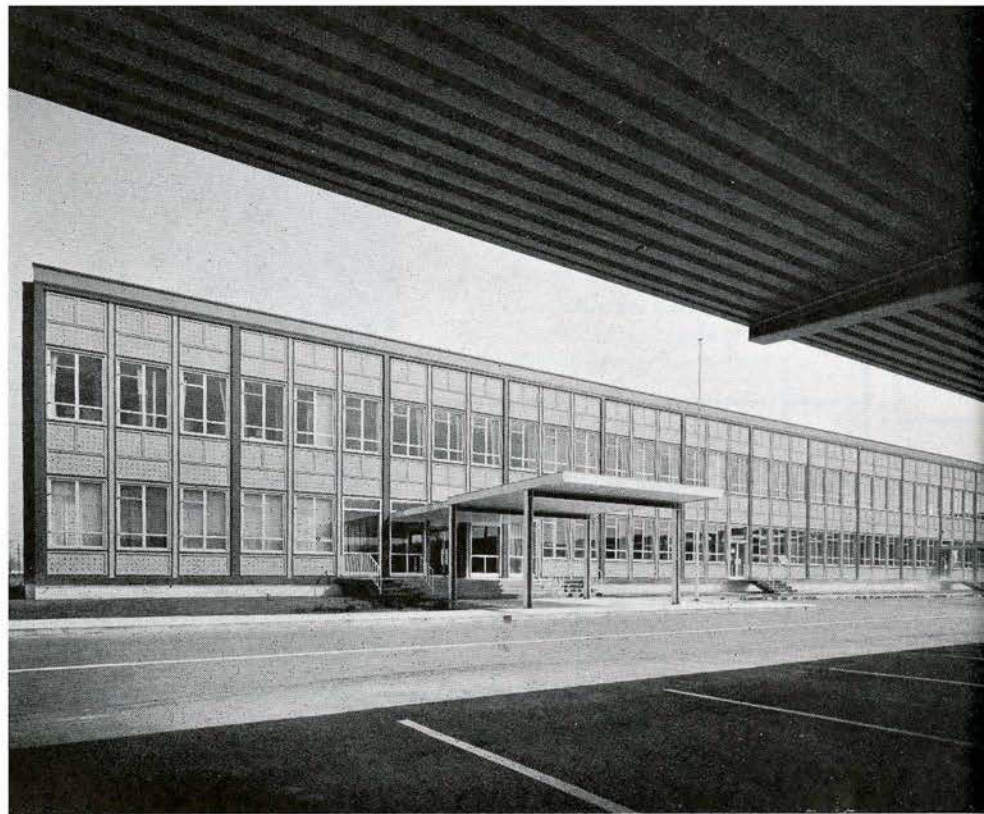
In order to permit flexibility, movable steel partitions have been used predominantly and air diffusers and other services are also movable.

**Construction:**

Wood piles, steel frame with precast concrete walls and first floor, second floor and roof cellular steel with strips of conduit bearing floor alternating. Interior finishes are exposed pumice block and plaster walls enamelled steel movable partitions, lino tile and rubber tile floors, reinforced metal pan acoustical ceilings.

**Mechanical:**

Hot water and tempered air from oil fired boilers. Provision is made in air circulation system for future cooling.

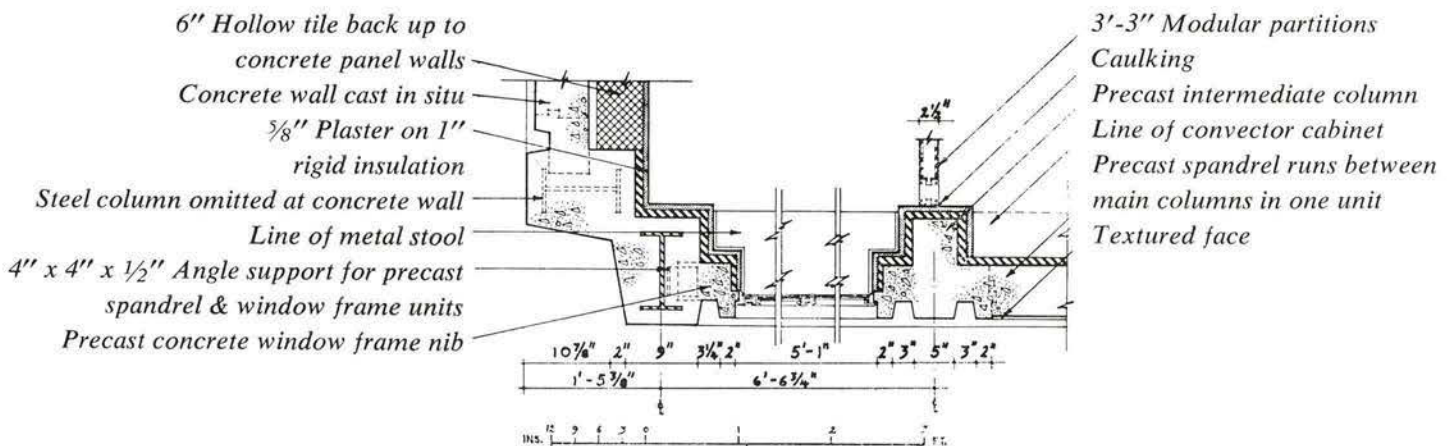
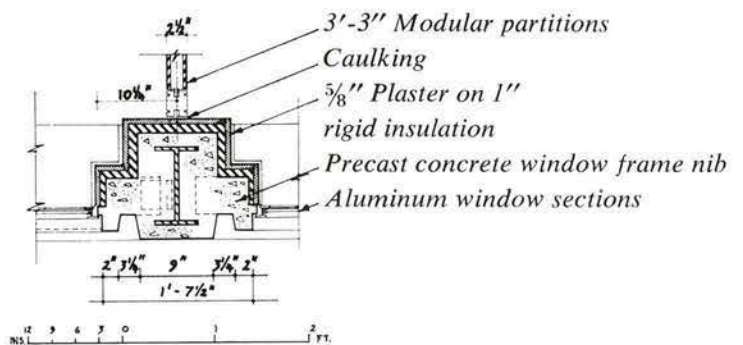


View of the front elevation and entrance to the building

HARRY CANTLON

The construction is somewhat interesting since experiments were made to combine in an economical manner, precast concrete and structural steel. On one side, steel spandrel beams were used. Precast concrete panels on this side serve only to enclose the building and carry no loads. On the other side, the structural steel spandrel beams were

omitted and load bearing precast concrete spandrels used. Close account was kept of the erection costs with a view to determining whether or not load bearing precast elements could be combined economically within a steel frame. No clear cut advantages were proven, however the steel spandrel beams appeared to be more convenient.





# Le Corbusier's Masterpiece?

## Dominican Monastery at L'Arbresle, Lyons

BY FATHER ILLTUD EVANS, OP

(Reprinted by permission from The Listener)

It was on a visit to the Carthusian monastery of Ema in Tuscany in 1907 that Le Corbusier, so he tells us, first formulated his idea of the *unité d'habitation*: that the essential problem of architecture is a human one, in which the needs of the individual must be related to those of the community to which he belongs. The resolution of the problem is indeed vividly expressed in any Charterhouse, where each monk is a solitary, with a little house of his own — one room for work and eating, one for sleep, and one for prayer. But all are arranged round a common cloister, and on Sundays and festivals the monks come together to pray and to eat. They are hermits and yet are social beings: and the very architecture of their monasteries is proof of it.

Nearly fifty years later, when Le Corbusier's early intuitions had long since developed into the immense achievements of Marseilles and Chandigarh, he was invited to return to the monastic source of his first inspiration. For the Dominicans of the Province of Lyons decided in 1953 to ask him to plan for them a monastery and church for a community of a hundred friars. It was to be a house of studies for future priests, a setting for the seven arduous years of training for the Dominican work of preaching, which from the beginnings of the Order, 700 years ago, has always meant an exact intellectual discipline within the context of the monastic life of prayer and silence. It was, therefore, to contain as well as a church all the usual features of a priory: cells for the professors and the students and the lay brothers responsible for the

material needs of the house; lecture halls; common rooms; chapter house; and refectory.

The choice of Le Corbusier, which in the circumstances was courageous and even unlikely, was due to the influence of Père Couturier, a Dominican priest, himself an artist, the friend of Braque, Léger, and Chagall, whose brilliant criticism in the revue *Art Sacré*, which he edited, had already done much to redeem the deplorable standards of sacred art in France.

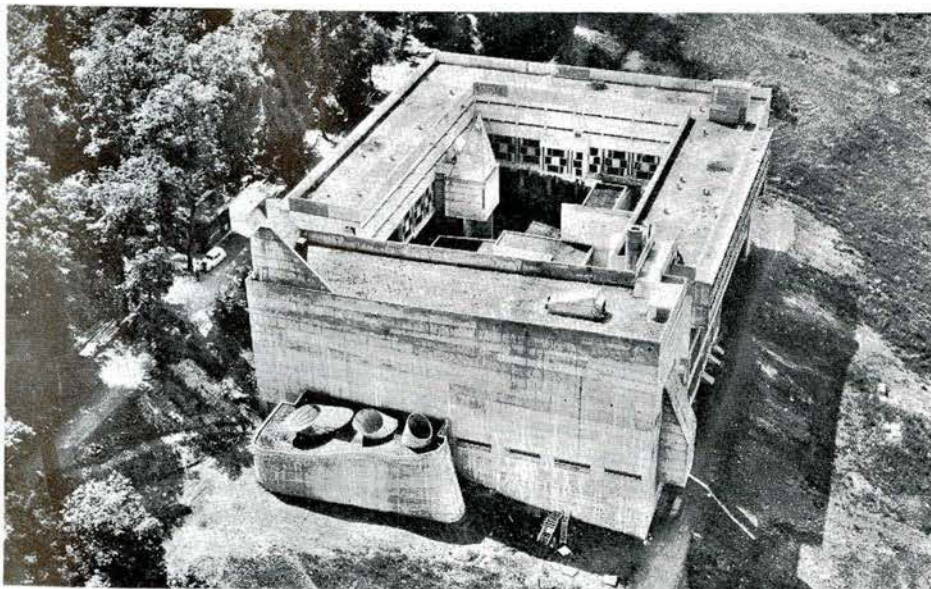
The purpose of a monastery at once imposes a determined pattern on any architect, and Père Couturier had convinced Le Corbusier that the essential requirements of a Dominican priory were rooted in a realistic acceptance of the fact of human dimension: an anticipation, as it were, of the famous theory of the *modulor*, that discovery of Le Corbusier's based on human measurement which he has used in all his architecture. Père Couturier explained to the architect: 'We walk in procession in two rows, we chant office in two rows, we prostrate ourselves full length on the ground. All these things determine the pattern and dimensions of the places where we pray and work and eat. You see, it's something entirely up your street! It is simply an exercise in human scale'. And perhaps the most interesting thing about the priory of La Tourette, now virtually finished, is its fundamental respect for monastic tradition, though this is expressed in a wholly original treatment that soars far out of the range of the usual architectural solution of such a problem. And 'soars' is the verb for this building, floating as it

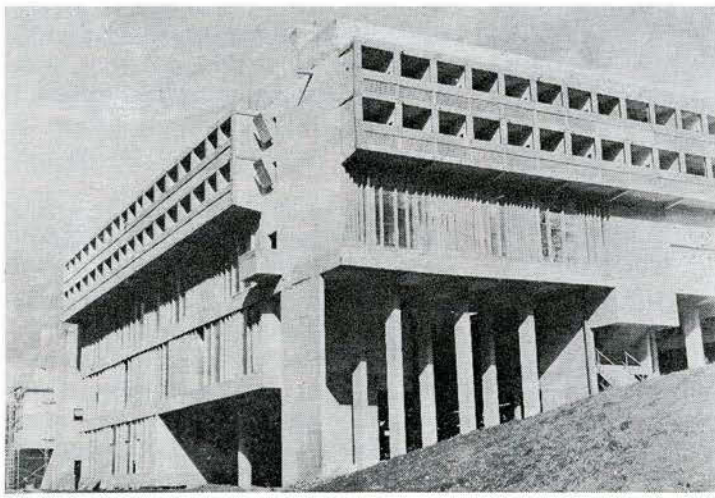
seems to do, set on its stilts on a sharply falling hillside screened by thick woods, fifteen miles north-west of Lyons, with the distant mountains of the Beaujolais giving definition to a rich landscape of vineyards, meadows, and avenues of trees.

The priory of La Tourette is perhaps the most lucid of all Le Corbusier's statements of architecture as determined by the given factors of human dimension and a community's needs. Here a hundred men are to live and work and pray together. They lead their single lives indeed, but they are a brotherhood in which, as St Augustine remarks, the test must always be whether the common good is preferred to the individual's selfish interests. The motive of their coming together is that unity which only the virtue of charity can command. It was an English Dominican, Father Vincent McNabb, who remarked that unless a monastery is a home with a small 'h', it will very soon become a 'Home' with a capital 'H' instead. This Le Corbusier has instinctively realized at La Tourette. The very structure of the building, as you see it from afar, is, as it were, a conjugation of the verb 'to live', from the singular up above to the plural down below.

The classical four-sided structure is preserved: three wings for habitation, which look out on to the countryside and the sun, in contrast to the fourth side, the church, which is a single block of concrete, severe and uncompromising, set a little apart, for, as the architect has remarked, 'architecture is like music: it must have its intervals of silence'. On his first visit to the site Le Corbusier at once sketched a design that began with the roof, flat, covered with grass — so providing a natural insulation. The two floors immediately below are devoted to a hundred individual cells, each with a loggia looking outwards to the world of nature. And each cell is made to the exact measurement of the *modulor*, with the landscape framed by glass and the balcony beyond. The walls throughout are of concrete, plain and unadorned. At the next level below come the rooms devoted to the sectional work and recreation of the community: and, since this is primarily a house of study, this means a library (which looks inwards to the cloister square), lecture rooms, common rooms for professors, students, and lay brothers. On the ground floor is the setting of the community as a whole: the refectory, where all come to eat, and the chapter house where the community gathers for formal occasions.

The plan, therefore, is a traditional one, determined, as Le Corbusier has





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explained, by the requirements of Dominican life and the detailed provisions of the Order's legislation. The treatment, however, is a masterly example of Le Corbusier's capacity — to quote his own words — 'to cut through the complexities in order to attain simplicity'. The question is entirely a human one: to devise a building that will nourish the life of prayer and study, for these, after all, are human activities that need a framework of balance and repose. A further problem is to reconcile the needs of the individual with his function as a member of a community. And that tension, healthy if it is accepted as a sign of life but disastrous if it is not seen as a practical implication of fraternal charity, has its outward and visible form in terms of volume and space. And always there is the overriding consideration of religious poverty: a way of life that demands the surrender by the individual of his own title to ownership or profit, not merely as a negation of created good but rather as its affirmation in the light of the organic life of the community. Hence the need for a building that is honest and durable. Religious poverty should never be a synonym for the suspect or the seedy. But it does demand above all else an economy of means, and here the use throughout of reinforced concrete — Le Corbusier's *béton loyal* — has its positive message to convey. Nothing is covered or concealed.

*Peace, the Common Life, and Poverty*

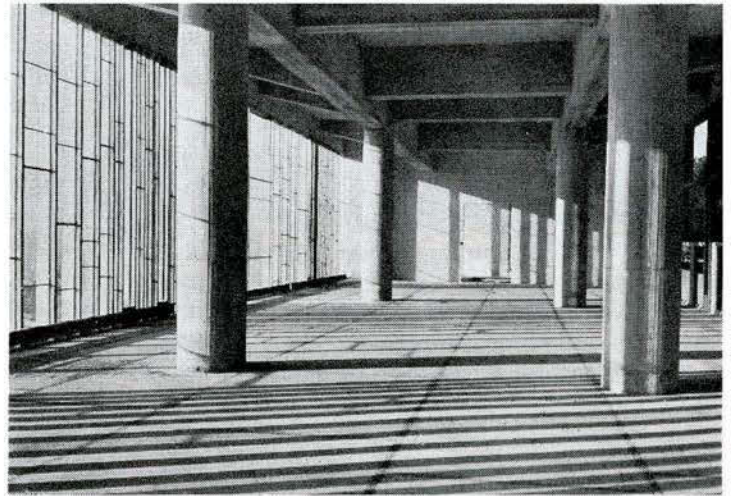
The very appearance of the monastery is a symbol of these three factors — peace, the common life and poverty — which any architect concerned with building such a place must want to convey. Built of concrete and glass, then, the priory expresses an essential honesty of purpose that is imperative in its effect. Here is nothing extraneous, nothing derived. The monolithic simplicity of the church, set against the open and light rhythms of the living

quarters, is a statement of the contemplative peace that is to give meaning to the rest of the building. A central altar dominates this closed place, with its untouched concrete walls rising more than fifty feet to the flat roof, segmented in slabs that recall the roof of Santa Maria in Cosmedin, a Roman church for which Le Corbusier has always had a special love. The walls are blind, apart from some narrow horizontal windows that give light to the monastic choir, but diffused light falls on the altar, directed from an astonishing series of telescopes of concrete — perhaps to call them cannons would give a better idea of their strength — inserted in the roof of a building at the north side of the church, low and semi-circular; an ear, as it seems, attached to the massive head of the church itself. In this 'ear', which from outside gives variety to the otherwise extreme severity of the church, are placed the side altars, so that the main place of prayer is free from secondary things. One altar and absolutely nothing else affirms the central purpose of the church, sacred, set aside, a single, silent place of sacrifice. Never, one can believe, have the ruthless honesty of an architect and of the means at

his command been so dramatically revealed.

In contrast, the three wings of the monastery are all light and movement. The façade is a rhythm that asserts the progression from the single to the communal: the two long lines of separate cells, each balcony with its rectangular terrace of pierced concrete, give place below to the glass walls of the common rooms, lecture halls, and, on the lowest floor of all, to the refectory and chapter house. Here, perhaps, is the most original feature of the whole building: an application of the *modulor* principle which gives exciting variety to a surface that might otherwise seem static and even monotonous. These large rooms and corridors look out on the

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world of nature through a glass film that is independent of the structure itself. The film is stiffened — to use the architect's own description — by vertical, slender ribs of concrete, irregularly placed it seems at first sight but in fact arranged in a geometric progression of intervals that creates an extraordinarily vigorous rhythm. It is, to use a musical analogy, a counterpoint of varying densities — and the musical comparison is not inapt, for Le Corbusier himself describes the effect as both 'musical' and 'undulating'. He sees this solution as most appropriate for modern glass, for it is governed by rules that have long since regulated the forms of music: the harmony of number and the eloquence of rest.

*Simple Strength*

The effect, then, from a distance is of a building that is simple but strong, supported on its stilts and columns, square and round, with the occasional fantasy of arcading cut into the patient concrete, giving glimpses from below of grass and a countryside beyond. Within the square one sees the triumph of this building in detail. Here is displayed the full majesty of mass and

volume. The traditional cloister, most practical of means to link the separate sections of the priory, is here an extended bridge in the form of a cross, with slender concrete pillars marching beside. There is much in this given square of the structure that at first astonishes and then justifies itself in terms of that play of volumes which is the secret of Le Corbusier's virtuosity as an architect. Thus one arm of the cloister extends to the atrium, an open esplanade where the whole community can gather before entering the refectory. To its right is a round tower, like the familiar round towers of Ireland, enclosing a staircase: opposite, on stilts, stands the most extraordinary thing of all, the students' oratory, a perfect cube, free-standing, with a pyramidal roof which gives relief to the horizontal emphasis of the cloister and of the window-line of corridors. The entrance to the priory, seen from the cloister, is an open cube, leading to a terrace with a porter's lodge and a group of concrete huts, round and irregularly pierced with small square windows, in which visitors can be received.

The effect within the priory itself is a vindication of Le Corbusier's claim for the fourth dimension of architecture, that of 'ineffable space'. Nowhere is this more strikingly seen than in the refectory, with its glass walls broken by the undulating pattern of concrete intervals and its four huge, round columns. In monastic tradition meals themselves are sacred, and here the perfect proportions of the vast room assert the validity of created good, of which food and drink are symbols.

The building of a monastery as such creates no particular architectural problem, for, as Le Corbusier has always maintained, all architecture is a matter of human dimension, of satisfying the subtle demands of personal life and personal relationships. But it may be that a monastery provides a specially articulate example of a building that is exactly subordinated to a clear purpose, to an ordered life; and it is nowadays particularly a challenge to that 'point of anarchy in our machine civilization' that Le Corbusier warns us we have reached. Now that the priory at La Tourette is virtually complete, one can see in it all the inexorable logic of this great architect's mind at work on a design in which the only restrictions placed on him were those he could respect. Here there has been no question of the jealousies and bureaucratic half-heartedness that have so often destroyed so many of Le Corbusier's plans.

#### *Faithful Interpretation*

I had the good fortune to stay for

several days recently at La Tourette and in fact to be there when the community moved in to live in the new priory. Perhaps you have to live in a building in order to get to know it as it is, and it is too early to speak of how, so to say, it will 'grow'. But the community of Dominicans who had chosen Le Corbusier to build their home were at one in their admiration for the fidelity with which he had interpreted the Order's purpose. The Dominican Order is old enough not to mind making experiments, and that is not as paradoxical as it may sound.

St Dominic was himself an innovator of extraordinary courage, concerned as he was to commend the truth to his own generation not only by dialectic but by example of the monastic life as a school of charity. His methods are as relevant to our own time as they were to the people of that territory, not so far away from La Tourette, where he began the work of the Order that bears his name. 'Hold fast to poverty' was St Dominic's legacy to his followers, and at La Tourette a vast modern building, so eminently of our time, affirms the essential simplicity, the avoidance of the second-rate and the derived, which true poverty demands. The concrete pillars, bearing the mark of the grain of the wooden planks that have moulded them, are honesty itself. As Le Corbusier has explained: 'Exposed concrete shows the least incidents of the shuttering, the joints of the planks, the fibres and knots of the wood. But these are magnificent to look at; they are interesting to observe, and to those who have a little imagination they add a certain richness'. So, too, the exposed rows of blue-painted pipes, suspended along the corridors, and giving a continuous note of colour to the long lines of white and grey, are altogether fitting in the house of an Order which has 'Veritas' for its device.

St Thomas Aquinas would surely have appreciated Le Corbusier's insistence that 'the manner of making' is that which decides whether a thing made is good or bad. The logic which has so ruthlessly ordered the very structure of this monastery, and which has rejected all that is pretentious and false, has its counterpart, one might even say, in Aquinas's own achievement. For he, too, was concerned with presenting the truth in terms that were valid to his own generation. And he, too, for that matter, had to suffer from the stupidities of the academically right-minded.

The La Tourette priory is likely, one may guess, to be counted Le Corbusier's masterpiece, if only because here the strands of his prophetic under-

standing of the architect's work seem to be most closely knit together. Here, one feels, he has laboured with a love that has been shared by those who commissioned him. In the contemporary debate on sacred art, the priory is certainly a vital statement. At La Tourette, unequivocally declared, is the radical distinction between tradition and mere traditionalism, which are so often confused in any discussion of religious art.



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Tradition is the discipline which any artist must be glad to accept, and within it the sacred must be expressed in every age. It is an acceptance of the subordination of what is made to the purpose of its making. Thus a church is governed by the altar and the sacred action that is done there, just as the monastery demands a co-ordination of its separate parts in its communal work. But this does not mean, it cannot mean, a tyranny of styles. We must, says Le Corbusier, banish styles. He goes on to say: 'All we can do is to think of style in itself — that is to say the moral probability of every work that is truly and genuinely creative'.

