

# ROYAL ARCHITECTURAL INSTITUTE OF CANADA JOURNAL



**MAY 1960**

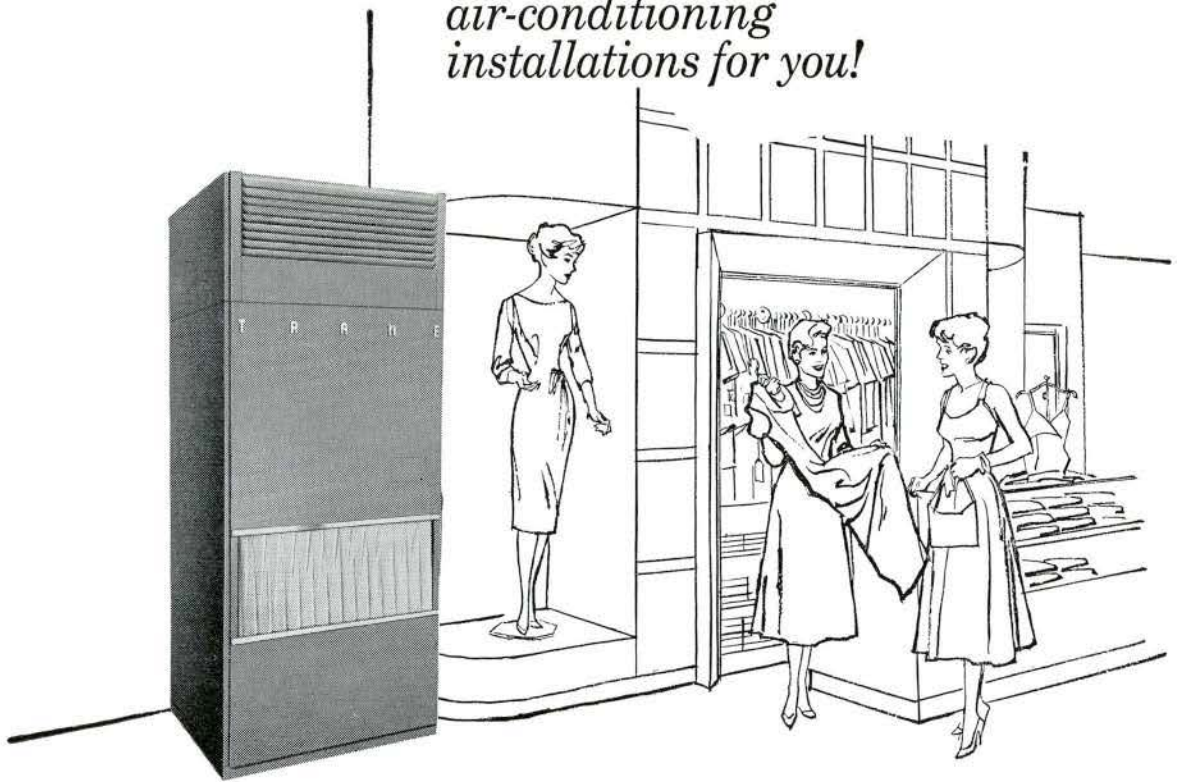
**ROYAL ARCHITECTURAL INSTITUTE OF CANADA  
INSTITUT ROYAL D'ARCHITECTURE DU CANADA**

**REPORT: RAIC COMMITTEE OF INQUIRY  
INTO THE RESIDENTIAL ENVIRONMENT**

# NEW!

## TRANE SELF-CONTAINED CLIMATE CHANGER

*increases  
air-conditioning  
installations for you!*



Great news! Trane now hands you the lucrative air-conditioning field in a package! The new Trane *self contained* CLIMATE CHANGER has the compactness and simplicity you need to sell dozens of locations. Dress shops, restaurants, older offices: they're all planned for in the Trane range of attractive packaged air-conditioning units from 3 through 50 ton capacity. No major alterations . . . just simple piping and electrical connections!

Trane is ready with all the help you need—technical data, staff training and sales promotion aids to bring in customers *fast!* Contact Trane right away . . . look forward to a record-breaking number of summer installations with the new Trane self-contained CLIMATE CHANGER!

TSC-59-1R

# TRANE

COMPANY OF CANADA  
LIMITED, TORONTO 14

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



## Durability and distinction— essential elements in fine architecture

Architects Luke, Little and Thibaudeau of Montreal selected CLERK curtain wall for the handsome new printing plant of Drummond Business Forms Ltd., in Drummondville, Quebec.

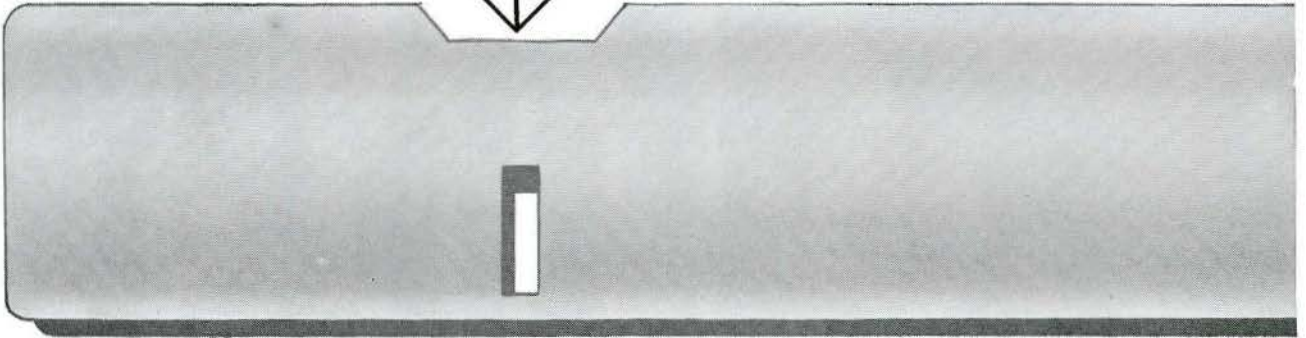
Made of anodized aluminum, porcelain enamel on steel and plate glass, the CLERK curtain wall will keep its colourful beauty permanently—unmarred by time or weather. The main entrance features a sparkling non-objective design in porcelain on steel, supplied and installed as part of the curtain wall contract.

CLERK welcomes the opportunity to work with you to find solutions to your own fenestration requirements. Call the CLERK representative nearest you or write to Clerk Windows Limited, 1450 City Councillors, Montreal 2, Que.

**CLERK WINDOWS LIMITED**  
MONTREAL TORONTO

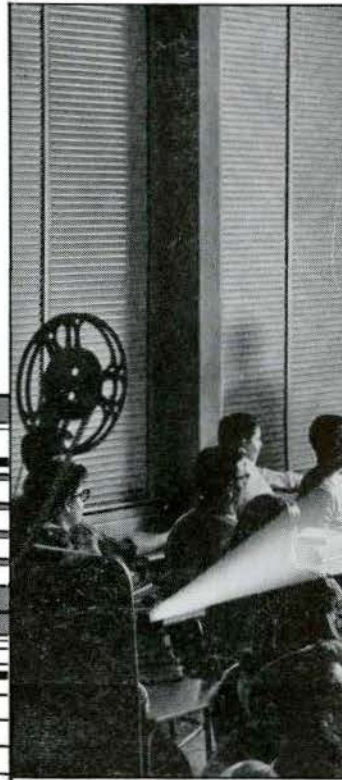


The patented feature  
you'll find  
on no other blind

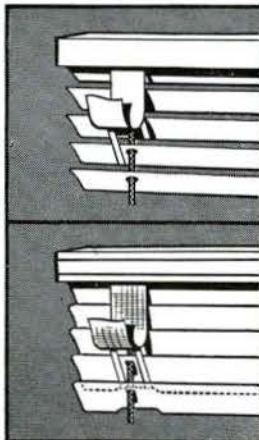


*the notch nobody sees lets*  
**Flexalum twi-nighter**  
*keep out six times more light  
than ordinary blinds.*

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



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



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

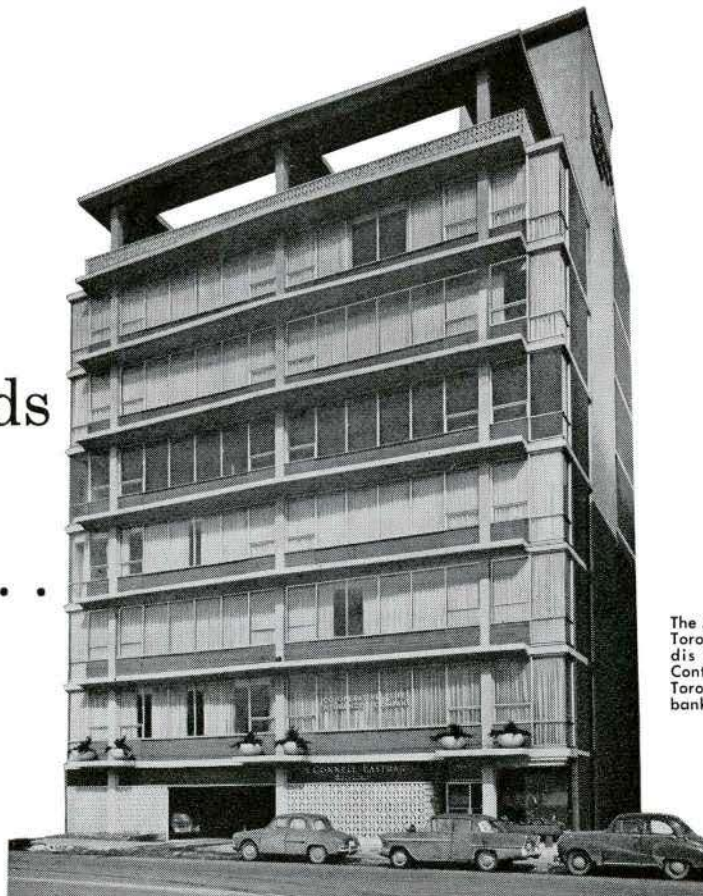
More slats per foot, special notches; light traps at sides, top and bottom . . . here is why the unique Flexalum Audio-Visual Blind is the superior performer for schools and all other screen projection situations.



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

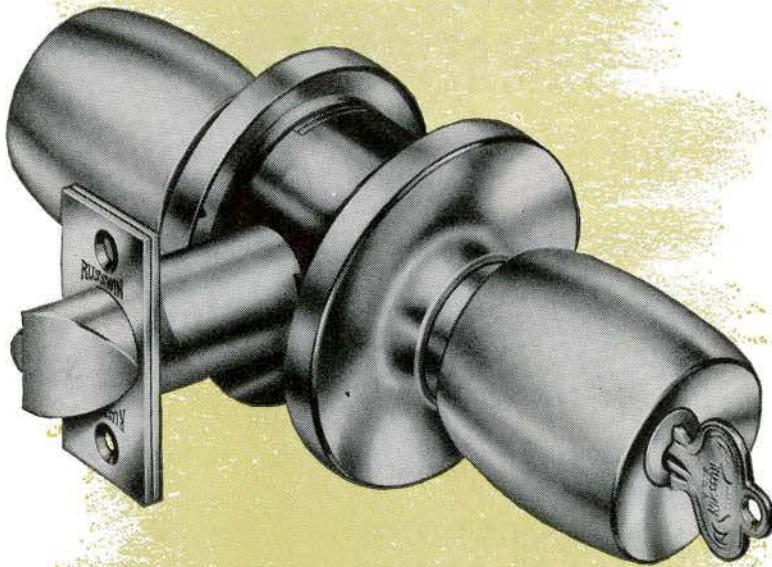
For further information and free descriptive literature, write "Flexalum Twi-Nighter", Hunter Douglas Ltd, 9500 St. Lawrence Blvd., Montreal.

Canada  
builds  
for the  
future . . .



The McConnell-Eastman Building, Toronto, Ontario. Architects Visvaldis Upenieks, Toronto. General Contractor: Kinco Construction Ltd., Toronto. Hardware Supplier: Fairbank Hardware Limited, Toronto.

with **RUSSWIN DOORWARE**



The impressive new McConnell-Eastman Building adds new elegance to Toronto's Eglinton Avenue. Indicative of the careful planning of this modern structure is the choice of Russwin Tempo design Stilemaker locksets. This smartly styled, heavy-duty doorware not only complements the building's modern architecture, but offers many features Russwin-engineered for long, trouble-free service. Ball bearing pin tumbler lock cylinders, for example, minimize lock wear. Extra length knob shank bearings hold knobs rigid, rattle-free. Latch bolts with a full  $\frac{5}{8}$ " throw provide positive security. Write for detailed information about Russwin's popular Stilemaker line. Russwin Belleville Lock Division, International Hardware Company of Canada Limited, Belleville, Ontario.

*For any door . . . in any building*



Russwin's Surface Type Door Closers are used for dependable door control in the McConnell-Eastman Building. Rugged Russwin Rim Fire Exit Bolts are used on exit doors.



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STYROLITE®  
rigid, light-weight low temperature insulation**

HERE IS A COMPLETE BROCHURE GIVING YOU :

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MAIL THIS COUPON FOR FREE STYROLITE SPECIFICATION BROCHURE AND SAMPLES—

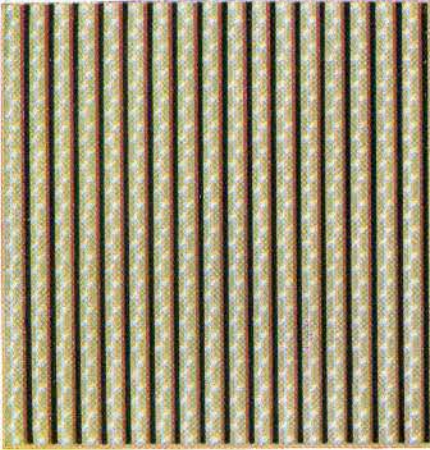
Courtaulds Plastics Canada Ltd.  
Cornwall, Ontario

Please send by return mail your free Styrolite  
specification brochure and samples.

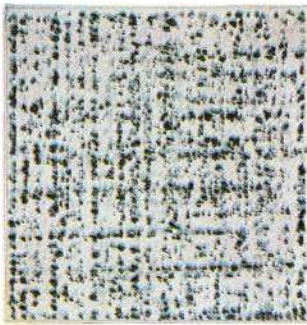
NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

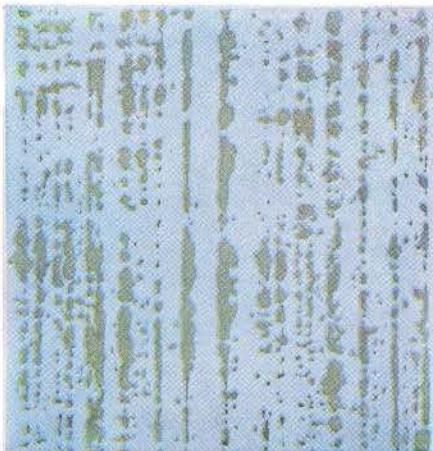
take  
a look  
at...



## PILKINGTON'S TILES



The wide range of Pilkington's tiles, both plain coloured and decorative, will delight you at once with its practicability and with its creative possibilities. And the skilled staff of Pilkington's Design Department will give you every assistance you need.



A sample pack containing the full range of plain colours and a booklet showing the full range of screen prints will be posted to you by our nearest agent on request. Please indicate if pack or booklet, or both, are required.

**FREE  
SAMPLES**



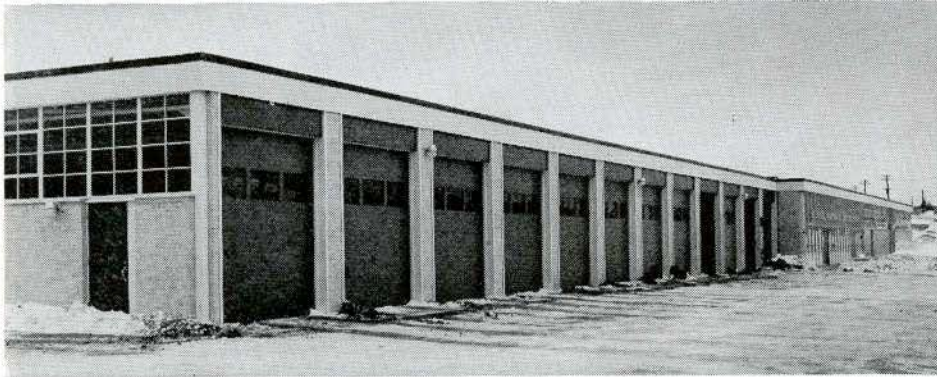
**AGENTS**  
Quebec, Ontario, Manitoba, Saskatchewan and Maritime Provinces:  
Kerr, Slee & Co., 1269, Greene Ave., Montreal, P.Q.  
Alberta: Ronald F. Butler Ltd., 10532- 130 Street, Edmonton, Alberta  
British Columbia:  
Atlas Import Products Ltd., 1221, Glen Drive, Vancouver, B.C.

**PILKINGTON'S TILES LIMITED**

*Clifton Junction, Manchester, England.*

3505 ©

A satisfying solution to a space-use problem



*Architects:* CRAIG, MADILL, HORWOOD, ABRAM & INGLESON  
St. John's, Ottawa and Toronto

*Contractors:* MACNAMARA CONSTRUCTION OF NEWFOUNDLAND LIMITED

*Vault Doors:* MOSLER-TAYLOR SAFES LTD.

Heated storage space for 24 buses with individual access to each bus was one of the problems faced by the architect in planning the recently completed St. John's Transportation Commission Bus Depot in St. John's, Newfoundland.

Requirements included a maintenance floor for 8 buses, paint shop, machine shop, stock room, tire storage space, locker rooms for drivers and mechanics, as well as general offices and a conference room for Commission members.

All in an area of 26000 square feet.

Specifications also called for 2 vaults furnished with doors by Mosler-Taylor Safes Ltd.

The completed building is pleasantly functional in appearance.



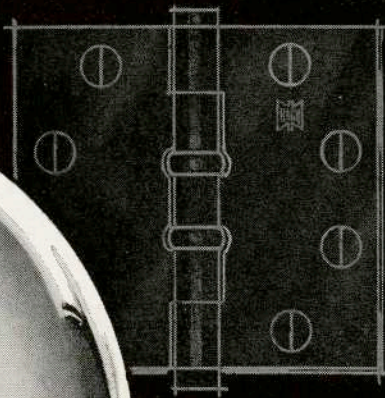
Typical architect's specifications for vault doors in buildings of this kind read, in part:  
... shall furnish a Mosler-Taylor 92 Flat-Sill, Non-Grout, Fire-Resistive Vault Door. The outer door shall have a certified 2-hour rating ... minimum of 3/8" open hearth steel plate ... fitted with heat-resistive insulation to a depth of 2 3/8" ... equipped with ten 1" diameter locking bolts ... controlled by a three tumbler Underwriters' Approved combination lock with relocking device ... protected by a drill-resistive plate ... Emergency Escape Device, permitting immediate escape of anyone locked in the vault.

**Mosler-Taylor** for safety's sake



*Canada's largest manufacturer of Security Equipment*





# 26\* Jeweled movement

**All 26 Keep Rolling Forever—not Part of the Time—in a Hager "Life-Time Bearing" Butt Hinge!**

The bearings *stay there for life!* Upper and lower raceways ride *forever*—on the *full count* of ball bearings—in a Hager *Life-Time Bearing* Butt Hinge!

Tough case-hardened steel ball bearing raceways are press-fitted into direct contact with knuckle on Hager ball bearing butt hinges.

No soft brass retaining jacket (or crimped shell) lies between the knuckle and the raceway . . . nothing to eventually wear away and allow the bearings to slip out.

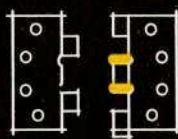
*Both* raceways and *all 26* ball bearings are hard at work in Hager Ball Bearing Butt Hinges—in fine jeweled movement—forever providing life-time trouble-free silent door operation.

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  
**EVERYTHING HINGES ON HAGER!**

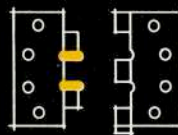


\*26 Balls in 4 1/4" x 4 1/2"  
2-bearing Butt Hinges



**NOT THIS . . .**

One-knuckle-bored construction. Bearings anchored with wear-away brass bushings. (Bearings eventually fall out, when pin is removed.)



**BUT THIS . . .**

Hager **TWO**-knuckle-bored construction. Bearings anchored with case-hardened steel raceways.

EVERYTHING HINGES ON *Hager!* • HAGER HINGE CANADA LIMITED • 136 OTTAWA STREET, KITCHENER, ONTARIO

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LaLiberte & Wilcox Inc.  
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**TREMCO**

# 1 PART

100% LIQUID POLYMER  
SEALANT

... a revolutionary "BREAK THRU" in curtain wall sealants!

**Note This  
Important Basic  
Difference**

Mono Lasto-Meric\* is formulated from Tremco-developed *natural 100% liquid polymers*. The basic ingredient is not a solid such as a butyl or vinyl. Therefore, it does not need to be modified with oil, etc., for adhesion, workability and long life. The desired characteristics of exceptional adhesion and enduring elasticity are an inherent and permanent part of the basic polymer. They are not attained through an ingredient that will migrate or disappear with time as is the case with conventional sealants. That "100% LIQUID" is the basic and important difference in TREMCO MONO LASTO-MERIC. \*TM

MONO LASTO-MERIC 1-part 100% liquid polymer sealant is the latest development of the Tremco Research Center. It is definitely a major "break-thru" in curtain wall sealant advancement, and fills a long-felt vital need in the construction industry. Check these new advantages:

- A factory-mixed 100% liquid polymer sealant—ready for use
- Eliminates hazards and high cost of job site mixing
- Exceptional adhesive qualities and enduring elasticity
- Non-staining on all types of masonry
- Wide range of colors
- Caulking gun consistency supplied in cartridge or bulk

A data sheet prepared especially for the specifying authority gives all the particulars. Ask your Tremco Man for a copy or write:

**THE TREMCO MANUFACTURING COMPANY  
(CANADA) LTD.**  
Leaside, Toronto, Ontario

**TREMCO**

PRODUCTS AND TECHNICAL SERVICES FOR  
BUILDING MAINTENANCE & CONSTRUCTION

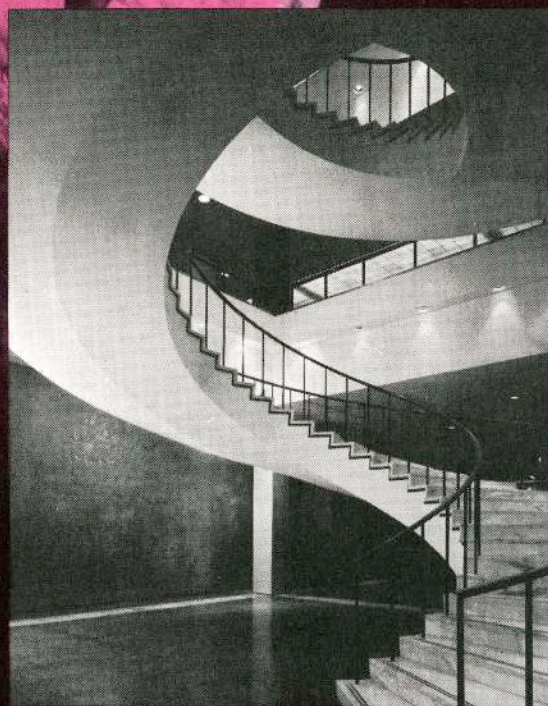
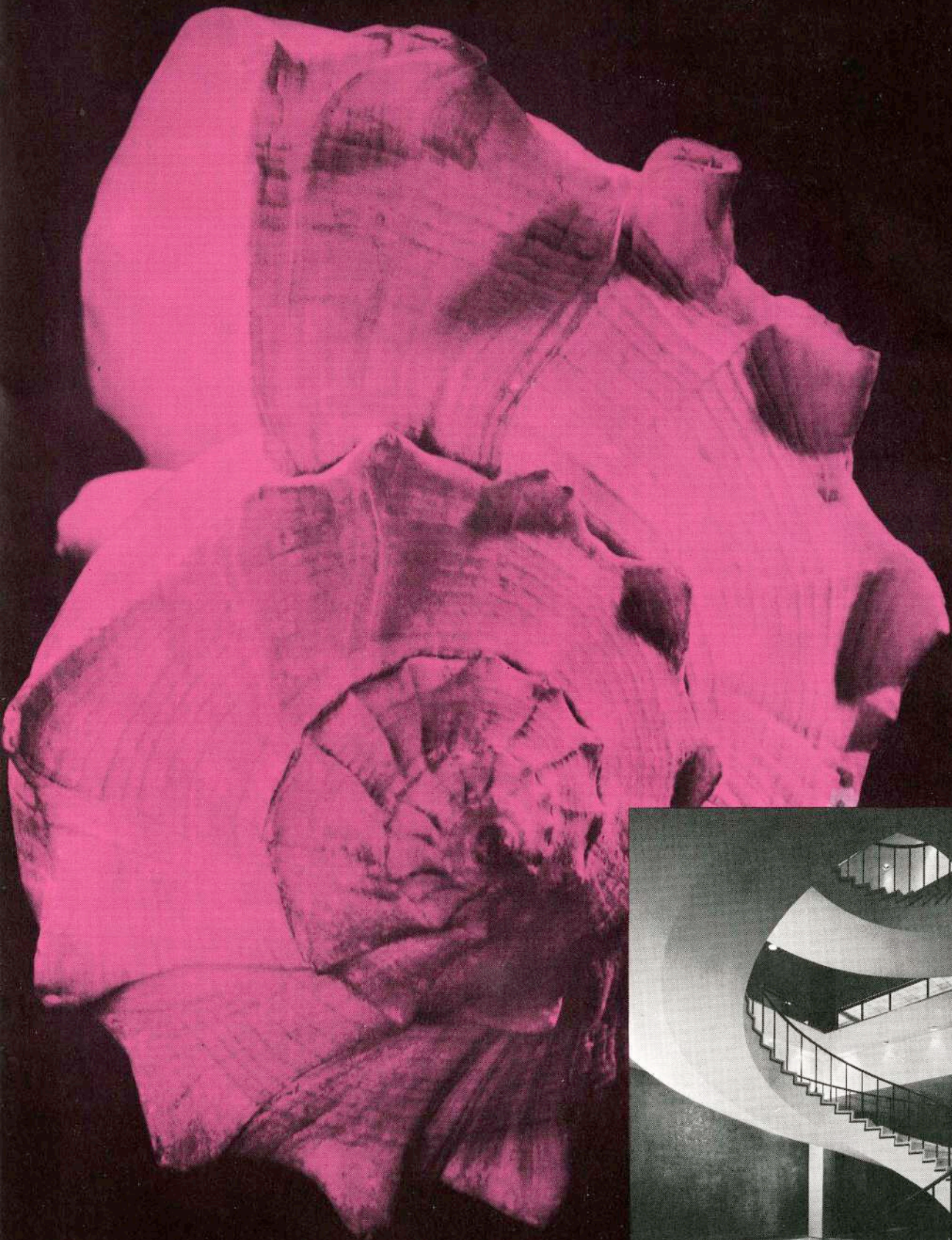
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**PRACTICAL  
INTERPRETATION  
OF  
PLANS  
AND  
SPECIFICATIONS**

Expert electric installations under the supervision of professional engineers mean performance as specified.



**METROPOLE ELECTRIC INC**  
MONTREAL — QUEBEC — OTTAWA



The spectacular beauty of this swirling staircase at The United States Air Force Academy is enhanced by RED TOP\* Keene's Cement and IVORY\* Finishing Lime. Architects and Designers: Skidmore, Owings and Merrill Plastering Contractor: A. E. Eiden & Son, Colorado Springs



# PLASTER

# CAPTURES THE CONTOURS OF CREATIVE THOUGHT

*Ready adaptability to any design, assured performance in any application, make plaster the perfect medium to express your ideas*

From the curve of a conch shell might have come inspiration for this spiraling sweep of dormitory stairs at the new Air Force Academy. Such complex design calls for exceptional subtlety and strength of material. The architects chose plaster.

Only plaster permits the flexibility of intricate design. Only plaster combines visual and textural beauty with such strength, lightness, durability, fire-resistance and acoustical values.

Through continuing research at Canadian Gypsum Company, today's lathing and plastering systems can meet the demands of the most daring architectural concepts. You can plan boldly with plaster — with the help of your skilled plastering contractor. For plaster truly . . . *captures the contours of creative thought.*



**CANADIAN GYPSUM COMPANY, LIMITED**

*the greatest name in building*

# 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.

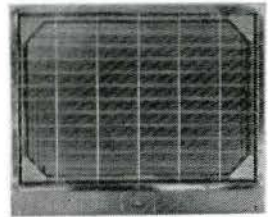
- Absolutely fireproof — absolutely quiet
- Heavy duty fin-type elements
- Low operating cost
- Smart, modern thin look
- Extremely efficient
- Heating elements guaranteed by 5 Year Protection Plan
- Available portable or permanent wall mounting
- Supplied with or without thermostat
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###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

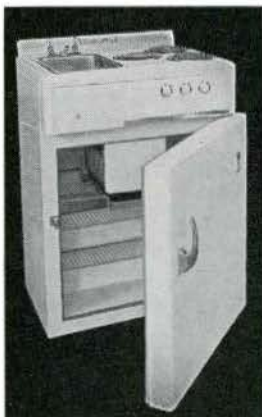
It's a treat to heat with Radiant Glass Heaters because you SAVE MORE MONEY yet get better, more comfortable warmth in your home. The safest, most healthful, most efficient Heater ever made.  
Capacities: 450W, 750W, 1000W and 1500W.

## 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



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#### Combination 3 in 1 Unit

- Refrigerator — 5 cubic feet
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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.

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.

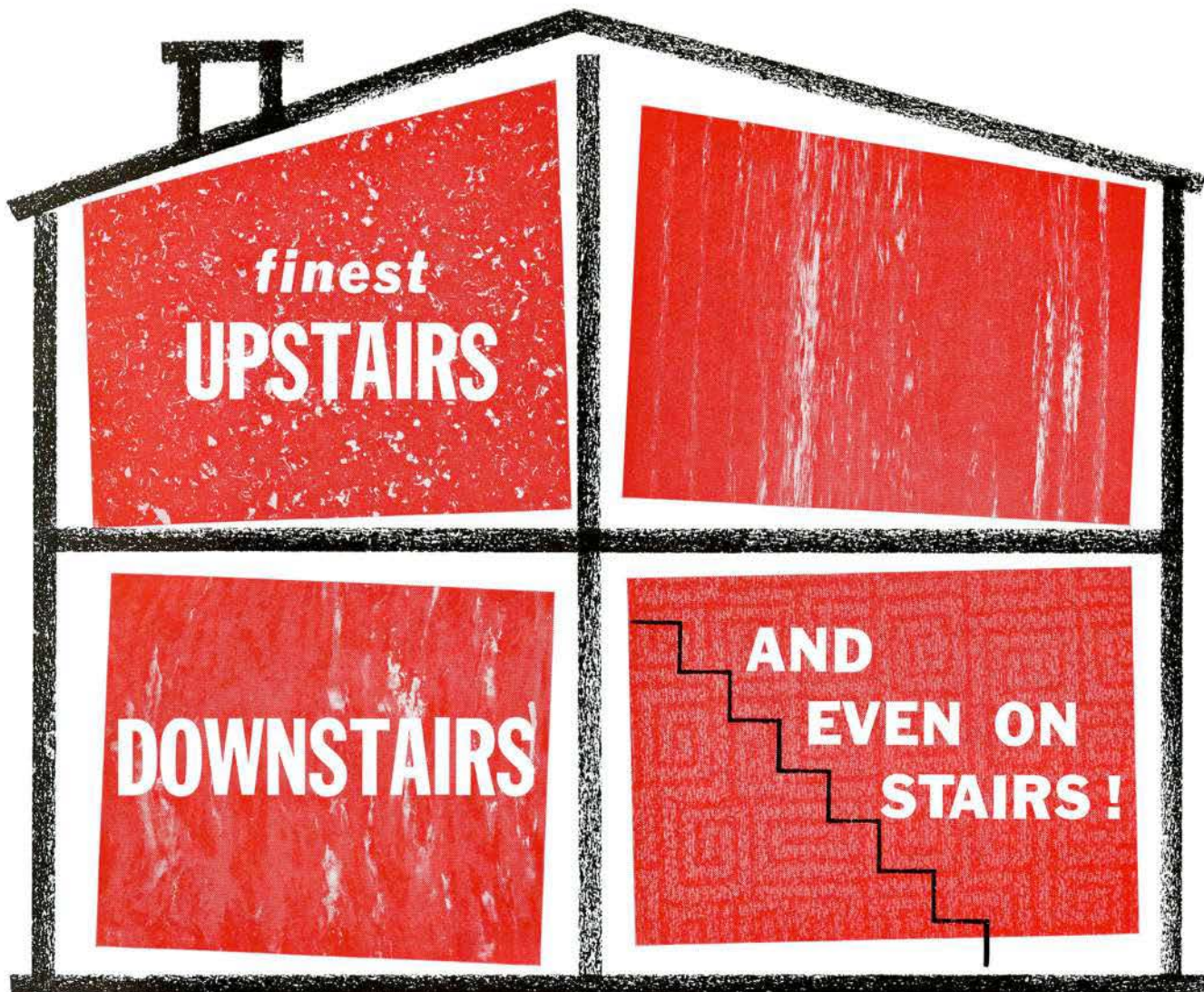


Accept no substitutes — Insist on ELECTROMAID products

Nationally Known and distributed from coast to coast — serving Canada for over 25 years.