How ironical it is that sacred art is so often the least honest of all: the one most dominated by feebleness of purpose and the fear of the future. I think the gratitude, not only of architects, but of all who care for the sacred as deserving to be seen as ever new, should go to Le Corbusier and to those who commissioned him, for at La Tourette something very important has happened — a building has gone up to the glory of God, and it is in the truest and noblest sense a building of our time.

## “THE ARCHITECT AND THE BUILDING COMMUNITY”

The four distinguished representatives of the construction industry who will participate in the seminar at Quebec in June have been invited to discuss their views on the subject in the four issues of the *Journal* preceeding the assembly.

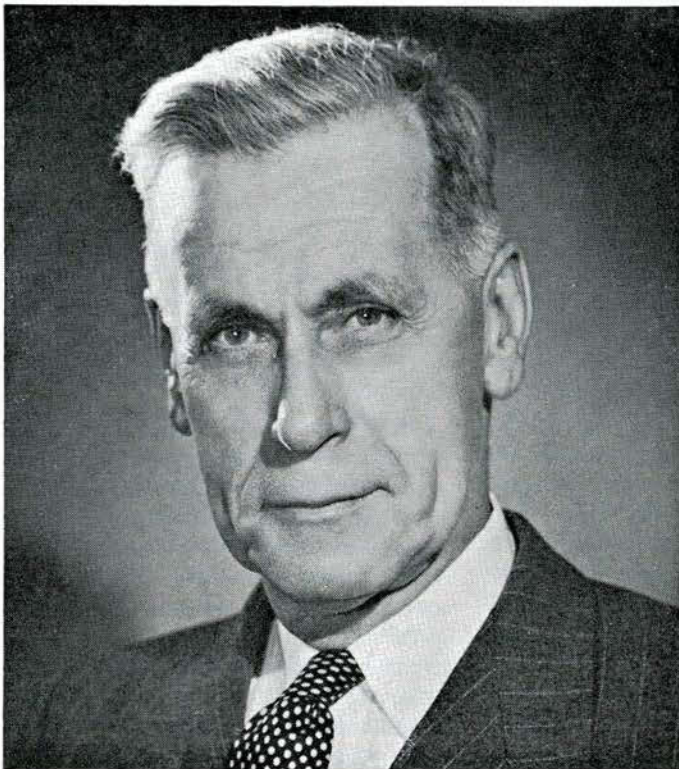
### No. 1. “THE CONTRACTORS’ POINT OF VIEW”

By *Raymond Brunet, OBE,*  
*President, Ed Brunet and Sons,*  
*Hull, Que. Past President of the*  
*Canadian Construction Association.*  
*Chairman, the National Joint*  
*Committee on Wintertime Construction*

I AM VERY PLEASED that the Royal Institute has placed such emphasis in its Annual Assembly program on the subject of “The Architect and the Building Community”. The influence of the Architect on the General Community is of course obvious — one need only look around — but the influence of the Architect within the Building Community is no less important even if it is less tangible and perhaps less understood by some members of the profession.

Whether the architect’s influence on the General Community is good or bad depends upon each example of his art, but all cases have something in common — the influence is of a lasting nature. In another profession the members may “bury their mistakes” but in the case of architecture the successes and ‘mistakes’ usually outlive the architect and are on display for all to see.

A review and self-analysis of the general relationship of the design team within the framework of the building industry would perhaps only be considered to be desirable or necessary in recent years. In earlier times the relationship



JE SUIS TRES HEUREUX qu’au programme de son Assemblée annuelle l’Institut royal ait attaché une si grande importance à la question de “L’architecte et la Communauté de la construction”. L’influence de l’Architecte sur l’ensemble de la collectivité est évidente, — il suffit de regarder autour de soi, — mais l’influence de l’Architecte au sein de la Communauté de la construction n’en est pas moins importante, même si elle s’exerce de façon moins sensible et si elle est peut-être moins bien comprise de certains membres de la profession.

Que l’influence de l’architecte sur la collectivité dans son ensemble soit bonne ou mauvaise, cela dépend de chaque spécimen de son art. Tous les cas, cependant, ont ceci de commun que cette influence a un caractère durable. Les autres professions peuvent parfois “enterrer leurs erreurs”, mais en architecture les réussites et les “erreurs” survivent habituellement à l’architecte et tout le monde peut les voir.

Ce n’est que depuis quelques années qu’il est jugé opportun ou nécessaire dans le cadre de l’industrie du bâtiment de faire l’examen ou l’analyse des rapports généraux qui doivent exister entre l’équipe qui a pour fonction de concevoir les travaux et les autres. Auparavant, ces rapports étaient assurément simplifiés puisque l’architecte et l’entrepreneur étaient une seule et même personne. Même avec la séparation des deux fonctions, les rapports sont restés étroits. Tous les architectes et tous les constructeurs d’une région donnée se connaissaient et les affaires se transigeaient sur le plan personnel. Cette situation dure encore dans les centres moins peuplés.

Les rapports entre architectes, constructeurs et fournisseurs de matériaux au cours de ces dernières décennies se sont grandement compliqués. Les travaux de construction se sont multipliés en nombre. Les maisons d’architectes et de construction ont pris de l’ampleur. La complexité des travaux s’est accrue et la tendance vers la spécialisation s’est accentuée. Les techniques de construction ont connu des progrès remarquables et, devant la multiplicité des nouveaux matériaux, il n’est pas facile de s’y reconnaître. Des milliers de personnes sont venues grossir les rangs de l’industrie et des professions associées. Il est devenu extrêmement difficile sinon impossible aux divers membres de la Communauté de la construction d’arriver à se connaître et à se familiariser avec leurs problèmes mutuels.

La concurrence est extrêmement vive d’un bout à l’autre du pays. Les entrepreneurs, les fabricants et les fournisseurs

was certainly simplified by the fact that the architect and master builder were the same person. Even with the separation of these two functions, a close relationship existed. Typically all the architects in an area knew all the builders and business was carried out on a personal basis. This situation still exists in the less densely-populated centres.

During the past couple of decades architect-builder-material man relationships have become much more complicated. The physical volume of construction has increased several times over. The size of many architectural and building firms has similarly increased. Projects have become more complex and there has been a marked trend towards more and more specialization. Great advances have been made in building techniques and it is difficult to try and keep abreast of all the new materials. Thousands and thousands have joined the industry and allied professions. In consequence, it has been extremely difficult if not impossible for the various members of the Building Community to get to know one another personally and become familiar with one another's problems.

Competition is extremely bitter across the country. Contractors, manufacturers and suppliers can remain as members of the Building Community only so long as they can make a profit and stay in business. A good deal of their fate in this respect rests in the hands of the architects, especially with regard to indirect costs.

This fact is of course appreciated by most architects who also desire that there be an adequate number of competent, well-financed and responsible firms to serve their clients. In the space still available, I would like to summarize a few of the main measures that architects can and should take to this end.

The "Guide To Bidding Procedure" endorsed by the RAIC and CCA states that five or six bidders normally provide Owners with adequate competition. We think that Owners get *better* competition if the bidding is restricted to a few well-qualified firms than if a dozen or two firms are on the list. It really is a question of odds. If there is a reasonably good chance of getting the contract, construction firms will put their best men on preparing the estimate because they know that their competitors are doing the same. If, on the other hand, there are a large number of bidders, including several of the less responsible variety, there is naturally a decrease in interest.

A word about "cheap bids". They seldom are a real bargain to the owner since he runs the risks of the contractor being unable to complete the work, of disputes over claims, and of added maintenance expenses. Designers also suffer in that if an incompetent firm is awarded the contract at an uneconomic price, they face the double-barrelled problem of a reduced fee and of increased supervision expenses.

From the contractor's standpoint, the necessity of meeting inequitable competition in the present wholesale bidding prevalent on most projects and the relatively high ratio of estimating expenses to contracts received are main factors explaining the industry's 'profitless prosperity' and indeed a relatively large number of loss operations, closing out of businesses and actual bankruptcies. Similarly, manufacturers and suppliers suffer from loose interpretations of "or equal" clauses or permission to substitute lower quality products than those specified. A careful screening of bidders and administration of material or equipment installation specifications are therefore in the best interests of all concerned.

In like fashion, it would be most helpful if all the other

ne pourront continuer à faire partie de la Communauté de la construction qu'aussi longtemps qu'ils pourront réaliser des bénéfices et rester en affaires. En ceci, leur sort est pour une bonne part entre les mains des architectes, particulièrement en ce qui concerne les frais indirects. Evidemment, la plupart des architectes se rendent compte de la situation et veulent qu'il y ait suffisamment de maisons compétentes, bien financées et responsables pour servir leurs clients. Dans l'espace qui me reste, je voudrais résumer quelques-unes des principales mesures que les architectes peuvent et doivent mettre en oeuvre pour arriver à cette fin.

Dans le "Guide du Soumissionnaire", publié sous l'égide de l'IRAC et de la CCA, il est déclaré que cinq ou six soumissionnaires assurent normalement aux propriétaires une concurrence suffisante. Nous sommes d'avis que lorsque les soumissions sont restreintes à un petit nombre de maisons compétentes, les propriétaires profitent d'une concurrence *meilleure* que lorsqu'une ou deux douzaines de maisons figurent sur la liste. C'est vraiment une question de probabilités. Si les chances d'obtenir l'entreprise sont raisonnablement bonnes, les maisons de construction affectent leurs meilleurs employés à l'établissement des soumissions, sachant que leurs concurrents en font autant. Si, d'autre part, le nombre des soumissionnaires est élevé et s'il s'en trouve parmi eux de plus ou moins responsables, l'intérêt diminue et cela est tout naturel.

Un mot au sujet des "soumissions à bon marché". Il est rare qu'elles constituent réellement une aubaine pour le propriétaire qui court le risque de voir l'entrepreneur incapable d'achever les travaux et de voir les contestations surgir et les frais d'entretien s'accroître. Les architectes, eux non plus, n'ont aucun intérêt à ce que l'entreprise soit adjugée à une maison incompétente à un prix non rémunérateur, car alors se posera le double problème d'une réduction d'honoraires et d'un accroissement des frais de surveillance.

Quant à l'entrepreneur, la nécessité où il est de subir la concurrence injuste causée par la profusion de soumissions présentées pour la plupart des travaux et le niveau relativement élevé des frais de soumission par rapport aux entreprises obtenues comptent parmi les principaux facteurs qui expliquent "la prospérité sans profit" dans laquelle l'industrie se débat, voire le nombre relativement élevé des exploitations à perte, des fermetures d'établissements et des faillites pures et simples. Les fabricants et les fournisseurs ont souffert de l'interprétation élastique donnée aux clauses "ou l'équivalent" ou de la permission de substituer des produits de qualité inférieure aux produits spécifiés. Il y va donc de l'intérêt de tous d'exercer un choix judicieux parmi les soumissionnaires et de surveiller de près les devis de matériaux ou d'installation d'outillage.

Pareillement, l'architecte a avantage à suivre les autres recommandations du Guide du Soumissionnaire et à utiliser les formules types canadiennes de soumission et de contrat. Les représentants de l'Institut royal les ont étudiées à fond avant d'en approuver le texte. L'uniformisation des méthodes améliore le rendement et procure des économies. D'autre part, les demandes de longues listes de prix unitaires ou autres, au moment de la soumission, et l'addition de clauses unilatérales au document de contrat ne peuvent que faire monter le prix de revient.

Le rôle unique et changeant de l'architecte, dans ses rapports avec le propriétaire et l'entrepreneur, est également digne d'une mention spéciale. Jusqu'à la conclusion du contrat, l'architecte est mandataire du propriétaire mais, après cela, il devient également mandataire de l'entrepreneur en

recommendations in the Bidding Guide were adhered to and the Canadian Standard Forms of Tender and Contract used by members of the architectural profession. All have been carefully studied by representatives of the Royal Institute before the latter approved the texts. Standard procedures lead to greater efficiency and therefore economy. On the other hand, requests for long lists of unit and alternate prices at the time of tendering or the addition of one-sided clauses to the contract document can only be additional cost items.

The unique and changing role of the architect in his relationships with the Owner and Contractor is also worth mention. Up until the contract is signed the architect is the Agent of the Owner but after that he is equally also the Agent of the Contractor with regard to the interpretation of the terms of the contract. His role, in short, is that of an impartial arbiter.

The architect's responsibility for the general supervision and direction of the contract includes seeing to it that the Owner lives up to the only major provision concerning him in the contract — i.e., making his payments on time. This in turn requires that the Architect issues his certificates without delay. Many architects apparently do not feel that they have any real responsibility to carry out this provision because they are not signatories to the contract but their position in this regard is made very clear in the contract's General Conditions.

Delays in the release of holdbacks also causes financial hardship to contractors. This is especially true with regard to the granting of the completion certificate. A substantial release of the holdback upon substantial completion of the project is most desirable. Similarly, the approval of completed sub-contracts and release of a corresponding amount of the holdback can give valuable relief in those provinces where the practice is permitted by the Mechanic's Lien Act.

Another point of financial importance to contractors upon which some Architects fail to maintain their proper position relates to the approval of extras. Some seem to believe that claims for extras are merely attempts by the Contractors to take advantage of minor errors or changes in the plans and as such should be resisted on behalf of the Owner. Others take no stand whatsoever but leave it up to the Owner to decide whether he approves or disapproves. Competition is such that Contractors cannot absorb these extra expenses.

My remarks above are of course of a general nature designed to provoke discussion during the seminar program in the Annual Assembly next May. The problems cited, however, are considered to be so serious by members of the construction industry across the country that they all are dealt with in specific policies of the Canadian Construction Association.

That the Royal Institute is most conscious of the importance of its relationships with other members of the Building Community is proved by not only the emphasis placed on this subject in its 1961 program but also by its action in establishing joint committees with other national groups. We are fortunate in the CCA in having two such joint committees with the Royal Institute: one with contractors concerning bidding and contract procedures and one with manufacturers concerning product promotion. Reference should also be made to the formation of RAIC committees on the Residential Environment and Package Deals as further examples of a desire to assess the architect's relationships with other members of the Building Community. Joint meetings and committees between local chapters of architectural associations and CCA affiliates are increasing in number and have had excellent results. All bode well for improved relationships and understanding of our mutual problems.

ce qui concerne l'interprétation des stipulations du contrat. Bref, son rôle est celui d'un arbitre impartial.

La responsabilité de surveillance générale et de direction de l'entreprise qui incombe à l'architecte lui commande de veiller à ce que le propriétaire observe la seule disposition importante du contrat qui s'adresse à lui: faire ses versements à temps. Ceci suppose que l'architecte établisse ses certificats sans délai. Un certain nombre d'architectes, semble-t-il, parce qu'ils ne sont pas signataires du contrat, n'éprouvent aucune responsabilité réelle relativement à cette disposition. Pourtant, les conditions générales du contrat définissent très clairement leur situation à cet égard.

Une source d'embarras financiers pour l'entrepreneur est le retard apporté à la remise des sommes retenues. Ceci est particulièrement vrai pour ce qui est du certificat d'achèvement. Il importe qu'une remise substantielle de la retenue soit faite à l'achèvement substantiel des travaux. Dans les provinces où la Loi sur les privilèges le permet, l'approbation à l'achèvement des sous-entreprises et la remise d'un montant correspondant de la retenue peuvent être d'un très grand secours.

Une autre question d'importance financière qui touche les entrepreneurs de près, mais dont certains architectes ne se soucient peut-être pas suffisamment, est celle de l'approbation des extras. Certains semblent convaincus que les sommes réclamées pour les extras représentent tout simplement des tentatives, de la part des entrepreneurs, de profiter des petites erreurs ou modifications des plans. Ils s'y opposent donc au nom du propriétaire. D'autres s'en remettent au propriétaire du soin de décider s'il doit les approuver ou non. La concurrence est si forte que les entrepreneurs ne sont pas capables d'absorber ces frais supplémentaires.

Bien entendu, ces quelques observations d'un caractère général sont destinées à provoquer des échanges de vues à l'occasion des séances d'étude qui se tiendront à l'Assemblée annuelle en mai prochain. Les problèmes cités revêtent pourtant une telle gravité, aux yeux des membres de l'industrie de la construction d'un bout à l'autre du pays, qu'ils sont tous expressément mentionnés dans la Déclaration de principes de la Canadian Construction Association.

Que l'Institut royal soit conscient au plus haut point de l'importance de ses rapports avec les autres membres de la Communauté de la construction, j'en vois la preuve non seulement dans l'importance qu'il a accordée au sujet, dans son programme de 1961, mais aussi dans le fait qu'il a institué des comités mixtes avec d'autres groupements nationaux. Nous, de la CCA, avons la bonne fortune de participer à deux de ces comités mixtes avec l'Institut royal: le premier avec les entrepreneurs sur les méthodes de soumission et de contrat et l'autre avec les fabricants sur la réclame qui doit entourer les produits. Il convient aussi de mentionner la création, par l'IRAC, de comités sur le Milieu domiciliaire et sur les Marchés d'ensemble comme autant d'exemples de son désir d'évaluer les rapports entre les architectes et les autres membres de la Communauté de la construction. Les réunions conjointes et les comités mixtes réunissent de plus en plus fréquemment les associations d'architectes et les affiliés de la CCA à l'échelon local. Déjà ces initiatives ont donné d'excellents résultats. Tout cela est de bonne augure pour l'amélioration des relations et pour la meilleure intelligence de nos problèmes mutuels.

PERCEPTION IS THE AWARENESS OF THINGS perceived by the senses. However, it is a well known fact that at the common level of perception there is a regrettable lack of any awareness. In a very real sense most people see and hear very little of the world about them and the same is true regarding the use of the other senses. It is to emphasize this difference between a sensitive awareness and the ordinary lack of appraisal of things perceived that the term creative perception is used.

The classic approach to the art of seeing assumed that it involved only two factors to understand it fully: first, the apparatus, that is the eye with its lenses, the retina, the nerves, the screen of the mind, and so forth, and second, the stimulus, that is the object or objects seen. This at first glance would seem to cover the situation quite adequately. An apple is perceived by the eye and the message is quickly transmitted to the mind's screen and the mind judges it to be what it is, and says "apple".

In more recent studies, however, a third factor has been introduced. This factor is the accumulated experience in seeing that every person (other than a new born baby) has filed away. It is a very real and important factor, this experience in seeing, for it is this third factor that conditions our responses and actions, our prejudices and judgments, in relation to what is seen. And to see creatively it is the most important factor. The truth of this seeing through accumulated experience is self evident in such statements as, "That is not a chair, it does not look like a chair" or "Well it could be a council chamber, but it looks like a clam shell to me". Who has not seen castles in the clouds, or the face in the full moon? By extension, this is the source of our difficulty in seeing anything new, for we have no experience in seeing these new — to us — things. The first two factors are unchanged but the third is not present at all, hence we have very little chance of seeing the object. We must sharpen our perceptions to assist us to appraise this new reality in terms of our own comprehension. Creative perception is a way of taking a second look, with the awareness of what it is we are trying to see.

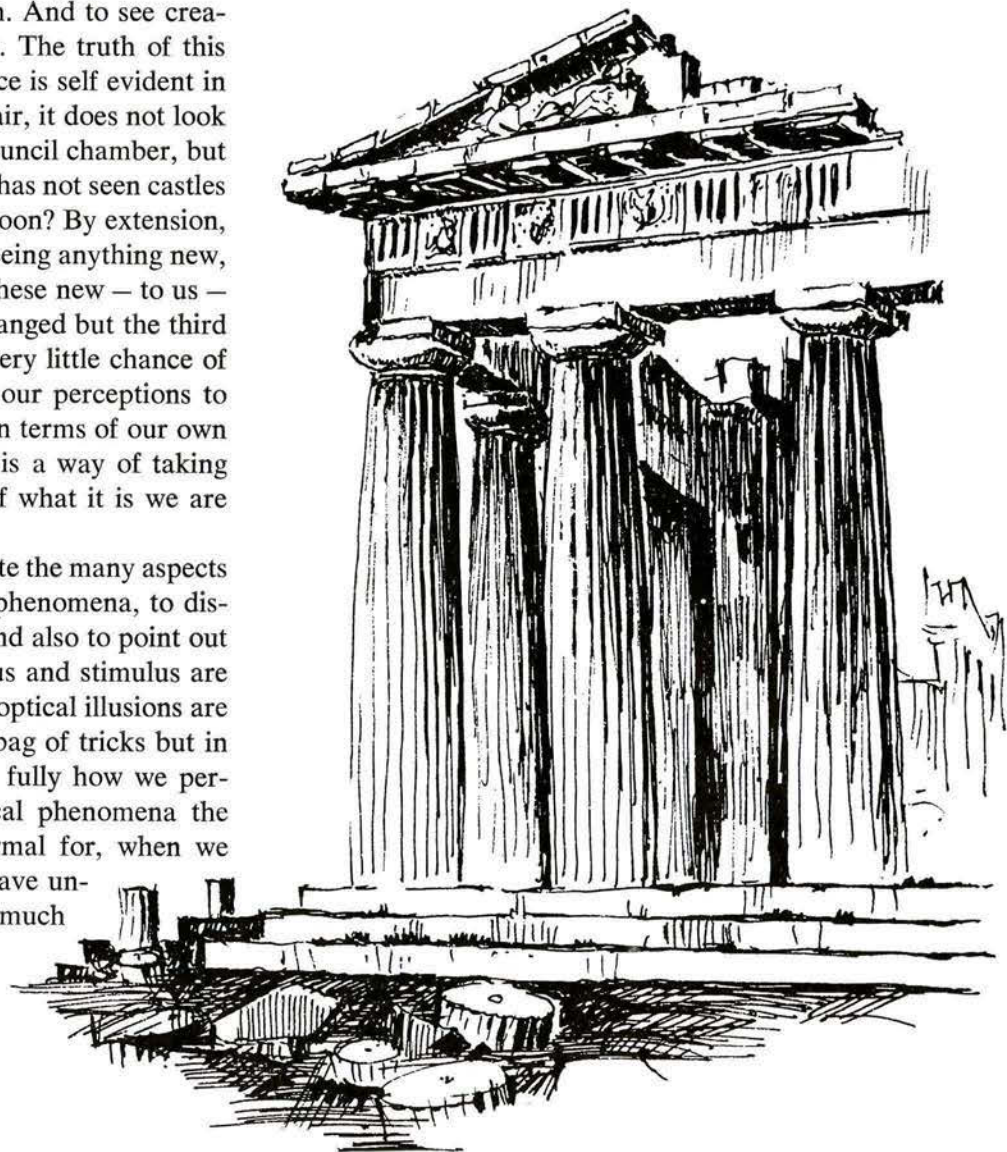
It will be quite valuable to investigate the many aspects of seeing, including those of optical phenomena, to discover with some clarity how we see and also to point out that even the two factors of apparatus and stimulus are not as simple as was assumed. These optical illusions are not introduced here as a magician's bag of tricks but in order that we may understand more fully how we perceive the world. In studying physical phenomena the fruitful area seems to be the abnormal for, when we comprehend the cases in which we have unusual events taking place, it sheds much light on the normal ones.

Figure 1—The Greeks made many corrections in their buildings to compensate for the way people perceive; such as entasis, and column spacing.

# Creative Perception

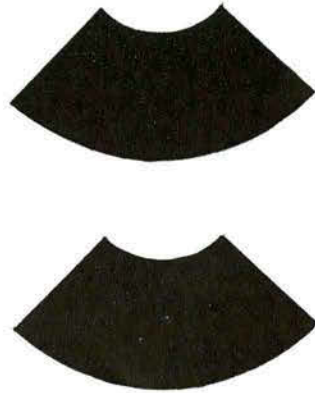
by

Ronald Whiteley



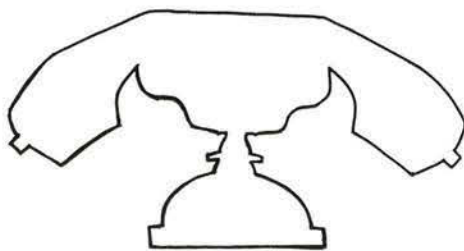
Perhaps the most obvious of these optical phenomena is the discrepancy of length, size, shape, and the like. In the diagrams (figure 2) are examples of this type of optical effect. It is not the mistaken judgment that is important here, but the fact that this error exists as a fact of seeing and that we must accustom ourselves to this situation. As designers, we might choose to correct it as the Greeks did, or we might choose to ignore it. The important thing is that we see it and make the choice. As observers we will have a better understanding of why certain corrections were or were not made if we can see and understand that such a choice exists.

Figure 2



The second group of optical phenomena may be classified as the double image, where two or more things are seen in the one thing (figure 3) At first glance what seems like the silhouette of a desk telephone might at second glance be the silhouette of two dogs facing each other. The experience of some observers might be such that the dogs appear first and the telephone on second glance.

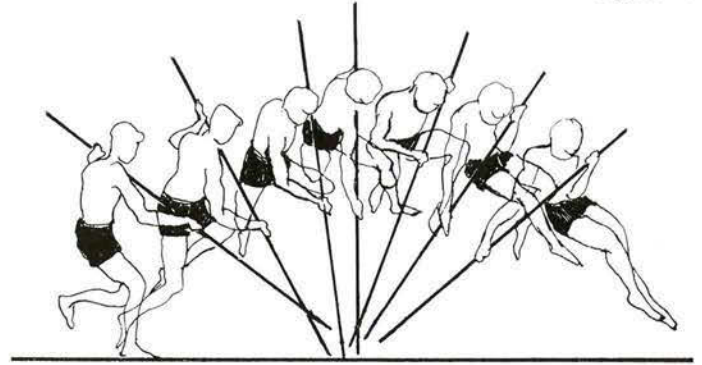
Figure 3



A third group of optical phenomena is that of distortion of time and space. Repeated exposures of an image superimposed, such as a golf club being swung, or a person jumping, are examples of the time distortion (figure 4) The famous painting of the "Nude Descending the Staircase" by Marcel Duchamp belongs to this group. In a like manner, when the pattern is made up of plan view, elevations and profiles of an object all superimposed one on the other, we then have a space distortion such as would only be possible if we could see the top, side, front, and base of an object simultaneously. This is

of course an artificial phenomenon, an arranged experience but an understanding of it brings further clarification of perception.

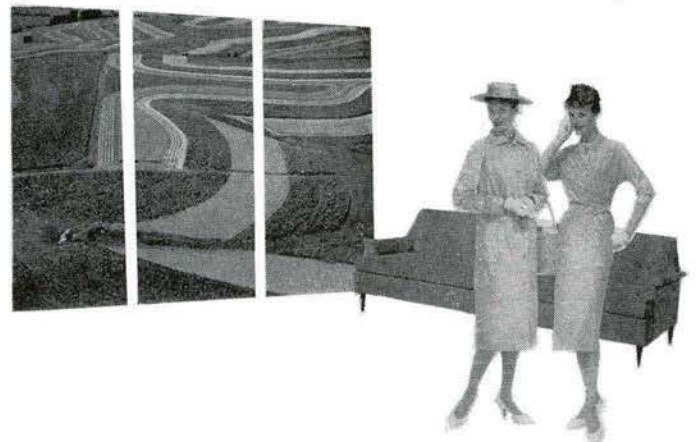
Figure 4



Another important factor in seeing is that of gestalt. Stated briefly gestalt is the term used to characterize the theory of physical, psychological, or biological events occurring in integrated units or patterns. A more simple statement would be that there is a forming together into groups or a configuration. In psychology, visual perception concerns itself with what is termed figure and ground — the object and the background — it is possible to classify the figure and ground into four simplified groups, though these would probably not satisfy the expert.

*First.* Perception through the essential suggestion. In this we see only a part of the whole and mentally construct the whole from the parts or part observed. An obvious example of this is the stage set in which by a few well chosen properties and certain lighting effects the audience has no difficulty in sensing the scene as a total experience from the bits and pieces used. Also this form of gestalt is widely used in advertising, and although we might question it as an art form, we cannot deny the implication that we all see in this way (figure 5) Thus it is important to our understanding of perception. A silhouette of a building, a person, or an object is another example of this way of perceiving the whole from the part.

Figure 5



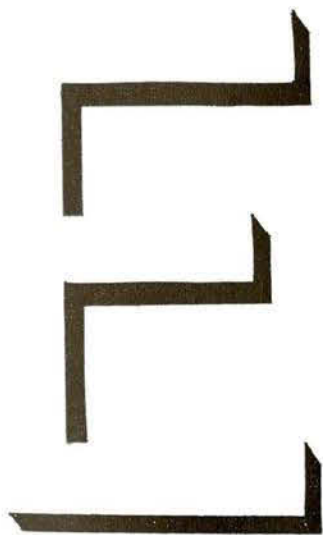
*Second.* Perception through the shadow cast by an object. Similar to the first with the exception that no part of the object need be visible for recognition, though it



may help in verification. An example of this that immediately comes to mind is the shadow on a screen as it is used in children's shows where the hands clasped in certain ways casts a shadow on the screen that looks like a rabbit or a dog. This is doubly illusive for we gestalt "rabbit" or "dog" when none is really there. We use this perception of the object from its cast shadow in many more ways than for entertainment. The letter symbol (*figure 7*) might not be at once recognized by everyone but when it is seen or gestalted as an "E" then it is very difficult not to see it as the letter but only as three separate, angular dark areas.



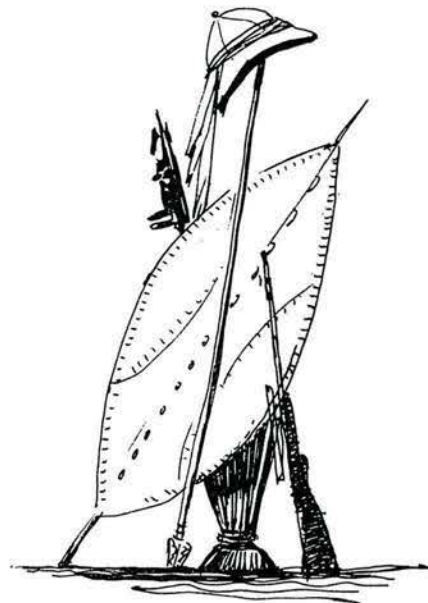
*Figure 6*  
One sees  
the sign  
in the  
evidence  
of the  
shadow



*Figure 7*

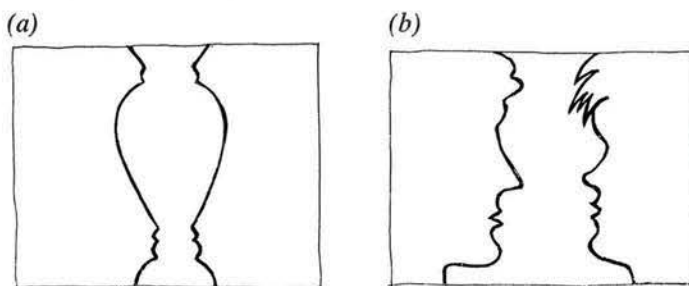
*Third.* The perception of objects in groups in such a way that frequently we see more than the sum of the elements alone. This is the type of gestalt we make when we see a face, an animal, or an object in the swirls of marbled linoleum. In more complex cases some quite interesting configurations are frequently made. Much abstract art depends for its effectiveness upon this type of perception. The diagram in *figure 8* is a further example. In the field of architecture, the concept of space is doubtless a gestalt

of this category. The containing planes, in a strictly physical sense, create the space, but from these props and indicators we perceive the space itself with its character of narrowness or breadth, gloom or cheerfulness, and its movement; the spatial perceptions, the atmosphere of the space.



*Figure 8*  
Grouping  
"Safari"

*Fourth.* Perception through symmetry. In figure and ground relationships, the phenomenon of symmetry plays a very important part. Apparently, we find the perception of symmetry more simple and direct. Whether this is due to an inherent laziness or a sincere liking for the simple and direct is for the moment beside the point. An example of the perception through symmetry is given in *figure 9*. In (*a*) we see an object located near the centre of the space, while in (*b*) it is more readily interpreted as two profiles facing each other and looking in toward the centre. It is possible by an effort of mind, once one is aware of this, to see each of these diagrams in reverse; that is to see (*a*) as two strange creatures facing one another and to see (*b*) as some kind of misshapen vase. Quite apart from this, however, the first perceptions noted were certainly the most common and the most likely to be made, and demonstrates the force of symmetry in our perceptions.



*Figure 9* — Perception through symmetry

Depth perception is another factor in seeing. Here also we find certain optical phenomena.

The perception of depth results in many instances from the phenomenon of overlay. Whenever something is perceived to be in front of something else because the

foremost object cuts off part of the other object we have certain reference points whereby a visual effect of depth is perceived. Many psychologists believe this to be one of the strongest factors in perception of depth. So strong in fact that we can even make a faulty prognostication of depth (*figure 10*).

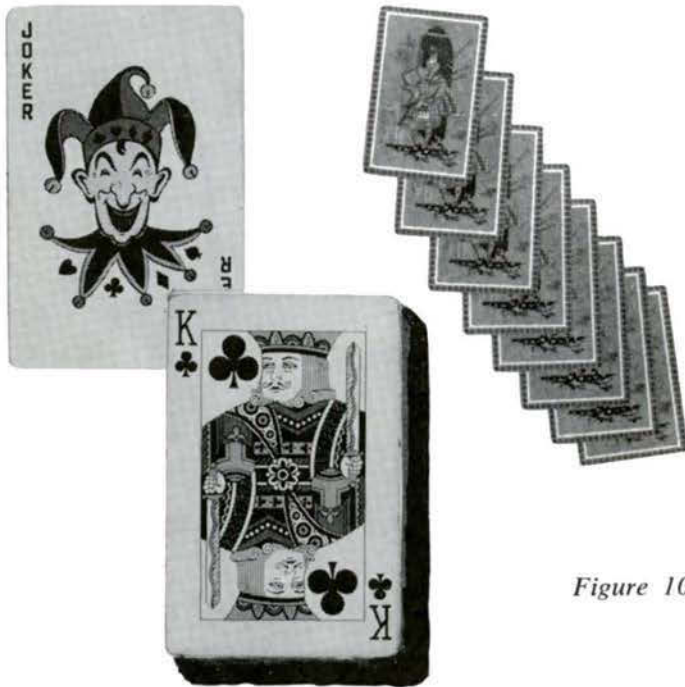
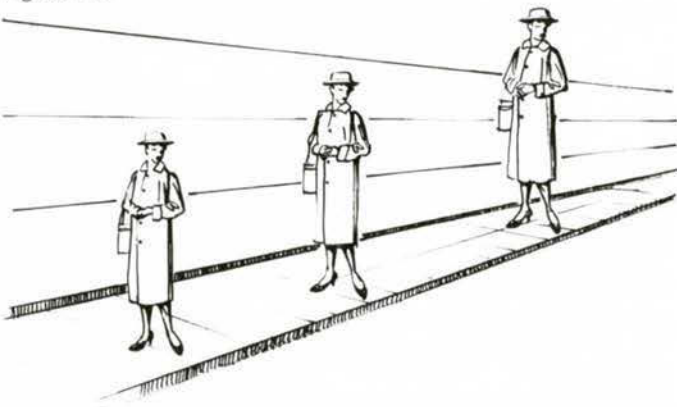


Figure 10

The phenomenon of size must also be considered in connection with depth perception. This might be termed the perspective effect. As an example, if a number of objects of equal size are arranged in a line going away from the observer, the foremost one appears the largest and the most distant one the smallest. We make this judgment of distance or depth when objects we believe to be of equal size appear to vary in size (*figure 11*). Obviously, this too can be an illusion for we make the same judgment of depth when the size of the objects is varied such as the exaggerated perspective that is used in stage settings.

Figure 11



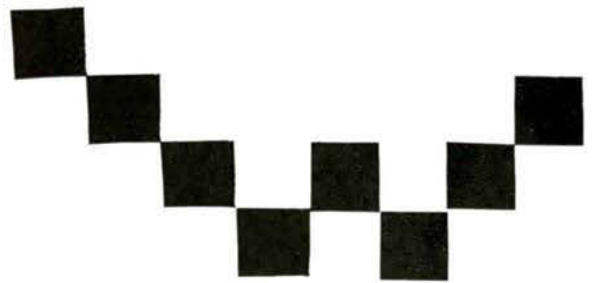
Brightness, such as distinctness of outline or contrast of the object with its background, is also a factor in depth perception. Allied to this is the effect of color, with the yellows advancing, the blues receding, and the reds and

greens in the middle range. These may all seem very obvious indications of our depth perceptions, but this awareness of how we perceive in depth again gives us a better understanding of the possibilities of creative perception.

Another area of visual perception that merits study is that of the awareness of movement. Everyone is conscious of movement in the physical sense, such as a running horse, a jet plane in flight, the wagging jaw of gossip, or the leap of a hungry fish. There are, however, other movements which are more properly classified as apparent, and in these cases the perception is arrived at in a dynamic way. We sense a movement even though the object is physically at rest. A simple example of this is the motion picture, which is made up of a series of still pictures arranged in a sequence and exposed to view at such intervals that we see the movements as real. This can be elaborated in a variety of ways with a variety of results, such as the moving light which traces a line.

In another sense, also, there is apparent movement — that is in the way we make our visual perceptions. The mind finds it difficult to concentrate for any length of time upon a single object and we are all conscious of our attention shifting from one object to another, or at least this is certainly a fact if we deliberately try to concentrate our attention. We tire quickly and turn our gaze elsewhere. We tend to read the world in some pattern of movement in our perceptions. This apparent movement is slow when the objects perceived are assorted or various, for each new thing holds our attention by its novelty. Again, the movement is more rapid if the objects are all the same or similar (*figure 12*). We move visually along a picket fence more quickly than along an elaborate screen (*figures 17 and 18*).

Figure 12



The importance of movement in perception cannot be overstated. In the normal appraisal of architecture this factor is frequently combined with those of space modulation and grouping, which complicates the understanding of apparent motion. The photographs of urban spaces with their movements of perception, giving modulation and form to the spaces are examples of this, as in *figures 13, 14, 15 and 16*.

When planes or surfaces are perceived several factors influence the apparent movement. We sense movement along the length of a plane — that is along the dominant direction. The textural quality of the surface, the regu-



Figure 13



Figure 14

- (13) *Urban space with open end lacks definition.*
- (14) *Same urban space seen from the open end is more satisfying.*
- (15) *The complex of volumes created by the walls and elevated bridge has a strong impact.*
- (16) *Building forming backdrop to end of street becomes an important focus of interest. Requires very careful study.*



Figure 15

Figure 16



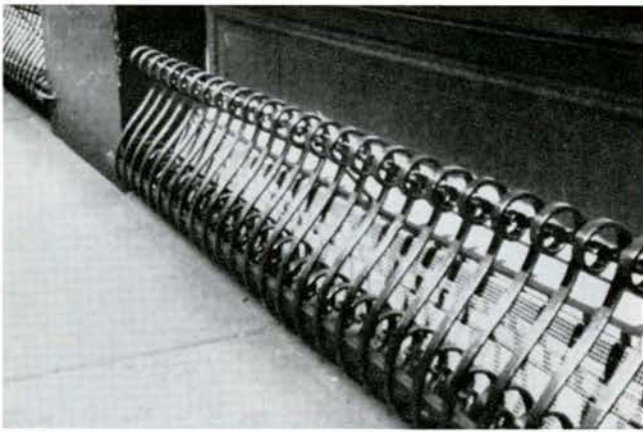


Figure 17 — Strong rhythm and movement in the bold iron-work of an areaway.

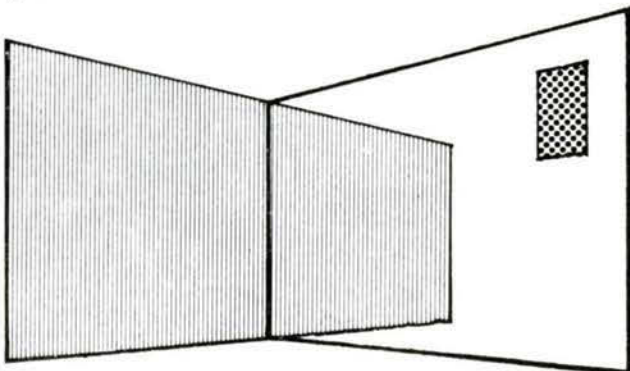


Figure 18 — Complex and elaborate movements along the railings, balconies and panels.

larity, the brightness, the nature of the interference of other planes or forces and distractions, all contribute in a positive or a negative way to the apparent movement perceived. in (figure 19) we see such examples of apparent movement.

It is in these apparent movements that rhythm in the visual sense is created or felt. Rhythm is without doubt

Figure 19

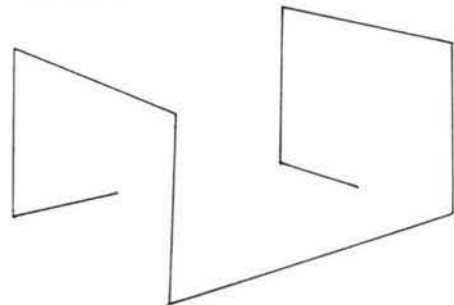


one of the dynamic characteristics of design, contributing a feeling of liveliness or spirit. By manipulation of the intervals and the arrangement of the objects we achieve the kind of movement we speak of as lyrical, plodding, or majestic and so forth. Fundamentally these are the rhythmic movements intrinsic in the work.

An extension of the idea of apparent movement is that of virtual volume.

Simple volumes of a virtual type can be perceived in situations like that in (figure 20). This diagram represents a piece of wire bent into a particular form, or some linear object so arranged. With very little study one can sense a kind of rectangular volume somewhat contained by the two ends. It may be sensed as a block of space or seen as a transparent tube, but a volume seems to exist partially outlined by the wire. When sufficient clues exist for one to perceive a volume, but it is of a more subtle order than a solid block or a shoe box, a virtual volume is created. We find these volumes in a variety of places, for in the final analysis all volumes of space are virtual volumes. The space beneath a table, the quadrangle between groups of buildings, the court yard, the cloister, the Arc De L'Etoile, or the Eiffel Tower.

Figure 20



Another example of the virtual volume is what is frequently referred to as the negative space. This can be a void used in contrast to a solid or it may be an empty space where we would perhaps expect to see a solid. Some sculptors use this device very effectively, where a simple loop may represent the head or where the figure seems to consist of spaces ingeniously related by solids rather than the solids themselves fused to each other.

This brief account of perception in the visual sense could not hope to shed light into all the corners. But if it has dispersed a little of the mist that seems to cloud so many of the subjects pertaining to design, it will have, perhaps, whetted your appetite and aroused your curiosity so that you will take a second look.

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# Viewpoint

“Does the practice of city building departments correcting architectural drawings submitted for building permits and advising on suitable mechanical and structural solutions to building problems constitute an infringement of professional practice?”

THE TOPIC IS SOMEWHAT ANALOGOUS to asking a confirmed bachelor if he is still beating his wife. In commenting on the topic it is essential to consider the basic role of the plan examiner in a building department. His main duty is to check drawings to insure that the design is basically in conformance with the minimum standards of a by-law and this, in addition to building by-laws, includes zoning standards and in the case of the City of Toronto, a myriad of other related restrictive by-laws.

Many architects and engineers have experienced the situation of having to comply with a different set of by-laws as they move from one municipality to another. This is, of course, an argument for uniform codes particularly with regard to building codes. In the case of Metropolitan Toronto, we are currently trying to formulate a code acceptable to all municipalities in the area which should assist in eliminating this particular problem. It is, however, part of the building department officials' jobs to become intimately conversant with his own municipal codes and conversely there are few, if any, architects or engineers in private practice who can be familiar with all the requirements of the various municipalities where he may have to design a building. In the light of experience in Toronto at least, most architects and engineers avail themselves of the opportunity to discuss their plans with the building department officials and generally are appreciative of the service so provided; certainly I have heard no complaints that this is an infringement of professional practice.

In checking plans for compliance with by-laws, the plan examiner merely informs the architect or engineer how the design does not conform with a by-law and it is then the consultant's responsibility to find the solution. In many instances there can be more than one solution to a particular problem but the best solution is certainly up to the designer to determine after considering the various factors involved.

In recent years with the advent of planning boards and zoning by-laws, an architect's drawings can frequently be affected more radically by the necessity of complying with zoning requirements than the building code. With the increasing difficulty of interpretation of zoning restrictions, it is now a necessity for architect's plans to be examined by building officials completely familiar with the regulations. Here again the plan examiner only indicates the problem and the consultant amends his drawings to conform — certainly this should not be construed as an infringement of professional practice.

In summary, building officials have little time to spare from normal building permit processing and it has become stock procedure to suggest where a design does not comply with the pertinent by-laws and then wait for the solution to be submitted by the architect or engineer

as the case may be. In my own experience in examining plans for building permit purposes, I have observed numerous designs which contravened the City's by-laws and which, if allowed to pass unnoticed, could have prejudiced the safety of lives and considering this fact alone if there is any infringement of professional practice, which I doubt, then it must be only a secondary consideration to insuring safety in buildings.

*Ronald Milne,*

*Dept of Building and Development, Toronto*

THE FIRST DUTY OF THE BUILDING OFFICIAL is to check the drawings and specifications to see if the proposed building is designed to comply with the Building By-laws and other municipal ordinances that he administers. If the design does comply, it is his duty to approve it and issue a building permit. If the design does not comply, it is his duty to refuse the permit.

When a building permit is refused, the applicant is entitled to an explanation indicating what provisions of the Building By-law have been violated. Although this is not always spelled out as a specific duty, surely this is one of the inherent aspects of his general duty to administer the By-law.

Just to list those provisions of the By-law that have been violated would often be of little use. These provisions are not always specific on every situation and often must be in general terms and of a performance nature. Interpretation of such provisions usually requires an understanding of the purpose and principles involved in the provisions and an appreciation of the difficulties of their application to a specific situation.

Here the efforts of the building official and the designer must often be co-ordinated if a satisfactory solution is to be found. If the designer is not a professional man, the building official is, often, accused of infringing on professional practice. If, however, the designer is a practicing architect or engineer, the building official is, sometimes, praised for his co-operativeness.

Surely what we are after are good buildings. If some legalistic trespassing takes place in the process, the higher ideals of the interested professions have not suffered.

I agree, however, that the municipal official should not give advice on the design of a building or suitable mechanical and structural solutions as this would be an unauthorized extension of the duties assigned to him and would also constitute an infringement of professional practice.

*C. Maxwell Taylor,*

*Dept of Planning and Works, Ottawa*

*(to be continued next month)*

## LEGAL NOTES

EDITED BY D. C. HALDENBY

### *The Committee of Adjustment*

BY JACK BATTEN

THE COMMITTEE OF ADJUSTMENT functions at the grass roots level of community planning in Ontario, and probably for that reason, the impact of its decisions on subdividers, builders and architects is immediate, direct, and, sometimes, downright devastating. Its powers, on paper at least, seem fairly modest and carefully limited by The Planning Act; a Committee, reads section 18 of the Act, "may authorize such *minor* variance from the provisions of the by-law (i.e. a by-law that implements an Official Plan), in respect of the land, building or structure or the use thereof, as in its opinion is desirable," and "may permit the enlargement or extension" of non-conforming uses in certain specified circumstances. But, in real practice, these powers mean that a Committee can make decisions on a wide collection of matters, from side-yard measurements to house design to landscaping to building location, that are basic to the whole planning process.