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



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People like Amtico everywhere, and Amtico makes resilient floorings to fit every requirement.

Amtico pioneered in the luxury field of translucent, three-dimensional vinyl flooring. For example, Amtico Renaissance® captures the grandeur of natural marble. Amtico vinyls like Terrazzo Design, Marbleized and Plain Colors have been favorites on floors for years. Budget-priced floors sparkle with originality when you use smart Amtico Care-Free® Vinyl. There's a full

Amtico line, too, in rich, colorful Rubber Floorings.

As a matter of fact, Amtico has *everything* to floor a room, a house, or a building. Amtico Vinyl or Rubber Carpeting and Stair Covering, with its expensive look that's so practical. Amtico Adhesives for every resilient-flooring purpose. Amtico Floor Dressing and Cleaner for wise floor care.

Why not fill yourself in on details and obtain free samples? Write now . . . because it'll pay you later!



**AMERICAN BILRITE RUBBER COMPANY LTD.**

Sherbrooke, Que.

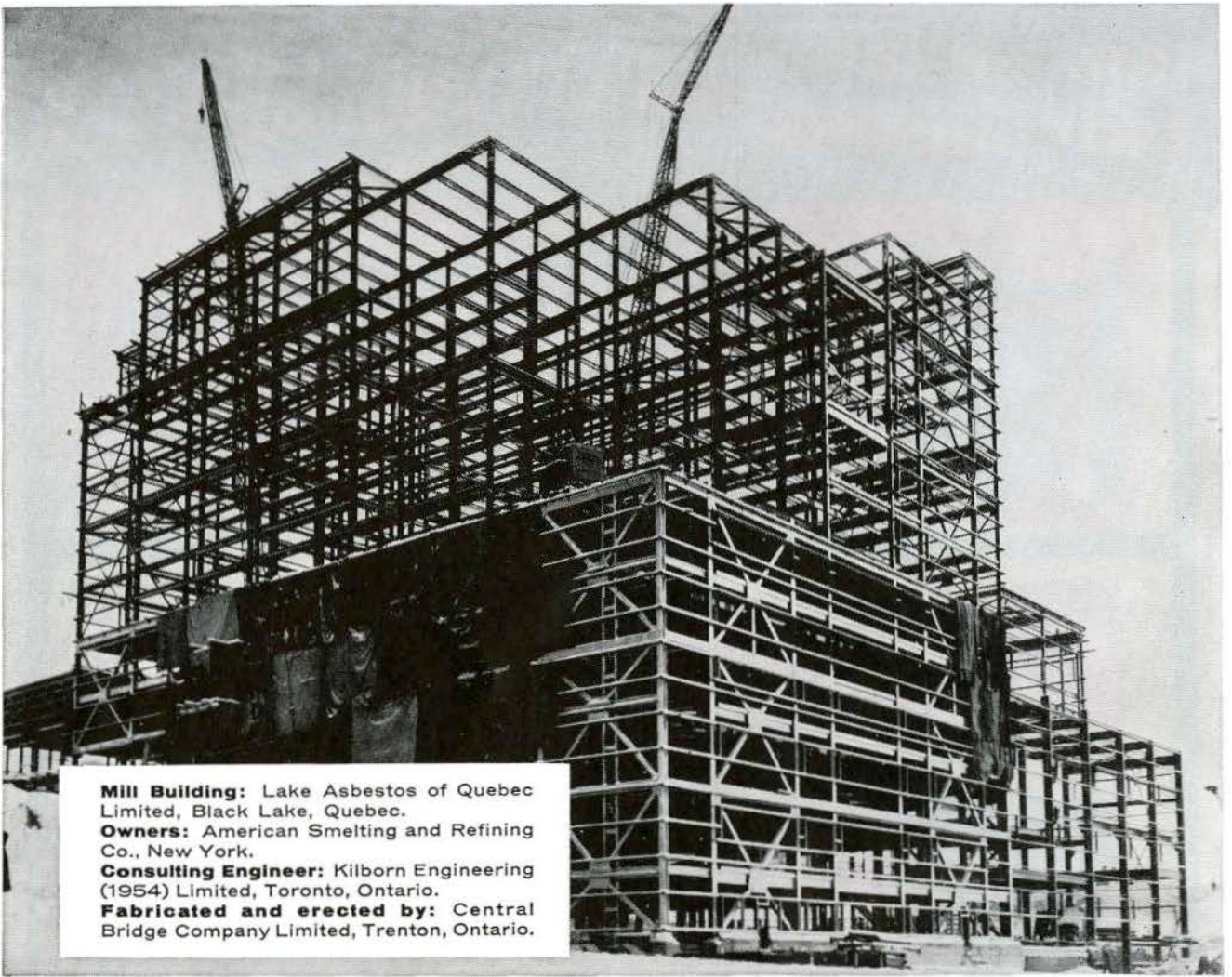
Showroom: 500 King St. W., Toronto, Ontario

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**Mill Building:** Lake Asbestos of Quebec Limited, Black Lake, Quebec.  
**Owners:** American Smelting and Refining Co., New York.  
**Consulting Engineer:** Kilborn Engineering (1954) Limited, Toronto, Ontario.  
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The fasteners that help STEEL go up fast



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35,000 Stelco High-Strength Bolts were used for fast, efficient construction, under severe weather conditions, of the building pictured above.

High-strength bolting speeds field construction. A 2-man bolting crew inserts and tightens a high-strength bolt in one third the time it takes a 4-man crew to install a rivet. Less equipment and less inspection are required.

As a fastener, the high-strength bolt is stronger and more durable than the rivet, being superior in both tensile and shear strength.

Every shipment of Stelco High-Strength Bolts is certified as meeting ASTM Specification A-325. For detailed information, contact any Stelco Sales Office.



*Write to any Stelco Sales Office for this free technical manual on high-strength bolting of structural steel.*



**THE STEEL COMPANY OF CANADA, LIMITED**

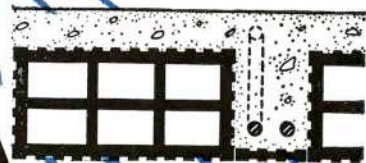
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WITH CLAY TILE FLOORS

Cutting deadweight is always desirable — provided it can be done safely . . . and especially if additional benefits can be gained.

Structural Clay Floor Tile actually reduces dead load by 37% — without reduction of load-bearing safety factor. At the same time, Floor Tile deadens sound — gives a ready-made plastering surface for ceilings — speeds erection — and is fire resistant.

No wonder the *best* floor plans include Structural Clay Floor Tile. Do yours?

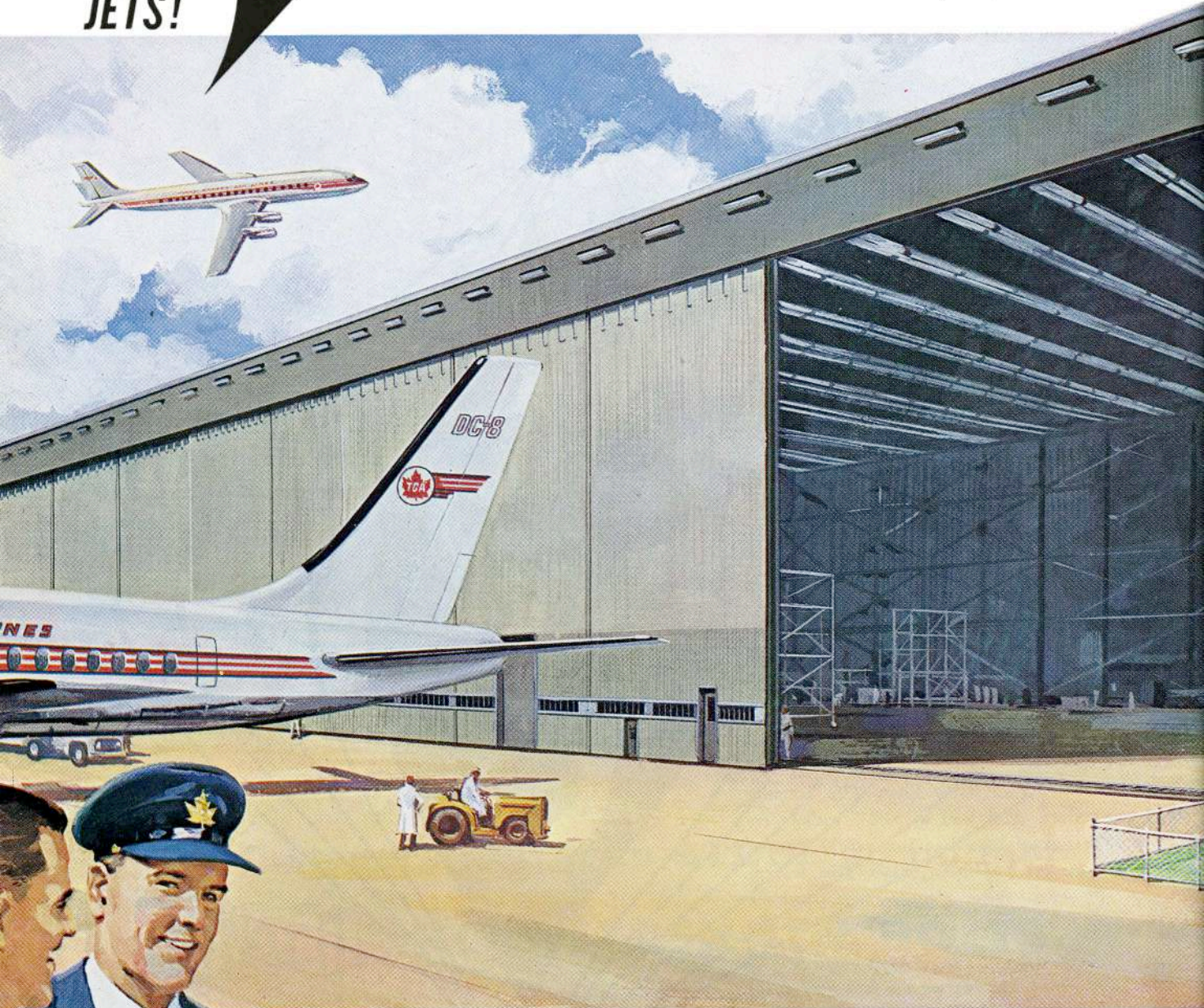
**BRICK AND TILE  
INSTITUTE  
OF ONTARIO**



4824 YONGE ST., WILLOWDALE, ONTARIO

**READY  
FOR THE  
JETS!**

**Giant 58-foot lengths of aluminum siding  
new service centre at Dorval, Que.**



*Sidewalls installed quickly, easily — because  
of ALCAN Aluminum*

Easily-handled 58-foot lengths of aluminum siding went up swiftly on the sidewalls. Because of the lightness of aluminum, the job took only days instead of weeks, reflecting credit on the Fabricator and Erector as well as on the ALCAN sheet they used. This building is one of the largest cantilever structures in the world, providing acres of unimpeded space for the jetliners. Along its front will extend over a quarter of a mile of movable aluminum-clad doors.

Doors and siding are made using ALCAN continuous anodized sheet — 125 tons of it in the attractive new silicon-grey shade, and with a distinctive, newly-developed profile. Alcan aluminum was chosen for its speed and economy in the sandwich wall construction . . . as well as its handsome appearance. But, **MOST IMPORTANT** of all: **No Maintenance!** Non-rusting aluminum with its anodized surface, retains its good looks for years! No painting, no other expensive maintenance!

**ALUMINUM COMPANY OF CANADA, LIMITED**

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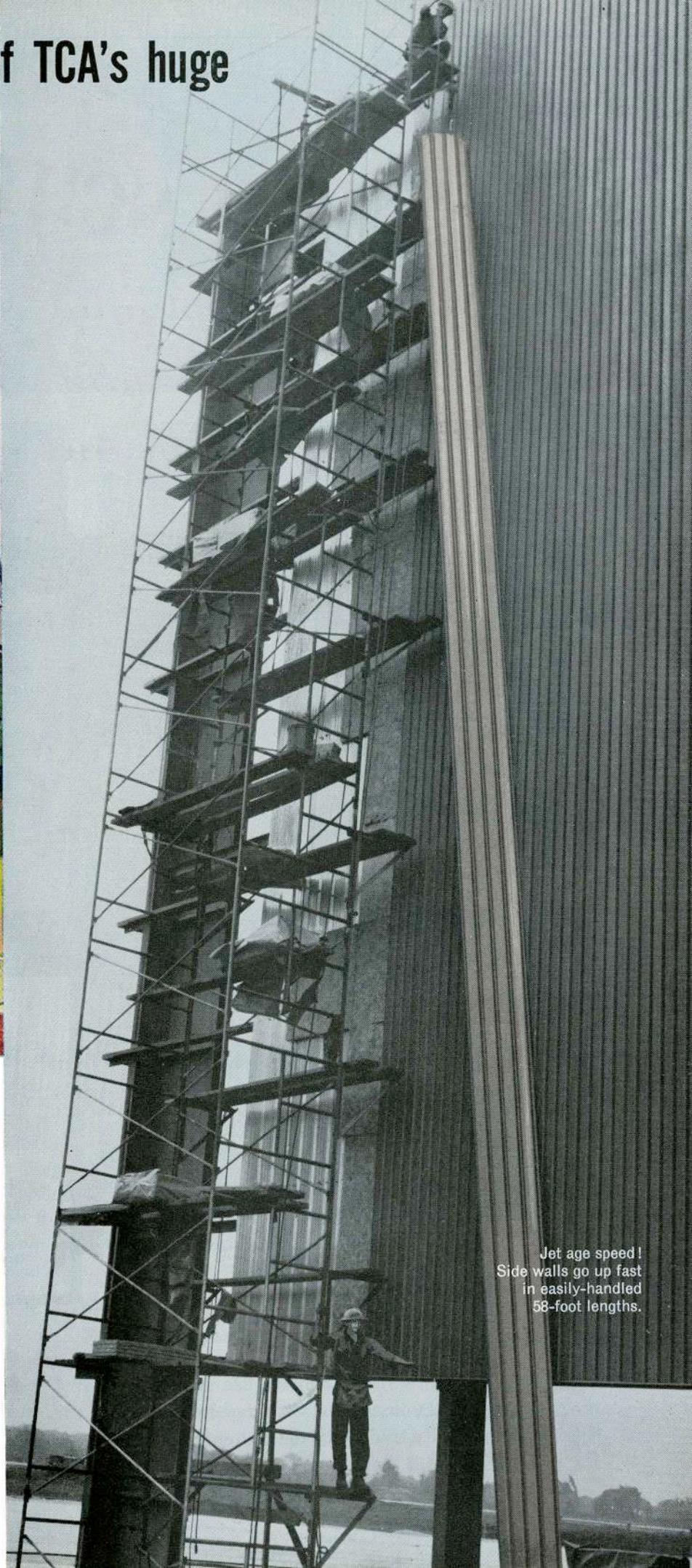
Quebec • Montreal • Ottawa • Toronto • Hamilton • Windsor • Winnipeg • Calgary • Vancouver

# speed construction of TCA's huge



Architects: **Ross, Fish, Duschenes and Barrett**  
Chief Architect; TCA: **E. W. Sellors**  
Aluminum Fabricators and Erectors—  
Insulated Aluminum Walls:  
**Columbia Metal Rolling Mills Limited**  
Insulated Aluminum Door Cladding:  
**Robertson-Irwin Limited**

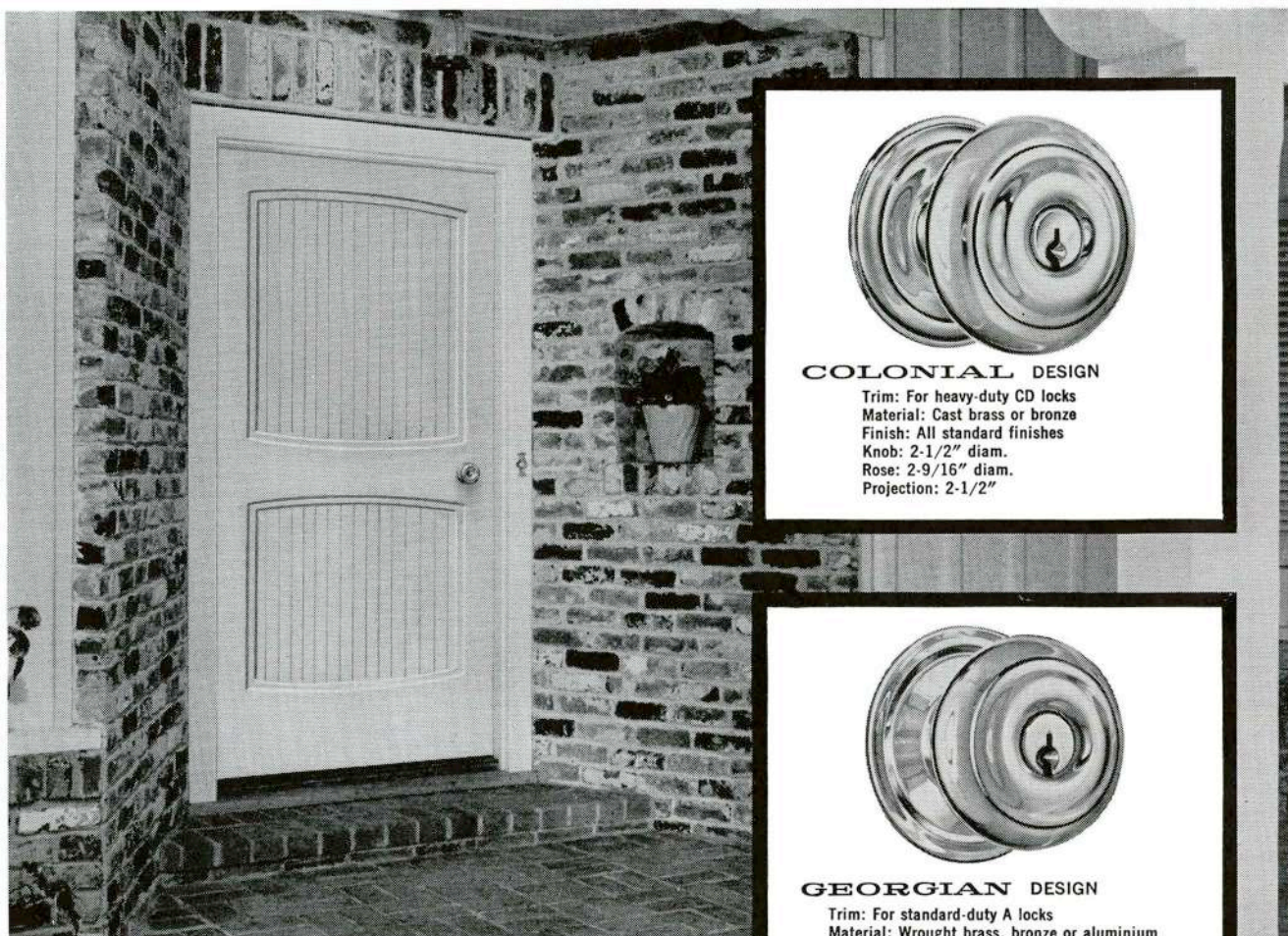
*For complete information on the advantages of light, strong, non-rusting ALCAN Aluminum in your building plans, contact your architect or metal fabricator, or write us at Dept. 16, P.O. Box 6090, Montreal.*



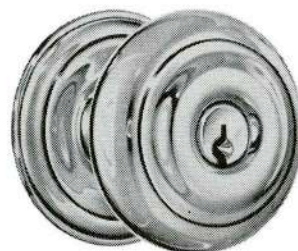
Jet age speed!  
Side walls go up fast  
in easily-handled  
58-foot lengths.

# NEW FROM SCHLAGE

Colonial and Georgian  
lock designs in the  
traditional manner

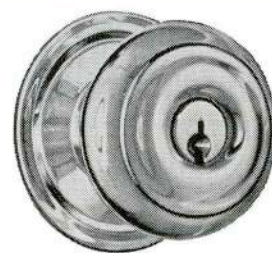


SONATA DOOR BY SIMPSON



## COLONIAL DESIGN

Trim: For heavy-duty CD locks  
Material: Cast brass or bronze  
Finish: All standard finishes  
Knob: 2-1/2" diam.  
Rose: 2-9/16" diam.  
Projection: 2-1/2"



## GEORGIAN DESIGN

Trim: For standard-duty A locks  
Material: Wrought brass, bronze or aluminium  
Finish: All standard finishes  
Knob: 2-1/8" diam.  
Rose: 2-9/16" diam.  
Projection: 2"

In home design today there is a strong trend towards a new elegance. Rich and luxurious accents are used to add graceful touches.

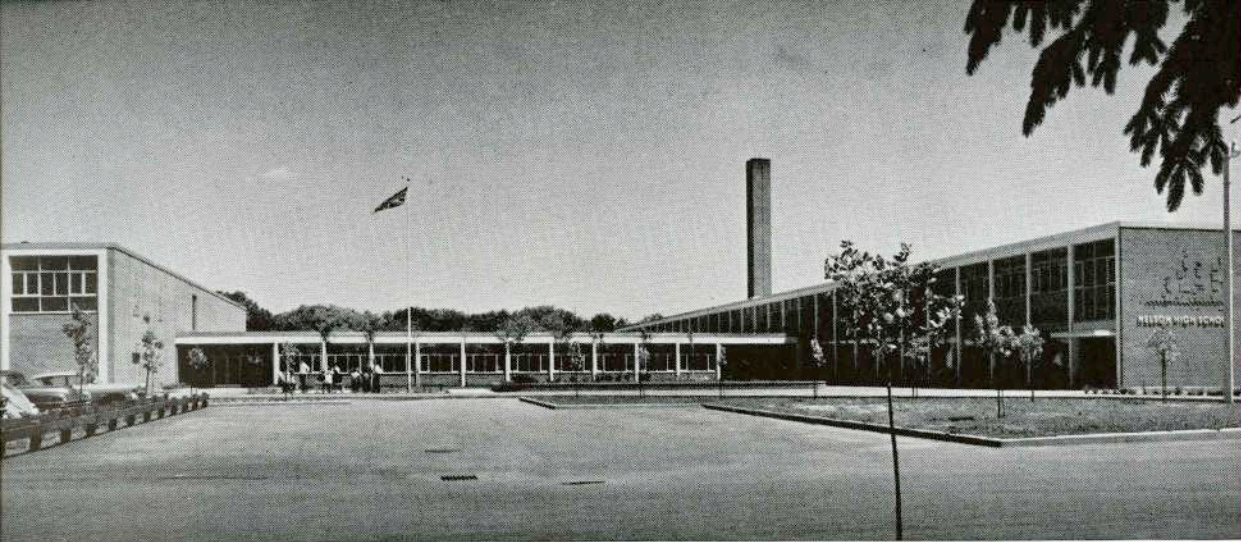
In response to this trend, Schlage has created the new traditional Colonial and Georgian designs. Specify them to add a traditional touch to entrances and throughout the house.

# SCHLAGE

TRADE MARK REGISTERED

## CYLINDRICAL LOCKS

Schlage Lock Company of Canada Ltd.  
Vancouver, B. C.  
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**NELSON HIGH SCHOOL, Burlington, Ontario**

**Architect:**  
Shore & Moffat

**General Contractor:**  
W. H. Cooper Construction Co. Ltd.

**Painting Contractor:**  
Warneke Decorating Co. Ltd.

**P & L Products Used:**  
Cellu-Tone Satin, Lyt-all Flowing  
Flat, Vitralite Enamel, Oil Stain, "38"  
Pale Trim Varnish, Effecto Enamel

### COLOR PLAYS A SCHOLASTIC ROLE...

This modern, H-shaped structure, is constructed mainly of pre-cast concrete with brick spandrels on the exterior. The interior walls are colorfully enhanced with P & L wall finishes. Wood paneling contrasts richly with terrazzo floors and natural planters, while fluorescent illumination highlights the unusual and distinctive design features. Pratt & Lambert Calibrated Colors® were used throughout to insure the highest possible quality at minimum ultimate cost.

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

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Comfort for customers, efficiency and savings for owners! That's why you'll find Johnson Air-Conditioning Control Systems in leading stores and shopping centres across Canada.

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Johnson Controls Ltd., Toronto 16, Ontario. Branch offices in Calgary, Edmonton, Halifax, Hamilton, London, Montreal, Ottawa, Quebec City, Regina, Toronto, Vancouver, Winnipeg.

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REYNOLDS "REYLIFE" INSULATION AND VAPOR BARRIER—quick and easy to apply with just stapler and shears. Cuts fuel bills, keeps interiors up to 15° cooler in summer.

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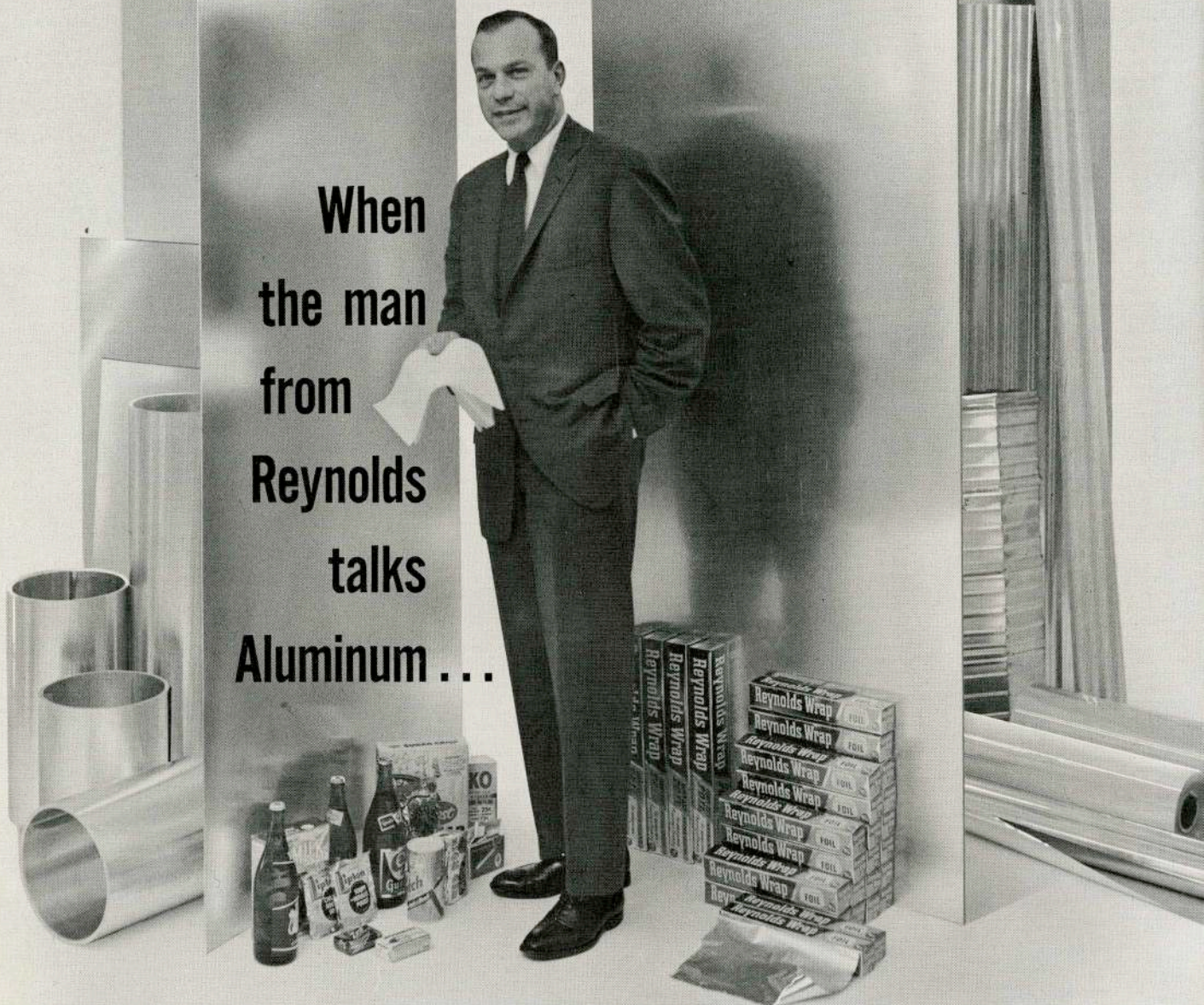
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Well—not really—but there's no long wait for Miss Martin of the third floor since a Turnbull Traflomatic system has been installed. She gets "her" car just as quickly as all those girls up on the 14th. Now, she pushes the "down" button at 5:03 with a light heart because Turnbull Traflomatic remembers all calls and remembers them in turn.