And in most Ontario municipalities the Committee seems to attack these jobs with a special enthusiasm that is, I think, largely a product of its essentially non-bureaucratic, non-professional character. The Planning Act doesn't require Committee appointees to demonstrate any specific qualifications; it merely suggests that "the council of the municipality may . . . appoint . . . such persons . . . as the council deems advisable," and as a result, the Committee, unlike the relatively more professional Planning Board, usually turns out to be a fairly "lay" body, made up not of expert planners but of local citizens with an interested amateur's view of planning, and a fierce pride in their own community.

Sometimes, of course, this kind of simon-pure zeal may lead to decisions that annoy the planners and the architects and even, need I say, the lawyers. This was likely part of the reason that the Ontario legislature provided a procedure in The Planning Act for appeal from a Committee's ruling to the Municipal Board. It isn't clear, either, that the other provinces which have established agencies similar to the Committee of Adjustment agree entirely with the Ontario concept. Some provinces, for instance, permit members of Council to sit on their own local zoning board; and there are even subtler differences — New Brunswick, for one, requires that "the Chairman of the Zoning Appeal Board shall be, where possible, a barrister of five years' standing." At the same time, however, all of the other provinces can apparently afford to demonstrate more confidence in their local boards, since none of them has a procedure like Ontario's for appeal to a higher body.

One practice, or rather non-practice, that all provinces share is a failure to publish the decisions of their agencies. The Ontario Planning Act specifically requires each Committee to give its decisions in writing, but there is, it seems, no machinery for circulating these to anyone other than directly-involved parties. As a result, precedents that would be valuable to both architects and lawyers are simply not made available, and it might even be

true that some architects remain unaware of precisely how helpful a Committee of Adjustment, and related bodies in other provinces, can be in solving otherwise hopeless planning problems.

Fortunately, however, there is available a very useful collection of Committee decisions, thirty altogether, in a case book on Community Planning compiled by J. B. Milner of the University of Toronto Law School — the editor mentions rather mysteriously that these materials were "obtained privately". They are all decisions of the Committee of Adjustment of Toronto Township, a booming municipality situated between Toronto and Hamilton. It's hard to say whether these are at all typical of decisions written by other committees and boards across Canada, but one would hope so, since they seem to me, taken as a group, to demonstrate consistent good sense, a sound grasp of planning, and, even, a refreshing concern for aesthetics.

Many of these decisions should make interesting and revealing reading for architects, although none, perhaps, could be as directly instructive as the decision in *Re: The United Church of Canada* was to the architect-applicant involved there. In that case, the architect was confronted with a lot that was, under the existing by-law, too small for the church he had designed, and he brought his problem to the Township Committee for its recommendations. The Committee helped him around the first problem — insufficient parking space on the church lands — by permitting a variance from the by-law parking requirements for churches, on the proviso that the church obtain approval from a neighbouring shopping centre to use its parking space on Sundays and that it properly direct overflow cars into this lot. A second obstacle proved to be more serious, particularly since it resulted from a misinterpretation by the architect. The relevant by-law required side-yards to be equal either to the height of the church or to 15 per cent of the lot width; this "came as a surprise to the architect" who had allowed only 7 feet on one side rather than the requisite 30 or more feet. He had also allowed only 40 feet for the front yard instead of the by-law's 60 feet.

The Committee conceded that "the design can not provide such deep side yards (or front yard) no matter how the church site is altered". But, it decided, it would "prefer to see the church sited so as to give the most attractive picture, rather than so as more nearly to meet the by-law's yard requirements". Before it could give its final approval, however, the Committee was forced to do a little more soul-searching, since the necessary variation from the by-law seemed more substantial than "minor". The manner in which the Committee solved the difficult problem demonstrates how completely mixed its social functions are with its legal duties. It disposed of the application by putting to itself this proposition: "Is it desirable for the betterment of the community life that a church should be established on the property here involved?" Examined from this point of view, the Committee easily concluded that "the variance could properly be regarded as minor", and it permitted the architect, to his relief, to proceed with the original design.

The decision in the *United Church* application hints at another power of the Committee that several decisions in the case book make even more explicit: the power to

attach conditions to approval. Section 18(a) of The Planning Act allows the Committee to give its decisions "subject to such terms and conditions as the committee may deem advisable". Some idea of the scope of this authority is indicated in a case where two doctors wanted to open a clinic in an area of the township that was zoned R-3 Residential, and they asked the Committee for a variance from this land use to permit their clinic to be built. The Committee granted the application, after a lengthy hearing, but, in order to "safeguard the residential interests of the affected area", it made its approval subject to a number of conditions. It required, first of all, that the layout of the clinic and the clinic grounds conform as closely as possible to a sketch plan which a member of the Township Planning Board staff had prepared under the supervision of the Committee. The Committee was therefore able to regulate the location on the lot of the building and driveway, the character of the driveway and parking lot (crushed stone), the nature of the landscaping, and so on. It also ordered that "the exterior surface shall be finished with a building brick of color and composition compatible with the surrounding buildings." And in all these ways the Committee became an important influence on the functions of the clinic's architect.

*Mr Batten is a member of the Toronto legal firm of McLaughlin, Macaulay, May and Soward.*

## LETTERS TO THE EDITOR

Editor, RAIC *Journal*:

Having spent the greater part of my teaching career in Canada as Director of the School of Architecture at Manitoba and Toronto, I read the *Journal* with much more than casual interest. I have intended many times to tell you how much the *Journal* has improved in its appearance, its format, and its general contents since I first became acquainted with it in 1929. I often had the pleasure of contributing to it. The *Journal* has become one of the distinguished periodicals representing the architectural profession in the world today.

With all good wishes for your continued success.

*Milton S. Osborne, LL.D., FRAIC  
Head, Department of Architecture,  
Pennsylvania State University*

A l'éditeur, Le Journal de l'IRAC:

J'ai examiné le programme du concours lancé en vue de l'aménagement complet du "Smyth Road Site". C'est à la suite de l'étude que j'en ai faite que je vous envoie l'expression de ma désapprobation globale du dit programme.

En effet, ce programme correspond plutôt aux exigences d'un entrepreneur cupide qu'à celles d'un organisme soucieux de réaliser un ensemble urbain de première qualité. On y discerne immédiatement de généreux puisements dans le cahier des normes de la SCHL. D'où l'impossibilité d'une recherche de base soit sociale, soit économique, soit technique, soit même totalement architecturale. Je m'explique.

D'abord, le site n'est pas un site, mais deux sites. Une voie de circulation majeure divise brutalement en deux la surface allouée au projet. Et on prétend à un ensemble homogène . . .

La concentration de population aussi est soigneusement contrôlée, c'est-à-dire limitée à un nombre maximum d'unités de logement. Et pour quelle raison?

Ensuite, en définissant les unités de logement en termes de chambres à coucher tout en limitant la surface maximum d'espace habitable, on aboutit indubitablement à la solution (maintenant hélas! très répandue) de la maison-dortoir, de la banlieue-dortoir. Le sommeil est l'élément-clé de l'unité et partant, de l'ensemble. On en connaît le résultat dans les nombreuses unités déjà réalisées: dès que le propriétaire prend possession de sa maison, il doit immédiatement se mettre en frais de finir le sous-sol, car la maison par elle seule est INHABITABLE. Et vos conditions de concours éliminent d'avance toute recherche dans la redistribution des espaces, dans la création d'espaces propres à la vie, de la technique en vue de baisser le coût de construction.

Enfin, en limitant la contiguïté des unités de logement à environ 30% de semi-détachés, on supprime toute possibilité d'habitation en bande continue, ce qui n'est pas peu dire. En effet, ce genre de solution comporte des avantages marqués tels: réduction du coût des terrains; réduction du coût de la construction; réduction des frais de chauffage; réduction des coûts d'installation et d'opération des services publics; etc. le tout en préservant très bien l'intimité et le sens de la propriété individuelle.

D'où vient donc que l'on tienne tellement à cette forme de développement urbain qui consiste à ramener le concept de la maison isolée à un terrain de dimensions réduites? On favorise ainsi entre les constructions l'apparition d'espaces ridicules d'une vingtaine de pieds, parfois de quinze pieds, et qui ne servent qu'à créer un corridor d'air froid en hiver, qu'à frustrer l'intimité dès qu'on y perce des fenêtres de ce côté (ce qui se produit très, très souvent), sans compter les frais d'entretien, etc.

Il est pitoyable de constater que les organismes en grande partie responsables de l'évolution de l'habitation au Canada fassent preuve d'autant d'irresponsabilité et de si peu de clairvoyance, au point même de ne s'être jamais posé de question sur la valeur des normes actuelles de la S.C.H.L. Normes desséchantes lesquelles, afin d'éviter certains abus, ont magnifiquement contribué à couvrir le pays de cabanes impropres à une vie intéressante, productive, pleine, épanouie, etc. Et c'est avec un programme à l'image de ces normes que l'on espère en arriver au but du concours, soit à l'éclosion de nouvelles idées en matière d'habitation?

On nous informe par voie de l'IRAC que les architectes du Canada montrent un grand intérêt dans ce concours, au point que vous en êtes à en réimprimer les conditions. Cela est triste. En effet, puisqu'un grand nombre d'inscriptions démontre l'accessibilité du concours à la masse des médiocres. On peut donc s'attendre à un résultat semblable à celui obtenu lors du concours Calvert pour la "maison canadienne de demain". Une myriade de concurrents, puis un premier prix présentant "quelques qualités". Le programme ne laissant au concurrent qu'un jeu de blocs à assembler, attendons-nous à quelques arrangements-types agrémentés de charmantes façades "modernes". Surtout n'envisagez pas un succès tel que celui obtenu par le concours pour l'Hôtel de Ville de Toronto. *Jean Ritchot, Architecte, Sainte-Foy, Québec*

## BOOK REVIEWS

"TOWN & SQUARE", by Paul Zucker. Published by Columbia University Press, New York. Price \$15.00.

The post-war decade has produced a very extensive and in some instances, distinguished literature, in Town Planning. A great deal has been written about the ills of our cities and their amelioration. Most of the literature deals with the mechanics of city life and attempts to bring to bear a semblance of the scientific method in prescribing for current civic ills. By and large the literature of the post-war period has dealt with the Science of City Building. Very little has been done for the Art of City Building. It is as if the city as an art form is no longer fashionable and that in terms of the twentieth century, the city has become, to borrow Le Corbusier's words, "a machine to live in".

This over-emphasis on the city as a mechanical contrivance has been re-dressed by the publication of an elegant book: *Town and Square*, by Dr Zucker. The author, a man of great scholarship and sensitivity unfolds the true nature of the western city and its heritage by tracing the evolution of "Town and Square: from the Agora to the Village Green". Essentially it is a study in the morphology of town form and as characterized by internal and external space. Although in many ways disagreeing with Sitte's approach in the "Art of Building Cities", it is a linear descendant of this scholarly work. In fact, Dr Zucker takes up the case for the City as the supreme art form where Sitte left off, but adds to it Hegemann's concern for the comparative analysis between successive periods of town planning and building. In its five chapters, it traces the square and through it the town from antiquity through the Middle Ages to the Renaissance and up through the Nineteenth Century.

A sixth chapter is added by Carl Feiss, the well-known American planner on early United States' public squares.

The total presentation is a breath-taking panorama of urban form and its decisive aesthetic impact upon successive ages. It is lavishly illustrated, as such a book must be, in order to make its case with visual impact. A good deal of familiar, but an equal amount of quite new material, is presented. The illustrations are particularly telling when they relate photographs to plans, enabling the reader to visualize the spatial form of a certain geometric lay-out. Here Zucker provides a dimension of effectiveness which Sitte never achieved. For example, this reviewer was struck by some of the aerial photographs of Capitol Hill presenting a visually convincing scale of that square in its urban fabric.

On the other hand one misses a map or series of maps identifying the geographic location of the various examples chosen. Unless the reader is thoroughly familiar with the geography of Europe and other parts of the world, identification of the urban spaces in terms of their country or region is exceedingly difficult. This is obviously a minor defect but, if remedied, could have contributed to the fuller understanding of the nature of the urban space examined in relation to its political or geographic setting.

This raises perhaps a more important aspect about the book, namely the relative absence of social, economic and political facts about "the towns and squares" ex-

amined. One would love to know more about the life of the men and women living within the towns examined and enjoying the squares at the time they were built or throughout the long periods that some of them took for their full development. However, this is perhaps asking too much within the compass of such an exhaustive and scholarly analysis with its sights entirely set upon the visual and aesthetic nature of urban spaces. The thread that runs throughout the book is an exceedingly important one and one that bears emphasis again and again, particularly for architects and all others concerned with the unending process of building cities: as one builds single buildings within the confines of property lines and by-law restrictions, one is, in fact, building voids as well as fulls. The architect as an urban designer is concerned with grouping the buildings and not just the construction of individual units. The examples of the past elegantly illustrated in Zucker's book remind us that the relationships between buildings are as critical as the individual building itself, or often even more so, if we are to build "towns and squares" which are more than merely arithmetic sums of their component parts. For this reason alone it is the sort of book that ought to find a welcome place upon the shelf of practising architects in a country like Canada, where "towns and squares" are just emerging out of the fabric of our burgeoning communities.

*H. Peter Oberlander, Vancouver*

"DAYLIGHT WITH INSULATION" by Thomas A. Markus, MA, MArch, (MIT) ARIBA, issued by Pilkington Brothers Ltd, St Helen's, Lancashire, England. (Available on application from Pilkington Glass Ltd, Toronto)

This beautifully produced book does credit to the author and to the Pilkington Glass Company who have produced it. It is probably one of the best quick reference books of its kind — it contains 52 pages, is amply filled with attractive diagrams, contains enough factual information and references to make it a most useful design tool. There are eight short chapters — "Life in a Controlled Climate", "Heat Transfer", "Humidity", "Sound Insulation", etc. The subject matter is clearly presented with a lavish use of bold colour, and important graphs and tables are included in a form that remains one of the direct techniques employed by the artist illustrators of the Golden Book Series for Children. Each chapter begins with a fine thematic picture in colour which is followed by a statement of the elementary scientific principles governing the subject under discussion. Bold diagrammatic drawings express these principles visually and are a particular help to the architect who, of all people, is usually blessed with a strong visual memory. Then follow a few tables with relevant information.

The book concludes with a useful classified bibliography which is up to date, each reference annotated by the author.

This book does not pretend to be a comprehensive text book and, of course, it is concerned primarily with glass, but it can be recommended with confidence to the profession and students.

*Thomas Howarth, Toronto*



## INSTITUTE NEWS

### *1961 Massey Medal Competition Details*

Conditions for the 1961 Massey Medals for Architecture Competition will be distributed to members of the Institute in early February. The RAIC Massey Medals Committee, under the chairmanship of John Russell (F), Winnipeg, met twice in 1960 to consider recommendations in the 1958 Jury report to streamline competition procedures and consider suggestions to expedite the processing of an expected record entry list.

### *Space Still Available on Post Assembly Tour*

Members are reminded that the deadline for registration in the forthcoming RAIC post Assembly Tour of Europe is Tuesday, January 31. An RAIC Newsletter dated December 15 and the December issue of the *Journal* gave full details of the tour. In order that quality hotel accommodation may be secured at all points of call it is important that architects and their friends proposing to join the May 21 to June 12 tour send in their registration to the Secretary of the RAIC, 88 Metcalfe Street, Ottawa, without delay. Members wishing further information are urged to write immediately to RAIC Headquarters.

### *RAIC President Made Hon Fellow of AIA*

The Honorary Secretary of the American Institute of Architects has announced the election of Harland Steele (F), President of the Institute, as an Honorary Fellow of the AIA. The President will receive the Honorary Fellowship at the 1961 AIA Convention in Philadelphia.

### *Photo Exhibit of Historic Canadian Buildings*

Following a January 5 visit to Ottawa by Dr Eric Arthur and Norman Melnick, chairman and secretary, respectively, of the RAIC Special Committee on the Preservation of Historic Buildings, consideration is being given by the Institute to preparing a photographic exhibit, for circulation in Canada and abroad during 1961 and 1962, featuring 50 of the best buildings of architectural and historic interest in all regions of Canada. The exhibition will be assembled with the assistance of committee members, the Canadian Exhibition Commission, Public Archives, the National Film Board, the National Historic Sites Division and others. One purpose of the special exhibition will be to dramatize the work of the Committee in developing the first stage of the national inventory of historic buildings, financed by a \$3,500 grant from Canada Council in 1960.

### *Revisions to RAIC Documents*

Members of the Institute are advised that the Client-Architect document (No. 6AQ) has been substantially revised and reprinted with an altered format, and is now available for purchase at ten cents per copy by Associations, firms and individual architects. Copies of the new form are also being made available to the five Schools of Architecture for use in the professional practice courses.

Meanwhile, following meetings with the Standard Practices Committee of the Canadian Construction Association, the RAIC Legal Documents Committee, under

Chairman Marvin Allan of Toronto, is reviewing the Stipulated Sum (No. 12) and Cost Plus (No. 13) documents with a view to further revisions and reprinting, with covers standardized for uniform use by both architects and contractors.

Consideration is also being given to minor changes to the "Suggested Guide to Bidding Procedures", and plans are under way to produce the draft of a proposed RAIC-CCA manual on contract administration.

At an Ottawa meeting on January 6 a special RAIC committee comprising Frank Nobbs and Edouard Tremblay of Montreal, representing the PQAA, and H. Gordon Hughes and James Strutt of Ottawa, representing the OAA, met to consider revisions to Document No. 4 (Code for the Conduct of Architectural Competitions). Copies of a revised form will be circulated to Provincial Associations in January with a view to securing the approval of component societies.

### *Committees and Officers Busy in January*

January is the busiest month of the year for RAIC committees and executive personnel. The heavy round of activities commenced with the architectural sales seminar at Scarborough on January 9-10, and was followed by an RAIC Executive Committee session at Toronto, January 20, and a special meeting of Council the following day. On January 23 President Harland Steele and fellow Institute officers were hosts in Toronto to AIA President Philip Will of Chicago, First Vice President Henry L. Wright of Los Angeles, and Executive Director Edmund Purves, Washington. At the National Museum in Ottawa on January 24 Mr Steele received, on behalf of the RAIC, a photographic exhibition from the Mexican Society of Architects entitled "Four Thousand Years of Mexican Architecture".

### *Reynolds Memorial Award Jury*

The American Institute of Architects have announced the composition of the jury to select the recipient of the 1961 Reynolds Memorial Award for distinguished achievement in architecture. Announcement of the competition was published in the November issue of the *Journal*. Members of the jury are as follows: Paul Thiry, FAIA, Seattle; Minoru Yamasaki, AIA, Birmingham, Michigan; Samuel T. Hurst, AIA, dean of Alabama Polytechnic Institute's School of Architecture and the Arts, Auburn, Ala; Hugh A. Stubbins, Jr, FAIA, Cambridge, Mass; and Henrique E. Mindlin, Hon FAIA, architectural editor of *Brazil - Architecture Contemporary*, Rio de Janeiro. The jury meets in Washington March 1st and 2nd.

### *To Address Canadian Clubs*

The RAIC, in co-operation with the Association of Canadian Clubs, has arranged for three special speakers to address Canadian Club groups from coast to coast early in 1961 on the subject of the Report of the RAIC Committee of Inquiry into the Design of the Residential Environment.

The three speakers will be John Parkin (F), Toronto, who was a member of the Committee of Inquiry; John Pratt (M) MP, Mayor of Dorval; and George Mooney,

Montreal, Executive Director of the Canadian Federation of Mayors and Municipalities.

Mr Parkin will address the Victoria Women's Canadian Club February 20; both the Men's and Women's Clubs in Vancouver February 21; the Edmonton Men's Club February 22; the Calgary Men's Club February 23 and the Winnipeg Men's and Women's Clubs February 24.

Mr Pratt will speak in five Ontario centres: Port Hope, April 10; Oshawa, April 11; Hamilton, April 12; Guelph, April 13 and Niagara Falls, April 14.

Mr Mooney will tour the Maritimes in April or May.

### *RAIC Building Research Committee to Meet*

The RAIC Standing Committee on Building Research, under the chairmanship of S. A. Gitterman, will hold its annual meeting with officers of the Division of Building Research of NRC in Ottawa on April 13 and 14.

### *Planning Institute Being Established In Ghana By UBC and United Nations*

An Institute for community planning is being established in Ghana under an agreement between the Government of Ghana, the Bureau of Technical Assistance Operations of the United Nations, and the University of British Columbia.

Dr H. Peter Oberlander of the Department of Community and Regional Planning at the University of British Columbia is consultant to the Institute, and the Director is Alan H. Armstrong, Ottawa who is on a year's leave of absence from Central Mortgage and Housing Corporation.

The project is the result of a visit to Ghana 18 months ago by Dr Oberlander as a United Nations' technical assistance specialist to advise on ways and means of training urgently needed technical personnel in the field of community planning. The Government of Ghana has projected a comprehensive and ambitious five-year development plan and it is within this framework that locally trained planning technicians are needed. The Institute may become a regional training centre for junior planning staff from other countries and West Africa.

The University of British Columbia will supervise the Institute for an initial period of three years in the hope of developing full local responsibility at the earliest possible moment. The University is providing the Director and it is under this arrangement that Mr Armstrong joined the University staff with the rank of Assistant Professor of Planning. Professor Armstrong is well known to members of the Institute. In 1960 he served as secretary to the RAIC Committee of Inquiry into the Design of the Residential Environment. As senior adviser on community planning for Central Mortgage and Housing Corporation for more than ten years he was responsible for the development and co-ordination of Federal Government assistance to the four schools of planning in Canada. He is a graduate of the School of Architecture of the University of Toronto and of New York University.

Both Dr Oberlander and Professor Armstrong left for Ghana in early January to spend a month in Accra making arrangements for the establishment of the new Institute.



Mr Forsey Page (F)



Mr D. E. Kertland (F)

### *Retire from Editorial Board*

A resolution was passed unanimously at the last meeting of the Editorial Board expressing the thanks and appreciation of the Chairman and members for the long and conscientious service of two distinguished members, both Past Presidents of the Institute, who retired from the Board in 1960.

Mr Forsey Page (F), Toronto, was a member of the Board for twenty years, joining in 1940 and serving as Chairman until 1945. He was President RAIC in 1944-46. Mr Douglas E. Kertland (F), Toronto, joined the Board in 1952. He was President RAIC in 1956-58.

Both Mr Page and Mr Kertland will continue to serve as members of the *Journal* Committee of the RAIC.

### *Positions Vacant*

Senior assistant architect wanted. Must be a registered graduate with at least ten years experience, capable of organizing and managing all drawing office operations.

Drawing office assistants wanted, graduate architects or experienced architectural draughtsmen.

Office situated in north central Toronto. Our staff is informed of this advertisement. Please reply Box No. 104, c/o *Journal*.

### *Positions Wanted*

Architect, graduate Istanbul Technical University 1958, three years experience, including design, engineering, detailing and urbanisme. Age 26, single. Sencer Ayhan, Ikinci Beyler Sok. No. 43, Izmir, Turkey. (References available from Canadian Embassy in Turkey).

### *Omission*

In our presentation of the O'Keefe Centre for the Performing Arts in the November issue of the *Journal*, the intended photographer's credit "All photos by Panda unless otherwise indicated" was inadvertently omitted. The *Journal* makes a practice of crediting all photos where the photographer's name is known, or can be discovered, and particularly regrets its omission in Panda's excellent photography of the O'Keefe Centre.

## PROVINCIAL NEWS

ONTARIO

### *OAA Annual Meeting February 9-11*

The annual meeting of the Ontario Association of Architects will be held at the Royal York Hotel, Toronto, February 9th, 10th and 11th. The program opens Thursday, February 9th, with registration at 4.00 p.m. and at 6.00 p.m. the opening of the exhibition of new building materials and techniques, the allied arts and student work in the Canadian Room. This will be followed by an exhibitors' reception and an OAA buffet supper in the Canadian Room.

The annual general meeting will begin at 9.15 on Friday morning, February 10th, and the program includes an address by the President, James W. Strutt, Ottawa; the presentation of reports, resolutions, etc. Members and ladies will be luncheon guests of the Toronto Chapter. The speaker will be Ian MacLennan, Chief Architect and Planner, CMHC. An informal dinner, dance and floor show has been arranged for the evening.

On Saturday, February 11th, at 10.00 a.m. a seminar on "Teaching More Than Design" will be conducted by Sibyl Maholy-Nagy. The luncheon speaker will be Rev. Norman Rawson, Montreal. At 2.30 p.m. a seminar on "Architects and the Structure" will be conducted by B. Paul Wisnicki, MEIC. The annual dinner will be held at 8.15 p.m. and the speaker will be Claude T. Bissell, President of Toronto University.

### OBITUARY

RAY M. HALL, MRAIC died suddenly at his home in Galt, Ontario, on November 13, 1960. Mr Hall was born in the county of Oxford, and received his early education at Stratford Collegiate and Central Technical School, Toronto. While at the latter he studied in the office of Andrew Cobb from which he entered private practice in Galt. Here he practised for some 45 years until the time of his sudden passing. He is survived by his wife, Leila Winnifred Hall of Galt, and two sons, Roderick of Ottawa and Basil of Hamilton.

*B. M. Hall*

### QUEBEC

#### *Montreal Study Group*

The third dinner meeting of the 1960-61 session was held on 13th December, under the chairmanship of Jean-Louis Lalonde, when Blanche and Sandy van Ginkel gave a talk on "The Harbour and the City of Montreal".

Mrs van Ginkel began by explaining that the object of their research had been, firstly, to discover the "context" of the planning for the harbour; secondly, to collate the studies which had already been made; and thirdly, to relate the harbour to its immediate vicinity, namely the original settlement of the city of Montreal. It was clear, she claimed, that the port should stay where it was, since it contributed the most vital part of the city's fabric and economy. It could never be a pretty sight, and she deplored any possible attempts to make it such by arbitrary "visual design". But it could, she asserted, be handsome, even beautiful, if it was doing its job well. "Not beautiful in terms of design", she said, "but in terms of order. Perhaps brutal, but with a grandeur of its own — the proper beauty for a working city". She did not elaborate on the aesthetic implications of such a distinction, but may have

been referring to the eighteenth century differentiation between the beautiful and the sublime.

Mr van Ginkel then dealt with the conclusions and recommendations derived from their research. After explaining the inadequacy of any scheme for an East-West Harbour Expressway, which must inevitably mutilate the old city, he said that in their view the old city should not be touched. This decision was not prompted by romanticism, or any visions of a potential tourist trade, but simply by observing the scale and character of the existing streets. The only defect of the old city was that it had become a centre for storing merchandise. Its architecture was not in itself unattractive; it simply looked unattractive because it was put to improper use. Their proposal was thus in essence that the trucking and warehousing operations be removed elsewhere, and that the old city should be given back its original function as a commercial and administrative centre.

To achieve this, the grain elevators (which were in any case obsolescent, and unlikely to serve more than another fifteen years) should be removed, and an appropriate authority set up with powers to expropriate existing property and land. Its duty would be to rehabilitate the old city, to maintain its character as a whole, and to bring it back into sound economic use. Commercial corporations concerned with port operations were only too anxious to move into the area; indeed, the Cunard Company had just moved there from Beaver Hall Hill. Extensions were required to the Law Courts and City Hall, and since the existing buildings were located in this area, it was an obvious place for them to expand.

John Bland asked if Greber's plan still had any validity since it had seemed to him very interesting as a composition. Mr van Ginkel countered this by asking in turn if the PQAA would be likely to be interested in actively promoting the scheme he had just outlined. Since neither had any intention of answering the other's question, the discussion lagged, but Harold Spence-Sales revived it a little by expressing in well-rounded phrases his views as to the general worthwhileness of every element of the previous speeches which he had considered worthwhile.

The meeting ended dramatically with an impromptu presentation of a rival scheme by an unheralded guest, who suddenly produced a sheaf of faint but extremely springy drawings just as the discussion seemed to be petering out. The essence of his proposal seemed to be that since the two most symbolic natural elements of Montreal were the river and the mountain, these should be linked directly by a splendid boulevard. The secretary started to remark that, whilst he could see no point in linking two elements whose only common feature was their inaccessibility to traffic, he personally would welcome any project which linked McGill University direct to a transatlantic port; but before he had finished clearing his throat he was ruled out of order by the chairman, on the grounds that the previous speaker had had no right whatsoever to make an elaborate speech. The members seemed to think, however, that it was the chairman who was out of order, and made it clear that they enjoyed hearing different opinions, from whatever source they came. It was on this general note of democratic tolerance, mixed with a democratic disregard for protocol, that the meeting was finally adjourned.

*Peter Collins*

## Du Secrétariat de l'AAPQ

Le mardi 13 décembre dernier, une délégation de dix membres du Conseil se présentait chez le Ministre de la Jeunesse pour discuter de plans types d'écoles. Au nom de la délégation, le président du Comité concerné, M. Paul-O. Trépanier, a résumé les conséquences fâcheuses de la politique actuelle du Département de l'Instruction publique: Economies illusoire, écoles non réalisées selon les plans et devis, bâtisses non adaptées au site, Département agissant comme architecte, banalités en série, etc. Il a conclu en réitérant les recommandations contenues dans le Mémoire soumis plus tôt au Ministre.

Prenant ensuite la parole, le Ministre de la Jeunesse a déclaré que cette question fort épineuse l'avait préoccupé même avant qu'il ne prenne connaissance du Mémoire. Il ne s'est pas engagé à retirer tous les plans types déjà en circulation, ni n'a promis d'empêcher le Département d'en continuer la distribution, mais il a assuré ses interlocuteurs qu'aussitôt la session terminée il s'attaquerait au problème en vue de lui apporter une solution équitable pour tous. Les membres du Conseil se sont retirés très satisfaits de l'entrevue et convaincus d'avoir posé un jalon important dans la lutte que l'Association mène depuis bientôt une décade contre la pratique du Département de se substituer à l'architecte. Mais attendons la fin . . . de la session!

D'ici là, nous aurons le Congrès des architectes. Dans les derniers quatre ans, l'Assemblée annuelle, comme on l'appelait alors, se calquait chaque année sur ce qui s'était réalisé ou raté l'année précédente. Le travail s'exécutait tant bien que mal, deux ou trois volontaires s'en mêlant. Plus maintenant, toutefois. L'Association bénéficie cette année de l'ardeur toute neuve d'un Comité spécial, dit Comité du congrès. A l'instigation d'un groupe de jeunes "révolutionnaires" et sous la présidence conjointe de Claude Longpré et de Gilles Marchand, le Comité a expurgé le congrès d'une partie de ses affaires et lui a transfusé une dose d'études qui ne peut certes pas nuire à l'architecture. Au lieu de se satisfaire de trois séances fastidieuses de propositions dûment appuyées et adoptées pratiquement sans opposition, d'une joute de curling qui a déjà attiré jusqu'à cinq spectateurs, d'une table d'honneur qui dépasse en nombre le commun des mortels qui siège en face, les organisateurs de cette année ont le courage de leurs convictions: ils ne veulent pas que ces deux journées sombrent dans la routine et le trinquage, mais comptent y offrir des sujets à méditer et des pensées à rapporter chez soi. Il est à souhaiter que leur initiative et leur message captent l'attention des confrères et reçoivent l'endossement qu'on est en droit d'attendre d'un milieu professionnel.

Au moment de lire ces quelques lignes, vous vous serez donné un nouveau chef de file. Le président de 1960, M. Henri Mercier, aura un successeur. La grande majorité des membres ignore, sans aucun doute, l'apport considérable de M. Mercier aux choses de l'Association. Il a consacré, et plus particulièrement cette année, des centaines d'heures de sa vie privée et des affaires de son bureau en assemblées de l'Exécutif et du Conseil et en réunions de Comités à demeure et spéciaux, dans ces derniers cas chaque fois qu'une question de principe ou un problème d'envergure allaient être discutés. Ajoutez à

cela les voyages effectués pour le compte de l'AAPQ, les multiples déplacements pour tous genres de réunions, les entrevues et les innombrables appels téléphoniques. Le poste de président de l'AAPQ est devenu une tâche de tous les jours, et M. Mercier l'a accepté et rempli comme tel. L'Association lui doit immensément, d'avoir dirigé ses destinées en 1956 et en 1960 et d'avoir servi à titre de Membre du Conseil pendant près de vingt ans: il a beaucoup mérité de la profession. Aussi le Conseil a-t-il décidé de lui décerner la Médaille du mérite: c'est la médaille qui y gagnera, il ne fait pas le moindre doute. Le soussigné désire rendre un hommage particulier au président sortant de charge et lui exprimer sa vive reconnaissance de l'aide précieuse et de la collaboration soutenue qu'il a bien voulu lui accorder. Heureusement, Monsieur Mercier demeure au moins encore une année avec nous à titre de membre ex-officio de l'Exécutif et du Conseil.

Jacques Tisseur

## BRITISH COLUMBIA

### 41st Annual Meeting AIBC

The 41st Annual Meeting of the Architectural Institute of British Columbia was held at the Empress Hotel, Victoria, December 2nd and 3rd. Ned Pratt, Vancouver, was elected President for 1961 and Fred Brodie and Roy Toby, Vancouver, and Bob Siddall, Victoria, were elected to Council for two-year terms.

A measure of the expanding activities of the AIBC was evident in the total of 19 reports of various standing committees and special committees which were issued to the membership prior to the annual meeting. In an addendum to his report President Bill Leithead noted the special contribution during 1960 of three committees dealing with Churches, Schools and Hospitals. Important conferences were arranged by these committees in which the profession was able to establish close contact with laymen responsible for financing, administration and operation of these building types. In the case of Schools, a permanent committee is in the process of being organized with the BC School Trustees Association and the Provincial Government which promises to produce useful results in the near future. The President also noted the retirement from Council of John Wade and Ken McKinley, both of whom had contributed much time and effort to various affairs of the AIBC during their terms of office.

The Registrar's Report revealed a net gain in AIBC membership of 15 with a present total of 260, including 26 new



The AIBC Council, 1961: left to right, Warnett Kennedy, Executive Director; Ned Pratt, President; Bob Siddall, Vice President; Fred Brodie. Not present, Ray L. Toby, Kenneth H. Gardner, Paul Smith, and Prof Wolfgang Gerson.

members admitted in 1960. Honorary membership was conferred on H. Blackadder of Vancouver, Frank G. Gardner (F), Vancouver, and G. Thornton Sharp, Duncan, all long-time members of the profession in BC.

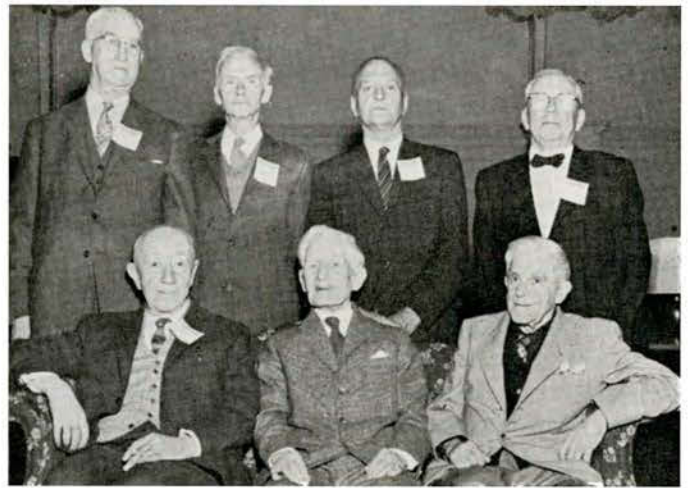
The Executive Director, Warnett Kennedy, also referred to the expanding activities of the AIBC and called for more people to participate in committee work.

A presentation was made to Reg Deacon, who retires after nineteen years as Executive Secretary, and he was made an Honorary Member of the AIBC. He will be succeeded by his son, Bob, who has assisted him in the office for a number of years.

Nearly 150 members, wives, and distinguished guests were present at the luncheon in the Empress Hotel dining room. P. Leonard James, one of the original members of the profession in Victoria, presented certificates to new members. Awards were presented to several BC architects for house designs entered in the joint AIBC - Western Homes and Living Housing Awards Program. The Gold Merit Award was presented to Carlberg, Jackson and Associates of New Westminster with special mentions going to MacDonald and Rowett, Wensley and Rand, Duncan McNab, Ron Thom, Ken Gardner and Arthur Erickson. The AIBC Medal and book prizes were presented to UBC students Ray Griffin, James Strasman and Peter Batchelor.

Paul Seibert, Executive Vice-President of the Central Association of Seattle, guest speaker at the luncheon, outlined problems and progress in urban renewal in the Seattle area.

Two difficult problems came up for lengthy discussion in



*Long-time members of the AIBC who attended the annual meeting. They total 528 years in their ages. Left to right, standing: J. Y. McCarter (F), (74), Vancouver; G. Thornton Sharp (80), Duncan; Ross Lort (71), Vancouver; George Evans (69), Vancouver. Left to right, seated: Henry Whittaker (74), Victoria; P. P. S. Twizell (85), Victoria; J. F. "Doc" Watson (75), Vancouver.*

the afternoon business session. One dealt with fees and services in the design of small homes and the other with a contentious clause in the AIBC Act concerning admission to membership of applicants with considerable practical experience but no formal training.

The first problem involved a resolution circulated by

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Council several months ago which in effect allowed a relaxation of the standard fee scale for houses costing less than \$25,000. The intention was to promote wider participation of architects in this field at fees which the prospective home owner or builder could afford and thus in the long run to raise the standard of design in this neglected but substantial and vital part of the housing market. Various objections were raised in the general meeting, chiefly concerning the possible reduction in the quality of architectural services. Other points discussed were the use of stock plans, the unrealistic fee schedule for repetitive plans, and the need to work with CMHC and lending agencies toward obtaining recognition of architects' services in the appraisal of house designs for mortgage purposes. The latter appears to be a particularly vital point and could apply as well to other building types, especially apartments.

Over the past year or more the AIBC Examining Board has been faced with a number of applications for registration under the so-called "15 year clause" of the Act, which permits a man with 15 or more years of experience and upon the recommendation of five members of the profession, to be "examined" for registration in the AIBC. It has become apparent that such applications are extremely difficult to assess and that a risk exists in the creation of a second set of admission standards. The meeting agreed that no second and possibly inferior standards could exist and that applicants in this category must display outstanding ability and accomplishment in their previous work in the absence of any formal training in architecture and related subjects.

It was perhaps not surprising that neither issue was fully resolved in the general meeting. The Housing Committee was instructed to give further study to the question of fees and services for small houses and the meeting largely confirmed the opinion of the Examining Board in maintaining strict and uniform admission standards.

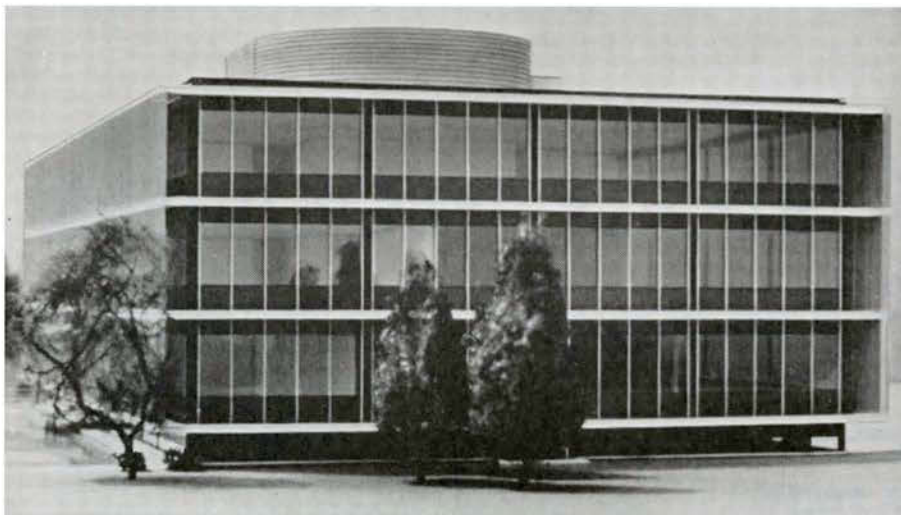
The Members' Stag Dinner was rescued from near disaster by President Bill Leithead when it was found that Prof B. C. Binning, noted artist and valued friend of BC architects, the guest speaker, was ill and unable to be present. In lieu of one speaker a number of members and guests present were "invited" to "say a few words". The results were lively and amusing.

The Annual Meeting concluded with a Seminar entitled "The Architect and his Community". Vancouver architect Wilf Ussner moderated a panel consisting of Ron Nairne, Bill Leithead, Fred Brodie, John Wade, Bob Harrison, Peter Cotton and Jim Dudley. The topic was perhaps a bit nebulous for brief and orderly discussion. However, the panelists tackled the subject with enthusiasm and sincerity and the discussion, including remarks from the audience, was interesting, lively and entertaining.

The wind-up affair was a very successful fancy-dress supper dance held at the "Net Loft" in Victoria.

Much credit is due to Chairman Peter Cotton and members of the Victoria Chapter, for the excellence of the arrangements both social and otherwise. Annual meetings in Victoria have traditionally been gala affairs and this was one of the best.

*C. A. Tiers*



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## HOUSE BASEMENTS

by C. R. Crocker

UDC 69.021

The trend today is to the finished basement. In more and more homes, space in the basement is being converted to recreation rooms, workshops and offices. The results are not always satisfactory if precautions have not been taken to ensure that the basement will be dry. This Digest deals with the techniques used during construction to ensure a dry basement and the proper procedure for applying an interior finish to walls and floors.

The practice of finishing basements is relatively new. Basements in older homes were often small, damp and poorly lighted, accommodating the heating plant and fuel and providing good storage conditions for fruits and vegetables. The basement was not considered acceptable as a play area for children or as a storage space for unwanted or unused items of furniture, clothing and toys. More recently, with the popularity in Canada of the one-story bungalow, basements are large and well lighted but not always dry. Many of these basements are being finished in a variety of ways to provide additional living space. Regardless of how the basement is finished, however, it is essential that the basement be dry if it is to serve as useful space.

### *Waterproofing the Basement*

The method used to waterproof a basement will depend on the groundwater level, the type of soil and the drainage of the building lot. The most severe conditions will occur in low-lying areas where at times the groundwater level is near the surface of the ground. If in such a location the soil is coarse grained, then a basement should not be built. Water will pass so freely through such soil that it will be impossible to lower the water table adjacent to the basement walls. If the soil is fine grained it will restrict the movement of

water and a dry basement may be constructed, provided the water table is lowered by means of drain tile located at the footings to intercept subsurface water and carry it away from the site.

Drain tile must be laid so that they are entirely below the level of the basement floor; the usual practice is to lay the tile on undisturbed soil at the level of the bottom of the footing. Tile are laid with a  $\frac{3}{8}$ -in. gap, the top half of which is covered with a saturated felt to prevent ingress of fine particles of soil.

Methods have been developed by which the walls and floors of a basement can be waterproofed to resist the hydrostatic pressure of several feet of water. This is done by applying a continuous membrane consisting of alternate layers of bituminous materials and felt to concrete that has been properly mixed, placed and cured. It is risky to adopt this procedure for light structures in an attempt to overcome the problem of poorly drained sites. The lifting pressure of this water amounts to  $31\frac{1}{4}$  tons per 1000 sq ft of floor area per foot of water. Such a pressure will cause structural failure of the floor unless it has been designed to resist the force; this can only be done at considerable expense. If the floor is constructed to resist the upward force, then there is a possibility that the house itself could be lifted out of the ground. The use of a membrane to keep a basement dry under wet site conditions is not sufficient by itself; steps must also be taken by the provision of adequate drainage to prevent the build-up of water pressure under floors and against walls.

Good practice in basement construction requires footing tile to carry subsurface water from the site, granular fill under the floor slab and over the tile and a bituminous coating on the exterior of the basement walls. Since the

purpose of the granular fill is to permit drainage of water to the tile drains and to prevent movement of moisture by capillarity from the soil to the concrete, the gravel or crushed stone must be kept clean. The bituminous coating should be applied directly to concrete walls and over a continuous ½-in. cement plaster coat in the case of masonry walls. To ensure drainage from under the floor, tiles or pipes should be placed through the footing to permit drainage to the footing tile.

It is also considered good practice to apply 4-mil polyethylene or heavy roll roofing over the granular fill before the concrete floor slab is placed. This not only acts as a vapour barrier, virtually ensuring a dry floor, but prevents concrete from penetrating the granular fill. Should this occur, capillary paths are provided enabling moisture to move from the ground to the floor slab. If the floor is to be laid to a definite elevation, the amount of concrete that can be saved by the use of the plastic film amounts to 1 or 2 yards for a 30-by 40-ft slab. To avoid punctures, the plastic film should be placed on a layer of bituminous felt.

If walls or floors of basements in houses already built show signs of dampness or seepage, action must be taken to correct these faults before the surfaces are covered. Dampness on a basement wall can be controlled by applying two coats of a water-cement paint. These paints consist of ordinary or white portland cement and water and may include sand. The paint is mixed to a pancake batter consistency and scrubbed into the wall with a stiff brush. Water-cement paint, to be effective and durable, must be cured in the same way that concrete is cured. Water-cement paints unlike most other types of paint, may be applied to a damp surface; in fact, a dry concrete surface must be dampened before application of the paint.

Seepage through a basement wall indicates that the footing drain is plugged or that something is preventing surface water reaching the tile. If the seepage is not extensive, the wall may be waterproofed by applying a cement plaster to the inside surface. Since it is very difficult to plaster a wall while water is seeping through it, repairs should be carried out during a dry period. The plaster should be at least ¾-in. thick. Extensive seepage or leaks can be corrected only by excavating to the footings, installing or repairing drain tile and replacing

the bituminous damp-proof coating on the exterior of the basement walls.

Leakage through the basement floor indicates the presence of water under pressure. If there is a granular porous layer under the slab, this pressure can be relieved by connecting the space under the slab to the footing tile by a tile or pipe placed under the footing. If the slab is placed directly on a heavy clay soil a second footing drain must be installed under the floor next to the footings or in the area of most leakage. A connection must be made to a sump pit or to the exterior footing tile.