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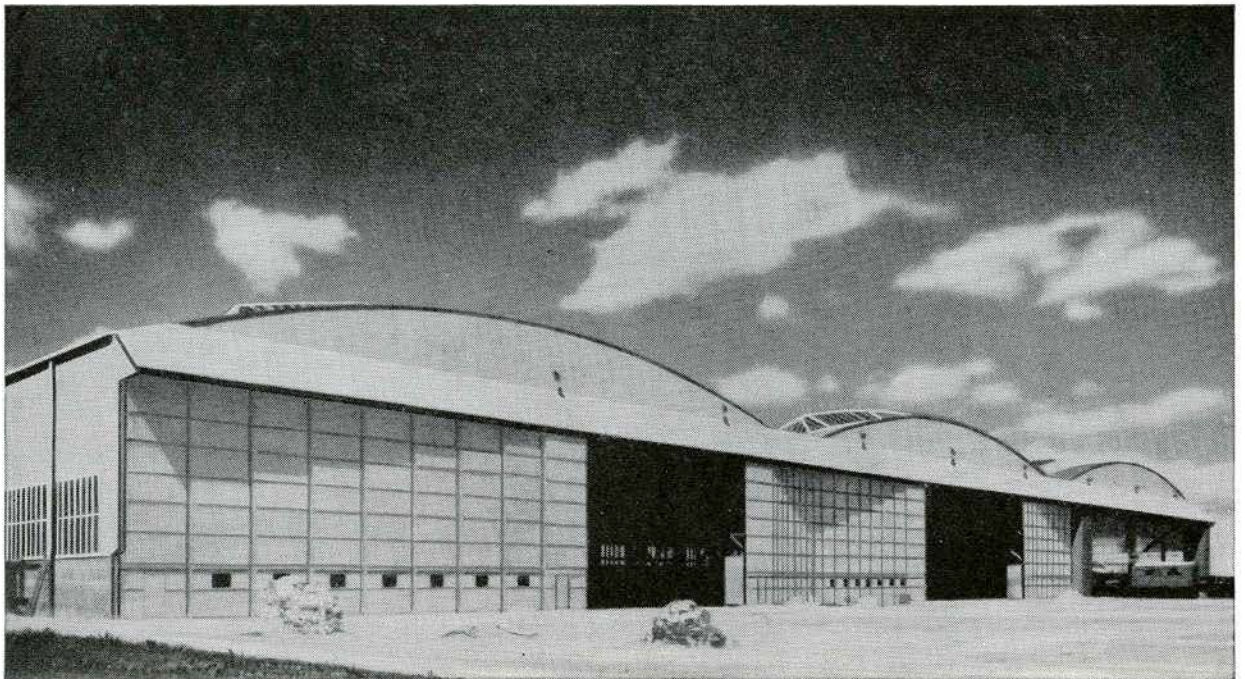
ARCHITECTS, ENGINEERS and CONTRACTORS

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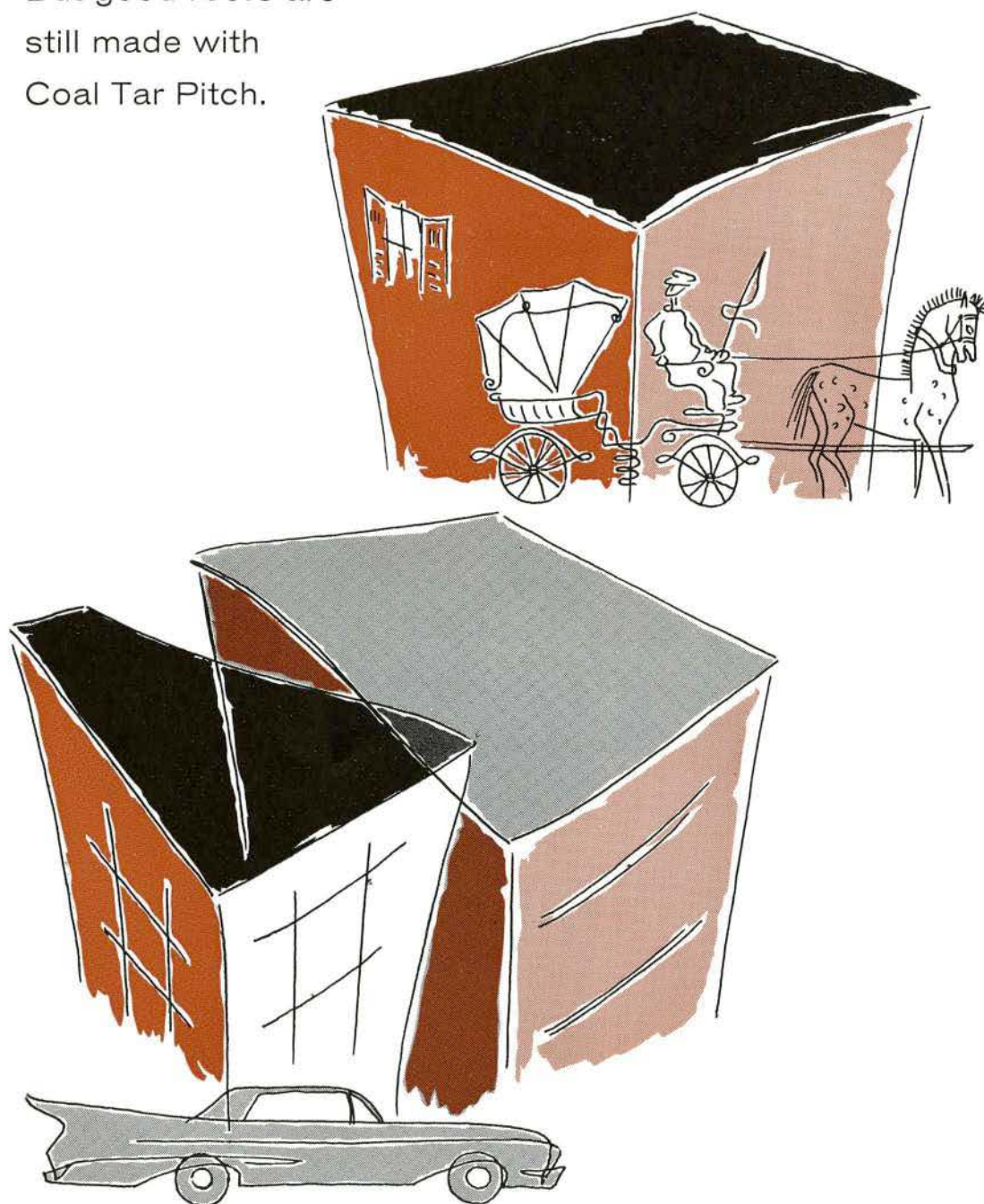
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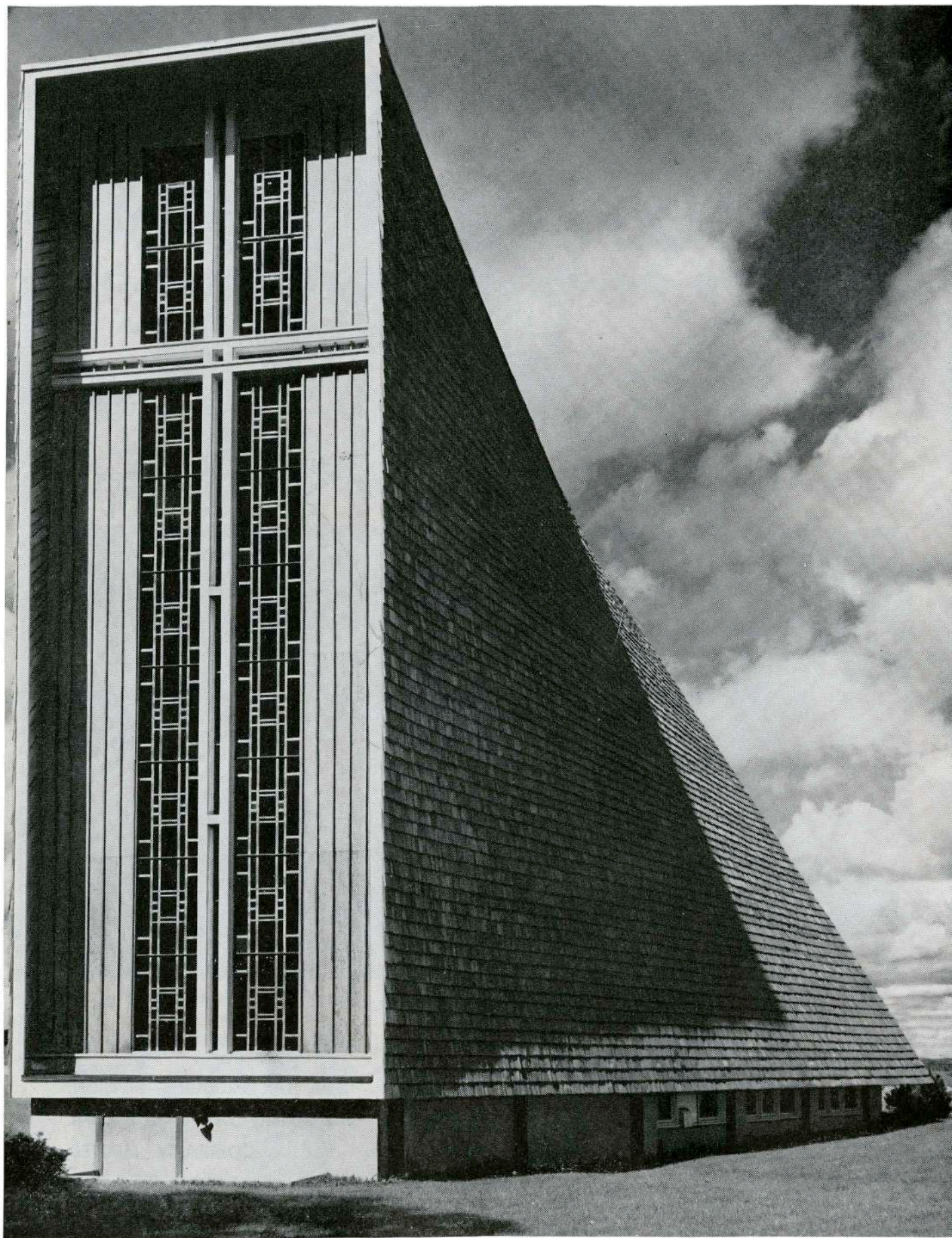
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Many are the differences between today's buildings and those of a century ago. But good roofs are still made with Coal Tar Pitch.



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St. Luke's Church—a beautiful example of advanced wood technology put to use in church architecture. Here laminated hyperbolic paraboloid construction made possible this dramatic application of the ancient Christian symbol of the triangle.

*Design should never be the servant of material—*

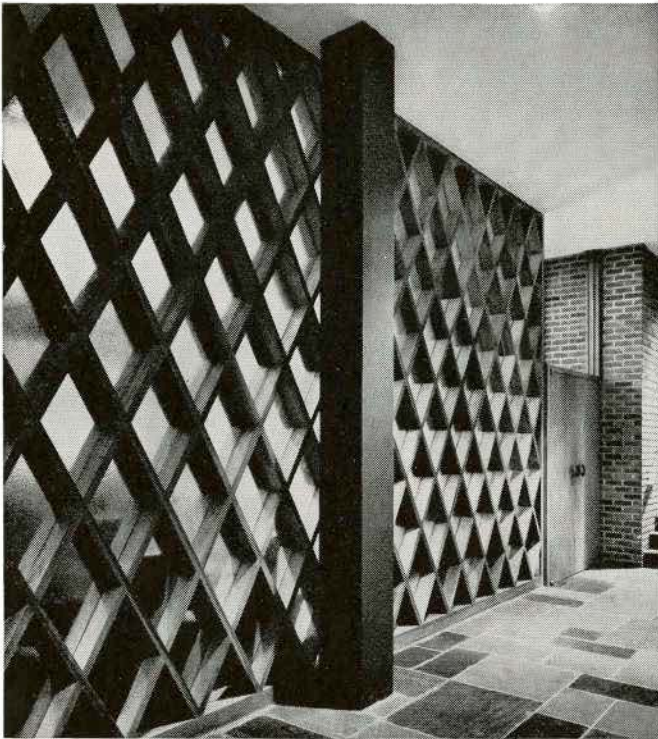
# for new answers...look to WOOD

What matters creativity—unless materials at hand can translate the blueprint into reality? Wood can modestly boast of its versatility, of its close association through the centuries with the highest aspirations of architects and craftsmen alike. It is no less true today! Thanks to the new technology of wood, laminated beams and other products undreamed-of ten years ago are making way for a new era of structural sophistication. Add to this the new work in wood preservatives, the new opportunities in exterior and interior colors, finishes and textures—you have what

amounts to a *new* material whose only design limit is your imagination! For more information on designing with wood, write to:

CANADIAN WOOD DEVELOPMENT COUNCIL  
27, Goulbourn Ave., Ottawa 2, Ont.

*for freedom of design,  
look to Wood*



The architect wanted a dramatic entrance screen for Temple Beth El. Egg-crate wood wall has insets of stained glass, provides rich shadow patterns and luminous color.



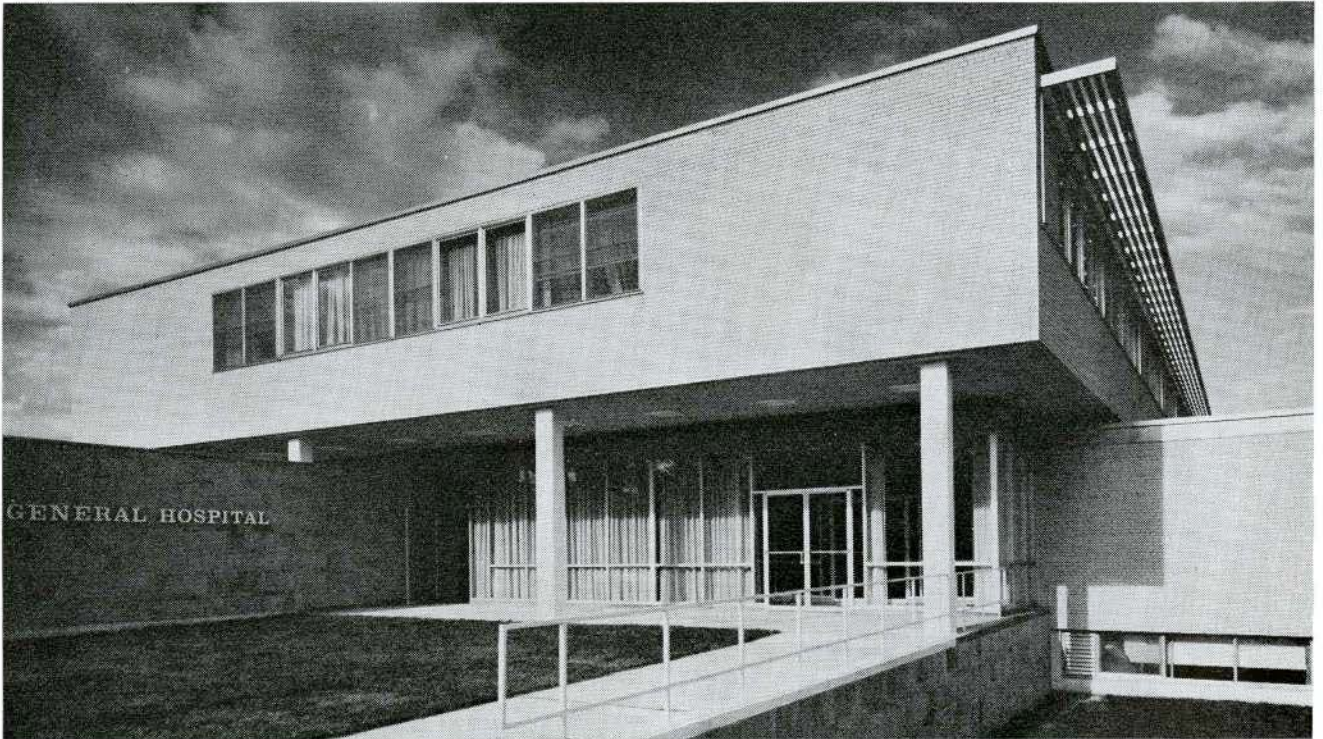
When design calls for unobtrusive elegance, wood is the natural choice. Here neutral hardwood panelling creates a handsome backdrop for objects of art in a private home.

Wood handles a double function in the design of this airy, weekend house. Imaginative hung construction was used to take advantage of wood's structural strength, and at the same time create a strong design pattern that gives distinction to a limited-budget project.



# TWINDOW Insulating Windows

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



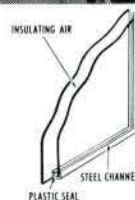
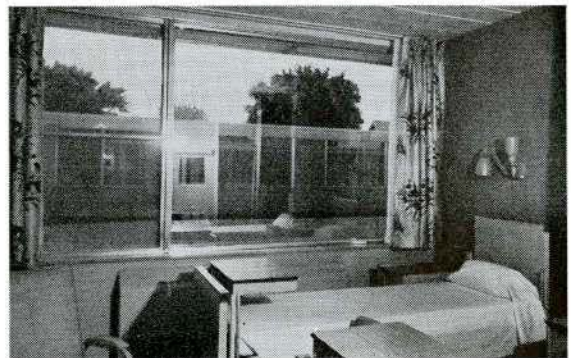
ARCHITECTS: *John B. Parkin Associates, Toronto*  
CONSULTANTS: *Agnew, Peckham and Associates*  
GENERAL CONTRACTOR: *Smith Brothers Construction, Ltd.*  
GLAZING CONTRACTOR: *Canadian Pittsburgh Industries Limited*

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

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

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

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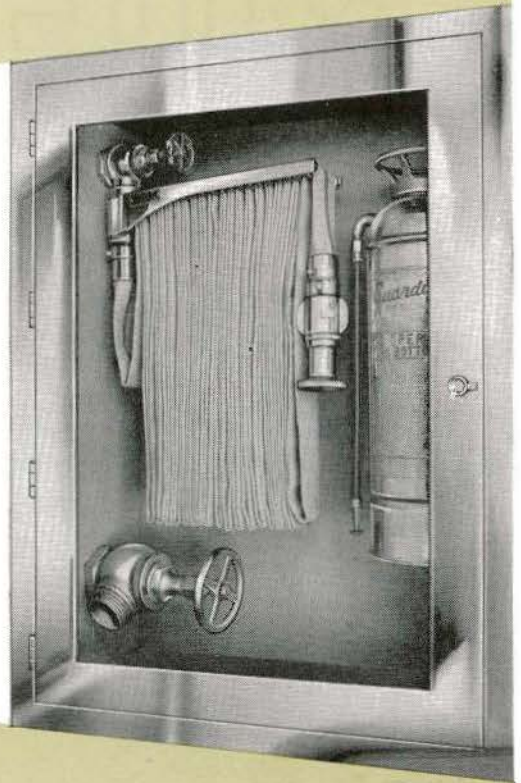
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If you prefer, Wilson & Cousins will build the cabinets to your design, consistent with local fire regulation. (We are now doing this for a number of leading Canadian Architects). We will be pleased to forward complete details and specifications on request. Write or phone

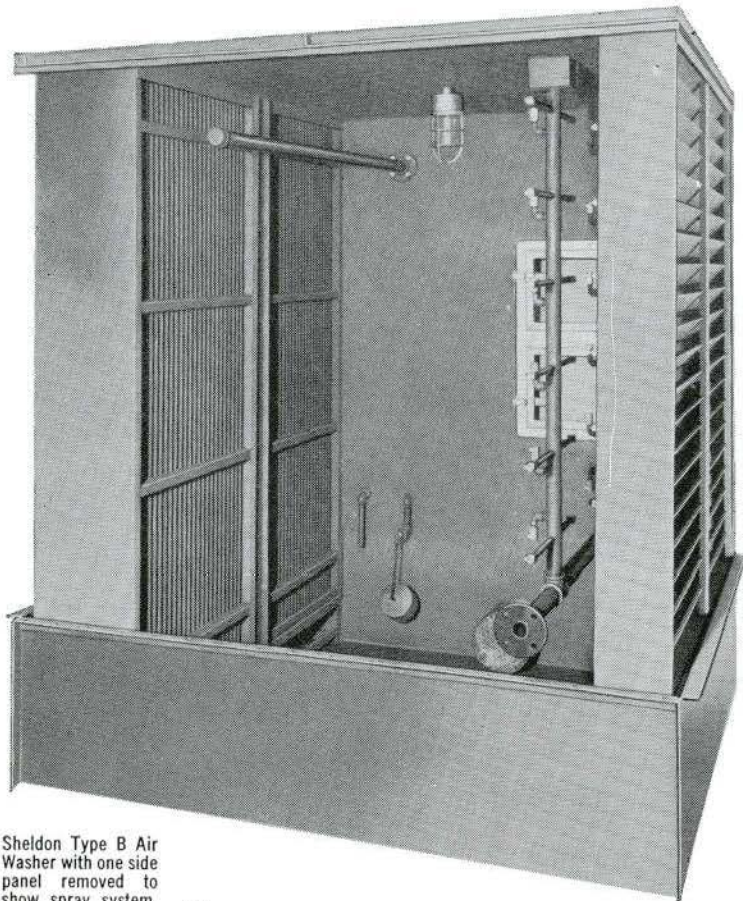
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# SHELDON AIRWASHERS



Sheldon Type B Air Washer with one side panel removed to show spray system.

## Types A, B, C and Capillary®

Sheldon Airwashers are an efficient, economical method of removing dust and dirt from air. They also perform such necessary heat transfer functions as humidification, cooling and dehumidification.

**The Type A** heavy-duty unit provides maximum humidification. Two opposed banks of sprays. Continuously washed eliminators.

**Type B** for general cleaning and humidifying. One spray bank. One set of flooding nozzles.

**Type C**, smallest, most economical model. Has wide spray nozzles for maximum wet surface.

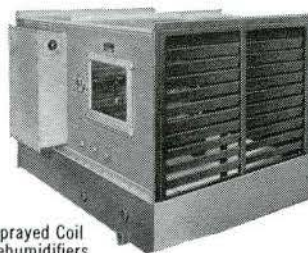
**Capillary® Airwashers** clean and humidify large volumes of air as needed in textile mills, etc. . . . Saturation efficiency as high as 97%.

Sheldon Airwashers are constructed with ease of installation in mind. Side and top panels are factory built one-piece components, for quick on-site bolting through angle iron flanges. This results in effective savings on installation costs.

*For complete information and data write for our Airwasher catalogue number 810, complete with illustrations, diagrams and performance tables.*



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Air Conditioning Unit



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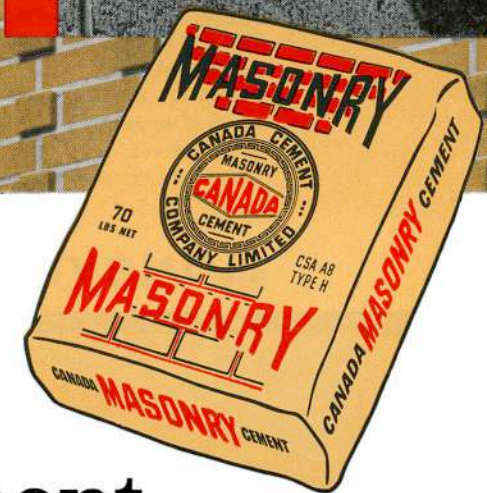
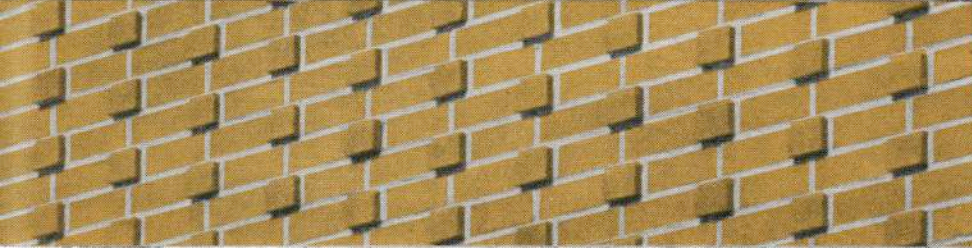
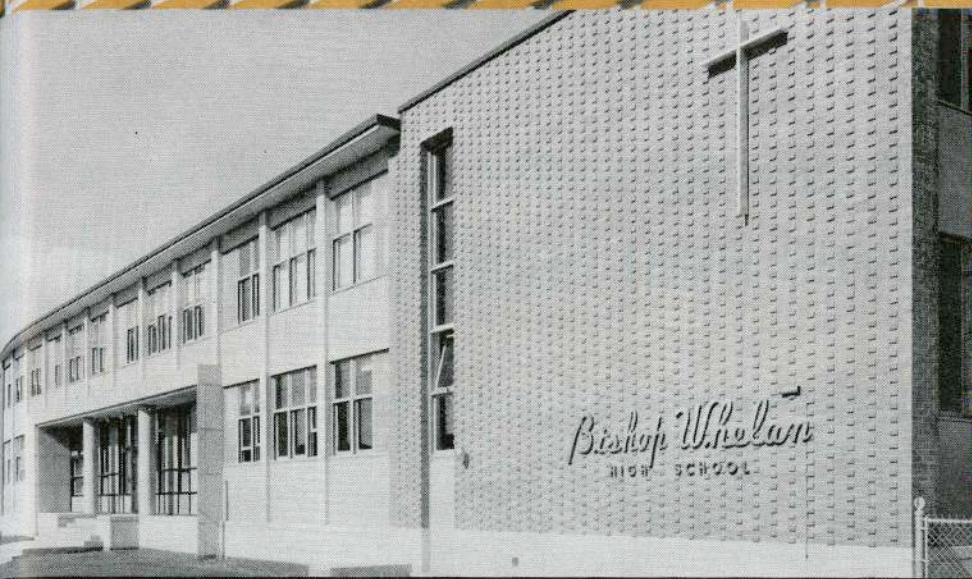


Multi-Zone Unit



Mechanical Draft





*architect, builder, engineer, owner... all are proud  
of the fine appearance of their buildings  
created by the mason's skill and mortar made with*

# Canada Masonry Cement

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*Architect: JEAN MARIE LAFLEUR  
 Consulting Engineers for  
 Reinforced Concrete Structure: LALONDE & VALOIS  
 General Contractor: J. L. GUAY & FRÈRE LIMITÉE  
 Contractor for Masonry Work: ROBERT & FRÈRE INC.*

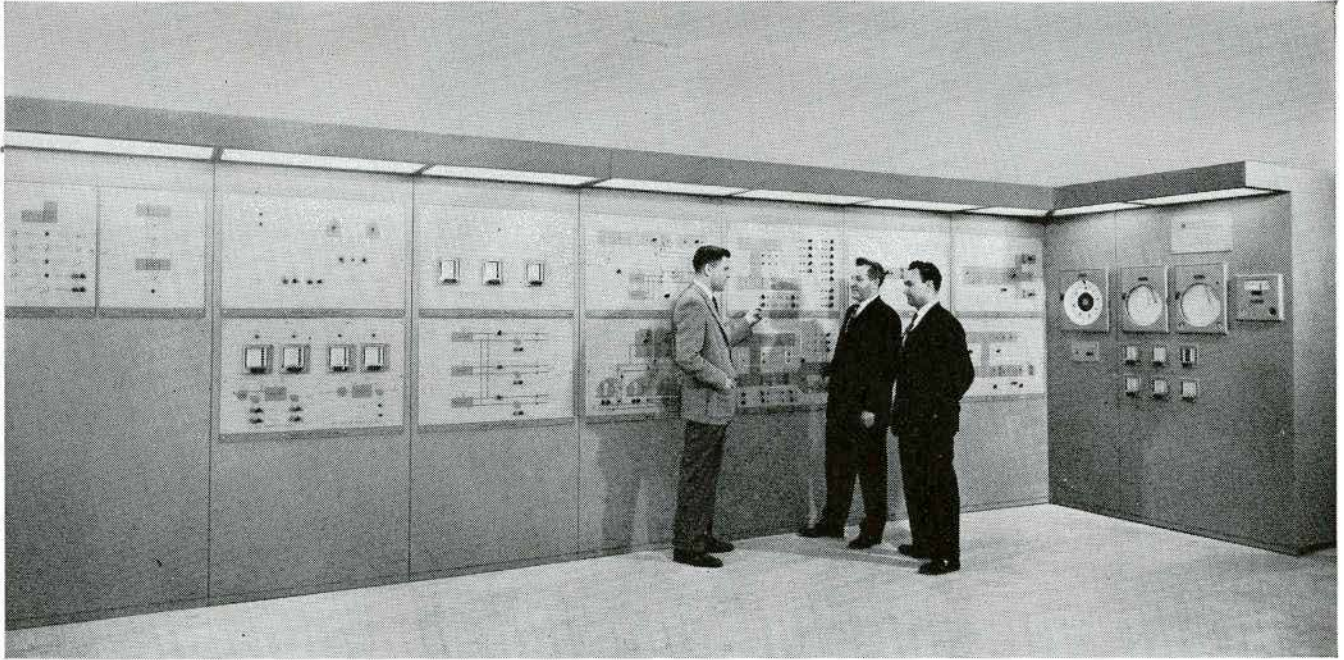
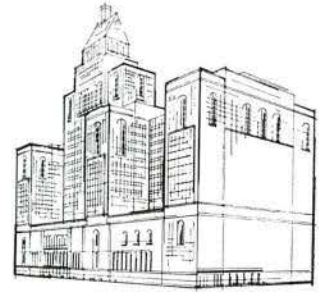
**BISHOP WHELAN HIGH SCHOOL, LACHINE**  
*Architects: PAUL M. LEMIEUX & J. S. MORIN  
 Consulting Engineers: BEAULIEU, TRUDEAU & ASSOCIÉS  
 General Contractor: SEMETEYS CONSTRUCTION INC.  
 Contractor for Masonry Work: EUGÈNE HAMELIN.*

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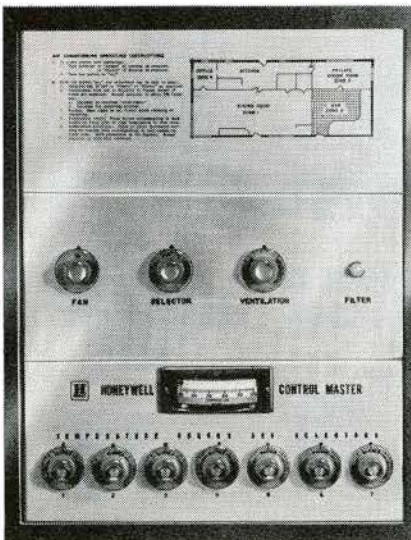
# A HONEYWELL SUPERVISORY DATACENTER saves man hours



**HERE'S THE SUPERVISORY DATACENTER.** Simply by pressing a button, *one operator* can read, adjust and record critical temperatures and pressures throughout the building, start and stop fans and other pieces of equipment. Each fan system is represented by a graphic module on the panel and a switch provides fast adjustment of temperature in any area that is too hot or too cold. Among other functions, the Supervisory DataCenter checks outdoor temperatures, return air tempera-

tures, mixing chamber temperatures, chilled or hot water temperatures, steam pressures and so on. And the Supervisory DataCenter indicates the temperature of supply air to the guest rooms, where guests can control temperatures with individual wall-mounted thermostats. *Architects:* Ross, Fish, Duschenes and Barrett. *Associate Architect:* Charles B. Dolphin. *Consulting Engineers:* Jas. P. Keith & Associates. *Mechanical and Electrical Contractors:* Canadian Comstock Co. Limited.

## HONEYWELL CAN PROVIDE AUTOMATIC



◀**SIMPLICITY PLUS ECONOMY.** For even the smallest air-conditioning system, Honeywell supplies the Control Master... a simple electronic panel controlling up to seven zones. The Control Master permits the building owner or manager to start or stop equipment, adjust temperature or fresh-air supply without leaving his office.

▶**AIR CONDITIONING SELECTOR** is designed for single-zone buildings such as groceries, branch banks and so on. The unit illustrated provides automatic control of year-round air conditioning in a 25,000 square foot area. It also regulates fresh air intake as required by internal conditions.



# IN THE ROYAL YORK HOTEL'S NEW WING fuel and power

## HONEYWELL CENTRALIZED CONTROL ENSURES EFFICIENT SYSTEM OPERATION, YIELDS UP TO 33% ON INVESTMENT

A Honeywell Supervisory DataCenter in the new wing of the Royal York Hotel, Toronto, ensures the most efficient performance of the heating and air conditioning system, simplifies its operation and, at the same time, saves money for the owners.

A Supervisory DataCenter such as this can save thousands of dollars a year on labor, fuel and power costs, can pay for itself in three to six years, and yield from 15% to 33% on the investment in a typical building.

Consider the savings in manpower alone. With Honeywell's Supervisory DataCenter, the adjustment of controls and instruments scattered throughout a building is centralized at one custom-built panel . . . and operated by only one man. He can detect, record and adjust temperatures in open areas many floors above. He can monitor equipment throughout the building. Without a Supervisory DataCenter, it would be necessary to have a crew of maintenance men patrolling the building to check equipment, measure temperatures and adjust controls for best performance.

A Supervisory DataCenter can be custom-designed to meet the exact needs of any building, new or old: factories, hotels, motels, apartments, schools, offices or churches. Only Honeywell manufactures all types of automatic control equipment: pneumatic, electronic and electric. Honeywell is a single source of supply for thermostats, valves, switches, indicating, recording and control instruments, and all the necessary components and accessories for its installation, service and maintenance.

For complete information, call your nearest Honeywell office or write Honeywell Controls Limited, *Commercial Division*, Toronto 17, Ont.

# Honeywell



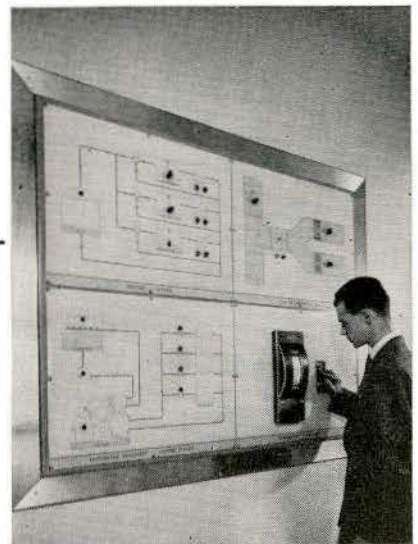
*First in Control*  
SINCE 1885

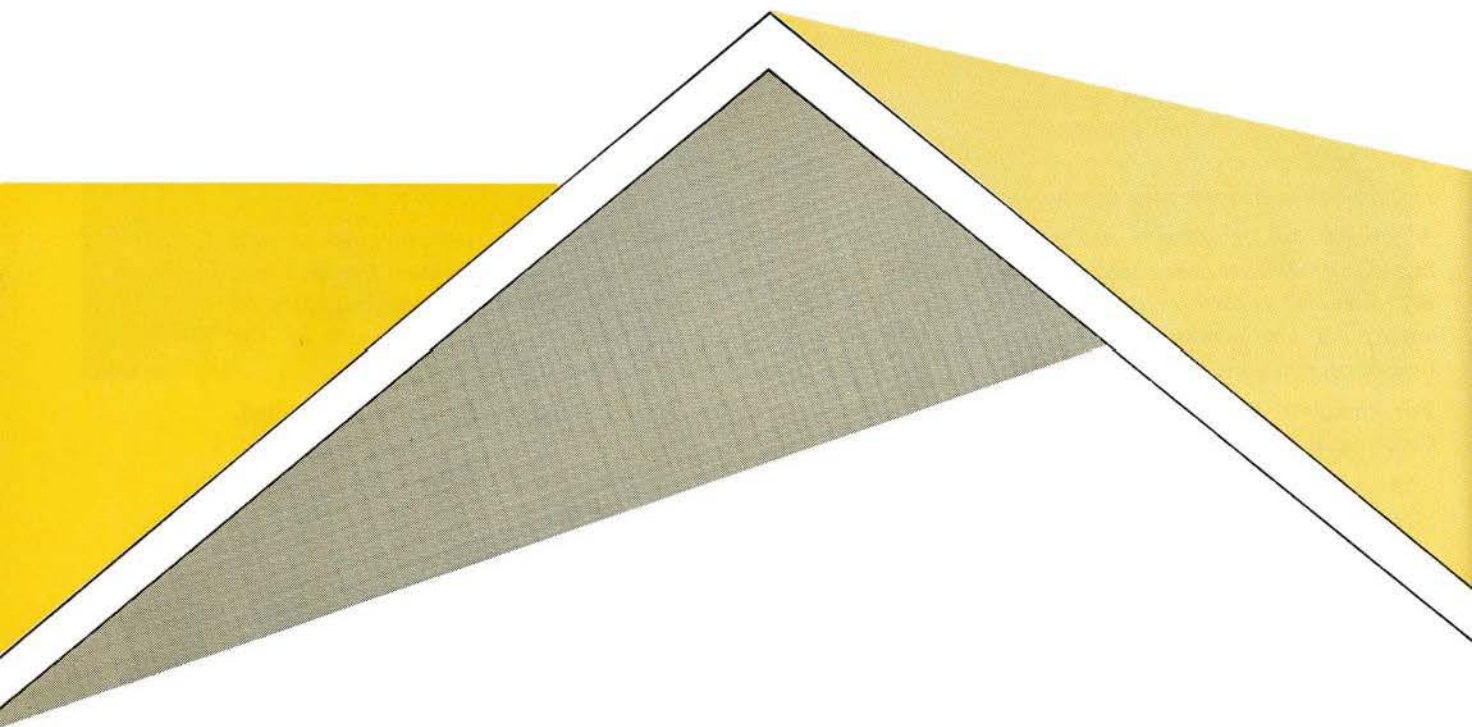
## CONTROL FOR EVERY SIZE OF BUILDING



THIS SUPERVISORY DATACENTER incorporates a graphic color layout of a complete air conditioning system. It was designed to give a medium-sized building all the economy and efficiency made possible by centralized control of temperature.