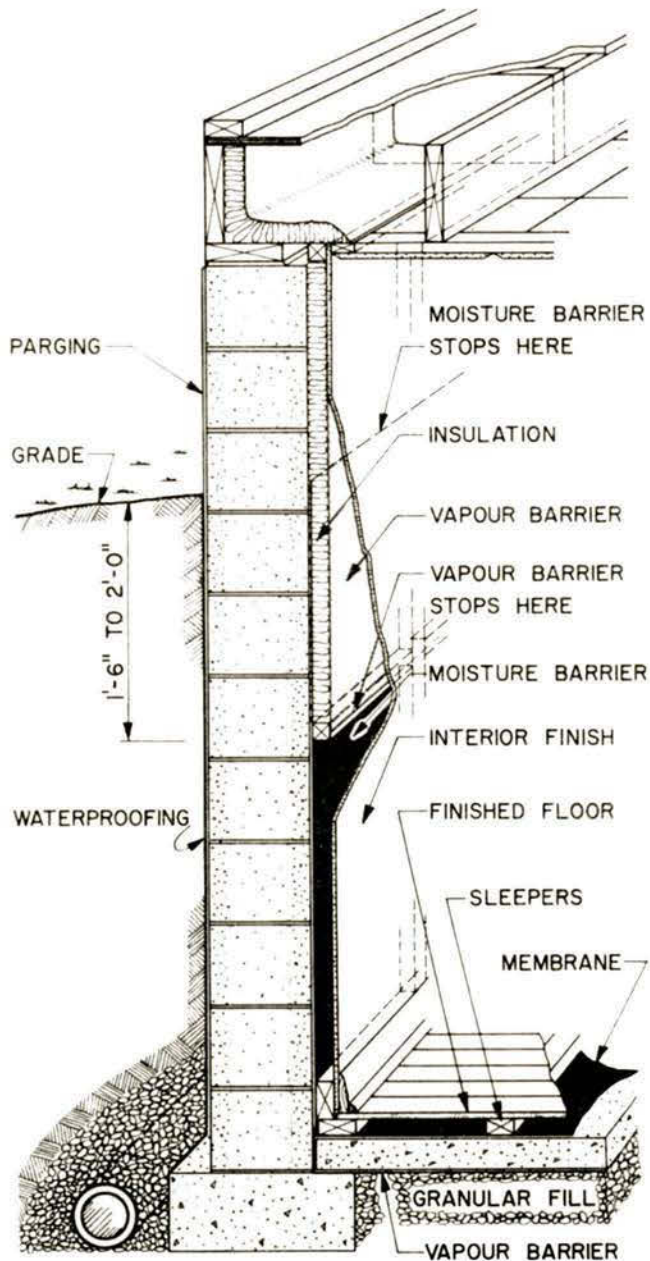
#### *Application of Interior Finish to Basement Walls*

There are many ways in which to finish the inside of a basement wall. One method is to apply a coating of paint directly to the concrete or masonry surface. This is a simple and economical method since inexpensive water-cement paints can be used. No moisture problem results but there is, of course, no insulation value in the paint film. In most cases, walls are finished with materials such as plywood, wood fiber board or gypsum board applied to furring strips. Insulation is often added to decrease the heat loss. Finishes of this kind, which cover up the concrete, introduce rather complex problems particularly in regard to moisture control.

Unlike other walls of the house, the requirements of a basement wall vary from top to bottom. The portion of the wall above grade must meet the same requirements as any exterior wall exposed to the weather. The portion of the basement wall below grade is, however, subjected to very different conditions and the design of the wall must be changed.

In the lower part of the wall moisture that may come from damp earth must be considered. Where the interior surface of the wall is not covered, any moisture that may pass through the wall is free to evaporate to the air in the basement. The appearance of white crystals resembling a fungus growth shows that moisture is moving through the wall and evaporating from the surface. This process may proceed, however, leaving no trace of its presence. If a finish is applied over the surface of the wall below grade then moisture, if present, cannot readily evaporate and the wall may become damp. Under these con-





ditions, only the most durable of building materials can be expected to last.

The first step, therefore, in finishing the wall is to provide a moisture barrier that extends from grade level down to the floor. An asphalt emulsion or cutback asphalt may be used to provide a continuous membrane. (Tar should not be used since the odour is often objectionable.) Sheet material such as 2-mil polyethylene provides a good moisture barrier. It can be held in place with cold asphalt mastic or by the furring strips which will support the interior finish. Vertical or horizontal strips may be used depending on the type of interior finish that is selected.

Insulation of a basement wall should be considered even when no further improvement of the basement is contemplated. The heat

loss through the upper portion of an uninsulated wall is six or seven times that of the average well-insulated wall. Thus the cost of insulating will be recovered in fuel saving within a few years. Insulation is applied to the upper part of the wall only, that is, from the ceiling down to a point 1½ to 2 ft below grade. Below this level, the earth against the outside of the wall provides all the insulation that is necessary.

A vapour barrier should also be applied to the upper portion of the wall. Where the upper portion is insulated, the vapour barrier backing on batt-type insulation is sufficient. Even when no insulation is used, a vapour barrier should be applied to prevent water vapour passing into the wall and condensing on the cold concrete.

Where vertical furring strips are used, it is advisable to fasten a horizontal strip to the wall at a point 1½ to 2 ft below grade. This will provide backing for the bottom of the vapour barrier and will block off the air space of uninsulated walls. The interior finish may then be attached to the furring strips.

#### *Application of Finishes to Basement Floors*

As in the case with basement walls, many types of finishes are suitable for basement floors. A good concrete floor surface may be left as it is or it may be waxed or painted. Most basement floors, however, have many surface cracks and are subject to dusting. The minimum treatment in such cases is an application of a surface hardener such as sodium silicate or the fluosilicates (zinc or magnesium) followed by a concrete floor paint. Rubber-base concrete floor paints have given good service on below-grade basement floors.

Asphalt, asphalt asbestos and vinyl asbestos floor tile are the types most commonly used on below-grade basement floors. These are fastened to the concrete by an asphalt mastic which is resistant to attack by alkali moisture. Recently new epoxy adhesives have been developed which permit the use of vinyl and rubber tile on concrete floors below grade. Linoleum and cork tile are still not recommended, however, for concrete floors below grade.

Wood floors may be used below grade but only after suitable preparation of the concrete slab. A moisture barrier under the slab should be installed during construction when

it is known that a wood floor is to be used. If an existing floor has no record of dampness, it should also be suitable. In either case, a membrane should be applied to the concrete slab before the sleepers are put in place. The floor is first primed with asphalt primer, after which an asphalt mastic is applied. A membrane consisting of 2 layers of 15-lb asphalt saturated felt or 1 ply of 2-mil polyethylene is then laid in the mastic. An additional layer of mastic is laid over the membrane and the sleepers embedded in this mastic. The mastic used must be either a cold-applied emulsion or cut-back when polyethylene is used as a membrane. Where asphalt felt is used either cold-applied or hot-applied mastic may be used.

Sleepers consist of straight, flat, seasoned 2 x 3's or 2 x 4's 24 in. to 36 in. long, impregnated with wood preservative. They are spaced at 16-in. centres where a subfloor is used or at 12-in. centres where the finished floor is applied directly to the sleepers. A space is left at the edge of the floor to allow for any movement of the finished floor.

Insulation of a basement floor is often considered as a means of making a recreation room more comfortable. The addition of insulation will not, however, raise the floor surface temperature to any significant extent.

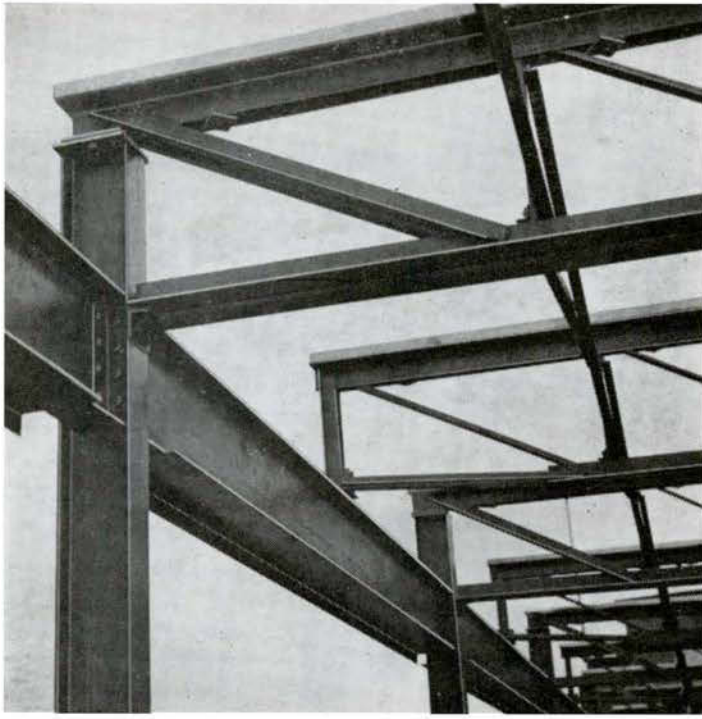
This is due to the fact that the floor is already well insulated by the earth under and around the basement. An insulated floor may seem to be warmer to the touch because heat is not carried away as quickly as through a bare concrete floor. It is doubtful if the use of insulation can be justified except for rooms where children play on the floor. The same effect will be obtained by using small rugs in those areas where discomfort is felt.

### *Heating the Basement*

Many basement rooms are uncomfortable because of cold floors. The conventional heating system which provides warm air at the floor or ceiling level does little to overcome the problem because the warm air rises to the ceiling. The solution is to get heat into the floor itself by means of hot water pipes in the concrete slab or warm air ducts under the finished flooring. This can be done quite easily during construction but at a later date is difficult except when adequate head room is available.

Basements can be converted from waste space to attractive living accommodations. Care must be taken, however, to control heat and moisture flow to ensure trouble-free enjoyment of this space.

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



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## *AIBC Seminar on Hospital Design*

The AIBC sponsored Hospital Design Seminar was held in Vancouver on October 21, 1960. Thirty-six architects attended from various parts of the province. In addition to the several invited guests appearing on the programme, twenty-two representatives of medical and para-medical organizations were also present. The organizing committee under the chairmanship of Fred Brodie is to be congratulated on the excellence of the arrangements for this first conference of its kind, dealing with hospital design, initiated by the profession in BC.

A full day programme was arranged with technical discussions on engineering services in the morning, a luncheon address by Mr A. W. E. Pitkethley, Manager of the Hospital Construction Division of the BC Hospital Insurance Service; an afternoon panel discussion and question period entitled "The Design of the Small Hospital (up to 100 beds)"; and an after-dinner speech accompanied by slides by Mr H. G. Hughes, FRAIC, ARIBA, Chief, Hospital Design Division, Department of National Health and Welfare.

Several prominent Vancouver engineering consultants familiar with the hospital field were invited to outline principles, problems, and trends in hospital design. Mr Reg. Cave of R. J. Cave and Co., Plumbing and Drainage Consultants treated the problem of water supply and sewage disposal in the small hospital.

Mr H. C. Redmond of Mr Cave's office continued with the topic by discussing water supply, piping, fixtures, and equipment within the building. He also mentioned auxiliary services such as oxygen supply, suction, and nitrous oxide. Mr D. B. Leaney of the firm of D. W. Thomson & Company, Mechanical Engineers, discussed problems of heating, ventilation and air conditioning.

Mr Chris McGregor of Simpson & McGregor, Electrical Engineers, treated the problems of power supply, electrical equipment, and illumination in the hospital.

Mr A. W. E. Pitkethley, as luncheon speaker, dealt with the role of government in the field of hospital design in British Columbia, particularly the relationship of the hospital architect with his department.

Perhaps the focus of the seminar centred on the panel discussion dealing with small hospital design. Mr Gordon Hughes was the able moderator of a panel of hospital



*Some of the invited speakers and panel participants: Left to right (standing): Mr H. C. Redmond, Mr A. W. E. Pitkethley, Mr G. Hughes, Dr Chapin Key. (Seated) Mrs M. K. Lunn.*

"users" including Dr B. D. Graham, Professor and Head of Department of Pediatrics, University of British Columbia Medical School; Dr Chapin Key, Chairman of the Expansion Committee of Langley Memorial Hospital; Mrs M. K. Lunn, Director of Nursing at the new Lions Gate Hospital in North Vancouver; Mr James MacMillan, Administrator, Surrey Memorial Hospital; and Mr A. E. W. Pitkethley of BCHIS.

A few points frequently referred to during the proceedings deserve mention in concluding this report:

- 1 There is an urgent need to consolidate information and experience in hospital design (in BC at least) to provide a ready reference for architects and others in the field.
- 2 A parallel need to the above is the development of operational standards, proper procedures, etc., in establishing hospital requirements to be incorporated in the programme.
- 3 Dr Graham's plea to avoid needless duplication of expensive equipment and facilities deserves serious study including his proposal for centralization of such facilities in the Community Health Service.
- 4 The word "flexibility" which the architect hears so often these days was repeatedly expressed in this seminar. Ways must be found to adapt the complex hospital plant to the demands of rapidly changing needs and to permit easy expansion.
- 5 Certain departments within the hospital warrant special study, particularly the laboratory, the x-ray unit, and dietetic facilities.

C. A. Tiers

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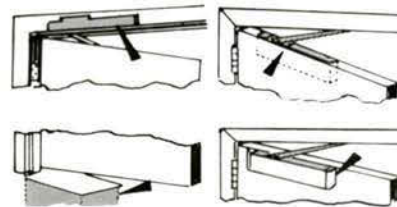
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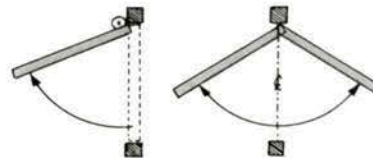
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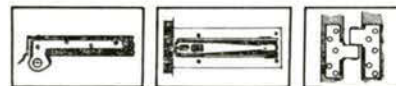
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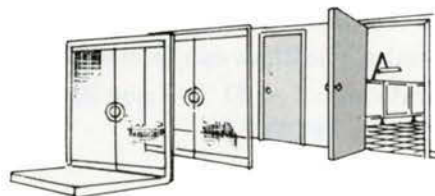
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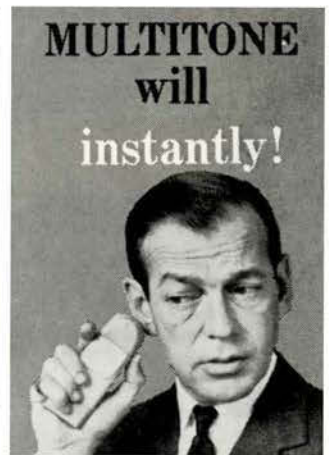
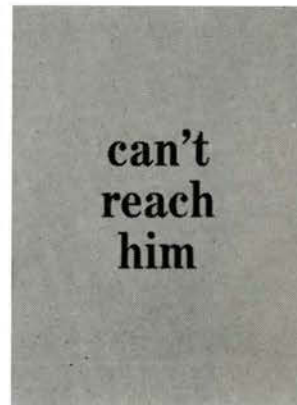
February 16-17, 1961  
Annual Meeting  
Nova Scotia Association of  
Architects  
Halifax, N.S.

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

April 9-15, 1961  
23rd Annual Convention  
National Association of  
Architectural Metal Manufacturers,  
Plaza Hotel, New York

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

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

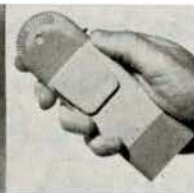


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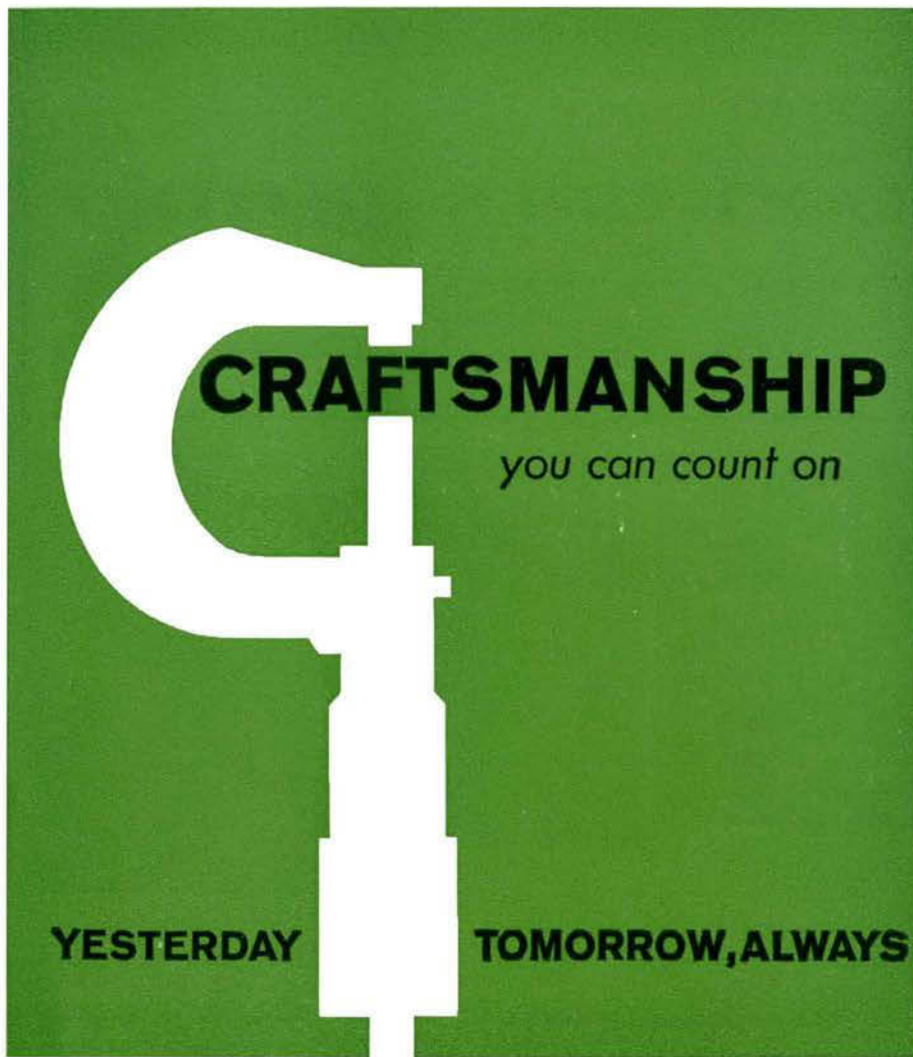
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## INDUSTRY

### Mastex Specifications

Attention of readers is drawn to the Mastex Industries' advertisement on page 63. This new type of advertisement was drawn up by co-operation between members of the firm and the Specification Writers' Association of Canada, with a view to designing the most useful type of advertising to architects and it is the first of this type to be published in the *Journal*.

Members' comments on the advertisement are invited.



### New Structural Steel

Identified under the A.S.T.M. Designation A-36, the "cost to strength ratio" of this new steel is substantially better than for existing carbon structural steel specifications and cost savings can result for most fabricated and erected structures. A-36 specification covers carbon steel shapes, plates and bars of structural quality not over 4" in thickness for use in the construction of bridges and buildings and for general structural use. Minimum guaranteed yield point is 36,000 p.s.i. compared with the present 33,000 p.s.i. specified for C.S.A. G-40.4 and A.S.T.M. A-7 steel. Upper limit on tensile strength is 80,000 p.s.i. Price differential over the conventional A-7 steel is less than 1% for a 10% greater strength making it apparent that an economy is possible. In buildings, weight saving can be expected in the order of 5%. Further information is available from The Steel Company of Canada, Limited, Hamilton, Ont.



### New Sliding Glass Door Line

Pilkington Glass Limited announces an addition to its Series 150 aluminum sliding glass door line to accommodate  $\frac{3}{8}$ " Thermopane insulating units, and to provide three and four-panel doors with single or double glazing.

New Model 152 is designed for extreme climates and heavy wind exposures where  $\frac{3}{8}$ " Thermopane windows are needed. It is available in twelve size and type variations, ranging from two-panel single slide doors up to four-panel double-slide doors. Features include Alumilite finish, inside screens, patented step-down weathertight sill, new slim silhouette, jam-proof latch, and simplified assembly and installation.

All sizes, types and options are available for immediate delivery. For details please write to Pilkington Glass Limited, 55 Eglinton Avenue East, Toronto.

# SPECIFICATIONS

## For Mastex Polythene Sheeting In Vapor Barrier Installation

R.A.I.C. No. 37E1

VAPOR BARRIER MATERIAL

Polythene Sheeting  
Mastex Industries, Brampton, Ontario.  
'Milrol' Polythene Sheeting  
For Moisture Vapor Barrier

material  
manufacturer  
trade name  
application purpose  
standards

ASTM E96-53T—Impermeability.    ASTM D828—Tensile Strength.  
ASTM D882-56T—Elongation.    ASTM Method D568-56T—Qualitative Anal.  
New information —                    .002 meets new CGSB 70GP — 1

**Highly Impermeable, ASTM E96-53T** 1.  
Ratings: Permeability rated 43GP131  
Dry Cup .002 — 0.16 perms.  
                  .004 — 0.08 perms.  
Wet Cup .002 — 0.14 perms.  
                  .004 — 0.07 perms.

physical  
characteristics

New information —

**Tensile Strength, ASTM D828** 2.  
Average combined tensile and  
elongation (inch pounds), 108.7

**Elongation, ASTM D882-56T** 3.  
300% elongation at 65°F.  
100% elongation at 32°F.  
Can be bent back on itself continuously at  
-70°F. without cracking or pinholing.

**Flame Spread—Qualitative Analysis, ASTM Method D568-56T** 4.  
— slow burning

**Durability** 5.  
Immune to all common acids, alkalis and salts. Unaffected  
by contact with soil, bacteria, fungus, insects and termites.  
Permanently protects metals from deterioration by electro-  
lytic action.

Mastex 'Milrol' Polythene Sheeting is available in widths, 12 inches  
to 40 feet, clear or black. Gauges from 1 mil to 20 mil. Low cost —  
2 mil costs less than 3/4c per square foot. Lightweight — approx. 10 lbs.  
per M square feet for 2 mil. Lowest installation costs. A wide range  
of sizes and designs for labor saving. All 4 mil and 6 mil sheeting  
comes four-folded in cartons. All rolls are edge-marked with gauge  
and footage for easy identification. Mastex Tape in 2" width, clear or  
black for sealing Type II applications. Ideal for job-site storage of  
materials for weather protection. When used below concrete, 4 mil  
Polythene virtually eliminates shrinkage and gives higher strength  
to the finished floor due to slower cure and no sub-base suction.

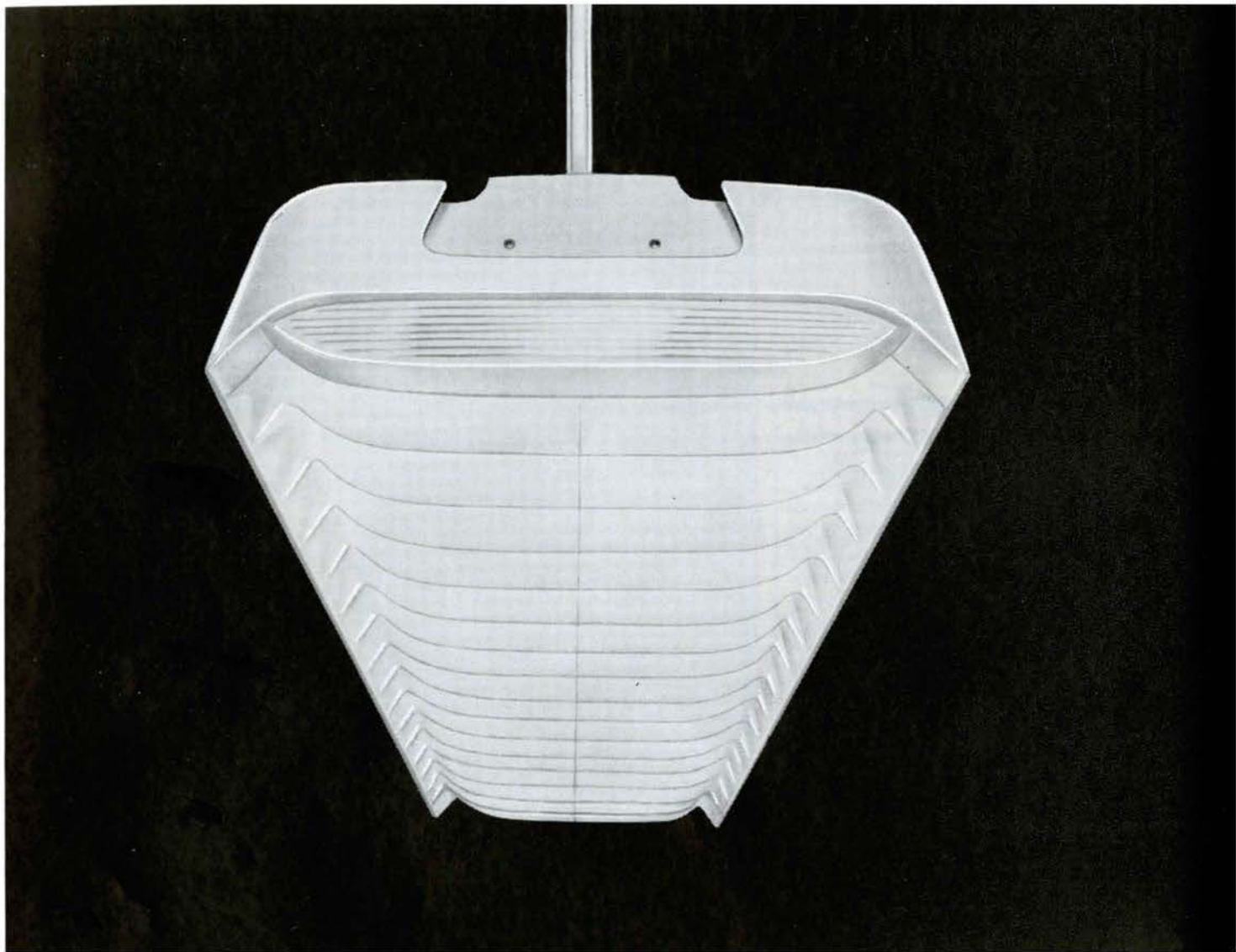
special  
properties

Mastex 'J-Fold' 100" gives the lowest installed cost on inner walls and  
covers complete with no joints to allow transmission. Polythene film  
seals around staples and nails but does not split the sheeting as hap-  
pens with other materials.