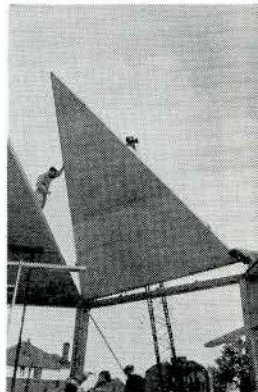
← HONEYWELL SELECTOGRAPHIC DATACENTER saves space by projecting floor plans and system diagrams on a console screen at the touch of a button. The operator can check temperatures and adjust key operating points for that floor or system. Thus one set of buttons—one compact unit—can regulate the air conditioning system of any size building.

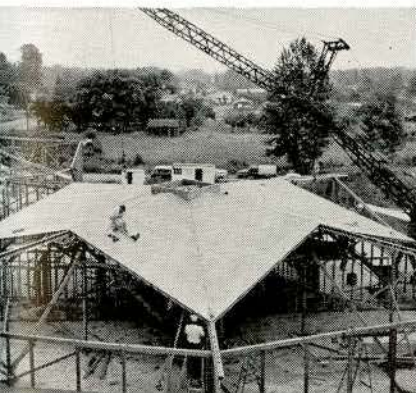
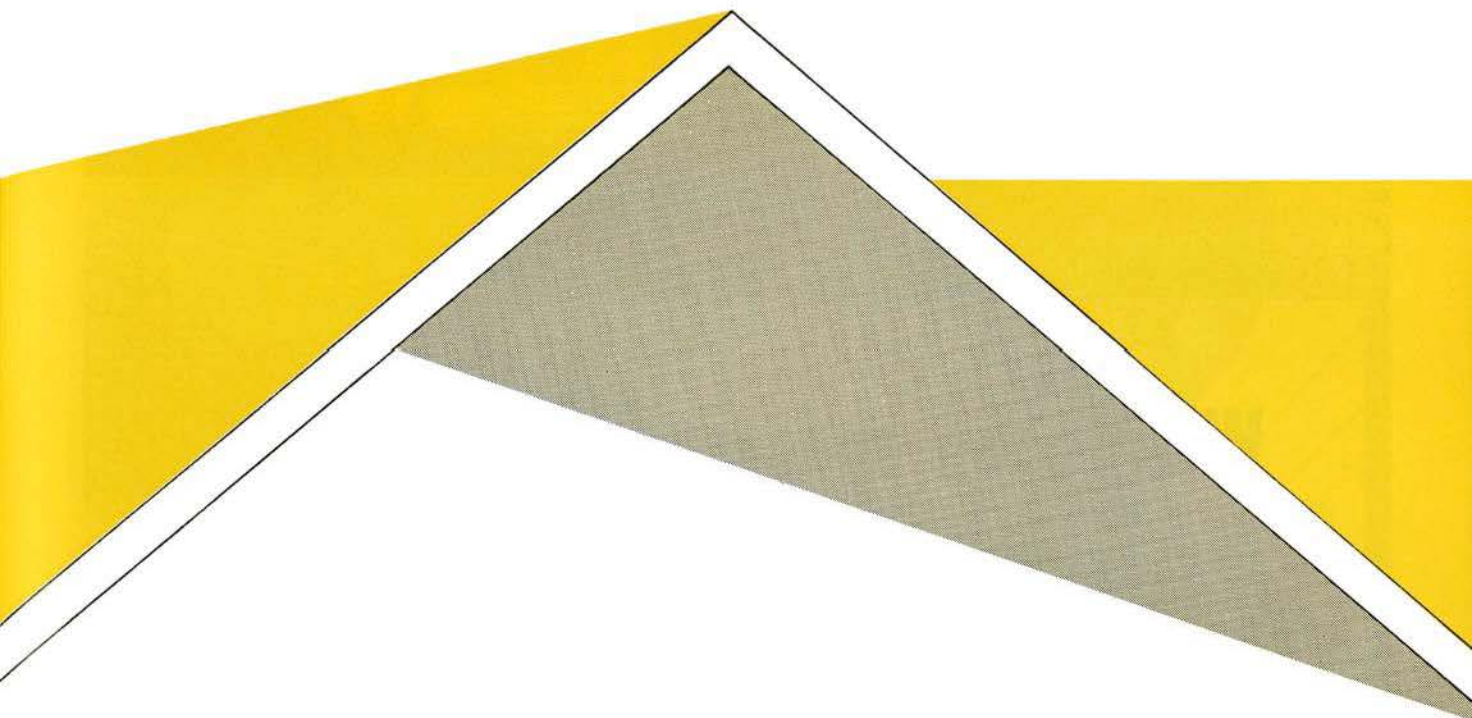




**STRENGTH IN SKIN** It is the Fir Plywood envelope rather than the light lumber framework that gives Stressed Skin Panels their structural strength and stability. This very modern method of construction is easily and simply fabricated in the factory or on the site, and in its almost unlimited variety of size and shape it offers new scope and opportunity to the designer.

This is one of the many stimulating ideas emanating from the plywood industry. It is good practice to keep plywood always in mind, and to discuss it with our nearest Field Office, or the headquarters in Vancouver. Our technical knowledge and information are sure to be useful.



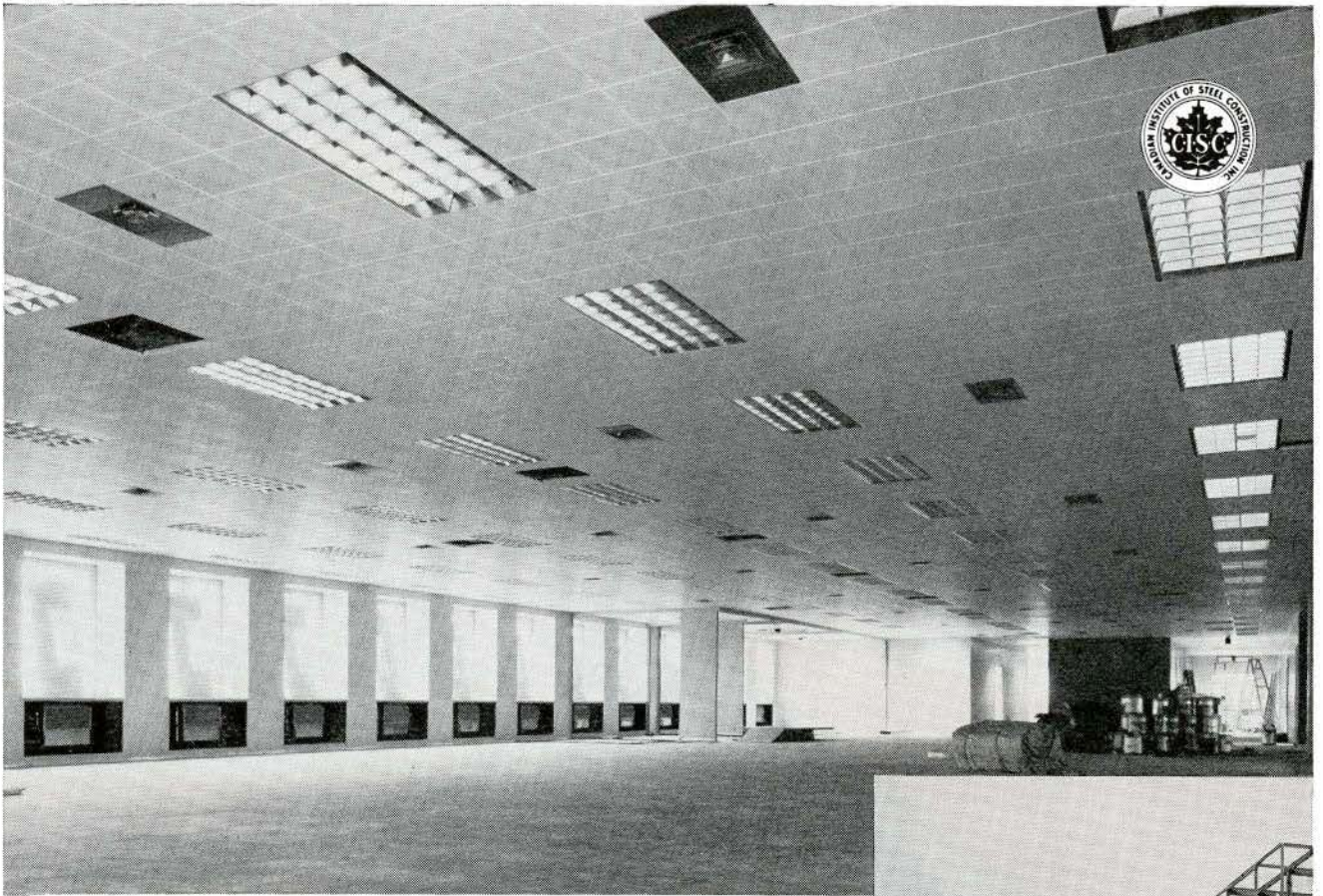


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## Wide open spaces...

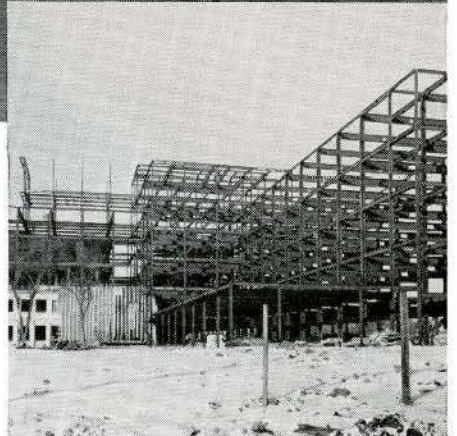
You get space, speed, flexibility and economy with steel construction—all were achieved in the Great West Life Assurance Company's new head office building in Winnipeg.

The use of long span steel beam construction gave large column free areas and allowed maximum flexibility of interior partitioning. Future changes in office and space requirements can be easily accommodated.

In addition, openings in the beam webs provided for passage of electrical, plumbing and heating facilities beneath the floor—without adding to the building's overall height. Every inch saved in height meant significant dollar savings.

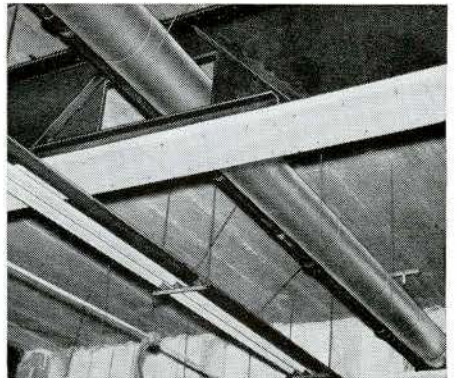
All the steelwork was erected during three months of bitter winter weather. This enabled the sub-trades to move in on time to complete their work.

Architects: Marani & Morris of Toronto and Moody Moore and Partners of Winnipeg. Consulting engineers on structural design: Wallace, Carruthers & Associates of Toronto. Contractor: G. A. Baert Construction Co. Ltd.



1800 tons of steelwork, fabricated and erected by Dominion Bridge, Winnipeg. Most of this was of "rigid frame" design.

Easier and more economical installation of piping was made possible by openings cut in webs of beams.



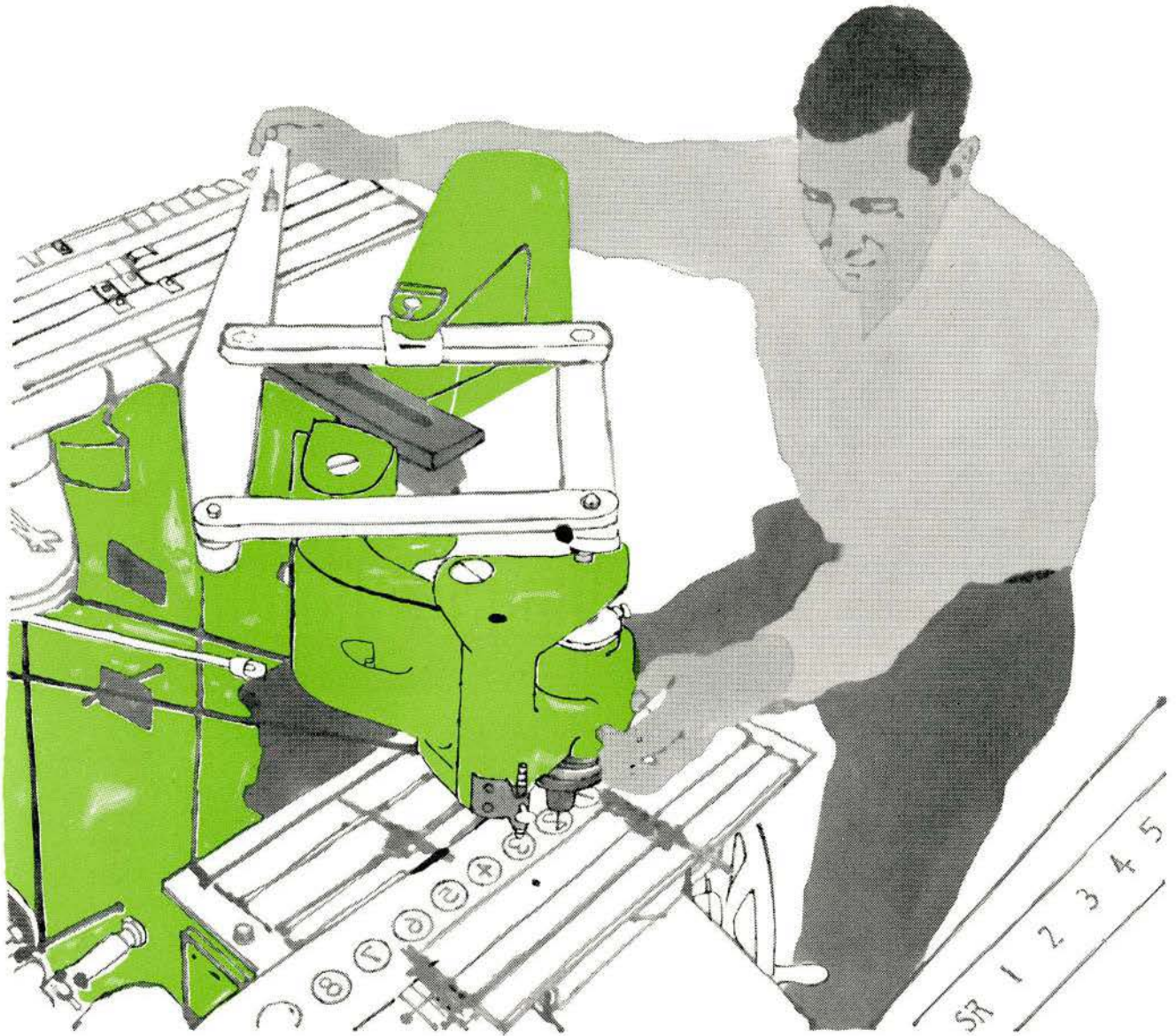
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structural steel by

# DOMINION BRIDGE

FOURTEEN PLANTS — COAST-TO-COAST

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One reason is the importance of harmonizing such fixtures—lobby and car operating panels, car and hall position indicators, car and hall directional signs and electronic touch buttons—with the quality design and finish of OTIS cars and entrances. An important step in this process is the engraving of modern materials such as stainless steel, satin bronze, nickel silver, aluminum and a variety of plastics by pantographing, as illustrated, from quality-controlling master patterns.

How much of the complete elevator installation does OTIS manufacture? Everything! Over 28,000 original and always available replacement parts. From the smallest switches in the machine room to the beautifully designed and finished cars and entrances—to make certain that every OTIS installation performs as a completely integrated unit.

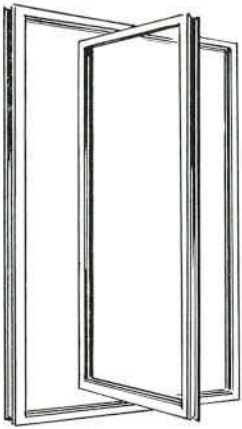


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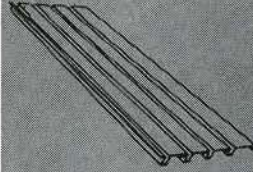
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QUALITY  
WITH  
ECONOMY**



Aluminum  
Pivoted Window with  
Thermal Barrier



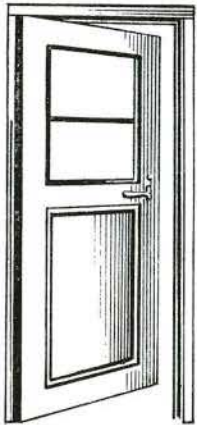
Aluminum  
Weatherstripped  
Projected Window



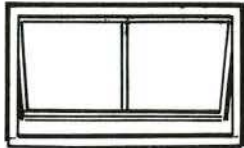
Steel Roofdeck

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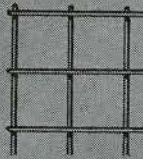
Industrial Steel Door



Steel Basement  
Window

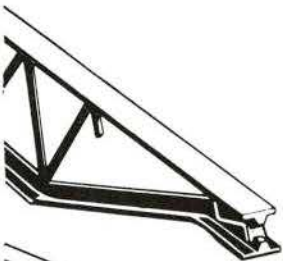


Steel Floretyle



Welded Wire Mesh

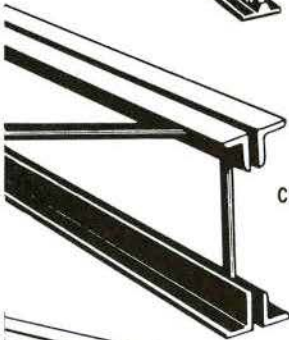
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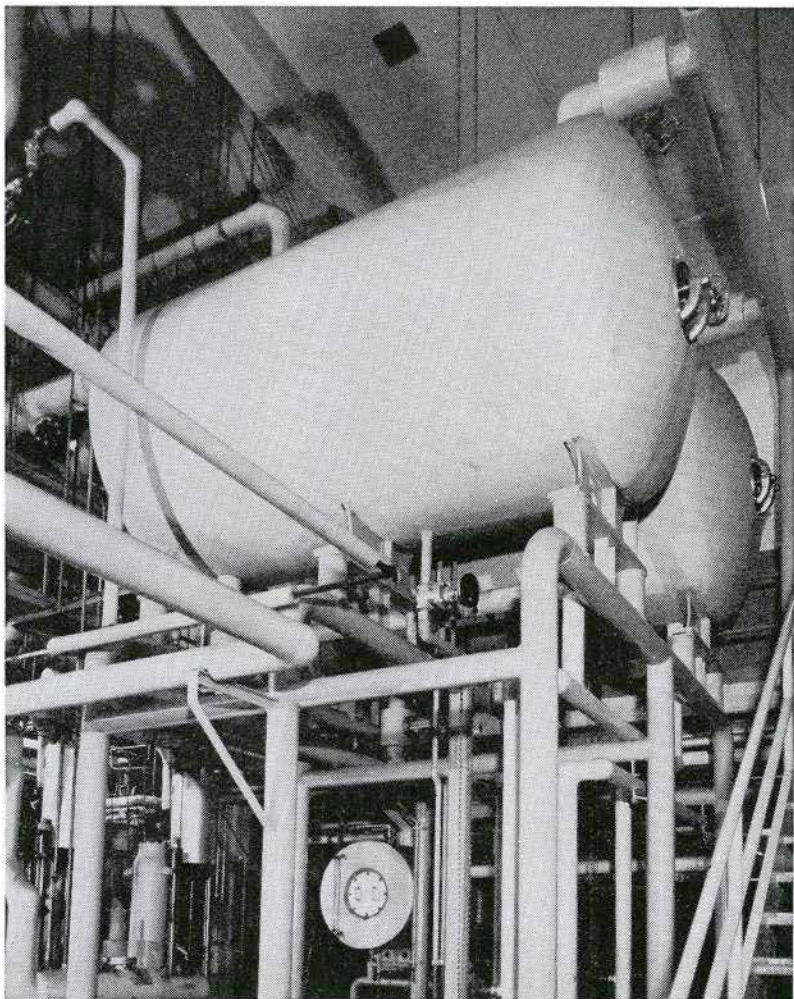
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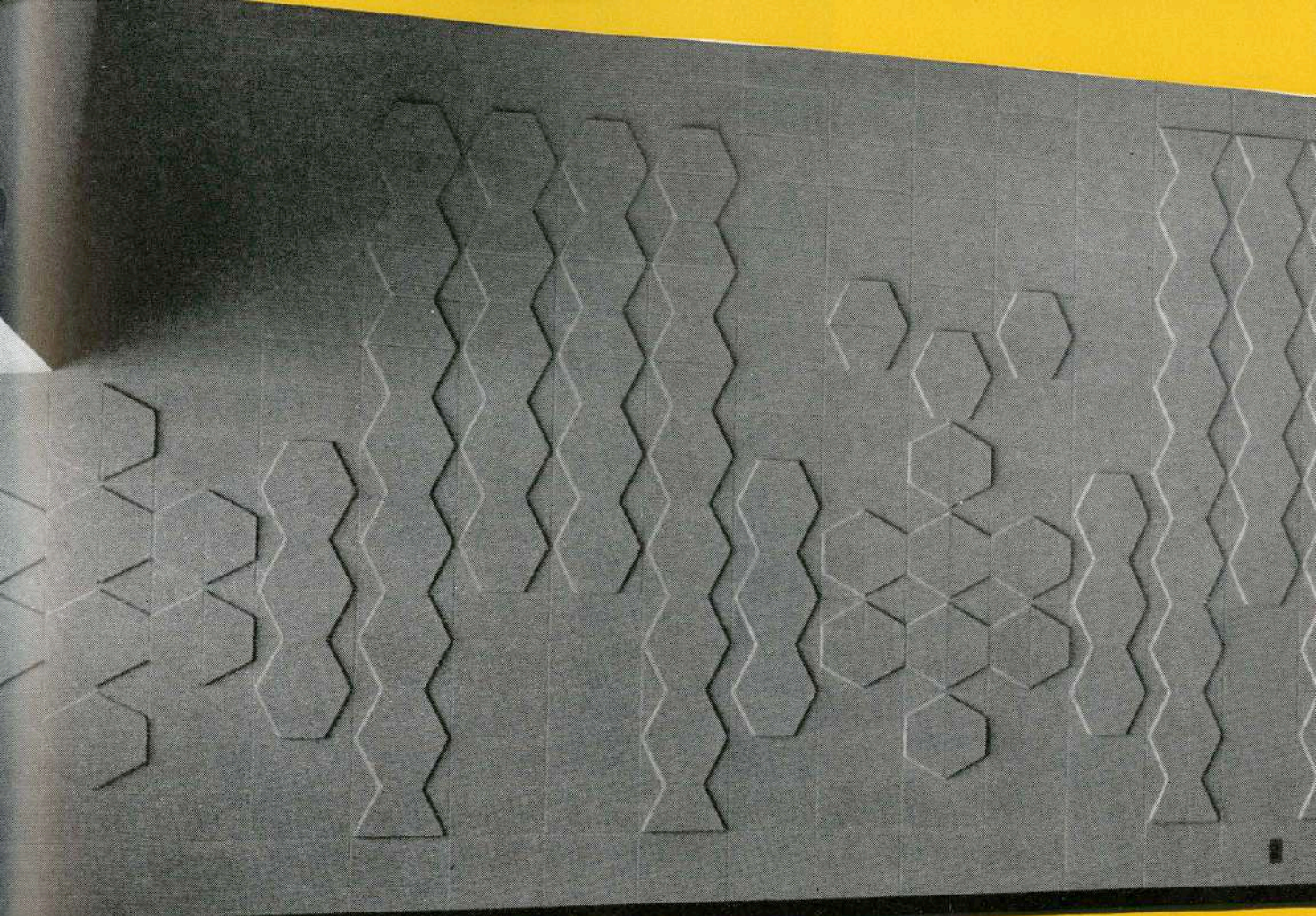
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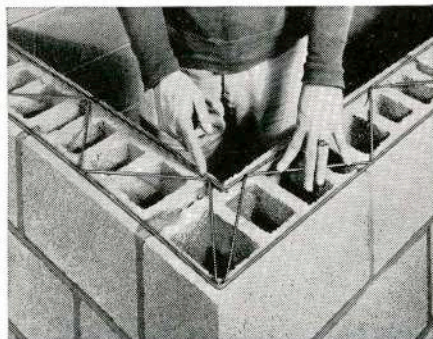
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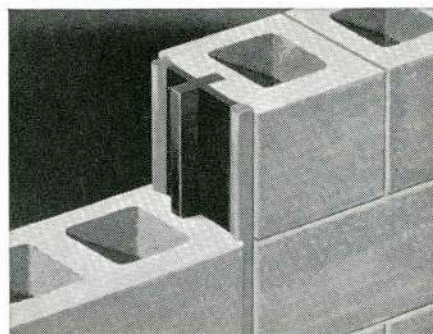
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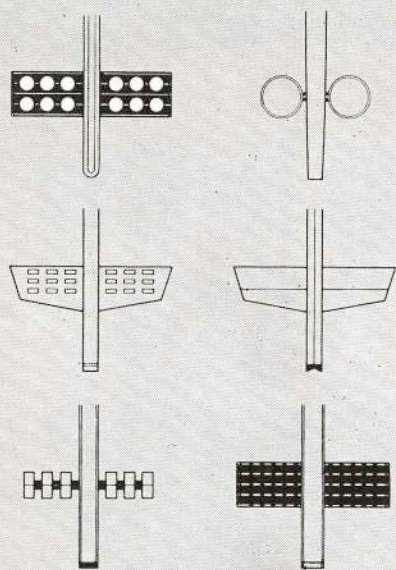
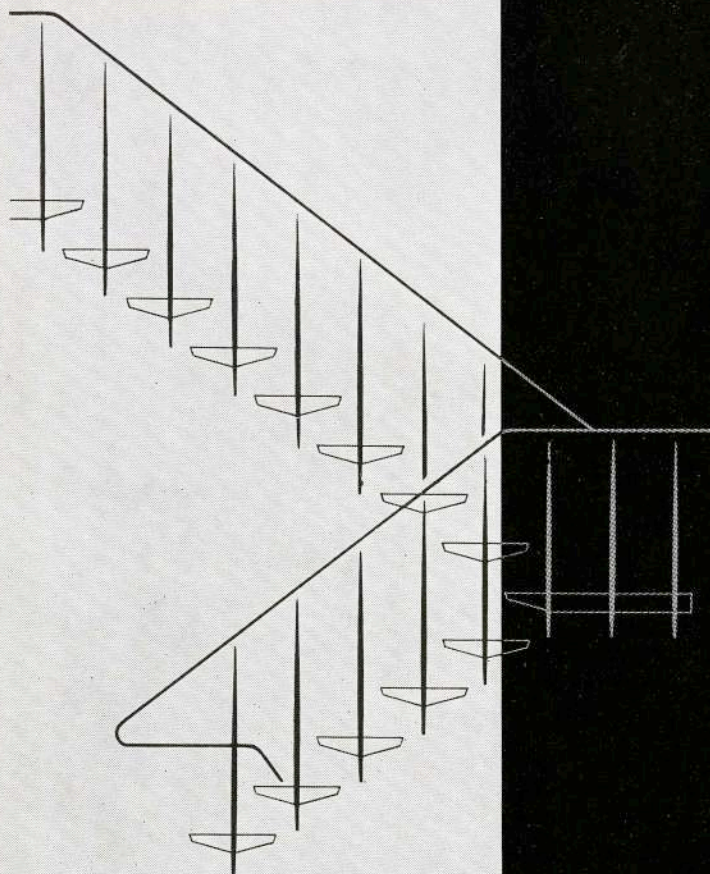
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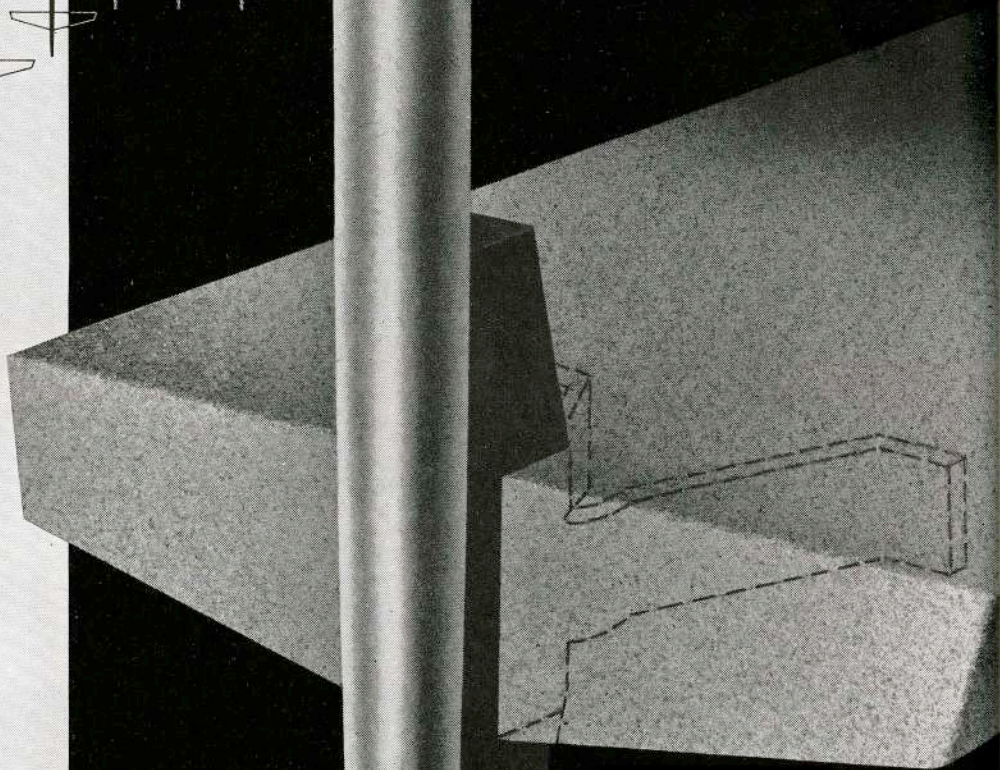
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SERIAL 417, VOLUME 37, NUMBER 5, MAY, 1960

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# Institute News

## RAIC Executive Committee

The Executive Committee of Council met at RAIC Headquarters at Ottawa on April 22-23 and the main agenda topic was the preliminary presentation of the report by the RAIC Committee of Inquiry on the Residential Environment, which is to be formally tabled in Winnipeg, June 1.

Other items of interest included an encouraging financial report on the 1960 first quarter operations of the *Journal*, and a first hand report by Collin Copeman, Chairman of the RAIC Package Deal Committee, on the fact-finding survey his Committee is now conducting into the implications on the package deal problem to the profession.

The Executive endorsed a study group recommendation that the RAIC and the Canadian Construction Association (manufacturers and suppliers section) jointly sponsor a new RAIC-CCA Joint Committee on Building Materials; and approved a proposal to conduct this spring, in co-operation with the Economics and Research Branch of the Department of Labour, a 1960 Salary Survey of self-employed and salaried architects. This would represent a first step toward assembly of vital data concerning the profession.

It was announced that the RAIC Travel Card, patterned on RIBA precedent, would be printed in June and made available upon request to members and students contemplating overseas travel this summer.

## Building Research Committee Develops Active Program

At the invitation of the National Research Council Division of Building Research, members of the RAIC Standing Committee on Building Research met at Ottawa on April 7-8. It was the first meeting of the whole committee since the 1959 Assembly at Windsor last May. Attending were R. G. Calvert, Toronto, Chairman; Thomas Howarth, Toronto; W. G. Raymore, Toronto; Roy Sellors, Winnipeg, (replacing John Russell); Ernest Smith, Winnipeg; Fred Lasserre, Vancouver; John Bland, Montreal; Douglas Shadbolt, Montreal (on invitation); Lester Page, Halifax, (replacing C. D. Davison); R. Stirling Ferguson, Ottawa; S. A. Gitterman, Ottawa; Pierre Morency, Montreal; Walter Bowker, *Journal* Managing Editor, Toronto (on invitation); Robbins Elliott, Executive Director RAIC.

Members discussed the problem of determining the best means of circulating pamphlets and brochures of a technical nature to the profession, and some doubt was expressed about the desirability of attempting circulation of this material except through the medium of the *RAIC Journal*.

Chairman Robert Calvert expressed a view that the task of the Standing Committee is to separate the program into two lines of endeavour, (a) preparation of product information, and (b) examination of technical problems.

The meeting reviewed the availability of a wealth of information in the Division of Building Research Library, where over 100,000 books and pamphlets are now stored. It was felt that architects should continue to be urged to make use of the DBR facilities by filing inquiries and being listed to receive technical literature as it becomes available.

The Committee examined alternative methods for practitioners to accumulate and retain research or materials information and the Executive Director advised that the AIA in early April had issued a very complete Building Products Register to members of the profession in the United States, and to the building industry at large.

Mr Elliott reported on steps which had been taken during the past eight months to establish a joint Committee on Building Materials between the CCA and the RAIC, such organization to be patterned on the Producers' Council Inc. of Washington, which has direct affiliation with the AIA. The principal objective of the Council is to prepare and circulate quality product literature for the design profession.

The Standing Committee decided to move jointly with the DBR to establish a method of recording the performance of buildings. The Division undertook to prepare a draft check list which would be designed to measure how buildings and materials stand up under use. Comparatively little information of any kind on building performance is known to exist.

The Committee was firmly of the opinion that increased emphasis should be given in the columns of the *RAIC Journal* to problems of a technical nature, and the *Journal* Editorial Board was urged to review technical data appearing regularly in Architectural Journals abroad with a view to introducing a regular column on research and technical matters in the *Journal*. The *Journal* and the Sub-Committee on Technical Problems was commended on the inauguration of a series of technical inserts in the *Journal* in January.

Decision was made to have the Sub-Committee on Technical Problems take action as soon as possible to send a questionnaire to representative organizations and individuals in private industry, Canadian universities and governments at various levels, to survey the amount and character of building research being conducted in Canada today. It was also agreed that the Committee would work with DBR to enquire into providing an acceptable method of cubing buildings.

R. F. Legget, Director, Division of Building Research, emphasized the desirability of active association by the architectural profession in CSA committees. He urged that the profession recognize the importance of establishing appropriate standards because of the relationship to adequate specifications and efficient building performance.

The Committee also met with senior officers of CMHC while in Ottawa. Next meeting of the Committee will be at Winnipeg on June 1.

## Architecture Abroad Committee

Two years ago the Under-Secretary of State for External Affairs proposed to the Royal Institute that the RAIC allow representation on a new committee to be known as The Architectural Advisory Committee for Foreign Buildings.

Establishment of such a committee resulted from the unprecedented growth and expansion of the Department of External Affairs into many new diplomatic posts during the post-war period. Departmental personnel have stated that experience has demonstrated the advantages of owning chanceries and official residences abroad. At present the Department owns 12 of its chanceries, 19 official residences and 16 staff quarters, out of a total of 65 Missions abroad. The long term intention is to build or buy in most foreign capitals where the Canadian Government does not own property. At present the Department of External Affairs has properties in New Delhi, Ankara, Canberra and Brussels on which it is proposed to build.

Late in 1958 the Executive Committee of Council appointed the following RAIC members to serve on the new Committee: Maurice Payette, Montreal; J. Lovatt Davies, Vancouver; and H. Gordon Hughes, Ottawa. A senior officer of the Department of External Affairs was to serve as Committee Chairman and E. A. Gardner, Chief Architect of the Public Works Department, was named to the Committee as a departmental representative. The

Committee has come to be known as the Architecture Abroad Committee.

At the outset it was agreed that members of the RAIC would serve on the Committee for a basic period of two years. Initially, the functions of the Advisory Committee were: (1) to provide the Department of External Affairs with the names of one or more Canadian architects, who in the Committee's opinion, are considered best qualified to design a particular building abroad; (2) to review and advise on the architectural quality, fitness, and merit of the designs and plans prepared by Canadian consulting architects for each building project; (3) to submit their reports and recommendations to the Under-Secretary of State for External Affairs, and where unanimity is lacking, to report both majority and minority views for consideration by the Department.

During the interval the Committee members have met at Ottawa on three occasions, once each in 1958, 1959 and 1960. Recommendations in respect to the design of the proposed chancery at Canberra have been made to the Department of External Affairs and announcement concerning the selection of an architect to undertake the commission is expected shortly. Action in respect to buildings at other locations is anticipated as soon as funds are available.

### News from British Columbia

The Vancouver Chapter continues to be an active participant with other civic groups in an attempt to find a solution to the Vancouver Civic Square problem. The architects recently presented a six point resolution to a meeting sponsored by the Downtown Business Association which was adopted. The resolution embodies a realistic and forward-looking appraisal of the problem and calls for the preservation of the existing courthouse without additions, for the redesign of the existing green space in front of the courthouse as a proper civic square, for the implementation of current City plans for a square south of the courthouse, and for the construction of additional courthouse accommodation in an annex building immediately west of the courthouse across Hornby Street. It is recommended that these factors be incorporated in the terms of reference of an architectural competition to secure the best possible solution to a subtle and difficult problem. It is hoped that this resolution will receive the final support of the DBA and City Council and will then be forwarded to the Provincial Government for consideration.

A new line of activity recently inaugurated by the Vancouver Chapter promises to yield interesting and valuable results. Not long ago Vancouver architect Frank Russell proposed a series of "Study Group" sessions to which a limited number of practicing architects would be invited to bring their problems and experience for informal discussion of a number of topics. This idea met with an enthusiastic response and received the support of the Chapter. Two highly successful meetings have been held. Topics such as the Mechanics' Lien Act, Insurance, Bonds, Certificates, and office procedures are slated for future discussions. It is increasingly evident that difficulties exist in practice regarding these matters, particularly amongst the smaller firms. Therefore it seems likely that the exchange of views on such topics will be rewarding, whether or not specific recommendations are generated by the group.

Recently elected members of the executive of the Vancouver Chapter for the next two years include Fred Hollingsworth as Vice Chairman and Membership Chairman, and Dick Gelhede as Treasurer. Bob Kerr changes roles and becomes Program Chairman for one year, while Bob Harrison and Chuck Tiers continue for one year as Chairman and Secretary respectively. The load of work on the Chapter executive, particularly the Chairman, continues to mount with the increasingly active participation of the Chapter in civic affairs in Vancouver as well as in professional matters. *C. A. Tiers*

### New Membership List

As a result of the RAIC *Journal* coming under the direct management and control of the Institute in January, the annual Membership List of the profession, for the first time in RAIC history, has this year been published at RAIC Headquarters. The 1960 List represents a substantial departure from the listing prepared in previous years. With the use of advertising material the RAIC List may, in some respects, be compared to the RIBA *Kalendar*. It seems possible that the Canadian Membership List will gradually evolve into an RAIC *Calendar* or *Handbook*.

This year's List provides the list of names of members in clearly legible type and it is hoped that the 1961 List may provide a list of architectural firms in addition to the individual members.

A feature of the List is the use of two full-page colour photographs of the Ottawa City Hall and the model of the winning entry in the recent Winnipeg City Hall competition.

### Graduate Assistantships — Architecture

The School of Architecture, University of Toronto, makes available to suitably qualified candidates two Graduate Assistantships to the value of \$2,500 each for the session 1960-61.

Candidates should possess a degree in architecture of an approved University and, in addition to reading for the degree of Master of Architecture must be prepared to give such assistance in the School of Architecture as may be required by the Director. In the first instance applications in triplicate, including a curriculum vitae and brief outline of the proposed subject of research, should be submitted on or before 31st July, 1960 to Dr Thomas Howarth, Director of the School of Architecture, University of Toronto, Toronto, Ont.

### Publish First Issue of PLAN, new Journal of TPIC

The Town Planning Institute of Canada has recently commenced publication of *PLAN*, a periodical journal which will carry articles of professional and academic calibre relating to community planning.

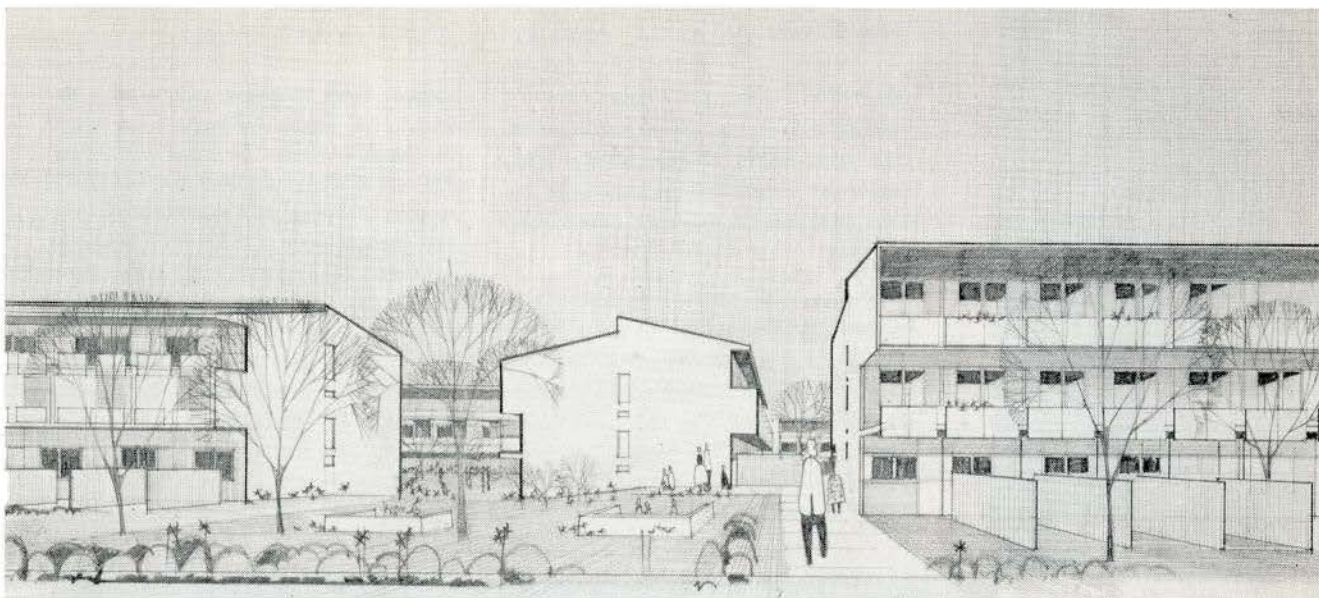
The first issue, published as Vol. 1, No. 1, is 68 pages in length and contains articles on the fundamental aims of planning, the history of planning in Canada, international trends in urban and rural planning, planning growth and change under the law, and the relationship between heights of buildings, traffic density, and rights of light. No regular publication schedule has been established as yet, but it is hoped this can be achieved in the near future.

While *PLAN* is intended primarily for the members of the Institute, it should be of interest to persons in many fields related to the planning and development of Canadian communities. Copies are available at \$2.00 each from Hugh T. Lemon, Secretary, Town Planning Institute of Canada, 11 Adelaide Street West, Toronto 1.

### For Cartoonists & Caricaturists

It has been observed that here and there throughout the profession there are members who combine a twisted sense of humor with a talent for drawing cartoons of the life architectural and its problems, caricatures of their fellow architects or just graphic whimsy of the kind decorating the conference room scratch pads after a long, dull meeting. The Editorial Board invites contributions of such work, on the understanding that nothing profane, lewd or libellous will be considered for publication unless it is the very best of its kind. **Continued on page 231**



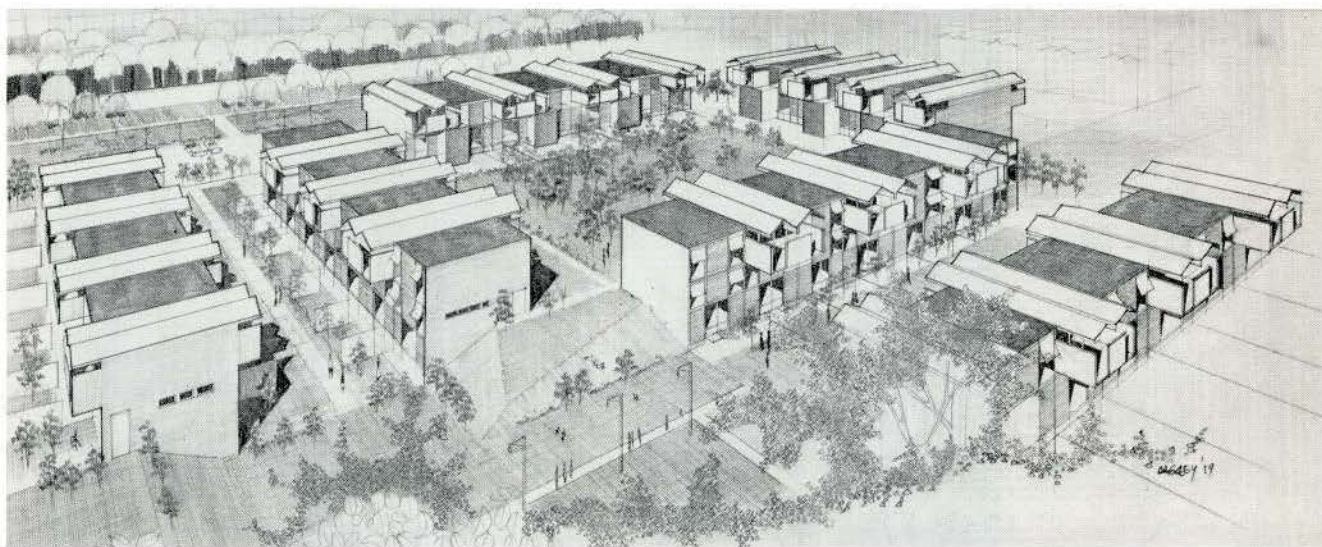
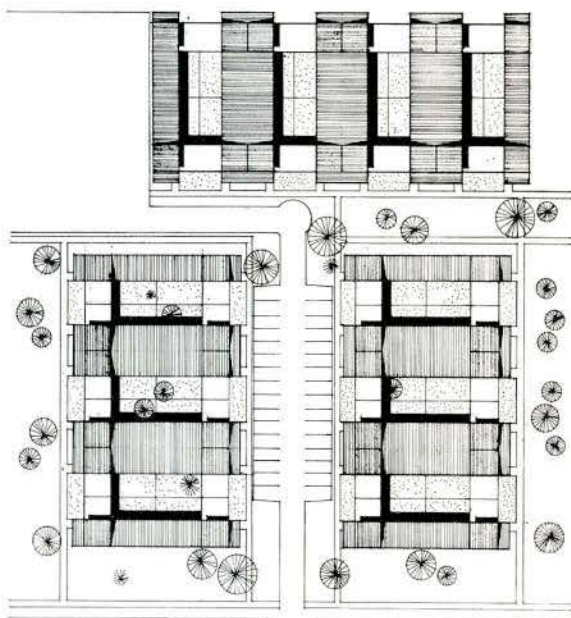


### *NEW FORMS OF FAMILY HOUSING*

A study which seeks an answer to the problems of the growing family and the desire of most people for a little bit of garden space to call their own has been prepared by James A. Murray and Henry Fliess. The study explores a range of dwelling types for high density residential areas rather than the single family house or the tall apartment building.

“New Forms of Family Housing” was shaped by three objectives: to give each family unit its own identity and expression in the design; to provide for each family unit direct access to its own private outdoor space; and to regain the quality of the human scale in high density housing. The study explores this complex problem and indicates, by way of example, four solutions.

The study was commissioned by Central Mortgage and Housing Corporation and published under the auspices of the Canadian Housing Design Council. Copies will be available through the Council.





## Basil Spence, *President, RIBA*

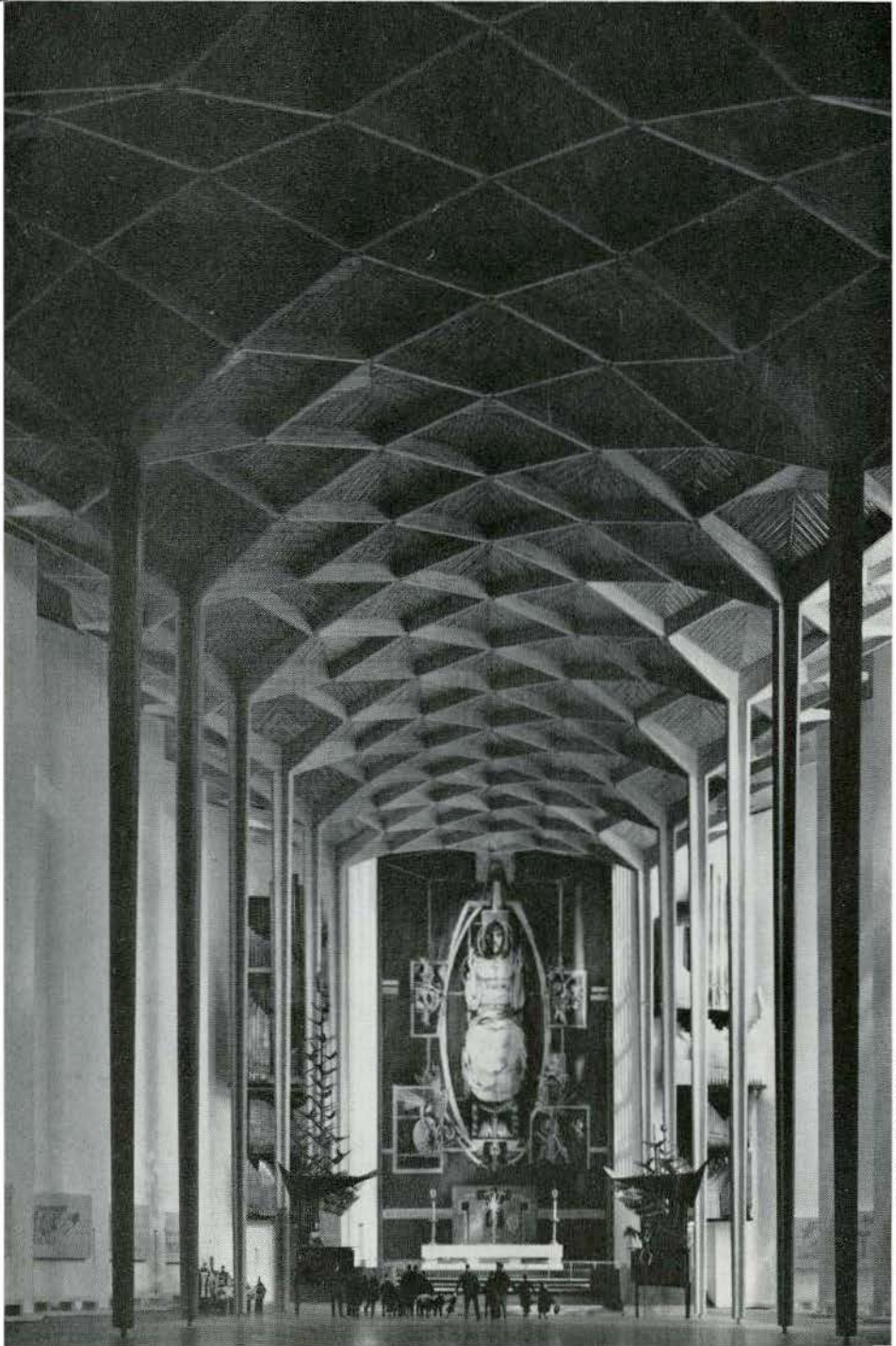
*KEYNOTE SPEAKER, 1960 RAIC ANNUAL ASSEMBLY*

ON THESE PAGES the *Journal* presents some examples of the work of Basil Spence, OBE, ARA, ARSA, President of the RIBA, who is to be the keynote speaker at the 1960 RAIC Annual Assembly at Winnipeg, June 1-4.

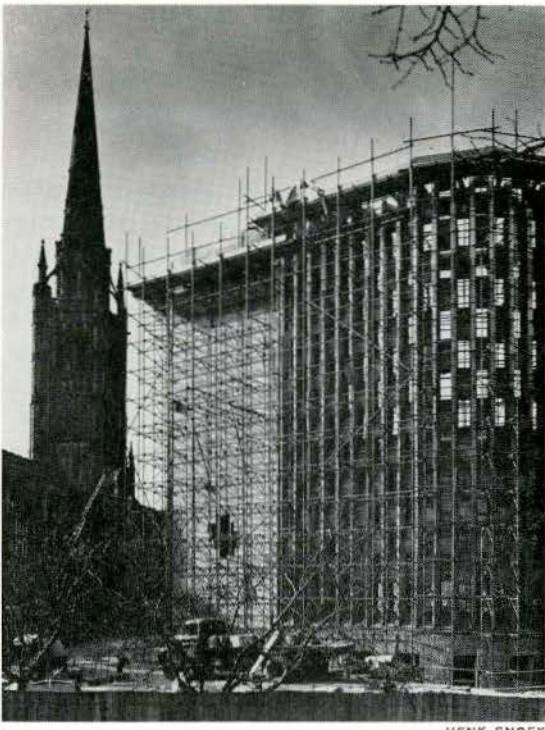
Both as a student and as a practising architect, Mr Spence has won many honors and awards. He is perhaps best known for his new Coventry Cathedral, the competition for which he won in 1951, and for his exhibition projects. His housing estate at Sunbury-on-Thames won the Festival of Britain award by the Council for Archi-

ture, Town Planning and Building Research. Mr Spence is Planning Consultant for the central area for Edinburgh University and is Consulting Architect for Southampton University and Nottingham University. He has done a number of University buildings in England and Scotland as well as industrial, commercial and hospital buildings.

Mr Spence was elected to the RIBA Council in 1953 and became President in 1958. His last official journey abroad was to South Africa in March, when he was elected an Honorary Member of the Institute of South African Architects.



ALFRED CRACKNELL



2

HENK SNOEK



3

HENK SNOEK

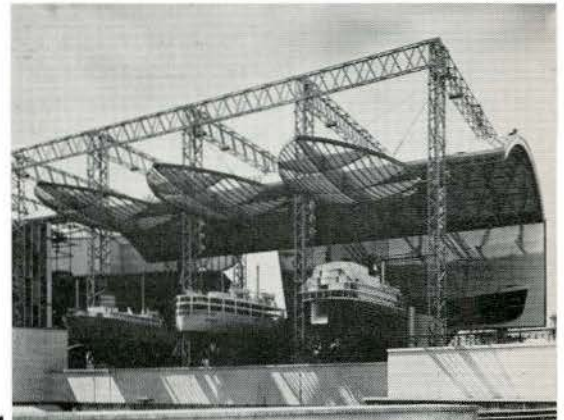
1. Cathedral of St. Michael, Coventry, interior of the model.

2. Progress photo of the Cathedral of St. Michael, Coventry, showing at the left the spire of the old Cathedral and at the right the great Baptistry window.

3. Interior of St. Catherine's Church, Sheffield.

4. "Sea and Ships" Pavilion, Festival of Britain, 1951.

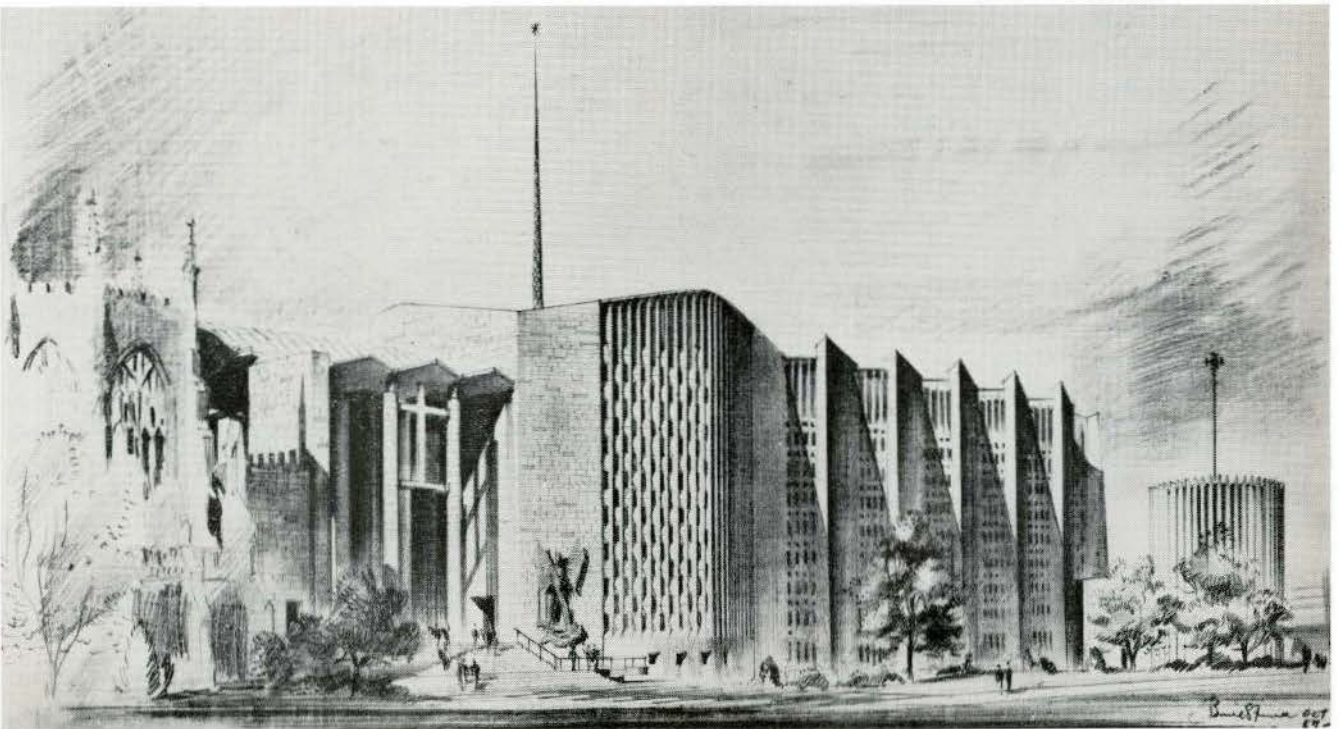
5. Perspective by Mr Spence of the Cathedral of St. Michael, Coventry, showing the ruins of the old Cathedral at left and the Guild Chapel on the extreme right.



4

ELLIOTT & FRY

5



MAKING THE RAIC  
INTERNATIONAL IN OUTLOOK

The 1959 theme of the RAIC Assembly in Windsor was "Architecture Beyond our Borders" and the all-day tour of Detroit and environs gave pertinence to the theme. The presence of Basil Spence and John Noble Richards in Winnipeg during the first week of June is a further reminder that our architecture in Canada – like all architecture – feeds upon stimulus and innovation from abroad.

How international in its outlook is the RAIC? If we are not concerned with fostering a distinctive Canadian architectural form (which will flower and flourish in any event, given time), should we not explore ways and means of having Canadian architecture exhibited abroad so as to reflect the image of architecture known and accepted by Canadians? Talks are presently under way with the Cultural Section of the Information Division of the Department of External Affairs with a view to arranging the co-sponsorship in other countries of outstanding examples of Canadian architectural design. At the same time the Architecture Abroad Committee, with a representation of three members from the Institute, continues to be engaged in the process of advising the Department of External Affairs on selection of private architects to design Canadian chanceries and residences overseas.

Some members of the Institute have been asking themselves if, at some point in the future, the RAIC should take out membership in the International Union of Architects. This matter is presently under study.

Latterly – during the past 18 months – the Institute has maintained a heavy volume of correspondence with both the American Institute of Architects and the Royal Institute of British Architects, and has received a wealth of advice and information, through letter, pamphlet and brochure, to assist the establishment of several new RAIC projects, or the revival of old ones.

The senior officers of both Institutes met at New York in January to exchange views on mutual problems, and it appears possible that Canadian and American organizations of architects may be joined around the conference table in January 1961 by the leaders of Mexican and Cuban societies. Closer collaboration by architects living within this Western Hemisphere is a logical development as architecture in all countries gains in public acceptance. Our obsession with the creation of closer unity and purpose within the component parts of the Institute here at home, need not blind us to the value in shaping a closer identity with "architect neighbours" a few jet hours distant in Europe, Asia, or South America.

L'INSTITUT DOIT ELARGIR SES HORIZONS  
A L'ECHELLE INTERNATIONALE

Le sujet d'étude de l'Assemblée annuelle de l'Institut tenue à Windsor en 1959 était "l'Architecture au delà de nos frontières", et pour illustrer ce thème, on a pu, à cette occasion, visiter Détroit et ses environs. La présence à Winnipeg de MM. Basil Spence et John Noble Richards au début de juin nous rappelle encore qu'au Canada, comme partout ailleurs, l'architecture se nourrit de stimulants et d'innovations qui lui viennent de l'étranger.

Jusqu'à quel point les vues de l'Institut sont-elles internationales? Si nous ne nous préoccupons pas de l'épanouissement d'une architecture typiquement canadienne (qui naîtra et s'épanouira de toute façon un jour), ne nous faudrait-il pas rechercher les moyens de faire connaître à l'étranger, par des expositions d'oeuvres canadiennes, la conception que les Canadiens se font de l'architecture? L'Institut est présentement en pour parler avec le service culturel de la division de l'information du ministère des Affaires extérieures, afin qu'ensemble nous puissions exposer dans d'autres pays, des exemples remarquables de notre architecture. En même temps, le comité de l'architecture à l'étranger qui compte trois représentants de l'Institut continue de conseiller le ministère des Affaires extérieures dans le choix d'architectes pour réaliser les chancelleries et résidences du Canada outremer.

Certains membres de l'Institut s'étant demandé s'il ne faudrait pas que l'Institut devienne bientôt membre de l'Union internationale des Architectes, l'affaire est présentement à l'étude.

Depuis environ un an et demi, l'Institut échange une correspondance volumineuse avec l'American Institute of Architects et le Royal Institute of British Architects. Nous en avons reçu quantité de renseignements sous forme de lettres, dépliants ou brochures dont nous nous sommes inspirés pour lancer plusieurs initiatives ou en ranimer d'anciennes.

Les hauts dirigeants des deux Instituts se sont rencontrés à New York en janvier afin d'étudier les problèmes qu'ils ont en commun, et il se peut qu'en janvier 1961, des dirigeants des sociétés du Mexique et de Cuba se joignent aux représentants du Canada et des Etats-Unis autour de la table de conférence. On ne peut que se réjouir de cette collaboration plus étroite entre les architectes de l'hémisphère occidental car l'architecture de tous les pays gagne à s'assurer l'adhésion du public. Notre préoccupation à resserrer les liens entre les parties composantes de l'Institut au Canada ne doit pas nous faire oublier tout l'intérêt qu'il y a à créer l'unité avec nos "voisins" architectes qui ne sont qu'à quelques heures de vol par avion à réaction, même s'ils se trouvent en Europe, en Asie ou en Amérique du Sud.



# REPORT / RAPPORT

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

*of the Royal Architectural Institute of Canada, Ottawa*

*du Comité d'enquête sur les conditions de l'habitation de l'Institut*

*Royal d'Architecture du Canada, Ottawa*

1960

The Executive Committee of the RAIC late in April authorized the production of approximately 2,000 additional copies of this official Report of the RAIC Committee of Inquiry on the Design of the Residential Environment. The overrun of *Journal* copies was done to serve a variety of requirements. The RAIC is furnishing 250 copies to Central Mortgage and Housing Corporation in accordance with the 1959 agreement between the Institute and the Corporation. As well, 500 complimentary copies of the Report will be forwarded to those who appeared before the Inquiry in major cities across Canada during the past year.

Copies of the Report may be obtained from the Executive Director, Royal Architectural Institute of Canada, 88 Metcalfe Street, Ottawa 4. Sale price to the general public is \$1 per copy.

The 52nd Annual Assembly of the Royal Institute directed "that a formal inquiry be established to investigate the broad range of problems associated with Canada's residential growth and development". The Executive Committee of Council presents this report to the 53rd Assembly, in discharge of that instruction.

So short a statement of a duty carried out tells too little of those on whom the burden mainly fell. The profession is indebted to the Chairman of the Inquiry (Mr Peter Dobush) and to his colleagues (Mr John C. Parkin and Mr C. E. Pratt) who willingly undertook this task at my request. They left their own practices for arduous weeks of travel and deliberation, so that the Members' purpose would be served.

During their visits to the major cities they were joined by provincially nominated Members, whose names appear with theirs on a later page. These gentlemen also volunteered whatever time was asked of them. The findings, derived from hundreds of interviews and inspections conducted from Atlantic to Pacific, are however those of the three eminent Architects I have named.

Your Institute undertook to meet certain administrative and other incidental costs of the enterprise, and to publish the report of the Committee of Inquiry. In consideration of the contributions offered by these Architects and by the RAIC as a whole, funds were made available under the terms of the National Housing Act to meet specified expenses of the Inquiry, chiefly those for travel and supporting staff, and for distribution of this report outside the profession. The Central Mortgage and Housing Corporation, as administrators of that Act, also tendered one of their members to serve as the Committee's Secretary. In this capacity Alan Armstrong has made a notable contribution.

These participants gave the Institute high hopes for its Inquiry nine months ago. Fulfilment of those hopes is due entirely to the hundreds of Canadian men and women who came forward out of their concern for this subject. They readily offered their experience in planning and housing to the Committee and answered its questions. The Royal Institute is grateful for these earnest offerings, whose authors are listed at the end. This is a debt we can repay to our own gain, by acting upon their significant suggestions.