Specifications folder available from 'Milrol' Film Division

# MASTEX INDUSTRIES

134 Kennedy Road, Brampton, Ont.                    Phone BU. 6-3241  
DISTRIBUTORS FROM COAST TO COAST



## THE NEW IMPROVED WILSON

### The "Best in Sight"

The new Wilson Lumilux II commercial fluorescent fixture is the most efficient and aesthetic unit available today—anywhere. It is so acceptable photometrically and visually that it fits perfectly into the modern concept of low brightness with high levels of illumination.

The new Wilson Lumilux II is designed for lighting schools, offices and all other areas where emphasis is placed on atmosphere and maximum visual comfort as well as on high level, glare-free lighting at reasonable cost.

### Wide Choice of Louvres

**White Plastic:** A general purpose louvre that harmonizes superbly with any interior design. Provides soft, glare-free illumination. Extremely high efficiency of 88.4%.

**Green Plastic:** Uses the new Chromatic Louvre System with eye-rest factor. Tinted sea-mist shielding eliminates glare and creates restful lighting. Efficiency of 84.4%.

**Silver Plastic:** For handsome, decorative use in industrial and commercial applications. Provides extremely soft, diffused light and maximum visual comfort. Efficiency of 64%.

Diffusing louvres are also available in other light-stabilized colors, at additional cost.



## J. A. WILSON LIGHTING

280 LAKESHORE ROAD

Plants: Toronto, Ont., Medicine Hat, Alta. District offices: Montreal, Toronto, Winnipeg



# OUTSTANDING FEATURES OF THE NEW lumilux II



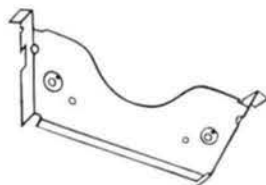
## ONE-PIECE DIFFUSING LOUVRE

A 4 ft., one-piece Diffusing Louvre of injection-moulded, light-stabilized polystyrene for dimensional uniformity. Faultless continuous row lighting is assured by 1/4 inch overlap for a "no-light-leak" joint of the louvres.



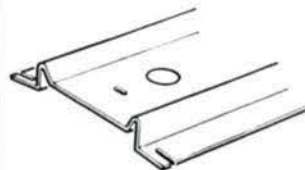
## VERSATILITY IN HANGING

Complete versatility in hanging fixture is achieved by redesigning body to take a 2-piece Ice Tong Clamp. Ice Tong Clamp can be attached anywhere to fixture body and firmly engaged by manually tightening one wing nut.



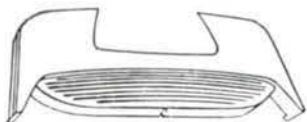
## BODY ENDS RIGIDIZED

Body ends are rigidized by using End Support Brackets which also serve to accurately join fixtures. Lamp alignment and contact are maintained by a tab on Bracket end which locates and prevents lampholders from turning.



## RIGID TIGHT JOINTS

Rigid tight joints and accurate fixture alignment in continuous row mounting are now simplified by use of a Joiner Plate.



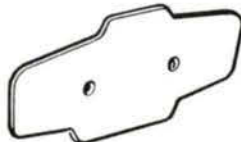
## AESTHETIC PLASTIC END PLATE

Plastic End Plate promotes aesthetic appeal by providing over-all even fixture illumination at ends of individual or continuous fixture rows.



## CEILING SPACER

Ceiling mounting of fixtures is simplified by use of ceiling Spacer, 1 1/2 inches deep to meet CSA requirements for air space between low density (cellulose) ceilings and fixture body... and 4 1/2 in. in diameter to cover 4-inch outlet box.



## FIXTURE HARMONY

Fixture harmony with contemporary surroundings is achieved with a Metal End Trim of baked white enamel.



## ADJUSTABLE LOUVRE BRACKETS

Perfectly level Diffusing Louvres are now possible as Louvre Support Brackets can be adjusted.

# lumilux II

## SIMPLIFIED Installation and Maintenance

- Lumilux II can be surface or pendant mounted, as individual fixtures or in continuous rows. Specially designed 2-piece Ice Tong Clamp makes for speed and economy in installation.
- Fixture, less Diffusing Louvre, may be used for lighting during the building completion. Diffusing Louvres are conveniently stored in separate cartons, clean and thoroughly destaticized for the finished installation.
- The Diffusing Louvre is easily and quickly installed, being securely held in position by rigid, die-cast support brackets... which allow the Louvre to hinge down from either side for relamping or removal.

## & DISPLAY LIMITED

TORONTO 14, ONTARIO

Agents: Eric Ackland & Associates Limited, Vancouver, Edmonton, Calgary

## New lumilux II Catalogue

Provides full information on construction, methods of suspension, architectural specifications, photometric data, etc. Write for your free copy.



# ElectroMaid

Trade Mark Reg'd.

## HEATERS AND REFRIGERATORS



### Thin Line BASEBOARD CONVECTORS

ElectroMaid Thin Line Baseboard Conveyors are particularly suitable for comfortable perimeter heating, to make cold walls and window areas a thing of the past. Designed for modern living, with their slim and low construction they will fit even under the lowest picture windows and they will blend perfectly with any modern decor. Available in sizes from 30" up to 108" long. Capacity of: 500W, up to 3000W. Voltage both 120 Volts and 240 Volts.

- Absolutely fireproof — absolutely quiet
- Heavy duty fin-type elements
- Low operating cost
- Smart, modern thin look
- Extremely efficient
- Heating elements guaranteed by 5 Year Protection Plan
- Available portable or permanent wall mounting
- Supplied with or without thermostat
- 7¼ in. high, 2¾ in. deep

## RADIANT SPOT HEATING FOR INDOORS & OUTDOORS

The directed rays from a Spot Heater heat persons and objects, and not vast wall surfaces and large quantities of room air. For this reason, heating with Spot Heaters is very economical, and since the heat is instant its use is recommended for rooms infrequently occupied. Spot Heating is healthy and natural, heats like the sun or like fire in a fireplace.



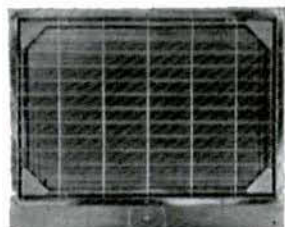
- Radiant
- Corrosion Resistant
- Modern Appearance
- Fully protected
- Easily installed
- Safety wired
- Low cost
- Sun's wonder rays



## UNIT HEATERS

Propeller type shown  
Capacities from 1500W up to 6000W. Any voltage up to 575 Volts, as specified. Propeller and Blower type Unit Heaters for various industrial applications.

## PERMANENT WALL MOUNTING RADIANT GLASS HEATERS



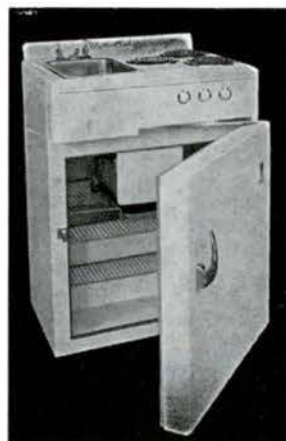
No. 1335

Available surface and recessed mounting, square shaped or long and low for Baseboard installation. With or without built-in thermostat.



No. 1384

It's a treat to heat with Radiant Glass Heaters because you SAVE MORE MONEY yet get better, more comfortable warmth in your home. The safest, most healthful, most efficient Heater ever made.  
Capacities: 450W, 750W, 1000W and 1500W.



## ELECTROMAID Combination 3 in 1 Unit

Refrigerator — 5 cubic feet  
Stove — 3 Burner  
Sink — Stainless Steel

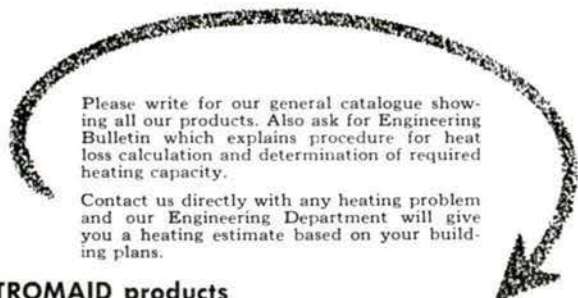
A Real Space Saver  
Ideal for Apartments and Motels

A complete kitchen unit  
**NATIONAL DESIGN AWARD WINNER IN 1955**

We manufacture one of the most versatile lines of refrigerators in Canada today.



Accept no substitutes — Insist on ELECTROMAID products  
Nationally Known and distributed from coast to coast — serving Canada for over 25 years.



Please write for our general catalogue showing all our products. Also ask for Engineering Bulletin which explains procedure for heat loss calculation and determination of required heating capacity.

Contact us directly with any heating problem and our Engineering Department will give you a heating estimate based on your building plans.

**CANADIAN ARMATURE WORKS INC. (ELECTROMAID DIVISION)**  
6595 ST. URBAIN ST., MONTREAL • CR. 7-3191

Write for our catalogue no. 90 describing our complete line of products.

# CERAMIC TILE ADHESIVES



## CTA-11 and CTA-20 for walls

3M Brand Ceramic Tile Adhesives 11, 20 (CTA-11, CTA-20) are waterproof rubber based adhesives, specifically compounded for low cost installation of clay wall tile. They are of a soft buttery consistency resulting in easy handling characteristics. These adhesives set to a tough flexible film, which increases in strength over the years without becoming brittle. Both products can be used to install clay wall tile over a wide variety of surfaces, including wallboard, finish coat plaster, waterproof paints, plywood, concrete, or almost any sound smooth surface.

CTA-11 was designed to give a short working life, whereas CTA-20 has a wide bonding range.

## CTA-12 for floors

3M Brand Ceramic Tile Adhesive 12 (CTA-12) is a waterproof, gray, rubber adhesive designed to give added rigidity to bonded clay floor tile. Because of the rapid strength buildup of CTA-12, light traffic may use the floor the same day that the tile are laid.

### applications CTA-11 and CTA-20

3M Ceramic Tile Adhesives have been used to advantage in hotels, restaurants, hospitals, schools, commercial buildings, apartment buildings and individual homes. With CTA-11 and CTA-20, clay wall tile may be set on walls or ceilings, either new construction or remodeling. They perform well in areas of high moisture concentration or near stoves, radiators or other space heating units.

### CTA-12

With CTA-12 clay floor tile may be installed over concrete, plywood or terrazzo. This adhesive is particularly suited for use with ceramic mosaic floor tile with cushion edges. CTA-12 is suitable for use over radiant heated floors.



WALL TILE installation can be made by trowelling CTA-11 or CTA-20 on the wall surface and pressing the tile into place.



A waterproofing skim coat of adhesive should be applied to wall surfaces in moisture areas.



LAYING FLOOR TILE in a bed of CTA-12 which has been troweled on a plywood floor with a notched scraper.

## standards

These water-resistant organic adhesives for installation of clay tile comply with all requirements of Commercial Standard CS 181-52, as developed by the trade under the procedure of the Commodity Standards Division, and issued by the U.S. Department of Commerce.

## advantages

- ▶ **Savings:** Weight, space and time are saved when using CTA-11, CTA-20 and CTA-12. One pound of adhesive will do the work of 40 pounds of wet mortar. The final dry weight of a wall section set with adhesive is about ½ the weight of a wall section set with mortar. Two to three inches can be added to room size. Overall savings of labour time amounts to approximately 30%.
- ▶ **Strong and Resilient:** Adhesive bonds exhibit shear strength in excess of 1,000 pounds per tile. Strength is maintained up to 125°F and in the continuous presence of water. Adhesive bond will not fracture but will flex under stress and retain adhesion.
- ▶ **Durable:** CTA-11, CTA-20 and CTA-12 have long life, retain permanent toughness and adhesion, and are thoroughly resistant to the effects of soaps and detergents.
- ▶ **Economical:** No need to tear down existing walls or clean up splashed mortar. The adhesives are ready to use as packaged at any temperature. No mixing equipment to move or maintain. Rooms can be reoccupied within 24 hours as compared to several days when mortar setting is used.



# ceramic tile adhesives

## Specifications

### Material:

Installation of clay wall tile on walls or ceilings shall be with 3M Brand Ceramic Tile Adhesive 11 or 20 (CTA-11 or CTA-20). Installation of ceramic tile on floors or ceramic mosaic tile on ceilings, shall be with 3M Brand Ceramic Tile Adhesive 12 (CTA-12) as manufactured by the Adhesives and Coatings Division, Minnesota Mining and Manufacturing of Canada Ltd., London, Ont.

### Surface Preparation:

All surfaces to receive tile shall be structurally sound, plumb, level and true, free from dust, dirt, grease, calcimine, water or other foreign matter. Wall and floor surfaces with minor variations ( $\frac{1}{8}$ " or less) shall be trued and smoothed with a skim coat of adhesive applied with flat of trowel. **ALLOW TO DRY BEFORE SPREADING MORE ADHESIVE FOR SETTING THE TILE.**

**ALL WALL SURFACES IN SHOWERS AND AROUND BATHTUBS AND ALL PLYWOOD SUB-FLOORS SHALL RECEIVE A WATERPROOF SKIM COAT OF ADHESIVE** applied with flat of trowel and allowed to dry at least one half hour before spreading adhesive for the tile setting operation. All openings around pipes, fixtures and bathtubs shall be sealed with CTA-11 or CTA-20 by packing adhesive into the opening. CTA-11, CTA-20 and CTA-12 contain flammable solvents. Rooms and areas to receive tile shall be well ventilated. **SMOKING SHALL NOT BE PERMITTED WHILE WORK IS IN PROGRESS**, and any flame or spark producing operations must be suspended in the area.

### Tile Preparation:

Tile may be set dry or pre-soaked depending on grouting methods to be used. Wall tile of type described in Tile Handbook A1A 23-A may be prepared by soaking in clear water for not less than five minutes, nor longer than 15 minutes. If pre-soaking method is used excess water on tile shall be drained before setting.

comparisons shown below clearly illustrate the proven advantages of ceramic tile adhesives over other methods for any type of installation

### Tile Installation:

For wall tile or quarry floor tile spread adhesive with a notched trowel having these approximate dimensions:  $60^{\circ}$  V notches  $\frac{3}{16}$ " deep, spaced  $\frac{3}{8}$ " center to center. For ceramic mosaic floor tile, use trowel having notches  $\frac{1}{16}$ " deep,  $\frac{1}{16}$ " wide with  $\frac{1}{8}$ " flats on the teeth. Set wall tile with slight twisting motion to assure suitable contact with the adhesive. With CTA-11 tile shall be set within 45 minutes after spreading the adhesive. With CTA-20 tile shall be set within 3 hours after spreading the adhesive. With CTA-12 tile shall be set within 10 minutes after spreading the adhesive.

### Coverage:

Using a  $\frac{3}{16}$ " notched trowel coverage shall be approximately 75 square feet per gallon. When using a  $\frac{1}{16}$ " notched trowel (for floors) coverage shall be approximately 90 square feet per gallon.

### Tile Cleanup:

Excess adhesive shall be removed from face of tile with a soft cloth dampened in petroleum naphtha or unleaded gasoline.

### Grouting:

After wall or floor tile have been in place for not less than four hours all joints shall be grouted and cleaned in accordance with Tile Handbook A1A 23-A. Tile which become dry after setting shall be soaked at the joints with a wet sponge, or sprayed with water before grouting to prevent cracking of the grouting compound. Grout used with floor tile must be kept moist until properly cured.

### Installation of Tile Accessories:

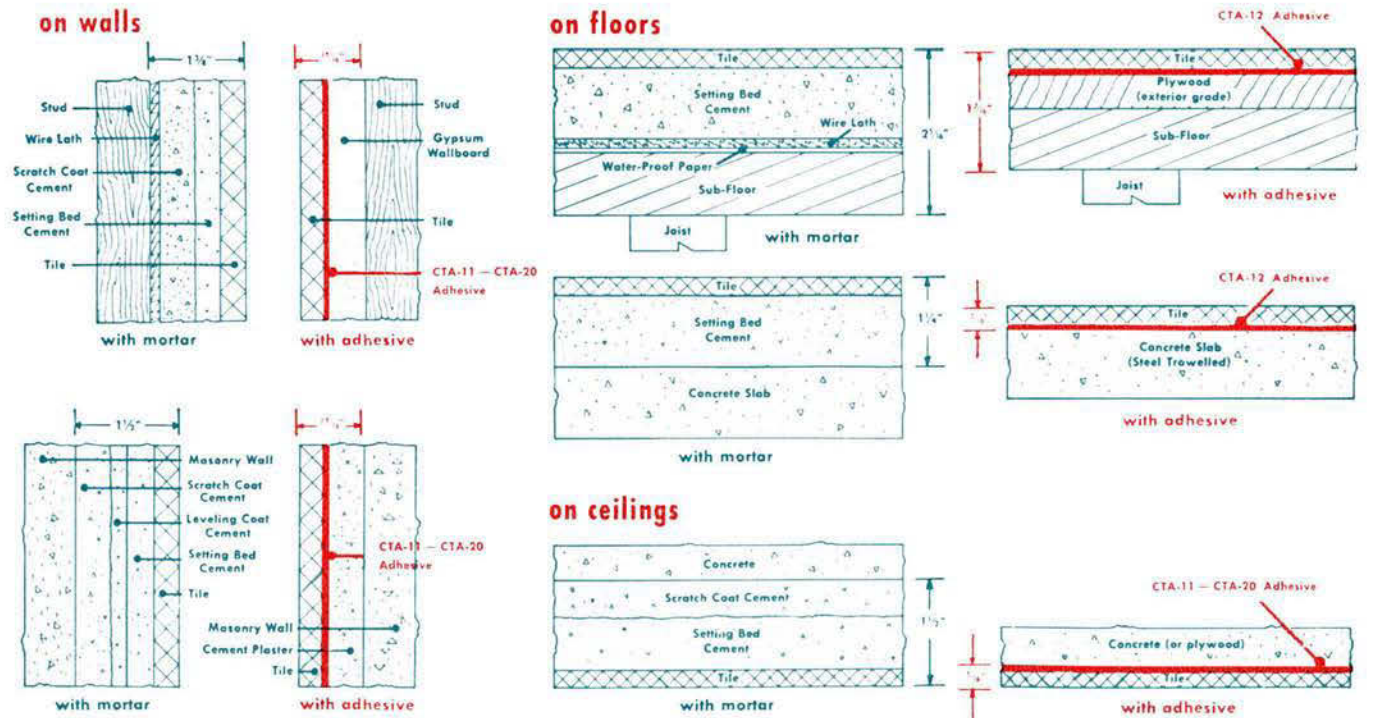
These adhesives are not recommended for setting accessories such as towel bars or soap dishes with handles. Wherever possible use surface type accessories or concealed mountings which are secured with toggle bolts or similar fastenings.

### Caution:

Although these adhesives are compounded not to stain domestic tile, user is urged to make stain test for each brand of tile before using.

### Note:

Custom and Foreign made tiles are to be tested for staining before use with all adhesive set methods.