There is much for every Architect and every Canadian to ponder in the findings of these three distinguished Architects. I commend them to the Assembly, to professionals in their own practices, and to the very evidently interested Canadian public. Few questions can more closely touch our lives than those that deal with the residential environment. They need continual study and action.

*Maurice Payette, FRAIC  
President*

1 June, 1960

La 52e Assemblée annuelle de l'Institut royal avait donné instructions "qu'une enquête soit instituée sur l'ensemble des problèmes que pose, au Canada, l'habitation, sa croissance et son aménagement." Le Comité exécutif du Conseil a l'honneur de présenter le présent rapport à la 53e Assemblée, en exécution desdites instructions.

Ces quelques mots révèlent que la tâche a été accomplie mais dissimulent tout le labeur qu'y ont mis ses principaux auteurs. Les architectes ont une dette de reconnaissance envers le président du comité d'enquête, M. Peter Dobush, et ses collègues, MM. John C. Parkin et C. E. Pratt, qui ont bien voulu entreprendre cette tâche à ma demande. Ils ont quitté leur pratique pour se consacrer, pendant des semaines, à des voyages et des délibérations en vue de réaliser le vœu des membres de l'Institut.

Au cours de leurs visites dans les principales villes, nos enquêteurs ont bénéficié de l'aide de membres désignés par les Associations provinciales, et dont les noms apparaissent plus loin. Ces membres aussi ont fait don du temps qu'on leur a demandé. Les conclusions de l'enquête, tirées de centaines d'entrevues et d'inspections de l'Atlantique au Pacifique, demeurent toutefois l'oeuvre des trois éminents architectes que j'ai nommés.

Votre Institut, dans cette entreprise, s'est chargé de certains frais d'administration et autres, ainsi que de la publication du rapport du Comité d'enquête. Vu la contribution qu'apportaient ces architectes et l'Institut royal en général, une certaine somme a été offerte en retour, aux termes de la Loi nationale sur l'habitation, pour être affectée à certains frais particuliers de l'enquête. La Société centrale d'hypothèques et de logement, chargée de l'application de cette loi, a aussi prêté un de ses membres qui a agi comme secrétaire du Comité. A ce titre, M. Alan Armstrong a rendu de précieux services.

Grâce à la participation de ces personnes, l'Institut fondait de grands espoirs sur son enquête il y a neuf mois. Ces espoirs se sont réalisés, mais avec la collaboration de centaines de Canadiens qui, animés d'un réel souci pour ce problème, se sont présentés devant le Comité. Avec empressement, ils ont mis à la disposition du comité leur expérience dans les domaines de l'urbanisme et de l'habitation et ont répondu aux questions qu'on leur a posées. L'Institut royal exprime sa reconnaissance aux auteurs de cette collaboration sincère, dont les noms apparaissent à la fin du rapport. C'est là une dette dont nous pouvons nous acquitter à notre propre avantage, en donnant suite à leurs importantes propositions.

Tous les architectes et tous les Canadiens trouveront ample matière à réflexion dans les conclusions de ces trois architectes distingués. A l'Assemblée, aux architectes dans leur pratique ainsi qu'au public canadien, je recommande d'étudier ces conclusions. Peu de problèmes nous touchent d'aussi près que ceux-ci puisqu'ils portent sur le milieu que nous créerons pour y habiter. Ils exigent qu'on les étudie constamment et qu'on y travaille sans relâche.

*Maurice Payette, AIRAC  
Le Président*

Le 1er juin 1960

## COMMITTEE MEMBERS

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<i>Chairman:</i>	Peter Dobush, B.A., B.Arch., MRAIC, AMTPIC
<i>Permanent Members:</i>	John C. Parkin, M.Arch., MRAIC, FRIBA, ARCA, ACID C. E. Pratt, B.Arch., MRAIC, ARCA
<i>Provincial Members:</i>	W. P. Pasternak, B.Arch., MRAIC Glen W. Parsons, B.Arch., MRAIC K. Izumi, B.Arch., MRAIC, MCP, ARIBA James Searle, B.Arch., MRAIC Robert Gordon Cripps, B.Arch., MRAIC Guy A. J. Gérin-Lajoie, B.Arch., MRAIC D. W. Jonsson, B.Arch., MRAIC A. F. Duffus, B.Arch., FRAIC G. W. Cummings, B.Eng., MRAIC, MEIC Warnett Kennedy, MRAIC, ARIBA, AMTPI, PIBC, MSIA

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<i>Secretary:</i>	Alan H. Armstrong, B.Arch., MTPIC
<i>Deputy-Secretary:</i>	P. A. Bowman
<i>Stenographers:</i>	Miss Elizabeth Wright, Mrs D. R. Mair



It is now clear that the most prominent aspect of the current development of Canada is the growth of her cities and that these will double in extent in less than a generation. Four-fifths of this new city extension will consist of residential districts, which is to say that there must soon be devised for millions of Canadians a living environment equal in area to all the urban surroundings we have inherited. The nation is confronted with the challenge to make this new environment as high in quality as the best of the old.

The architectural profession has a specific interest in the functional and visual qualities of that environment, and believes that it is possible to raise the standard of these qualities over what has already been achieved. Accordingly, the Royal Architectural Institute of Canada sets out for its Committee the following Terms of Reference to guide their investigation:

1. To make a study of the design of the residential environment in Canada and to find out how the architectural profession can contribute more effectively to the improvement of the quality of the design and layout of our residential areas, and to that end to inquire into:

- (a) The objectives to be sought in the design and layout of the total residential environment.
- (b) What factors at present shape the residential environment; what factors at present encourage, what factors discourage the achievement of these objectives; what can be done to modify these factors.
- (c) The ways in which these objectives may be more fully realized, with particular reference to the ways in which the architectural profession can contribute more effectively to their realization.

2. To make a report on their findings to the Executive Committee of the Council of the Royal Architectural Institute of Canada.

Il est aujourd'hui établi que le fait saillant de l'évolution actuelle du Canada est l'expansion de ses villes qui doubleront d'étendue en moins d'une génération. Les quatre cinquièmes de cet accroissement consisteront en quartiers d'habitation; c'est dire qu'il faudra créer dans un bref délai, pour des millions de Canadiens, un milieu d'habitation de superficie égale à toute la surface occupée par nos villes aujourd'hui. Il appartient à notre peuple d'aménager ce nouveau milieu selon des normes aussi élevées que ce que nous avons hérité de mieux du passé.

Les architectes portent un intérêt spécial aux qualités fonctionnelles et visuelles de ce milieu, et croient qu'il est possible d'élever le niveau de ces qualités au-dessus de ce qui a été réalisé jusqu'ici. En conséquence, l'Institut royal d'architecture du Canada confie à son Comité le mandat suivant, afin de le guider dans son enquête.

1. Le Comité doit étudier la conception du milieu domiciliaire au Canada et rechercher comment les architectes peuvent le mieux contribuer à améliorer l'élaboration et l'aménagement de nos quartiers d'habitation; à cette fin, le Comité étudiera:

- (a) les objectifs qu'il faut rechercher dans la conception et l'aménagement du milieu d'habitation dans son ensemble;
- (b) les facteurs qui jouent présentement dans la création du milieu d'habitation; les facteurs qui facilitent la réalisation des objectifs susdit et les facteurs qui nuisent à cette réalisation; ce qu'il faut faire pour modifier ces facteurs;
- (c) les diverses manières de réaliser ces objectifs le mieux possible, et en particulier ce que les architectes peuvent faire pour contribuer de façon plus efficace à la réalisation de ces objectifs.

2. Le Comité doit faire rapport de ses constatations au Comité exécutif du conseil de l'Institut royal d'architecture du Canada.

## ACKNOWLEDGEMENTS

## REMERCIEMENTS

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The Committee acknowledges the generous provision of space and facilities which made for a most useful schedule of public hearings.

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Le Comité exprime sa reconnaissance de l'espace et des services qu'on a, de si bonne grâce, mis à sa disposition et qui lui ont permis de réaliser avec beaucoup de succès son programme de séances publiques.

<i>EDMONTON</i>	City of Edmonton	October 19-21, 1959
<i>CALGARY</i>	Calgary Public School Board	October 22, 23, 1959
<i>REGINA</i>	City of Regina	October 26, 27, 1959
<i>WINNIPEG</i>	Government of Manitoba	October 28-30, 1959
<i>TORONTO</i>	City of Toronto	November 2-6, 1959
<i>MONTREAL</i>	University of Montreal	November 9-11, 1959
	McGill University	November 11, 1959
	City of Montreal	November 12, 1959
<i>QUEBEC</i>	Laval University	November 12, 13, 1959
<i>MONCTON</i>	City of Moncton	November 30, 1959
<i>SAINT JOHN</i>	City and County of Saint John	December 1, 1959
<i>HALIFAX</i>	City of Halifax	December 2-4, 1959
<i>ST. JOHN'S</i>	Government of Newfoundland	December 7, 8, 1959
<i>VANCOUVER</i>		January 18-20, 1960
<i>VICTORIA</i>	British Columbia Electric Company	January 22, 1960
<i>OTTAWA</i>	Central Mortgage & Housing Corporation	August 31-September 4, 1959
	National Capital Commission	February 8-12, 1960

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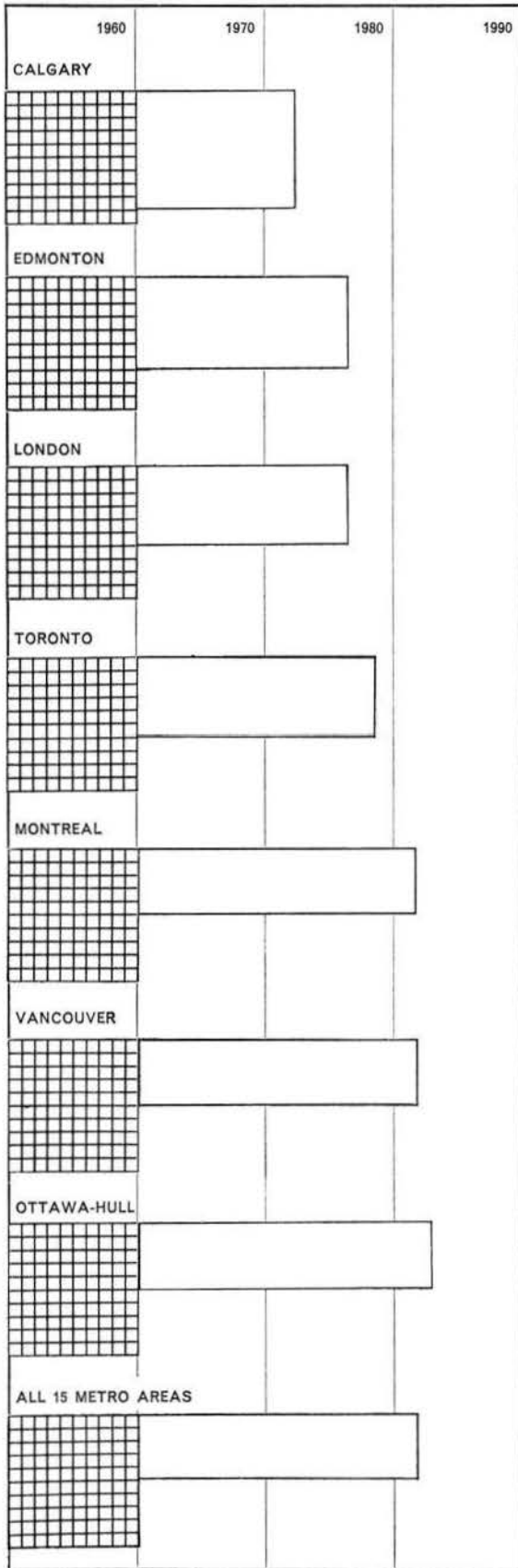
*The figures refer to paragraph numbers*

TO THE PRESIDENT AND MEMBERS OF THE  
EXECUTIVE COMMITTEE OF COUNCIL,  
ROYAL ARCHITECTURAL INSTITUTE OF CANADA:

*The Committee of Inquiry of three Architects, appointed by the  
President pursuant to a resolution of the 52nd Annual Assembly  
of the Royal Institute, submit the following findings and  
recommendations:*

# THE CHALLENGE

CHART I: HOW SOON OUR HOUSING STOCK WILL DOUBLE



1 Canadians are building housing accommodation in striking amounts. A million dwellings were built in this country in the 1950's, almost all in urban places and much the greater part of them in metropolitan areas. We have therefore concentrated our attention on these areas. If residential environment of good quality can be created there, it should be attainable in smaller towns; the reverse is not so.

2 In 1957 the Royal Commission on Canada's Economic Prospects predicted that in twenty-five years some 3,700,000 more houses would be built. Something like forty billion dollars would be spent to construct these new dwellings. Let us try to put these huge figures in terms of things we look at every day.

3 Several large Canadian cities, if they keep up their current housebuilding rates, will comprise twice as many dwellings by the end of the 1970s as they have today. Our metropolitan cities as a group have been putting up a new dwelling in each recent year for every 20 to 30 standing there at the beginning of that year. Calgary in 1958 erected a new dwelling for each dozen they had there on New Year's Day. Whatever centre we live in, we are challenged to bequeath to our sons and daughters twice the city we inherited. Chart I suggests how soon this may be.

4 As the result of all this building, drastic changes are in store for the shape of our city and for our favourite approach to it. Huge areas of farm land will be transformed when these billions of dollars are spent and these millions of dwellings built. The cities and towns of Canada are spreading out over new ground at a rate of nearly 100 square miles a year. Of that new urban territory, about 70 square miles a year becomes residential. In every direction the suburban viewer sees new houses and facilities for children and their mothers, who hardly ever leave this new world. After only a couple of decades, Canadians will have consumed in this fashion as much land as all our ancestors took up for towns since Champlain built his habitation. In a busy quarter-century, we are likely to put in place a human living environment as extensive as all the housing this country has ever known.

5 Many factors could upset these forecasts. Canadians may choose to spend more of our incomes on momentary creature comforts, and so less on urban building. Or we may have to divert earnings to noble or ugly endeavours addressed to men across the seas. But the public knows that hundreds of thousands of families now live in dwellings that are unfit for human habitation; while almost as many lack houses of their own at all. The temper of the nation is to build as much housing as we can. So we may safely assume that Canada's stock of urban dwellings will be doubled, if not in 1980 then in some year a bit later or a bit earlier. Precisely when we shall finish three million more houses makes no great difference in how we should handle our next

million. That million dwellings we must deal with in the 1960s, for better or for worse.

6 Few countries are urbanizing as rapidly as Canada. Our standards of comfort and convenience, combined with our climate, are met in none of the others. There are no foreign models of city-building exactly suited to our needs. Our new residential environment, if it is to serve us at all well, must be of our own devising.

### *City growth is urgent public business*

7 Each month a dozen square miles of rural land is being turned into city. When it was agricultural, probably 98% of it was owned by individual farmers; no house was near another. When it becomes urban, less than 70% of it will remain private; with dwellings much closer together, half the land overlooked by their front windows will be publicly controlled and maintained. These changes of ownership and responsibility, entailing heavy public expense, should ensure for urban development a major place in the affairs of all our governments. Urban municipal Councils spend half their time on issues of physical growth.

8 Those appointed to administer the National Housing Act have asked the highest national priority for these questions of urbanization:

"The next few years will be a decisive period in the planning of Canadian towns and the great urban regions based upon our metropolitan cities . . . But the successful building of cities cannot be measured only by their size and efficiency. As they become a predominantly urban people, Canadians will need to place greater value upon the quality of cities as the environment for a healthy and satisfying life . . .

"Housing represents a major part, but only a part, of the whole fabric of urban growth. The construction put in place in the next generation will represent half our urban environment in 1980. Much of its worth at that time will depend on the care and imagination with which it is installed in the first place. Cities, as producing centres and as end product, represent our greatest single asset."

*Brief of Central Mortgage and Housing Corporation to the Royal Commission on Canada's Economic Prospects*

9 The Royal Architectural Institute of Canada, in launching this investigation, was seized with a similar sense of public urgency:

"The present economic and population growth of Canada foreshadows a tremendous expansion of cities during the coming decades, with a vast extent of suburban areas. At the current rate of suburban home construction, a new city the size of Metropolitan Toronto is being created every five years in Canada. Of this huge building program, the value of the housing component alone is of the order of two billion dollars annually, and the quality of its design will be a lasting expression of our national character . . .

"The growth of our country has now reached a stage at which the architectural profession must firmly embrace its full national responsibility for that branch of architecture which most closely touches the lives of our fellow citizens."

*Report of RAIC Housing Committee, 1959*

### *Matching vigour with finesse in city building*

10 While public attention is turned to other matters, miles of dirt roads and straggling fences, scores of barns and brooks, acres of hay and underbrush disappear beneath the advancing city. In their places straight curbs, bright-painted boards, shingles, bricks, and glass come together, framing trim lawns dotted with young evergreens. Sometimes this transformation is well done; often it is not. Those who came to this Inquiry had little difficulty spotting defects in the new urban Canada. Whoever in his imagination multiplies those defects of environment for another ten million Canadians is liable to panic.

11 There are historic precedents in the successful fashioning of urban settings for religious festival or civil ceremony. With our greater wealth we can afford such central climaxes in our cities too. The newer challenge is nearer home. Can the political power, economic means and technical marvels in everyone's hands be reflected in fine domestic surroundings, as well fitted to their purpose and rewarding to the eye as were these great civic designs of the past? Our daily life is richer than other ages could know; we can live it in an urban fabric that will make it better still.

## OUR APPROACH

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12 The travelling public inquiry was chosen for us, as the particular method of tackling the uncertainties of future residential growth in Canada. Written and graphic presentations were invited in September 1959. These were followed by meetings with as many interested people, and inspection of as many residential areas, as our circumstances permitted.

13 In 15 cities from St John's to Victoria we met nearly

500 contributors and received from them over 300 presentations. A further 50 groups supplied written comments but for various reasons were unable to meet us. Still more people helped with these presentations: re-examining their own surroundings, filling out questionnaires, attending drafting committees, observing our public hearings. The officers of the National Council of Women and over 1400 suburban housewives across the country joined forces to put at our disposal

a mass of consumer information available in no other way. Tours were arranged for us to housing areas of special interest in all the cities we visited.

14 Chart II shows the areas of concern represented by our contributors; their names and affiliations are listed in greater detail at the end of this report. They brought to us facts and opinions, experiences and hopes. Their enthusiasm for this enterprise also indicated that concern for the future residential parts of our cities is by no means confined to thin professional ranks; it is deeply felt by thousands of Canadians. Newspapers and broadcasters wherever we went gave further evidence of this concern. The time proved ripe to canvass the reactions to post war housing developments of their builders, their owners and their occupants.

*The inquiry a medium of communication*

15 In what light could architects best examine the process of community building? We realize that familiar forms of dwelling and site layout have resulted from many factors, among which deliberate architectural choice may have carried little weight. Yet misgivings are most loudly voiced about new housing areas, not as financial risks or hazards to health, but as so many acres lacking clear sense of order or direct visible appeal. These are purely architectural complaints. To meet them will require fuller exercise of design criteria. But first, there must be understanding of the technical, financial and administrative influences now playing upon the community building process. This Committee of Inquiry acted in one sense as a vehicle to which those best informed in these important matters were willing to entrust the rudiments of their knowledge and their experience.

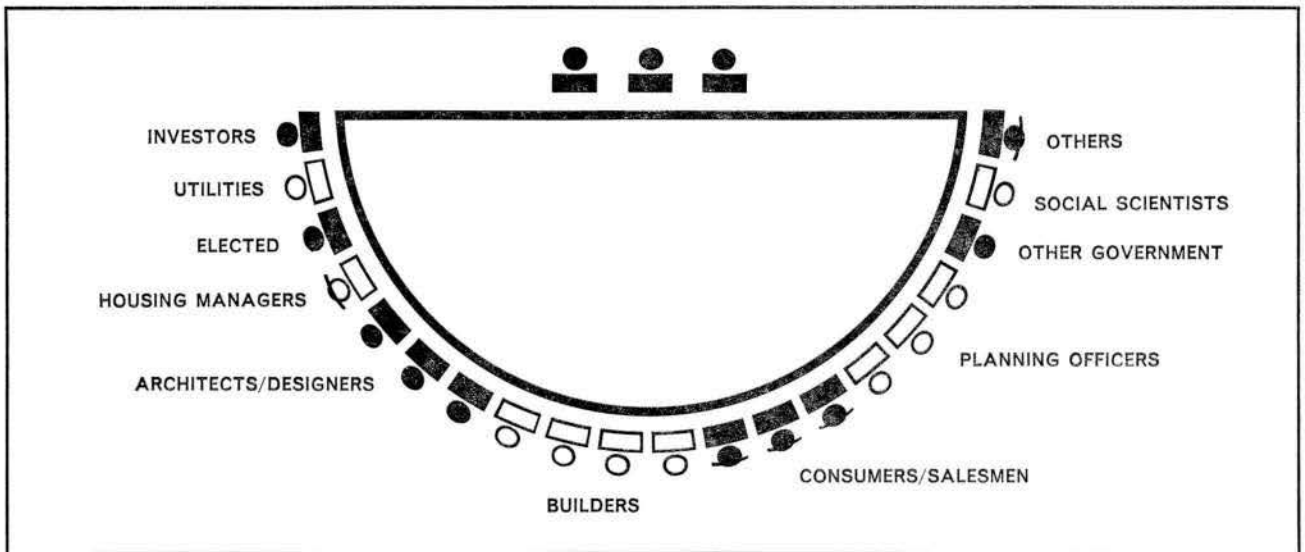
16 Many of the contributors who are not architects insisted

to us, however, that to compose all the equipment of the habitat into an appealing environment is a task for designers. It is for architecture and her sister arts to practise and succeed in the fashioning of environmental combinations. Site mensuration and utility engineering, landscape adaptation and road design, these in alliance with architecture are required to fashion domestic surroundings that look well and work well. Together they can compose for each site before construction commences a rounded preview, showing every part of the residential environment in place, the whole as efficient and handsome as the means at hand will allow.

17 After eight months of study and travel we have been able only to open this subject, to spot some places where a group of dwellings succeeded in use and appearance, to ask how it was done, to hear its authors tell what they learned from it. We have heard some of the circumstances of many cases. We gained an introductory briefing on housing development across the country, from the best informed students of our households and cities we could find. There are no infallible rules by which to lay out groups of dwellings well. Rather than imply that any one solution should be imitated, we have singled out no site plans to reproduce. At the same time, the main questions before us had to do with the response of a group of buildings to their site and to each other, rather than with their method of construction. So we have not entered into details of building technology.

18 We try to report the first necessities for success in design of residential environments to be built wholesale, and to describe those relationships among people that advance this art. From these can be projected conditions in which a finer habitat can be created. We met many people working toward that ideal. We hope as their communicants and as architects to bring its fulfilment a little nearer.

CHART II: OCCUPATIONS OF THE CONTRIBUTORS TO THE INQUIRY



## HOUSEHOLDS OF MANY KINDS

19 Over one-third of all urban Canadians now occupy post war dwellings. Even if most of them were happy with their houses and the surroundings in which they live, improvement would still be possible. To discover where to make it, one should listen especially to the dissatisfied. There are many complaints about new housing in our communities, voiced to this Inquiry and otherwise. If they come from a minority, it seems to be a growing one. Architecture and the construction industry, as well as officialdom, can learn much from these unhappy people.

20 Why do so many households now dislike the situations in which they find themselves? An important part of the answer lies in the essential identity of houses, the denial of differentiation, built into new suburbs. Typical outlying areas of our cities, indeed some whole municipalities, consist of nothing but bungalows. The detached house has one great attraction: it promises privacy. World War II stopped housebuilding but made possible a great wave of marriages; the offspring are the first generation to be brought up under theories of child-rearing that discard old disciplines on the budding personality. As the incomes of the parents rose after the war, they were eager to escape interference, to pay for privacy and isolation: the higher the salary, the wider the lot.

21 There is now a noticeable reaction. These very people have misgivings about the character of their housing, seen in bulk. The intensity of this dismay is evident in statements made to us on behalf of hundreds of housewives all across Canada, who have lived for some years in this kind of post war environment:

"Monotonous, boring, dull, rubber-stamp similarity, are some of the terms used to describe developments where the same (or very nearly identical) house is repeated over and over . . . This absence of interest and good taste (could) result eventually in a district degenerating . . . through lack of incentive to the individual owner to improve his property."

*National Council of Women*

"These places (built in 1954) looked like slums almost before they were occupied . . . How could they help it, being ugly, unimaginatively planned, the same plan used for every exposure . . . and garish colours shouting for attention? Good design would have cost no more."

*University Women's Club of Ottawa*

"It can be assumed that in order to create the best and most useful environment, greater attention should be given to scientific and aesthetic planning . . . There (need) not have been the development in some areas of monotonous rows of similar houses. If a scientific approach had been used in regard to safe access . . . the major causes of dissatisfaction would have been avoided."

*Victoria Council of Women*

22 The one objection these comments all contain, in com-

mon with most opinions about post war housing, is that of monotony. These widespread complaints betray a note of aesthetic despair, but also strong currents of human compassion. The bungalow, it is seen, does not suit every household at every stage in its increase and maturity. If we are to depart from the concentration on bungalows that marked the housebuilding of the 1950s, the case must first be made for other forms of dwelling. Then there needs to be an understanding of the main factors that have favoured one type of dwelling over all others.

### *Varieties in household composition*






























































23 The additions to Canada's stock of housing during the 1950s might have proved satisfactory if nearly all households consisted of a father at work and a mother at home with one or two children. In fact, less than half our urban households are like that. More than half have two earning adults or none; no children or many. The need for four-bedroom dwellings grew quite as fast between 1951-56 as that for three-bedroom units, in terms of family sizes. In spite of that, under our National Housing Act during 1958-59 we went on building 14 houses of three bedrooms or less, for each one with four bedrooms. In the next decade there is likely to be a marked increase in childless households, needing still another kind of dwelling.

24 Much attention is paid to the *net rate of family formation* as the mainspring of demand for housing. This phrase may seem an unfriendly way to talk about marriages. There will probably be a wedding solemnized somewhere in Canada for every four minutes in 1960. In addition, many married couples will immigrate to Canada during the year. By *net rate*, the statisticians mean the sum of these two sources of housing need, less the households dissolved by death or divorce and less households who emigrate. But household circumstances change for many other reasons as well. For every ten marriages in Canada, fifty families change their addresses — four of five of them transfer to different Provinces. At the same time twenty babies are being born in small families and another twenty in larger families. Two new names are being added to the old age pension list; and another household is being set up by some group of unrelated adults. Chart III portrays some approximate rates of change in Canadian household circumstances.

25 Each of these parallel streams of household circumstance is itself rising or subsiding; its trend can be measured. At the same time we are giving Federal guarantees to whole townships of three-bedroom bungalows. Does the projection of trends in household size cast doubt on the wisdom of that course? The vital statistics alone must mean that for every third birth-notice in a metropolitan daily, some family will have to abandon not only its house, but also its whole environment of similar little houses. Respect for neighbourhood property and loyalty to the values of the district must



CHART III: THESE CHANGES OF HOUSEHOLD CIRCUMSTANCES OCCUR EVERY HALF HOUR IN CANADA

A NON-FAMILY HOUSEHOLD FORMED			
7 MARRIAGES	    	 	
15 1ST OR 2ND CHILDREN BORN	    	    	    
15 3RD OR LATER CHILDREN BORN	    	    	    
2 PENSIONERS GET 1ST CHEQUE	 		
3 HOUSEHOLDS CHANGE PROVINCE	  		
3 FAMILIES DISSOLVE	  		
15 HOUSEHOLDS BUY THEIR 1ST CAR	    	    	    

be hard to cultivate with so much transplanting of people. Everyone acknowledges that the urban family must nowadays face frequent change of dwelling. Who is there to

advocate moves more often, and social uprootings more drastic, than job or ambition dictate? Yet these disruptions our typical new environment compels.

## OBJECTIVE: FREEDOM BY DESIGN

26 Old and young people in our cities are housed in all sorts of groups: single persons, families large and small. They encounter changing conditions: of employment and income, of ties of kinship. They display a wealth of different attitudes: to education, leisure, housekeeping, community interests and obligations. All these factors enter into the choice of a district appropriate for their residence, and the suitable form of dwelling within that district, at each phase of their life as a household. There are hundreds of possible combinations of these factors. No repetitive pattern of housing development can be expected to meet even a good part of the residents' proper choices through the years.

27 To correspond with the variety of households, there must be a wide range of dwelling types. They vary by number of rooms, their sizes and arrangement, the housekeeping effort expected of the occupants or provided by others, the structural linkage of one dwelling with another, terms of possession by rent or purchase, the amount and kinds of outdoor space for the use of the household. Dozens of these variations of type can be found in any small town.

Only a very few types are to be found in new Canadian metropolitan housing projects. Some types of dwelling, for instance the apartment with a minimum kitchen, depend on neighbourhood facilities like clubs and delicatessens to supplement what they offer. A few types of house are too rarely asked for to be financed by great lending institutions or produced by modern large-scale building technology. But richer mixtures of dwelling type should be possible than we have been getting.

28 Admittedly, wholesale blending of all kinds of household and type of dwelling is not feasible. A particular locality, given its distance and direction from centres of employment, its natural advantages of view and verdure, may offer sites that only the wealthiest can afford; even if a household of average income could buy land there, it might in the end find an uncongenial way of life being lived around it. But if economic extremes do not mix well, there is plenty of proof that grandmothers and brides, large families and smaller, owners and tenants could mix much better than most modern suburbs allow them to.

### *Mixture by ages of family heads*

29 To illustrate with a specific group, older people constitute an ever larger proportion of our household heads. One North American in ten today has passed his 64th birthday; in 1930 only one in twenty had. Only about a quarter of the income of this group is pay for current work; of the men, only a third are now employed, whereas in 1900 nearly two-thirds of them were. Meanwhile, although older people may suffer some minor disabilities, medical science and labour-saving appliances enable them to keep house for themselves to more advanced ages than they could a generation ago. Their sons and daughters are now fewer, and marry at earlier ages than they used to. These changes of circumstance, which seem more rapid to old people than to other groups, are not adequately served by current housing production. Some old persons may need nursing care from time to time, but understandably they cling to familiar locations and habits of living as long as they can. Too many are imprisoned in houses much larger than they need or can look after. There should be increasing numbers of small and convenient new dwellings tailored to their needs.

30 The new habitat designed for our society will thus offer to these old people the kinds of housing they can handle, within the surroundings to which they have grown accustomed. Considerable numbers of houses have been produced out of concern for this group. While most of these seem internally adequate, and some are very attractive, the financing of such housing too often forces it out to cheap land. This puts it far from the old haunts of its occupants, from households of other kinds and the community facilities they bring into being, perhaps remote also from public transit. The sponsors of these projects may be doing the best they can; pursuit of the blending idea would free these sponsors to do still better.

31 We know no rules of thumb for mixture of these various household and dwelling types. The ideal may be best understood by its opposite. If young children have to go over a quarter mile to visit anybody's grandparents, the blend is probably too coarse. Or if old people, sitting at their window, cannot expect to see some member of a younger generation, they may well be over-segregated. On the other hand, if the older and less sturdy members of the community find children constantly under foot, and cannot with a step or a turn of the chair return to their own quiet, the mix is probably too fine.

32 This is a question of design, not merely of numbers; a small group of these special-purpose dwellings can be so arranged that to enter it is to feel a shadow descend. Old people have to avoid tall flights of steps and long walks, so it is easy to build too large a project for them. In a populous city district, where escape to other kinds of surroundings is easier, the project for old people may well be larger than it should be in an outer area, where the bus comes only once an hour.

### *Mixture by tenure*

33 Blending of owner-occupants and tenants in the same zone is often opposed with great vigour. In reality, the new 'owners' are commonly residents with small investment in

their dwellings, who expect to be gone elsewhere in a couple of years; their attitudes to residential property are becoming hard to distinguish from those of leaseholders. In large parts of Montreal the two kinds of residents are very evenly mixed; they are successfully brought together in several English-speaking cities, by careful design and phasing of the construction for sale and rental. Prejudices against this mixture run deepest among those with unreal beliefs about ownership and unfortunate memories of cheap apartments.

34 Special opportunities to demonstrate good blending of housing types occur in development of large areas of land brought under public ownership by the Federal-Provincial land assembly partnerships in our major centres. In these the division of land and timing of construction can be done with that end in view; the insertion of public rental housing into these areas is consistent with the agreements between governments in many cases. Publicly owned rental housing schemes were among the best designed dwelling areas we saw. Far from detracting from surrounding properties, they can be architecturally the salvation of their districts. So long as these high standards of residential design are maintained, half the urban neighbourhoods in Canada would be better for the admixture of public housing.

### *Other bases of diversity*

35 The potential fields for the exercise of choice in housing go far beyond the composition of the household and structural form of the dwelling. Different households will prefer varying orientation and outlook from principal rooms. The quality of daylight, the appearance and use of the yard, the character of the distant view will all change with the season, the climate and the vegetation around the house.

36 Varying degrees of privacy are demanded by different households within their dwelling and their garden. Repeatedly we heard that typical new houses with open plans give far too little privacy to the members of growing families. The well-designed habitat will by imaginative design emphasize the individuality of the person and the household, not with ornamental edgings and stampings tacked on, but by giving these people every chance to be themselves in surroundings that really are of their own choosing. Without diversity of basic forms in the dwellings in the district, that choice cannot take place.

37 People of different ethnic backgrounds may use the various portions of their houses in quite distinctive ways. Especially is this said of the kitchen and eating space. Their diets vary, and so do their habits of cooking. The furniture and equipment put into houses vary widely from assumed standard dimensions. Some of this diversity of custom and taste appears in regional characteristics of housing. For instance, the colours of asphalt roofing come from outside Canada and are uniformly available across this country; but we were told the colours most popular in Newfoundland are rarely bought in Quebec, and so forth. On other regional preferences we could get very little systematic observation.

### *Elements of diversity worthy of study*

38 In Central Mortgage and Housing Corporation, Canada has a public agency offering house designs for sale,

and designing housing for construction in every part of the country. Several private concerns also sell designs and undertake housing construction in more than one region. Residential work coming out of these central design offices is unlikely to prove locally acceptable, either functionally or psychologically, without close attention to those distinguishing marks it should pick up from its setting. A few suppliers have established certain local preferences. We believe the designers of housing need much more comprehensive guidance of this kind.

39 *The Committee therefore recommends systematic and continuing investigation and measurement, by specialists with suitable qualifications, of the divergent needs and preferences of Canadian households; these should be examined according to their compositions, backgrounds, region of settlement, and whatever other factors may genuinely warrant expression in dwelling design, group siting and provision of internal or external facilities.*

40 One might assume that the production and marketing of new housing would respond more sensitively to these diverse needs than any deliberate allocating authority could do. But housing markets are notoriously slow to adjust to consumer preferences. And authority intervenes, through the National Housing Act and a host of local regulatory practices, to de-sensitize the Canadian market by virtually prohibiting some species of housing and guaranteeing profit to the producers of others. Under these influences the urban household in search of a new dwelling can be sure of finding only one sort for sale: the suburban bungalow.

41 All this argues that for many households, we should look for forms of dwelling other than bungalows. We should seek types that can afford equal privacy; that can be created at less cost in land and to the community; and that will prove more adaptable in the future. These other forms of dwelling should be combined with detached houses in neighbourhoods, so that in the normal history of a family it will not be compelled to break most of its social links merely to get one more room, or one less. The vision of great new city areas can be held to offer blends of efficient flats for working couples, houses with space on the ground for those who are rearing young children, and simple central cottages for

active senior members of the community. A person can look forward to normal changes in style of living with pleasure, knowing most friendly associations will remain intact and eyeing in advance the chosen corner to settle in later. Even the unexpected shift to another district or city could be taken in better part if the new environment were certain to offer various kinds of housing to accord with changing needs.

42 Architects and others involved in city design list one more benefit from mixture of types in housing development. They know from experience how hard it is to put together an interesting project by repeating one small building. Careful placing of a taller structure or some longer stretch of wall can change boredom to delight in the whole result. Perhaps this is an artist's reason for blending types of dwelling; if creation of the residential environment is again to become an art, such reasoning should not be ignored. The designers are but anticipating in time that outcry against monotony that others might not raise until too late.

### *Three-part goal for new housing*

43 The Committee, in the light of these considerations, adopts three related general objectives for future housing. We are convinced that progress toward any one of them will be speeded by trying to advance at the same time upon the other two. These objectives are:

- A That all possible should be done to maintain that volume of housebuilding that every informed forecast indicates the nation will need in the years just ahead; significant improvement in the living environments of Canadians will be possible in the immediate future if at least 150,000 new dwellings a year are built, but hardly at slower rates.
- B That every possible measure should be taken to encourage diversity among these new dwellings in size and nature, and mixture of several types in each new urban area, matching the variety of households in the local scene.
- C That full encouragement should be given to the careful design and execution of every part of this new housing, to the end that its prevailing excellence by 1967 shall reach the level of the recognized best of ten years earlier.

## PRESENT PROCESSES

44 We have named three essential dimensions for solid accomplishment in Canada's future residential environment: an adequate basic rate of housebuilding, wide diversity of dwelling types, and high prevailing standards of design in the output. We turn now to the factors that diminish or extend each dimension.

45 The rate of housebuilding in Canada was limited 30 years ago by lack of demand; 20 years ago by the war's prior claim on resources; 15 years ago by shortages of materials and skills, the latter meant to include managerial experience in construction of housing. Those engaged in building houses are now capable of an output of at least 175,000 dwellings a year, but financial constraints are holding them back to only about two-thirds of that rate. The reasons for this constraint lie outside our Terms of Reference and our competence. In any case the National House Builders Association has requested a special inquiry into the question. But we are sure that improvement of the residential environments of Canadians must wait upon a rate of housebuilding higher than the present; this is true because higher output is necessary to create real local competition among producers. That competition is needed to develop their responsiveness to consumer demands for greater diversity and quality in the products.

46 Some understanding is needed of the influences now so rapidly turning varied countrysides into stereotyped city. Notwithstanding the financial limitations on building, that rate is still fast, and we must assume will become faster. Before today's kindergarten children will be let out of high school, their city will double its population, more than double its area, and throb to three times its present traffic. These children can watch three streams contributing to that growth: newcomers from outside Canada, others who have moved to the city from our farms and rural hamlets, and their brothers and sisters newly arrived in the cradle at home or at the altar to be married. For seven out of eight Canadians from those streams, city life is going to prove the most materially rewarding existence; they hope the city will satisfy their spirits too.

47 Housebuilding firms have been established in each locality to meet the demand for living accommodation that is fed by these streams of people. There are more than 4000 firms in Canada to manage the on-site construction of houses, at least four firms of housebuilders for every firm of architects in the country. Sources of credit and scarce lands for housebuilding tend to be taken up by the more powerful housebuilding firms; currently the largest 200 of them complete nearly half the new N.H.A. dwellings built. Senior officers of many of these concerns volunteered information to this Inquiry.

### *Cost of development land*

48 To feed a substantial housebuilding enterprise requires

first of all an inventory of suitable land. Large residential developers normally hold enough acreage for the next three to five years of operation. However, there often lie between these builders' outermost holdings and the true farms nearest the city a band of territory which is neither the one nor the other. This is urban-designated land taken over from farmers by investors, who expect later to dispose of it profitably for urban development. Information given us by the Canadian Association of Real Estate Boards and others shows that this band held in speculation may amount to much more than active builders hold. Where a five year supply is in the hands of builders, a further supply for ten or even twenty years after that may be held for sale to builders.

49 Some speculators in land will be disappointed; but with recent rates of city growth, most will achieve their ambitions sooner or later. Suppose a group holds land speculatively for a dozen years before selling it for development; in that interval the price paid farmers has annual taxes and interest charges added to it. This protracted withholding of development land must have its effect on the price of housing built there.

50 A measure has been available for ten years to municipalities in most of our Provinces, to eliminate this inflation of development land costs. That measure is called Federal-Provincial land assembly; a partnership of the senior governments buys land from the farmers, installs the services, and later sells it at or near cost for immediate housing development. This step is taken only at the request of a municipality. It is for everyone who has been a municipal Councillor in the past decade to answer in his local situation why this means was not more generally adopted, to hold down the cost of housing.

51 *The Committee draws* the attention of municipalities to the Federal-Provincial land assembly provisions, which in addition to yielding development land at lower cost, offer advantages for the better design and diversification of the housing built on the land.

### *Factors that shape housing projects*

52 Trading in vacant land leaves its mark on the physical shapes and locations of the parcels made available for housing development from year to year. The individual farm, be it rough or flat, wide or narrow, can often be traced through this process to become a unit of urban growth. A crop failure or a personal tragedy on the farm is more likely to have put the land on the market than its inherent suitability for a housing project. Or corporate decisions quite as heedless of the housing potential of this land may have impaired its usefulness for farming, and determined its boundaries and accessibility to the city; intercity highways and high-voltage power lines are common among these forces.

53 The chances to build a good habitat are thus affected by what people may do for other good reasons, but without regard for this particular end. The farmer, the investor, the roadbuilders or power engineer need not feel responsible for the final quality of the urban residential environment; but unwittingly they may well have given it its first crude shape. The Canadian people concluded in 1935 that to encourage a more adequate *amount* of housebuilding needed specific national direction of the money market. We may likewise conclude that to encourage more adequate *kinds* of housing needs some closer direction of the land market. That lies in the jurisdiction of the Provinces and metropolitan regions; we shall return to them at a later stage.

54 One question in the land market should be weighed in national scales. To turn farmland to city land is an almost irrevocable step: looking at this land as a non-renewable resource, how fast are we using it up to make cities? The national economy must gain in the long run if we can make as much useful city accommodation, without using land so fast; can we? Very able agriculturists have argued these points before the Senate Committee on Land Use and elsewhere. For the present, farm yields as a whole seem to be rising faster than the demand for farm products. Before long, one North American farmer will be able to feed fifty city people. To produce most of the food and fibre they need will not take increased farm acreage; nor need most of that acreage be close to metropolitan cities. But there are important qualifications to this optimism.

55 Every city that scatters its housing far afield is going to pay more dearly for its milk and other perishables than it needs to. Vancouver, for example, is fast spreading over its severely limited tributary area of productive land. Finally, some lands in the paths of growing cities are uniquely endowed to produce specialized national crops; in this case, the nation should make it worthwhile for the growing city to detour, and for the specialist farmer to maintain his precious yield. A clear instance of this occurs in the peach orchards and vinelands between Hamilton and St Catharines. These cities can stay off such vital areas without greatly affecting their future livability as cities. If their urbanization can be led elsewhere, we can all have better food and drink to enjoy in our better environments.

56 *The Committee urges* the most energetic action by appropriate departments of Provincial and Federal governments, to identify areas of irreplaceable agricultural value that are threatened by imminent urbanization, and to protect those areas of unique value for future generations.

### *Subdivision into identical lots*

57 The developer of housing land buys an amount appropriate to his scale of operations; he may buy 3 acres or 3000 acres. He offers a price in accord with the incomes of those he expects will seek his house in this location; that price will be several times what the land was worth in its previous farm use. The developer decides what plot dimensions he can sell to prospective dwelling owners. He shows the tract of land to technical advisers: salaried or consultant surveyors, site planners, utility engineers. About a third of his land will have to be dedicated for thoroughfares and public

open space. The remainder of his tract he will ask to be divided for the optimum sale of plots of the chosen size. It is possible, and not uncommon, for a whole township to be reduced to little pieces of identical dimensions; on each plot only one sort and size of house can be built.

58 Soon the developer must take account of legal rules governing what he may produce. A covenant running with the title to his land may narrowly limit its use; this device is sometimes applied by the vendor of an old estate in an attempt, by restricting its new purchasers, to immortalize the vendor's taste in architecture or simply to magnify his probable receipts for his land. The subdivision of the land is regulated by local or provincial law and practice: minimum road allowances, lot widths and depths and the like. There may be local by-laws setting out the types of building and occupancies allowed in the area, the least permissible distances between buildings and between them and roads. Building codes will specify minimum floor and window areas, and materials and details of construction. If any construction on the land is to be financed under the National Housing Act, the Central Mortgage and Housing Corporation examines the site plan and building plans.

59 The developer proposes to fix in place some very expensive and durable properties. Their creation and continuing usefulness depend on governmental, and especially municipal support. Risks to occupants and passers-by must be eliminated. Much official scrutiny of building plans and inspection of the site is warranted, and no housebuilder we met objected in principle to this. Many growing municipalities are organized to conduct the examination of well-made development applications with commendable speed; a few weeks is not an unreasonable time to study the implications of housing that will have to be served by the municipality for a couple of generations. However, the total fees charged the developer for these preliminaries may run to \$1000 per house, or 7% of its selling price. And many codes seem made by men who had in mind only one kind of house; their faithful administration forces all development into that mould. At any rate, the familiar was approved last time; why risk delay by putting forward the untried?

60 Decades after the buildings are finished, and the names of their builders and first occupants are forgotten, the municipality will still be cleaning the roads, ploughing the snow, removing the garbage, collecting taxes — and perhaps underwriting demolition and redevelopment. The local government should be intent on having the new piece of urban fabric put in shape, for the city will have to pay to keep it in shape. Inefficient layout, facilities disproportionate to the people to be served, repellent appearance will add to social frictions and public costs.

61 Where municipal codes governing physical development are demonstrably linked to such future contingencies, their clauses must be respected. But this sensible linkage is hard to discover in many of the by-law restraints put upon residential area design. For instance it is commonly laid down that an access road allowance must be 66 feet wide, with all buildings set back another 25 or 30 feet from that road line. These provisions sterilize 1000 square feet of land that some family should be allowed to enjoy. They also sepa-

rate opposite house fronts by something like ten times their height, thus making illegal the grouping of houses for best effect at lowest cost. There are many other examples of this unreason.

62 *The Committee welcomes* the information that these municipal site design codes are under study at the University of British Columbia;

*urges* collaboration with this study in other parts of the country and

*recommends* incorporation of the logical principles emerging from such studies into the development codes of Provinces and cities.

63 Canadian legislatures first called local governments into being, because they saw the need for co-ordinated on-the-spot provision of services to settlers: roads, the teaching of the young, water supply and waste removal. Until recently, the majority of municipalities undertook these services directly, charging most of the cost to the property-owners who would benefit. In former periods of expansion, municipalities assumed large debts on this account. In the past ten years, many of them have found a way to reduce this kind of borrowing; instead they require of the residential developer that he install certain service items in the street and dedicate them to the city in running order. Such a developer finances construction of these items by borrowing on mortgages, secured by the houses he builds.

64 Whoever buys the property will then assume a debt for hundreds of dollars worth of public gear outside the boundaries described on his deed; the householder may have to pay \$15 or \$20 a month to repay that debt. On today's terms of borrowing for a given service installation, it may make little difference to his monthly outlay whether it goes to a mortgage company or the City Hall. But to the developer it makes a good deal of difference: single houses sell quicker than sites for other kinds of property. Under this system of payment for services the developer can minimize his carrying costs and accelerate his return of capital, by devoting his whole disposable tract to single houses, with none of it for apartments or shops or churches. That way lies more deprivation and monotony in the residential environment.

### *Standard furnishing of every road*

65 A municipality can thus acquire public works by making the developer perform its traditional servicing role. The threat it uses is to refuse consent to the developer's plan of subdivision. As most provincial Planning Acts make no mention of financial obligations upon the applicant, there is no statutory limit on the work the municipality may demand. The work a municipality asks others to do for it may be more than it would have done for itself. The city will be drawn into arguments about unequal treatment of different applicants and its subdivision approval procedure will become dominated by attempts to avoid this. In the end, the unauthorized price put on planning consent, and the policing of financial details connected with it, must make the applicant wonder about the municipality's concern for its real planning responsibilities. By its planning review, the city is supposed to ensure the right ultimate layout and distribution of all the varied facilities that will make a good residential area.

66 Let us admit two advantages in developers building residential streets and putting the pipes under them. The practice should save municipalities from extravagantly premature services, the landmarks of earlier building booms that led local governments to financial ruin. This practice can also place in one set of hands the design of the whole street picture; potentially it should be more carefully detailed by people who hope to sell properties along the street, partly on the strength of its appeal as an ensemble.

67 But to householders wanting to choose among alternative kinds of dwelling and district, those built by developers under this type of agreement with the municipality will tend to look much alike. Standard municipal clauses applying to all developments lead to more and more uniform outfitting of residential streets. These financial formulae have taken away from property owners in small groups their old right to petition for as much or little in the way of street lamps and catch-basins as they saw fit to pay for. Older parts of our cities owe some of their local character to the exercise of neighbourhood choice in local improvements. Many newer sections never had that choice.

68 Rate scales for domestic power distribution and telephone service are publicly established or approved. These scales are based in substantial part on the cost of building the local distribution system. The rates charged in this decade begin from the kind of system design and cost assumptions in vogue in previous decades. Until recently it was clear that neater systems of underground outdoor wiring, of the kind used in most of the civilized world, were much more expensive to install. In urban Canada we were in a sense doomed by public decrees to go on stringing wires overhead. New developments in trenching and cable manufacture now raise doubts as to how much greater is the cost per year of service of underground systems. There are many records of trouble-free service of this kind. For the sake of hundreds of square miles of new urban Canada we are about to build, the public is entitled to be informed what these extra costs would be, if any. Underground systems certainly enhance the value of the property they serve. The subscribers might well choose to have such a system.

69 *The Committee therefore recommends* that the various public bodies setting power and telephone rates be pressed to undertake a concerted study, to compare the costs per year of use of underground and overhead distribution systems in the various conditions that prevail in Canadian urban centres, and to publish the results.

### *Influences for repetition of house designs*

70 Most of the nation's current output of housing is meant for young families in urban centres. Of the million dwellings built in the 1950s, 700,000 were detached single houses. In 1959 this type still made up nearly two-thirds of all our housing production. A great deal of study by architects and builders has been applied to the basic room arrangements for this type. As a result, a relatively few almost classic house plans have evolved. Evidence of this is seen in that, although Central Mortgage and Housing Corporation extends a standing invitation to Canadian architects to submit house de-

signs and hundreds a year are submitted, only at rare intervals does a fundamentally new plan appear among them. Other changes are for simpler assembly, better storage and circulation, slight shifts in the way houses are used, or more direct architectural expression.

71 To discover how much money can be borrowed on the chosen house, simple drawings and an outline specification of its proposed materials are submitted to a lending institution. The lender's appraiser, scrutinizing these and taking into account land and service costs and the market in surrounding properties, establishes a lending value for the submitted property. If the loan is to be insured under the National Housing Act, it is typically close to four-fifths of the dwelling's cost; otherwise the loan cannot exceed three-fifths of appraised value. There are statutory and habitual limits on the dollar amount of each loan. We are struck with the slight differences in loan amounts for houses of like size in very different environments. Appraisal seems to us too closely linked to measurable and mechanical elements of the individual property in today's market: present appraisal methods are too indifferent to those aspects of housing *en masse* which only architectural and planning judgment can distinguish.

72 *The Committee urges* that Central Mortgage and Housing Corporation and the private residential appraisers should review their present formulae, to give more inducement to build quality into the huge amounts of housing in prospect.

73 Good as the house design may be in itself, it suffers when ten of them appear in a line; the urban mass produced by a hundred of the same specimen repels almost everyone. This herd of new houses is the more formidable when they

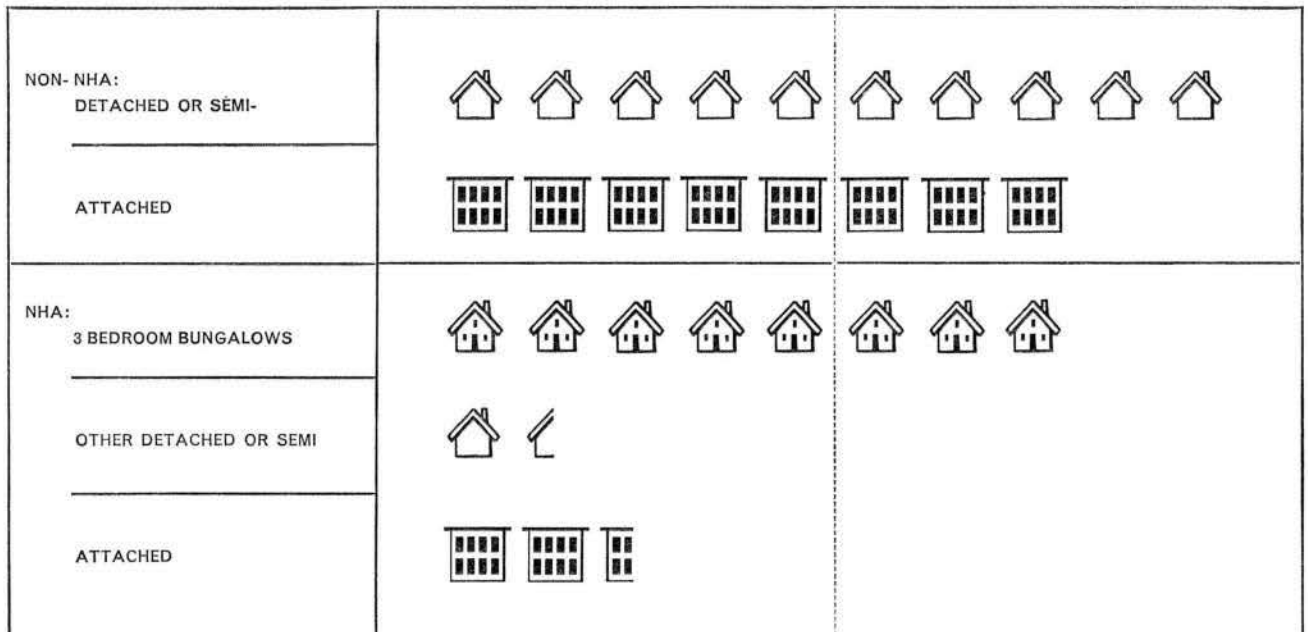
allow no contrasting shape — no older nor larger building — to survive among them. Nor will they leave much room for later insertions. In another age the place of worship would soar above the houses and have its flanking lawns to keep secular structures at a decent distance. Today if the church has a sideyard it is covered with asphalt for Sunday cars. This new and even dispensation of houses flows from bigger cities, higher land costs, more mechanical building methods and changing social values.

74 Objection to this new orthodoxy often leads to frantic manipulation of the surface colours and details of like houses. The result of this will be unhappy, resembling a violent family dispute about a trifle. Observance of convention in the outward forms of domestic buildings can be the hallmark of good residential environments, like fashionable Bath or Edinburgh or Nancy or Washington or Upper Town Quebec. These famous living quarters were built in communities much smaller and poorer than most of ours; they still delight the tourist because in each of them a competent designer, in the idiom of his own age, gave significant form to the whole visible setting. The industrialization of residential building means we are again capable of working on a large city area at one time; it also favours the repeated use in construction of simple, machine-made components. These factors can make for endless dullness or consistent style in the total urban result. Which way we go in multiplying our cities is a matter of design.

*National Housing Act favours detached houses*

75 If economic and technical forces tend to favour the repetition of certain types of dwelling, the National Housing Act appears to accentuate that tendency. It almost makes of a popular dwelling unit the ubiquitous N.H.A. house. Chart IV compares the 1959 output by types under the Act and

CHART IV: 1959 HOUSING PRODUCTION BY DWELLING TYPES



Each symbol represents 5000 dwellings

otherwise. The legislation encourages an urban family, setting up house for the first time, to buy a house on the outskirts instead of renting one inside the town. The ratio of N.H.A. mortgage to price leaves a low down payment for the new house, while purchase of an old house takes more cash. Carrying charges after purchase of a new N.H.A. house are much lower than monthly rent on any comparable property built under the Act or otherwise. The tighter a young family's budget, the more certain they are to hope for a new house in a remote area. Only those young couples with inherited means or thrifty habits can afford to deal with landlords or take used accommodation.

76 No urban society has ever had a housing program that succeeded in giving most of its low income people new dwellings. Our system, enabling thousands of modestly paid people to buy new bungalows, has probably set new records in that direction. But for half our urban households, also with modest incomes, purchase of a three-bedroom house at the edge of town is no solution. Yet the pattern of our publicly-supported housing gives them almost no other choice. The monolithic suburbs of the 1950s deal out a million prizes to one kind of household, but far too few to others. The repetitive appearance and social homogeneity of the typical post war suburb stem directly from the terms of the National Housing Act.

77 After a few years of this process, these tracts of small houses will be firmly embedded in the urban structure; after a few more, our cities will seem to consist of little else. The total social cost of this open order of urban advance — in unproductive hours of travel and transportation, in municipal services, in human isolation — are far from clear. Extension of our cities on this pattern will plainly not satisfy our stated aim: that most householders, in search of dwellings to suit their needs for the time being, should be able to find what they want in several locations, and associated with various other kinds of household and supporting facility. Multiple choices of variant factors in accommodation should be available to every person at several points in the life cycle of his household. Production of a more diverse inventory must prove a more prudent investment of the nation's housebuilding resources.

78 The existence of a government agency in housing must rest upon public purposes, as distinct from the interests of those entrepreneurs for whom the market could behave without benefit of public credit and guarantees. These public purposes in housing include wider choices for individuals, and greater cohesion and less cost for their communities. The dominant safeguards in Federal mortgage lending activity seem to us to stand against loss on the single property offered as mortgage security. Population growth makes it unlikely that houses will stand empty; 39 dwellings of every 40 built in Canada are occupied as soon as complete, if not before. The loss to the Federal taxpayer on this account has been negligible. A wider public prudence will look beyond the single new structure to the useful life of its whole area, and to the kind of city that preferential aid to any one type of dwelling must produce. A hundred thousand little mortgages, each sound by the standards of 1930, are no guarantee of a sane and ordered metropolis under the probable conditions of 1980.

79 *The Committee recommends* that deliberate use be made of the National Housing Act to encourage variety in dwelling types and combinations. Anticipating that this change of emphasis might reduce output for a little time, it could be introduced when national fiscal policy requires a temporary slowing of housing investment in any case. Diversity in housing programs is more likely to be achieved by large firms having extensive lands and substantial funds at stake; no restriction in the flow of credit to housebuilding should work to penalize such firms merely because of their greater size.

### *Orthodoxy in the private housing market*

80 Laws made by legislatures and administrative practices by which they are carried out may magnify the uniformity of conventional housing development; but they do not cause it. These public measures are but the effects, through due democratic process, of mental habits and values which played upon housebuilding like a barrel-organ, to give out a few familiar strains, long before we had any housing acts. Buyers of a house gain confidence when they see that the others alongside it are much alike, neither making it look cheap nor jeopardizing it. Each builder worked out sources of supply and methods of assembly most avidly for the most popular models. For each of these he knew his costs, what loan to expect, how quickly the municipality would approve the plan. For the builder there is indeed safety in numbers to one design.

81 His customers may be faced with the choice of a dwelling only a very few times in the life of a household. Their doubts and want of experience in such matters would naturally lead them to select what most other people are choosing; probably the three-bedroom bungalow. Both vendors and housewives reported to us that systematic assessment by prospective buyers of their own particular needs and the dwelling best suited to them is rare. Instead, prospects tend to arrive at a new project with a minimum down payment and a colourful dream home filling their mind's eye. This visionary house is nowadays very like the one the last prospects cherished, and the one the next will dream of too. If this builder cannot offer them fulfilment, another builder can and will. Most of these dream houses resemble the Ideal Home in the magazines, the stage-set for family comedy or detergent messages on television, the North American symbol of domestic respectability. Fantasies are notoriously untrustworthy guides to action in the real world; how nearly do they control the two billion dollar industry that is turning pastures to permastone all around us?

82 These factors in land subdivision, in municipal servicing practice, in housing legislation and the popular values it reflects, all nudge the housing entrepreneur down the safe middle of the developmental road to yet more bungalows. The producers of housing are proud to show new levels of technical achievement; the growth of the more efficient firms is proof of this. Several of the largest concerns are less than a dozen years old; over half the substantial N.H.A. builders in 1955 had set up shop after 1950. But few of them are satisfied with the sight of their products *en masse*; their 1959 customers are more discriminating than buyers were in 1951. The most able builders have created some of the housing



areas most deplored as too inaccessible, unvaried, inflexible and uninteresting to win the admiration of a rich and ambitious people.

83 Truer assumptions about what people want in their housing might be possible if more people were aware of what their dollars could get. Discussion of distinguished residential designs should be stimulated, beginning with those already singled out for their merit. Massey Medals in Architecture are awarded every two or three years to several categories of dwelling and housing groups. The Canadian Housing Design Council gives annual awards regionally and nationally to individual houses, and national awards to housing groups. There are many regional and local awards for special efforts at embellishment and for good upkeep of properties. Attention to all these awards, and institution of new ones for merits of the environment not now recognized, will broaden popular knowledge and heighten popular reactions to our surroundings.

84 Illustrated papers and advertising, television and the film all have their cumulative effect in shaping popular im-

ages of desirable settings for family life. Their producers too often send into the homes of the nation some picture of the ordinary, the crude or downright ugly. Their own purposes and the cause of good residential design would all be helped if whatever is shown with explicit or implicit approval were consistently to deserve mass duplication for its architectural excellence.

85 *The Committee recommends* that the sponsors of design awards do all in their power to make illustrations of the recognized best as readily available to editors and producers of mass media as pictures of the mediocre are. The architectural profession, being owners of many of the designs and photographs, participants in many of the award projects, and subscribers to the professional press, is particularly urged to contribute to this end.

86 *The Committee commends* the selections of the National Industrial Design Council in street furniture, and urges that Council to prepare an illustrated catalogue of the best items for the guidance of municipal and utility authorities.

## ON THE WHOLE COST OF HOUSING

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87 Reference to housing costs must here be made in general terms. Firm prices are not quoted for building and operating many of the items in residential areas, nor are comparative running costs available for housing and attendant facilities laid out on the ground in different patterns and combinations. Initial capital costs of the principal elements of private domestic property are definite; they therefore tend to dominate decisions about the design of their whole environment. Costs of maintenance and obsolescence, in both private and common property, are evidently substantial; but so elusive are these elements of housing cost that they tend to be slighted or entered by some rule of thumb in day-to-day design calculations.

### *Steady costs but changing prices*

88 Popular talk of rising costs of housing is often forgetful of the changes the typical house has been undergoing. In reality, the construction cost of a unit of dwelling space has not risen significantly in Canada for some years. That is to say, a square foot of habitable room now takes no more hours of the average wage-earner's work to buy than it has for most of the 1950s. Productivity in housebuilding is not out of line with that of Canadian productive enterprise generally. The price indexes of a good many items in the dwelling have in fact declined; certain roofing materials and electric fixtures provide examples. There should be these gains in efficiency of production and distribution, for this steadily growing mass market.

89 The price tag on the average new house has indeed be-

come heavier. This is mainly because today's price covers much more than a copy of the typical house of ten years ago. As each city grows, the price of a quarter acre of near-urban farmland is bound to go up somewhat; in Canada it may have risen more sharply because of speculative transactions in land for housing. Today's house price is also likely to include hundreds of dollars of the cost of those works the builder had to install out in the street; virtually no house was sold in Canada in the 1940s with any such items reflected in its price, for they were then paid for in taxes. An apparent rise in the price of a house in recent years is traceable to land and services, even if the house itself had not changed.

90 In fact, the growing sizes of families, the incidence in them of more teenagers who take more room, and the expectation of higher living standards in future, have all prompted the building of more floor area into houses for sale. There was Federal encouragement for compact houses in 1958-59; but apart from that, most of the houses built in the late 1950s were 200 to 300 square feet roomier than their counterparts of a decade earlier. The same pressures that led to more space were reflected in mounting quotas of mechanical gear in each house: fully automatic furnace; second bathroom and recreation room; heavier wiring and piping for better cooking, water-heating, laundry and refrigerating equipment; and the like. With these we are getting, not a dearer product, but a richer one.

### *The cost of a house is much more than its price*

91 The real cost of a dwelling to its occupants includes

many items beyond what is charged for the land and the construction. Interest on money used for purchase; taxes, charges for fuel and power, for water and communication, for repairs and replacements; plus the administrative cost of collecting all these and an allowance for the risk that they may have to be paid while the dwelling stands vacant, all these must be included. Outside housebuilding circles, it is not often realized that the extra amount commonly paid today in monthly interest charges on a new house, by reason of higher interest rates, is enough to carry hundreds of additional square feet of space in a five year old house.

92 Over-emphasis on the construction cost of housing, coupled with silence or rough-and-ready estimates on these running costs, must have affected the kinds of housing people chose to build. Take for example the low rental housing built under the limited dividend provisions (Section 16) or the Federal-Provincial arrangements (Section 36) in the National Housing Act. Those operating several projects of this kind report that their all-in monthly costs are exceeding the allowed amounts; they itemized materials and details they would avoid for future projects to get lower running costs and rents. Such cheap items were initially used because they permitted lower first costs; but apparently there was no corresponding upward adjustment of calculated allowances for repair and replacement of these less durable substitutes.

93 If there is this one-sided encouragement in low rental housing to reduce initial outlays, it is an inducement to sacrifice quality and durability; it must work against economic operation. It is a very arbitrary way of reckoning for the design of major projects. One contributor went so far as to say that the practice, as it applies to limited dividend housing, concentrates public aid on shoddy work, whereas such work should automatically be ineligible. Recent changes in the practice of the Federal Housing Authority in the United States seem to take more realistic account of future running expense; they reward built-in quality and durability with higher initial loans and lower annual maintenance burdens.

94 The Crown in the right of Canada has under direct control scores of thousands of dwellings, of all types and in all parts of the country. Some of these units have passed through the hands of many occupants and of more than one management. The oldest of them have gone through a full cycle of repairs and replacements. Central Mortgage and Housing Corporation also has access to the books of account for tens of thousands of additional units of housing managed by local public housing authorities and limited dividend corporations, as well as dwellings on rental guarantee contracts. Examination of the running costs of all this housing, analyzed from the point of view of original differences of design, should yield important pointers for the design and financing of future housing.