BRANCH OFFICES: HALIFAX, MONTREAL, TORONTO, WINNIPEG, CALGARY, VANCOUVER

**MINNESOTA MINING AND MANUFACTURING OF CANADA LIMITED**

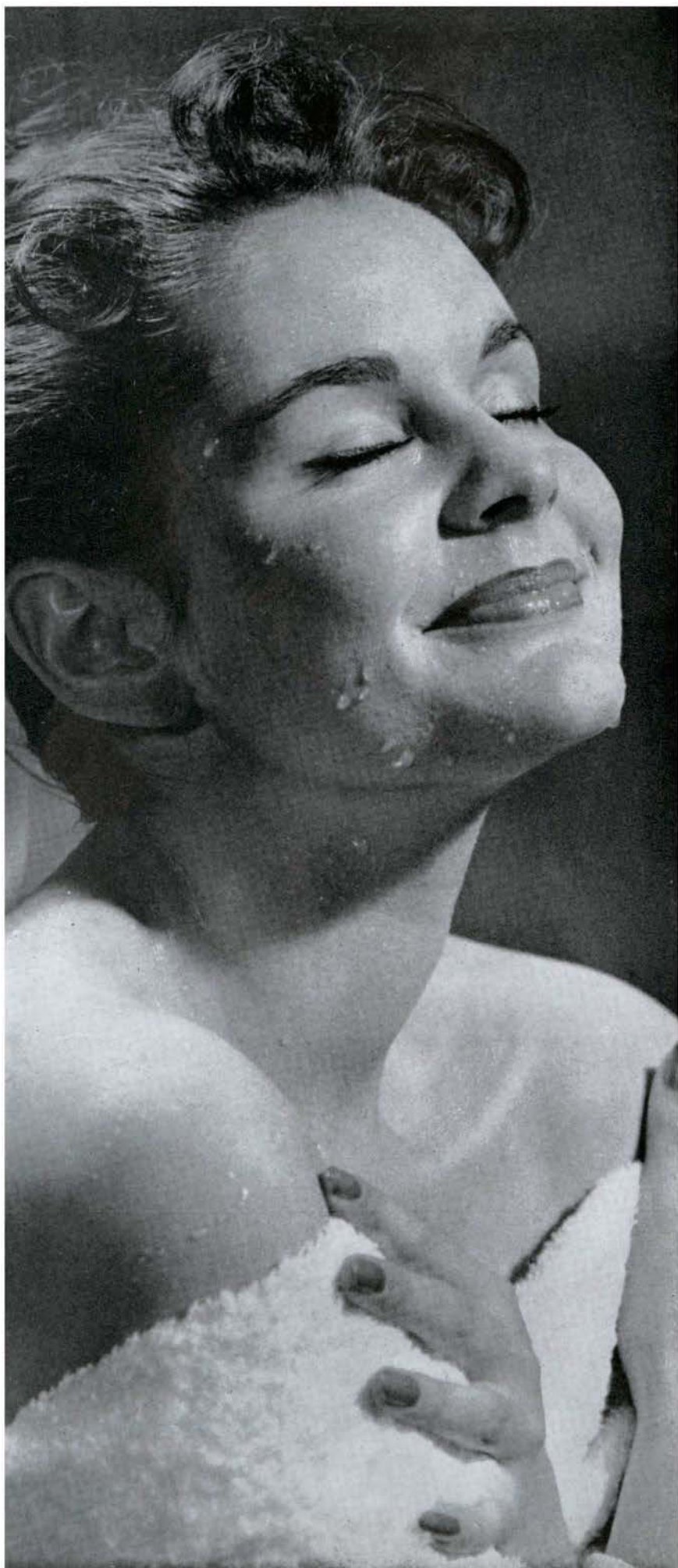
... where research is the key to tomorrow

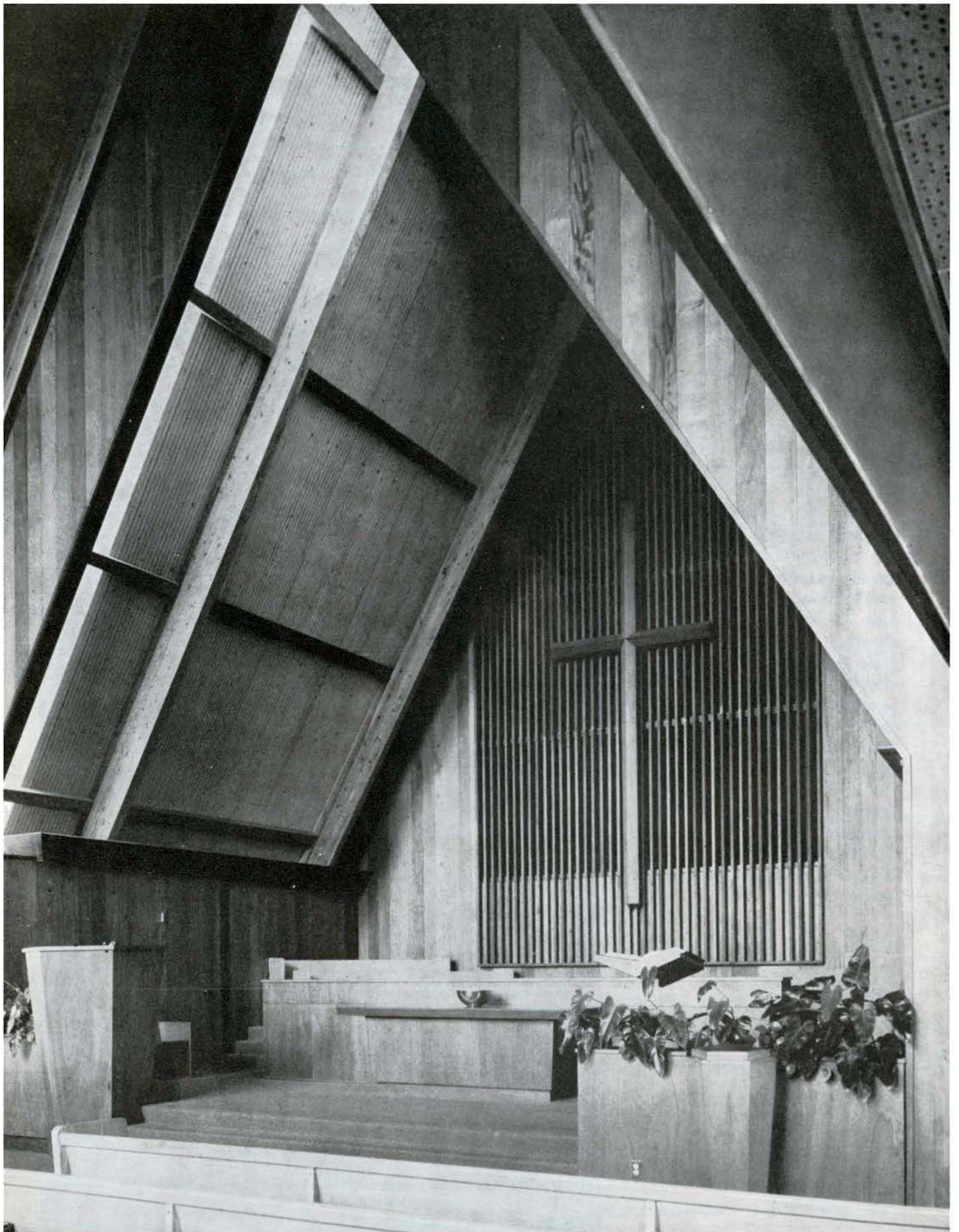


**She** demands — and deserves—the very best. In and out of showers, as she often is, she even knows the name — which is Rada. A Rada shower — exhilarating, refreshing, relaxing—is a shower controlled (the temperature, firmly and steadily, as you wish it) by a Rada thermostatic valve.

Rada is not only used for showers. Everywhere — hospitals, schools, hotels, ships, industry — where water temperature has to be relied on as constant, there you find Rada thermostatic valves. The name again is Rada.

Write for pamphlet No. 36 to Walker, Crossweller & Co. Ltd., 16th Avenue East, Markham, Ontario; or phone Markham 277. Our manager's name is George Starr.





In new churches, wood provides soul-stirring beauty, ideal acoustics, limitless design freedom—all at substantially lower cost. Good reason for the present prevalence of wood in church construction.

*Because economy is a basic consideration in design*

# for new answers...look to WOOD



Long-term economy is implicit in the durability of wood. Mellowing with age and exposure, wood gives homes and other structures lasting character for fewer dollars.

With most building materials, today's high costs of construction can severely restrict your freedom of design. But not when you choose *wood*, so economically applicable to many types of structures.

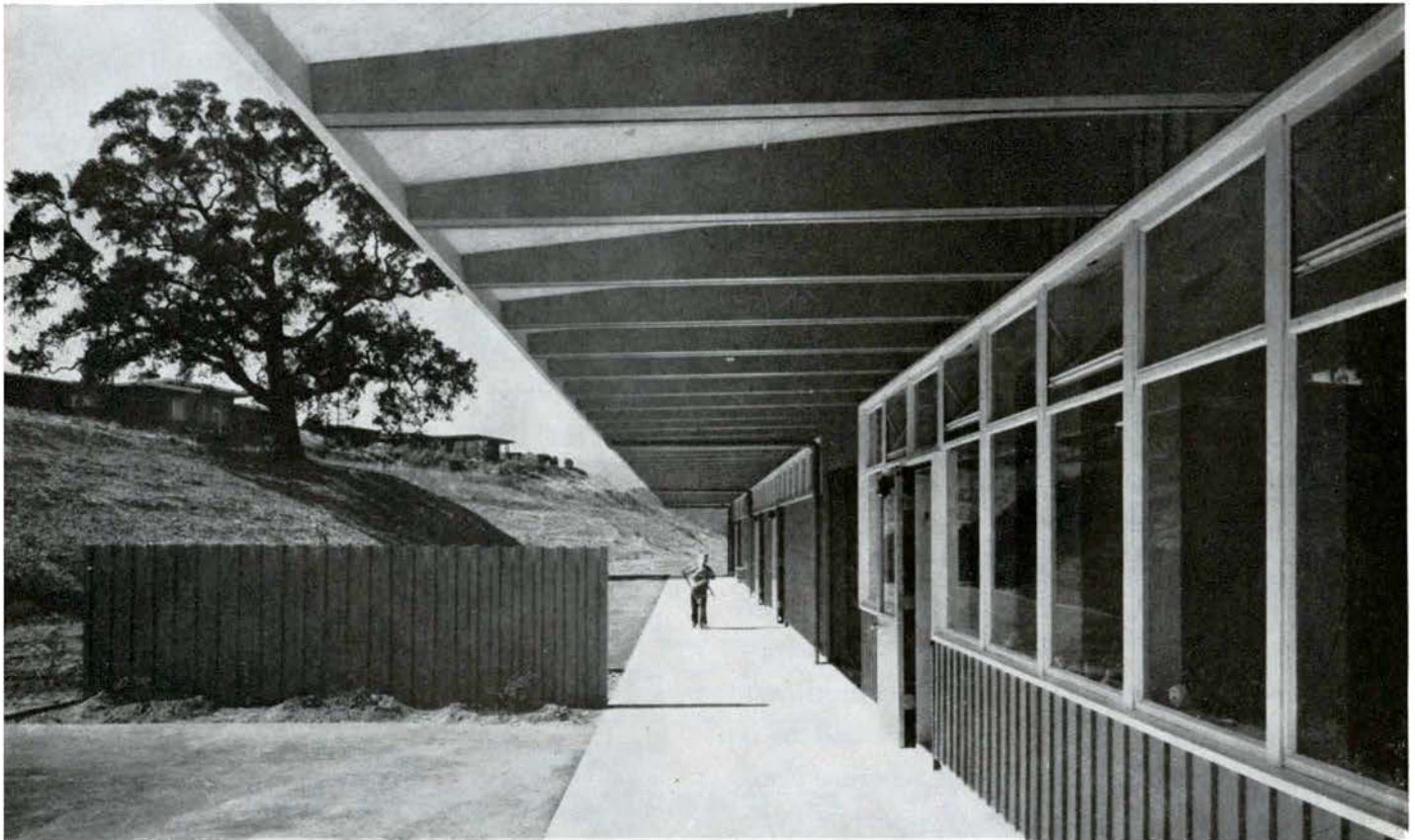
Wood is versatile. Wood is dependable. Wood is always in ready supply, familiar to workmen, easily workable and portable . . . offering on-the-job time savings that mean money. New methods of preassembly, new finishes and preservatives make possible even further economy. And, over all, *only* wood offers so much natural beauty and decorative richness, giving your design a look of luxury far beyond the project budget.

For more information on designing with wood, write to:  
CANADIAN WOOD DEVELOPMENT COUNCIL,  
27 Goulbourn Ave., Ottawa 2, Ont.

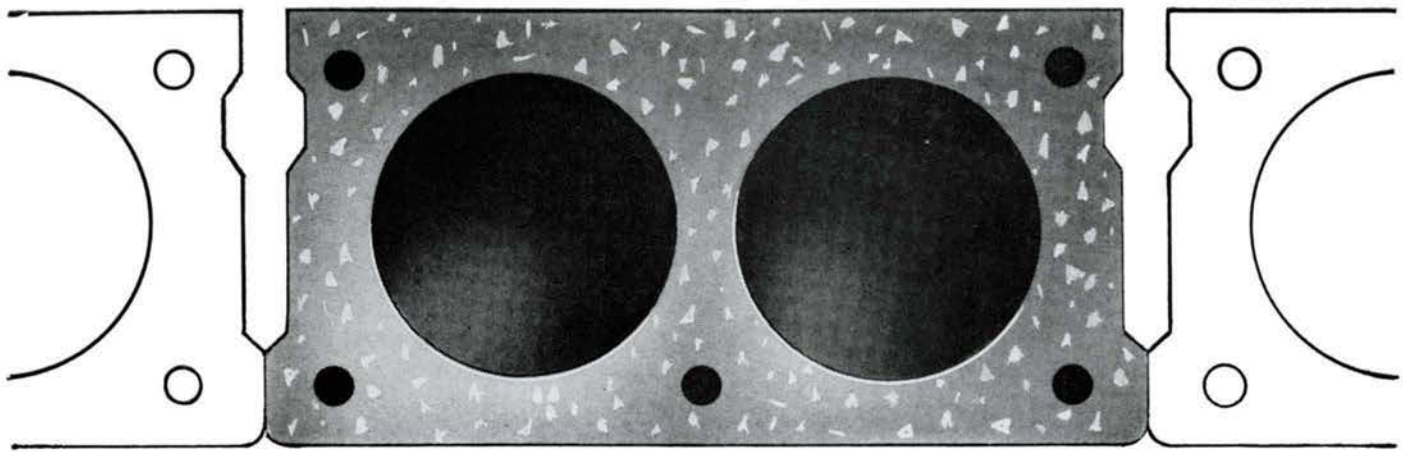
cwdc

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**wood**  
PROMOTION PROGRAM



The more wood you use in a school, the more good school you build for each tax dollar. Many of Canada's most successful new school designs have been inspired and made possible by wood construction.



# flexicore<sup>®</sup>

## and winter concreting... assurance of earliest possible occupancy

**NOW, YOU WILL BE HAPPY TO OBSERVE**, much can be done about the weather. Winter construction can proceed with no loss of speed at all, through the Flexicore system of precast floors and roofs. ❄️ This allows a building to be in use, and paying for itself, sooner. Flexicore slabs, of pre-cured reinforced concrete, can be moved into place at the rate of 2500 square feet a day, in any weather. At once, that area can be enclosed, heaters set up and the wiring, plumbing, heating and other installations begun. ❄️ With site-poured concreting methods there was all the preliminary formwork, then the pouring, then everybody waited while the concrete cured, and when *that* was done, the formwork had to be dismantled. ❄️ Terribly costly, whereas Flexicore construction is much cheaper in every way, and extremely close quality control is simple, and there needn't be a day lost. When

in place, the slabs need only be levelled and grouted to form a flat, monolithic unit. ❄️ Flooring or roofing is added to the top surface; the lower surface needs only paint to form a handsome ceiling. No plastering! ❄️ The hollow cores of the slabs cut the weight by about half, and are natural paths for heating, wiring, etc.

**APPROVED CONSTRUCTION:** The Flexicore system is designed to CSA standards... widely accepted and endorsed by architects and engineers... used on over 20,000 buildings. Please write the company nearest you

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CF 106



# Continuous Steel with No Overlap!

a new design principle for columns, employing...



For butt-welding of the column bars, Stelco Iron Powder "Electrod" E-9018 was specified for its arc stability and its low hydrogen properties. Welding in this case eliminated 4-foot overlaps in the reinforcing bars.

St. Joseph's Hospital, Hamilton, Ontario.

**OWNERS:** The Sisters of St. Joseph, Hamilton.

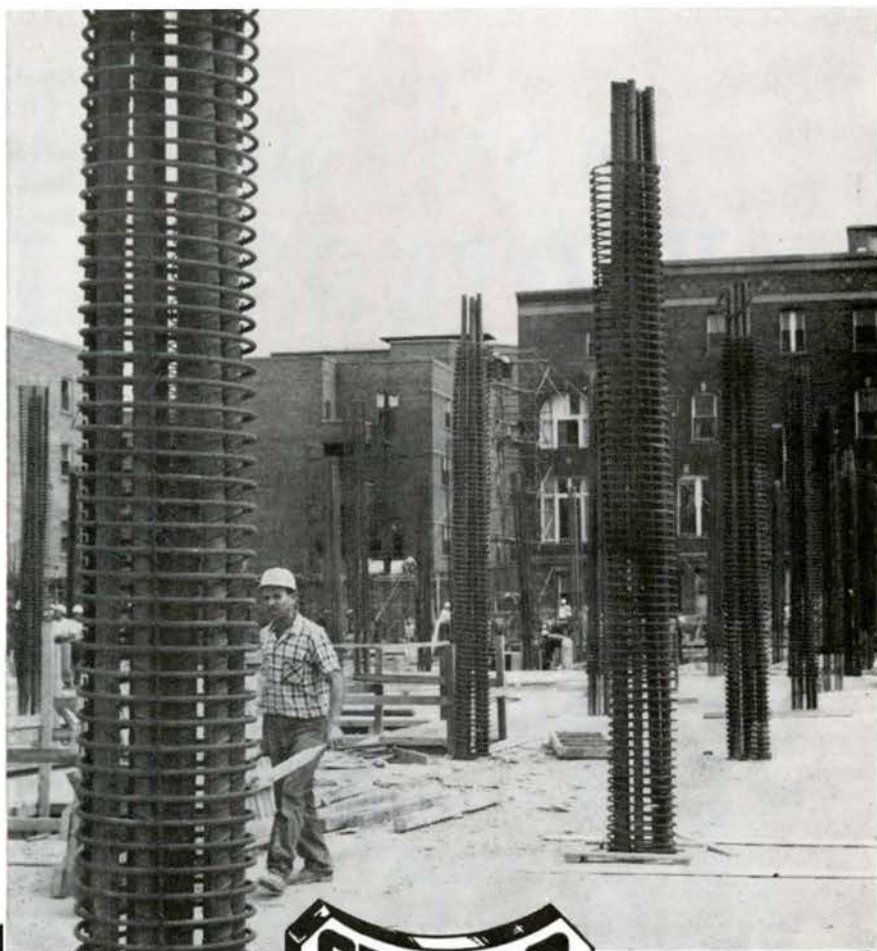
**ARCHITECTS:** Prack & Prack, Hamilton.

**GENERAL CONTRACTORS:** Pigott Construction Company Ltd., Hamilton.

Continuous steel column reinforcement in the extension to St. Joseph's Hospital, Hamilton, Ontario, is provided by Stelco No. 18 (2" S.E.) Hi-Bond Bars welded end-to-end at two-storey intervals. Stelco also produces No. 14 (1½" S.E.) bars, which are equally well suited to this new technique.

The outstanding feature is the use of slimmer columns without sacrifice of design strength, which leads to the following advantages:

- Reduced column area with steel area maintained. (In this particular instance, eight No. 18 bars are equivalent to twenty-one No. 11 bars in each column.)



## STELCO

# NO. 18 HI-BOND REINFORCING BARS

- With fewer column bars, the placing of beam bars is faster and easier.
- Good concrete coverage is maintained.
- Welding reduces erection time as compared with splicing. It also eliminates shop bending and bar overlaps.

Stelco Hi-Bond Reinforcing Bars are available in a complete range of sizes (¼" diameter, or No. 2 bar, up to 2" S.E., or No. 18 bar), conforming to C.S.A. Specifications G.30.1 and G.30.6-1954, and to A.S.T.M. Designation A.305-51. Full information, and details of on-site delivery service, are available from any Stelco Sales Office.



## THE STEEL COMPANY OF CANADA, LIMITED

Executive Offices: Hamilton and Montreal

Sales Offices: Halifax, Saint John, Montreal, Ottawa, Toronto, Hamilton, London, Windsor, Sudbury, Winnipeg, Edmonton, Calgary, Vancouver. J. C. Pratt & Co. Limited, St. John's, Newfoundland.



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automatic heating  
and cooling



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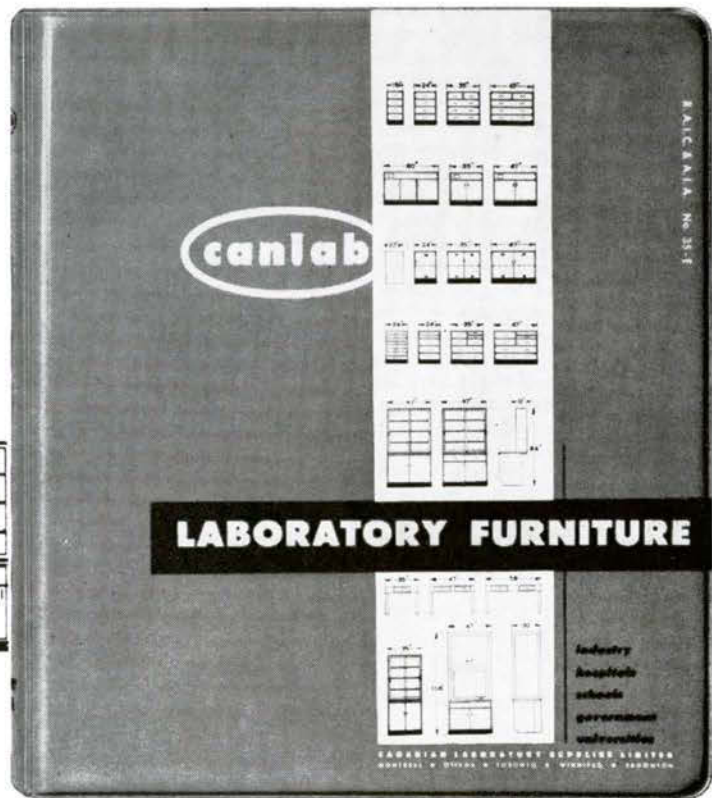
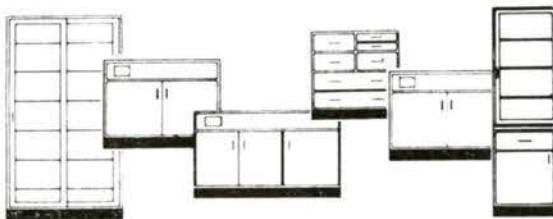
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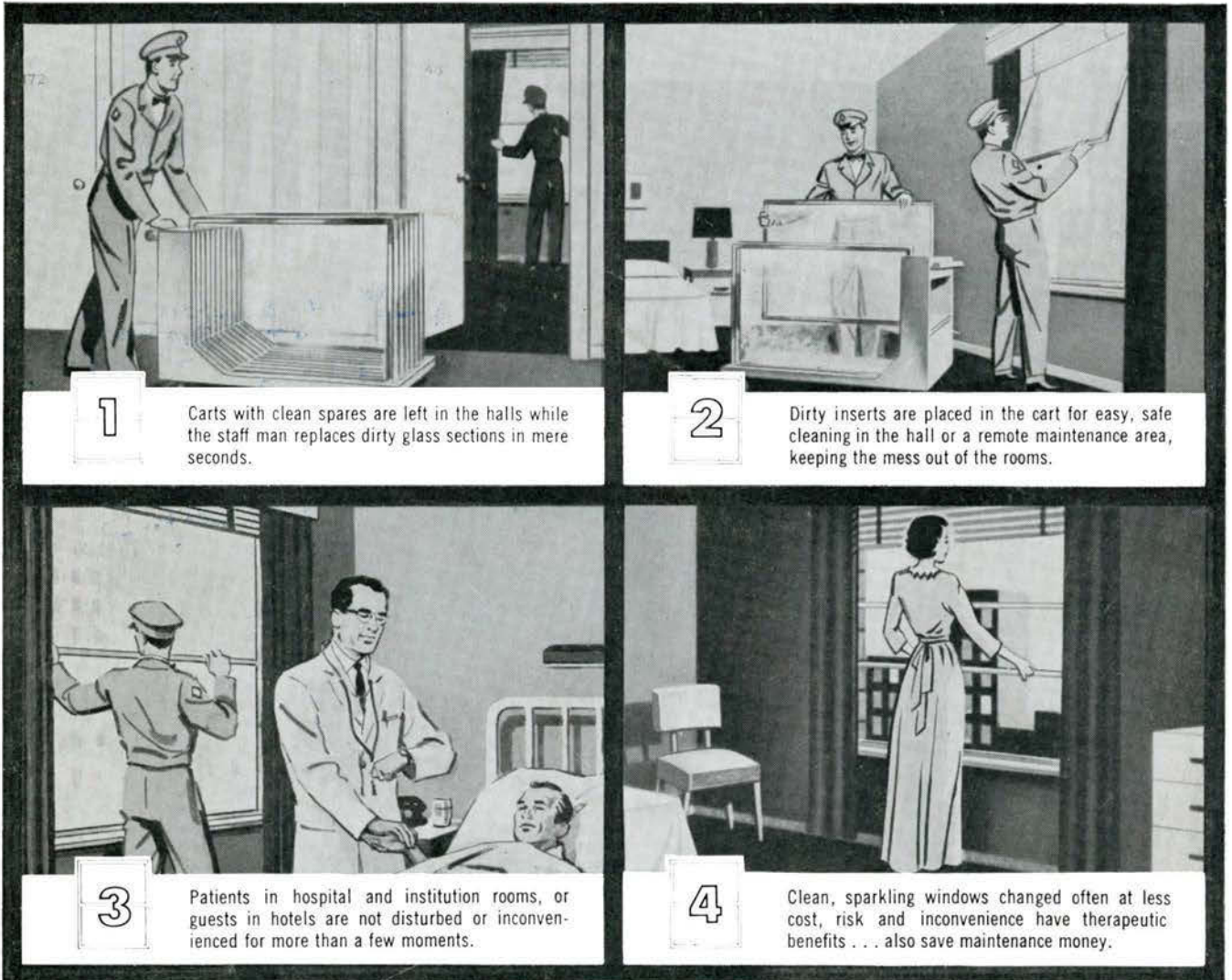
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