95 *The Committee recommends* that Central Mortgage and Housing Corporation be urged to undertake a thorough survey from the information available to it, of the operating costs of housing in the regions of Canada, as affected by its layout, design and construction; and to publish the results in forms useful to designers, sponsors and administrators in housing.

### *Dwellings neither bungalow nor apartment*

96 A considerable repertoire of dwelling forms is possible, that partake of qualities between the detached house on the ground and the apartment in a tall structure with elevators. Some of these have been built and are in use in this country. Others are available as sketches from the Canadian Housing Design Council. Broadly speaking, they involve the use of common walls between dwellings, but a minimum of common corridors or stairs. Most of these forms use much less land than detached houses must take. Some of them promise to be less expensive to build, because advantage is taken of modern earth-moving machinery and of repetitive elements of structural framing. Most of them are at least as efficient as detached houses in giving privacy to individual gardens, and better at keeping the automobile out of sight when out of use.

97 Many of these multiple dwelling types would serve well in the redevelopment of our older areas. One result of restricting ourselves so largely to detached houses has been the neglect of obsolescent districts. Ordinary financial arrangements seem to offer no ready way to deal with such areas. The major public surgery of slum clearance has won support only for the most desperate cases, and the site costs of that operation have sometimes prompted rebuilding in tall apartments. These have provoked definite antipathies with a public that knows no other form of dwelling useful on such sites. In this impasse, too little is done to redeem older parts of our cities, and they are left — notwithstanding their high land values — as the most unsatisfactory of environments for the most unfortunate of our citizens. These newer forms of dwelling may have most to contribute to the renewal, under private or public auspices, of the many square miles of run-down housing areas in Canadian cities.

98 The great life insurance companies of Canada already enjoy powers which they could use to create on their own account a number of pathfinder projects, to demonstrate the possibilities in combinations of these newer forms of dwelling. They are trustees of policyholders' funds with a managerial obligation to discover the most advantageous employment of those funds; they are national fiduciary institutions certain to have in their vaults vast amounts of paper worth no more than the housing described on it. Whatever innovations promise to enhance the usefulness and value of residential property in Canada must be of the highest interest to life insurance companies to explore.

99 *The Committee recommends* that steps be taken to use the National Housing Act and institutional funds to build pilot projects for our varying climates and cultures, employing in part these unfamiliar yet promising species of attached dwelling;

that these blends of dwelling type be given close operational study in use, as to their running costs including tax levies appropriate to whatever municipal economies these new forms achieve;

that some of these pilot projects should be in redevelopment areas; and

that the data so gained be published for the information of housing designers and authorities, municipalities and the interested public.

# OBSERVED CONDITIONS FOR GOOD HOUSING DESIGN

100 Nearly every city we were able to visit contains areas of well laid out, well designed modern housing. Each good project had its particular character; a little of this appears in the portfolio of samples illustrated. Only those who have been active in each scheme could fully account for its merits. But certain circumstances attended so many of the notable examples that they can be listed as conditions favourable to design of a good housing environment. These conditions are:

- an extensive parcel of land in the developer's control;
- this owner's interest in the land maintained over some years;
- appointment by the owner of a competent design team;
- contact between owner and design team throughout development;
- respect for the inherent natural qualities of the site;
- room in the original design for future adjustment of detail;
- official scrutiny of the design on its merits by qualified men;
- an ample and reliable flow of credit for fulfilment;
- suitable links and protections for this housing area in the publicly endorsed plan and program for the urban region.

## Extensive land in single control

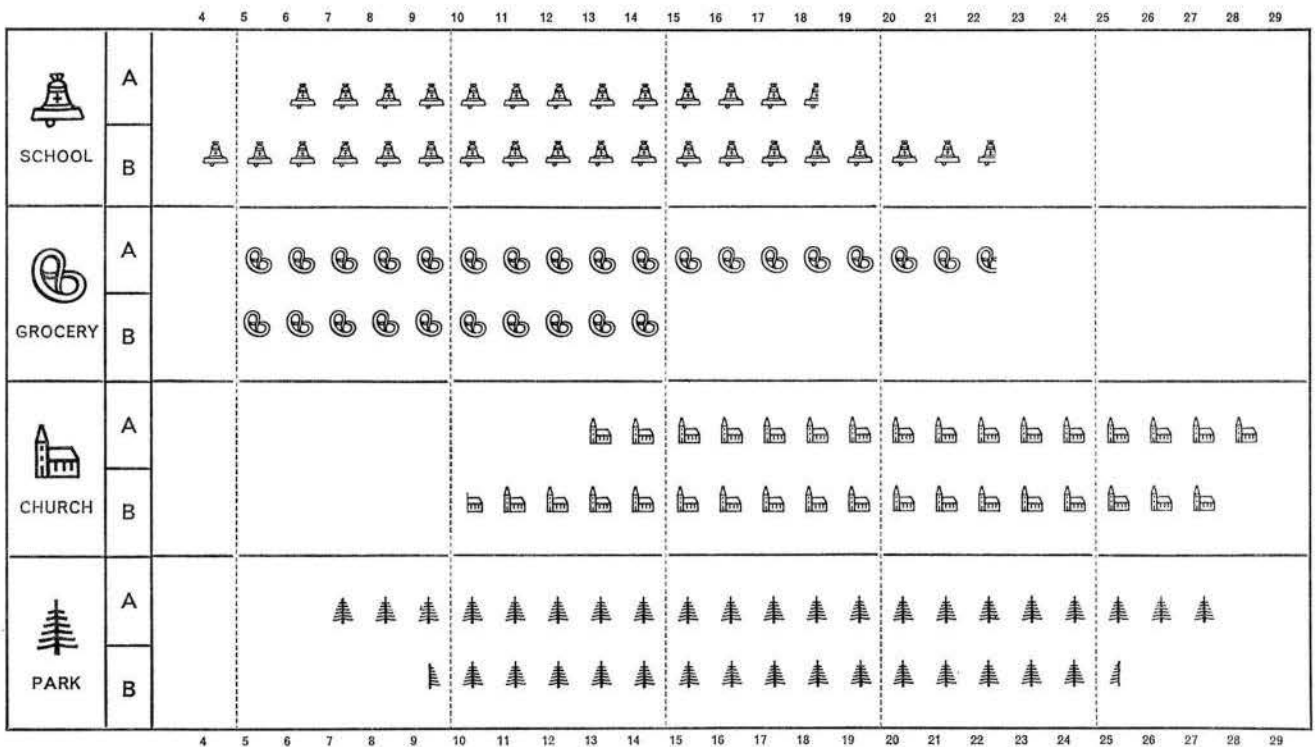
101 One condition favourable to good housing is to have a sizable tract of land under single developmental aegis. Size of development operation offers economies of scale: bulk purchase of materials, efficient use of power tools, etc. Fur-

ther, whether the sponsorship be private or public, the dwelling area should be extensive enough to establish its own system of road and pedestrian circulation. Adequate length and breadth permit it to set its own standards of treatment, both architecturally and on the ground surface. For instance, design compromises in grouping and layout must be made on a parcel of land of less than about 600 feet wide; when the land under one control spreads twice that far, the design can be freed of these tactical drawbacks. The evolution of the Canadian housebuilding industry is making toward more frequent large-scale undertakings. Some of these will be by a single firm; others by a number of smaller firms who pool their resources for land assembly and layout, before launching out in separate competition with final construction.

## The developer's interest over extended time

102 A second favourable condition for good residential design is that the owners of this large land holding should maintain their interest in it over a protracted term of years. It will take that long for their design to be completed, and in doing so they learn from resident reactions to their original intentions. Many Canadians are now living in the first dwelling they ever had. When they took it, they were unselective in many features, especially those beyond their doorstep. House-hunters are now less desperate. Most have a place to live in; from it they have learned quickly. Environmental facilities are among the most serious shortcomings they report. Chart V shows over what distances some hundreds of

CHART V: RANGE OF TIMES TO COMMUNITY FACILITIES IN MINUTES



A: Metropolitan and Major Centres

B: Cities of less than 30,000 people

suburban housewives and their children from coast to coast must go on the most ordinary errands. If the developer expects still to be selling land after his first wave of householders have learned their lessons, he will take care that these consumer reports about his project are going to attract later prospects. The long-term developer-owner is the responsible creator of housing.

103 A common device in other countries and in some parts of Canada, to assert the responsibilities of long-term land ownership while leaving construction and management to specialists in those fields, is to convey land by long lease instead of by sale. Municipalities acquiring land by slum clearance, and governments or private corporations assembling land for new urbanization, might profitably consider the greater control in use of the land and opportunity for later review inherent in leasing it out.

### *A competent residential design team*

104 A third condition favourable to good design of living areas, is that the sponsors should engage specialists to design it. Sponsor and designers should aim for an agreed vision of the finished project, complete in all its essentials. This should take account of foreseeable contingencies in development. Its cardinal features should be safe from afterthoughts and hindsight. This calls for design by a team – not all working at once, but working with such understanding of each other that a later member will not accidentally destroy what some earlier team-mate was at pains to create.

105 This kind of environment, assembled of many components, is commonly a number of years in the making. Some late member of the enterprise (say, the salesman who by interchanging two building sites could close a deal) should have heard that they were originally set out to frame a fine view from twenty windows (by the planning consultant); or that sewers, site grades and roads were carefully devised to that deliberate disposition of buildings (by the site engineer); or that corners and openings in six other dwellings in the group were made (by the architects) to point to the climax he is now about to deal with. A successful environment can be fashioned only when all who work towards it can know what is already done and why it was done.

106 Composition of the design team may vary with the circumstances. It is certain to include a land surveyor, whose certificate is needed provincially to establish ownership, and whose care in mapping the contours is of the utmost importance to all that follows. Exploitation and adaptation of natural drainage and soil characteristics will take specialized engineering skills. Advice of this sort may have to be blended with that of the landscape architects, if the end result is to be thoroughly fine; the latter should thus join the design deliberations at an early stage. Whether or not the developer is himself to undertake construction, he will need to retain architectural judgment on the consonance of proposed buildings with the intended character of the whole. More will be said of the training and collaboration required for this design teamwork.

### *Constancy of purpose and consultation*

107 A fourth condition for transformation of open fields

into an urban quarter, is that there should be some constancy of personnel in this team, and continuous contact between the land owner and the design team over the whole period of development. To protests that this seems expensive, we must reply that this design service has been provided for about 3 percent of the value of the finished project. This is a gross cost, and may be offset by quicker approvals and marketing, the results both of better design and more convincing presentation. A few months of unnecessary delay, either to be approved or to be occupied, can cost a housing project as much as this comprehensive design service would. Those who have used such service say it was the best part of their investment; it would thus prove a sound criterion for national underwriting of housing. This proper design cost is much less than the total of other fees now levied against most housing projects. Those other fees buy no real assurance that the outcome will have durable physical excellence.

### *Respect for the site's individuality*

108 A fifth condition for good residential development is that there should be emphasis on the inherent natural individuality of the given site. Only in special soil conditions (certain shrinkable clays or heavy forest-floor debris) is wholesale removal of trees warranted from an acceptable housing site. Every piece of undisturbed ground has some slope or undulation; the design can underscore such changes of level, both in fact and in visual impact. Rock outcrops and large boulders lend character to an area, just as does its mantle of verdure. Both can be preserved during the few months of active construction, or restored afterwards. The most efficient and imaginative developers use the bull-dozer with a light hand.

### *Built-in opportunity for future manoeuvre*

109 A sixth condition of sound neighbourhood building is to incorporate opportunities for change in its use as it matures. The most talented of design teams will not have the gift of infallible prophecy. As the urban scene is finished and populated, part by part, technical possibilities and social demands will emerge that could not have been foretold. Canadians will in any case put finishing touches on their own habitat. The kinds of community facilities that will win support, and the uses to which they will be put, are especially hard to anticipate. Let the design embody built-in space and latitude for the future.

110 There should also be opportunity for later variations to be played on the original design theme. A large scheme can gain much from unpredictability over time in the choice of design details. Its quality will certainly suffer from unrelenting by-the-mile predictability. The final touches over a large urban scene should be by deliberately changing hands, recognizing the limits of the most fertile imagination. Largeness is wanted in the original conception, but intimacy and surprise in carrying out its minor parts. Consistent design idioms will no sooner be established than men will want to interweave them with others equally good.

### *Approval on merit by qualified officers*

111 Good residential building can have a seventh advantage: the area conceived under the preceding conditions should be looked at by qualified approving authorities, on its



FREDERICTON, N.B.

*These houses have matured for a generation in Waterloo Street; although built of different materials, their respect for each other and submission to the outline of a larger street space makes them a distinguished group. Photo: N.F.B.*

*Ces maisons de la rue Waterloo ont vu passer déjà une génération; quoique construites de matériaux différents, elles s'harmonisent bien dans le large cadre de la rue à laquelle elles donnent beaucoup de distinction.*

UPLANDS (VICTORIA, B.C.)

*Care was taken in the most difficult building conditions: all wiring is underground in spite of frequent rock outcrops and maximum preservation of oak trees. The tree and rock forms would make this a strongly individual environment no matter what the architecture. Photo: C.M.H.C.*

*On a surmonté ici les pires difficultés de construction: tous les fils sont sous terre et on a su épargner les chênes. Quel que soit le style d'architecture utilisé, les arbres et les roches feraient de ce coin un endroit fortement individualisé.*





SILLERY, P.Q. (*Eugène Chalifour*)

*Houses of simple and unassuming form arranged with great care to take advantage of trees, give Parc Falaise a pleasant informality. Photo: C.M.H.C.*

*Des maisons de forme simple, disposées avec soin pour profiter des arbres, donnent au Parc Falaise un aspect sans prétention.*

← FORT GARRY, MANITOBA (*C. T. Lount Construction*)

*Direct and simple forms, with care to exploit a number of mature trees, make this a successful group of one-storey houses. Photo: A.H.A.*

*Des formes simples et directes, mises en valeur par un certain nombre d'arbres font le succès de ce groupe de maisons d'un étage.*



VANCOUVER, B.C.  
 (Ian MacLennan, MRAIC,  
 Chief Architect, Central  
 Mortgage & Housing Corp.)

*Family housing on the left  
 shares an outlook with row  
 cottages for old people on the  
 right; experience suggests this is  
 slightly too close an association  
 of these two kinds of household.*

*Des logis familiaux, à gauche,  
 font face à une rangée  
 d'habitations pour personnes  
 âgées, à droite; l'expérience a  
 révélé que c'est là une  
 association trop étroite de ces  
 deux genres d'habitations.*



ST JAMES, MANITOBA  
 (Bert Stovel for F. R. Lount)

*Kiwanis Court consists of row  
 cottages in a quadrangle among  
 shade trees; each tenant has  
 a small area for sitting out and a  
 small flower bed beside it.  
 Photo: C.M.H.C.*

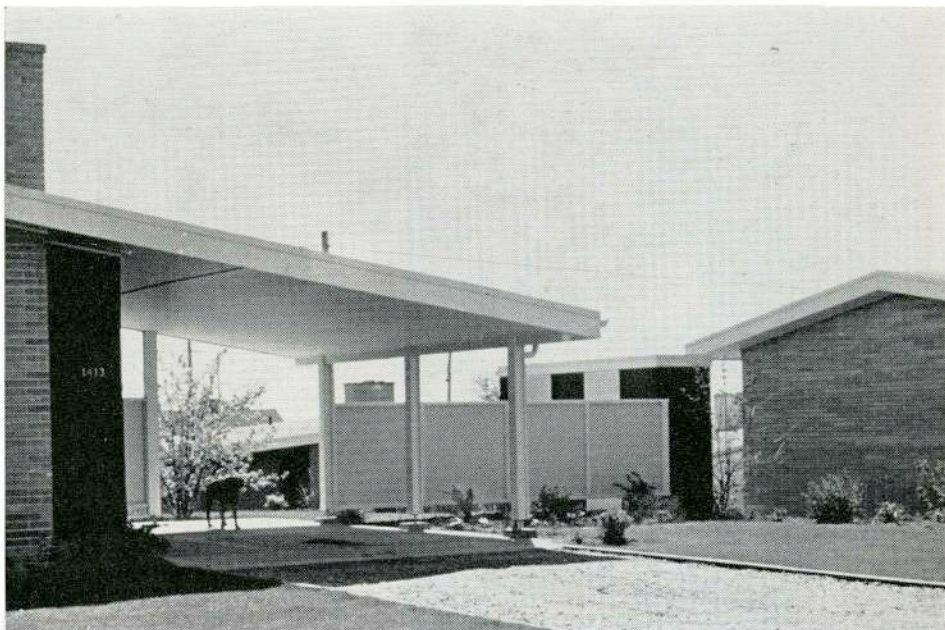
*Kiwanis Court consiste en  
 rangées de logis disposés en  
 quadrilatère au milieu d'arbres;  
 chaque locataire dispose d'un  
 coin où il peut s'asseoir à  
 l'extérieur.*



NORTH BAY, ONTARIO  
(William A. Gibson, MRAIC)

*This group of houses, besides consistent detailing and careful colour selection, are linked with one another by screen walls and outbuildings to form a successful street.  
Photo: S. Pickett.*

*Ces maisons, unies par la répétition de certains détails, sont de plus reliées les unes aux autres par des murs-écrans, ce qui donne son charme à cette rue.*

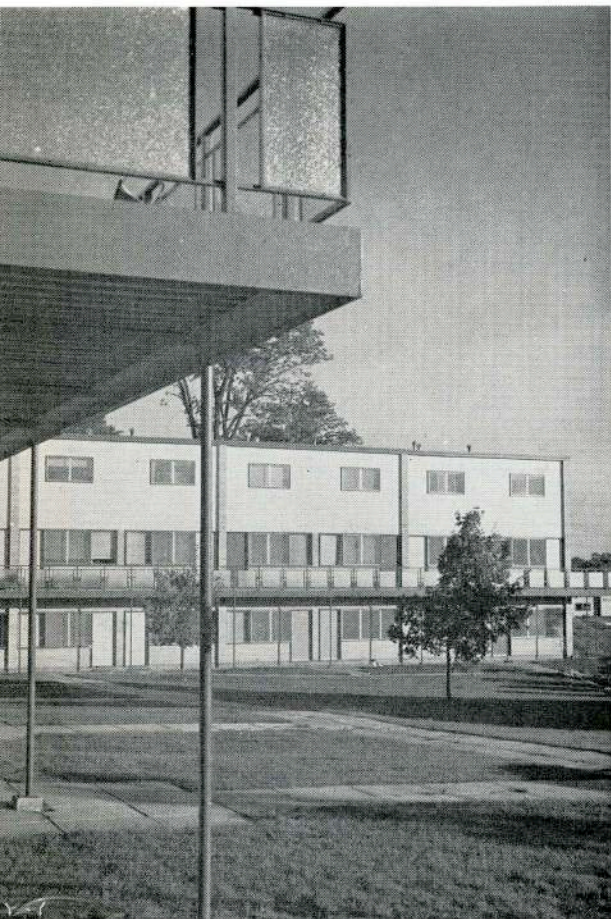


PREVILLE, P.Q.

*Custom houses designed within an idiom of forms established by the resident Planning Officer, Prof. Spence-Sales; although one house may be much more expensive than another, they are good neighbours because of similarity of form and detail.  
Photo: A.H.A.*

*Maisons individuelles issues d'une même conception des formes due au professeur Spence-Sales, urbaniste résident; même si le coût des maisons peut varier beaucoup de l'une à l'autre, elles font bon voisinage grâce à la similitude des formes.*





DON MILLS (TORONTO) (*Belcourt & Blair, MMRAIC, for Greenbelt Development Co. Ltd.*)

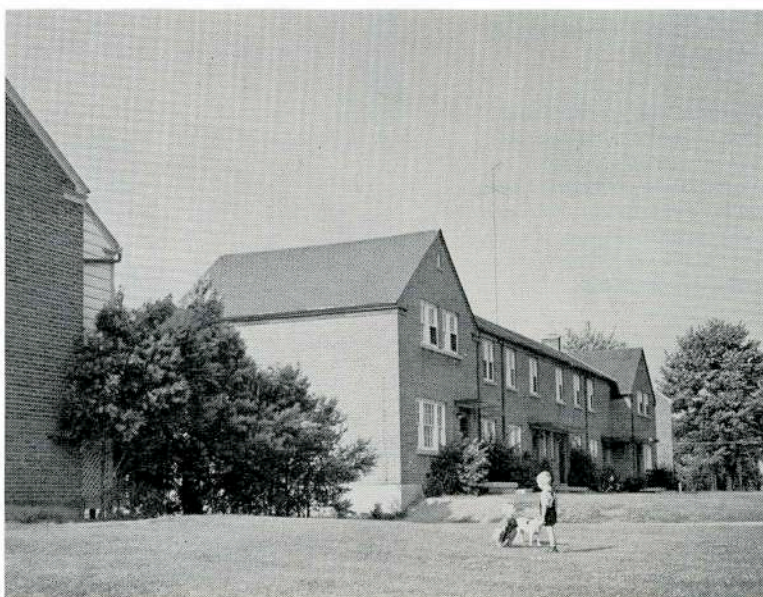
*Apartments built to look upon a court space and to gain distinction from it, rather than by over-design of the buildings themselves. Photo: B. Shawcroft.*

*C'est de la cour où donnent ces appartements qu'ils tirent leur cachet plutôt que de la complexité des immeubles eux-mêmes.*

LINDSAY, ONTARIO (*William Allen, MRAIC, for Housing Enterprises Ltd.*)

*Row housing built for Veterans immediately after the War; its success arises from careful site organization and avoidance of ostentation in the buildings. Photo: A.H.A.*

*Rangées d'habitations construites pour les anciens combattants dès après la guerre. L'utilisation judicieuse du site et la simplicité des immeubles font le succès de l'ensemble.*





RADBURN, N.J. (Clarence Stein, FAIA, and Henry Wright, AIA,  
for City Development Corp.)

*Although this housing uses less ground than the same number  
of dwellings would in most Canadian suburbs, it is arranged to  
create large open spaces free of the sight and sound of  
automobiles and safe for children. Photo: A.H.A.*

*Bien que ces habitations utilisent moins de superficie que le même  
nombre de logis dans la plupart des banlieues canadiennes,  
elles sont disposées de façon à laisser de vastes espaces libres  
d'où les automobiles sont exclues.*

DON MILLS (TORONTO) (*James A. Murray and Henry Fliess, MMRAIC, for Roy P. Rodgers Enterprises*)

*Winner of the Massey Silver Medal for housing groups in 1958 and a National Award of the Canadian Housing Design Council in 1959; advantage is taken of slope to place full-height housing on the left and split-level row housing on the right. The road surface is visually suppressed and not permitted to destroy a single one of the valuable trees. The building line is bent just enough to obtain enclosure and seclusion.*

*Gagnant de la Médaille d'argent Massey pour groupe d'habitations en 1958, et d'un prix national du Canadian Housing Design Council en 1959. On a tiré parti de la pente du terrain pour placer les maisons à étages à gauche et les maisons à demi étage à droite. La route respecte tous les arbres précieux. La courbe des constructions est suffisante pour donner l'impression d'enclore et d'isoler les demeures. Photo: Max Fleet.*



own merits. Each major proposal should be examined as an area of comprehensive development, to a degree setting its own standards. Many good schemes have suffered at the hands of those trustees of the public interest, who relied solely on a book of rules. Regulations and by-laws, that try to say in words what may be built, are based on two fallacies: first, that their authors are able to visualize every worthy ensemble that can be proposed, of the host of objects that make up the residential environment; and second, that adequate criteria in the art of good development can be stated in words and numbers at all. A written code governing development may be necessary. It may prevent the worst proposals from being built; it cannot deal fairly with the best schemes, unless the code provides for trusted judgment to be applied to each comprehensive proposal in its own imaginative terms.

112 Trained designers can now be commanded by progressive housing development enterprise. Their imagination will have to be matched by visualizing ability among officers of lending institutions and public authorities, if we are to build the best that is possible. It is no longer good enough that these who advise for or against major schemes should be able merely to read the language. They must also be able to visualize the meaning of maps, drawings and models. They must be adept in receiving the graphic symbols announcing a well thought out project, just as the developer's consultants should be eloquent in transmitting them. Otherwise the fresh masterpiece of urban design, with all its welcome vari-

ation from the familiar norms, may never be allowed to go ahead.

### *Certainty of funds*

113 An eighth condition, to realize boldly-conceived surroundings for living, is that their sponsors should have access to credit ample and reliable enough for their needs. When a residential undertaking meets the previous conditions, its completion may require funds running to eight figures: these funds may be needed over a term of several years. This enterprise is risky enough, without the hazard that investors cannot be counted on from start to finish, or that use of savings may suddenly be restricted to forms of housing incompatible with the half-completed design.

114 The ways in which our lending institution funds are allocated for housing, and the restrictions attached from time to time to direct federal government lending, depend on many factors. Building professionals can see that the advantages claimed for past allocations have been bought at a price; they have inhibited optimum production of housing. In a time of major urban expansion, short rations encourage short views; short views are ultimately expensive. The best residential output, that must be years in making, cannot come from an industry that is subject — for whatever reasons — to month-by-month vicissitudes in its financing. The far-seeing entrepreneur must be assured by long-term money commitments.

## THE URBAN FRAMEWORK FOR RESIDENTIAL ENVIRONMENT

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115 Underlying the shape and performance of any housing area is the pattern of the city and region around it. As the city grows, this pattern can be managed by town planning. Among the professionals who volunteered information to this Inquiry, the number of Architects was nearly matched by members of the Town Planning Institute of Canada. There is now a qualified member of the latter profession for every 50,000 urban Canadians. This is far from enough professionals to meet our public needs; a growing community of 50,000 should have not one but at least four or five qualified planning officers. But it is a vast improvement on the situation fifteen years ago. At that time several of our major cities had no planning departments; some whole provinces had not a single man qualified in city planning.

116 Municipal councils since World War II have faced acute responsibilities in dealing with physical growth, and with the urging and support of provincial governments and such bodies as the Community Planning Association, have established planning departments and recruited scores of planning officers. Trained men and women have entered this field after practice in other professions (including architecture); others have come from the four graduate schools of planning founded in Canada since 1946; still more have

come already trained from abroad, mostly from the United Kingdom. Building the equivalent of a new metropolitan Winnipeg each year, we need the help of every one of these qualified people.

117 City planning is often regarded as a sort of pass-gate, where every private building proposal is halted to see that it does not contain ingredients harmful to its neighbours or the general public. That is one part of the activity; equally important is the other part: intense study to ensure that the greatest public advantage will be gained by the right design and combined disposition of works requisitioned by governments. These works have long lives. The City of Edmonton must this year put works in place that will still be new, and should be serving well, when that city has grown to the present size of metropolitan Vancouver. If the municipal works of 1960 should fail in use by 1970, much public money will be wasted.

118 To build roads, parks and schools, hospitals, libraries and courthouses has been taking about \$200 a year from the typical city household. The Gordon Commission staff estimated that public authorities will spend on such items of 'social capital' over the next twenty years almost dollar-

for-dollar what private and public bodies will together spend for housing construction. Their estimate is nearly \$2,000,000,000 a year for each. The adopted city plan and capital budget are devices for reminding the Council of their long-term stake in the deployment and expense of both kinds of facilities, in the heat of voting on any one work.

119 The quality of new housing is dependent on the proper arrangement and timing of those public works that fit in among the dwellings: streets, schools and parks. It also depends on bigger plans. The land around our metropolitan cities is in demand for many other corporate uses: picnic grounds, by-pass highways, industries and institutions. Some of these others make bad neighbours for housing; the airport and sewage farm will serve for examples. The allocation of future urban land uses must extend beyond the built-up city; it should be done to a plan for that region dominated by urban facilities and influences.

120 Those engaged in planning see that urban building is eating greedily into these surroundings, at something like an acre a year for every 100 houses in the town. This urbanization will involve huge public expense; gigantic public advantages may be lost unless bold decisions are made soon. Tomorrow's metropolis will need some fertile land for its foodstuffs, certain strategic valleys for its approaches, adequate drainage basins to ensure its water supply. Sites for additional housing and other building will have to be selected in relation to these requirements for the whole region it is about to become. In short, a well-built city can appear only in pursuit of a firm and well-considered plan for the city region it is fast turning into.

### *Two kinds of planning procedure*

121 Many Canadian planning professionals and officials will have to deal in their own city during their own career with a total amount of urban building greater in extent, and more pregnant with import for human lives, than the whole of the London with which Sir Christopher Wren was confronted after the Great Fire. Procedures for cities to determine their future patterns are available throughout Canada. There are two broad systems of municipal planning in use.

122 The first type of planning system, most fully developed in Ontario, has been built on a distinct separation of planning from other municipal affairs. Municipal Councils who wish to reach local agreement on the physical future of their territory find the steps for doing so spelled out in a special Planning Act. Some of these provincial Acts were first passed 50 years ago. This legislation specifies an honorary planning board or commission, that cannot be dominated by Council members. This body is to draft an official plan. The planning board has almost no power, but it is the designated source of advice to the Council; if it is a joint board, it advises several adjoining Councils. It recommends the pattern of major works they should undertake, and the rules by which private developments should be approved or rejected. The board is expected to be representative of the best interests of the community, and free of influences for expediency or favouritism. Such a board is often served by some professional staff, either lent by the City, or engaged on salary or retainer from municipal funds supplied to the board. Intense

and continuous activity by these boards rarely dates back before the end of World War II.

123 The other general system of city planning regards the activity as an integral part of good local government. This system is now in use under some charters in the Province of Quebec, in Alberta, and most clearly in British Columbia (where the procedures for cities to follow in planning are embodied in the Municipal Act). The Council has a standing committee on planning, whose duties may include bringing to Council a comprehensive plan, and the presentation of annual programs of major civic works and budgetary recommendations for their fulfilment. In the western Provinces, this committee is served by a professional group of municipal planning officers; it is also advised by an inter-departmental panel consisting of the heads of the civic departments of works, health, finance, education, parks, law, and so forth. Thus the proposals made to Council carry firm staff endorsement as to their technical feasibility. The Council should in theory have before it a set of professionally coordinated proposals, and can base its decision wholly on their acceptability and appeal to the community. This system was first evolved for Edmonton about ten years ago.

### *All tactics and no strategy is costly*

124 During recent periods of rapid private building, the time of all these boards and committees and their staffs, under either system, tended to be taken up with individual private applications. The applicants most often want to divide land for urban development, or to change the uses to which private land in a particular district might be put. In the past three or four years, many cities have also studied closely the possible treatment of their slum areas. Concerted attention is urgently needed, however, to map the whole urban area, to measure trends that pervade its growth and change, to argue the logic of primary networks of public works that would most economically and cohesively serve the community it will become a decade hence. This concerted attention to the whole future of the city has too often been lacking. There has been too little thought for the larger frame the growing city will need, to maintain its stature and agility.

125 This bold framework should consist of several systems, each well designed in its own right, and each well adjusted to the others. The systems serve those purposes which compose the public business delegated for greater convenience by the Provinces to local governments a century ago. These are public thoroughfares; public open spaces; municipal buildings, such as schools and hospitals; and public utilities, including water supply and sewage disposal, often power supply.

126 To develop and extend these public systems efficiently, there must be some measure of control on the human load to be added in each direction year by year. Different uses of land put varying loads on the various systems. So a necessary part of municipal system design is to decide on a broad pattern of zones — for housing, for industry, and for institutions — in each area about to be developed or redeveloped. The city has then to determine in round figures how many people can reasonably be expected in each main use area.

This commonly takes the form of a generalized plan of land use with some limit to the number of people for whom accommodation will be allowed in each part of the city. This kind of diagrammatic zoning of areas for future use is needed to calculate the size of supporting public service systems. It is distinct from the more familiar and specific zoning, applied to each private parcel to forestall private nuisances to adjoining owners.

127 We are concerned with the default in regional planning as a threat to the quality of the residential environment. Housing quality is achieved in two ways. It depends first on a sound disposition of the main elements of the city and its region. Then environment should also have its positive, visible outdoor excellence at small scale, affecting the person at rest or moving on foot. This intimate setting should afford pleasures, to be found looking out the window, standing on the balcony or terrace, strolling in the garden or park or shopping plaza. Those delights have to be safeguarded from invasion of the residential area by anyone or anything with the purpose, not of *being* in the neighbourhood, but of *going through* it.

### *Good housing requires good city planning*

128 As our cities grow, more and more of the housing will lie in the paths of strangers, whose origins and destinations will be in other areas out beyond, or downtown in the working centre. These strangers will move in thousands of vehicles, and be too intent on safe travel to give themselves to visual delights. They will want more tons of cables, conduits and arteries strung out to them every year. Even after they have got home, the roads and facilities they need will be unsafe, unsightly and out of keeping with any attractive dwelling districts they traverse. These channels of movement call for design at the metropolitan scale. Given a well-conceived series of neighbourhoods, the grand chart of the city is the only way to protect those areas in use over the years. For good residential environment, the one scale of design is as necessary as the other.

129 In the hands of our major municipalities there are already powerful levers for direction of development, if they could but be used for converging instead of diverging purposes. The urbanization of land involves the transfer of at least one-third of it from private to public accounts, and installation therein of very expensive works, sooner or later by use of public borrowing and taxing powers. These public lands and the works in them make urban life physiologically possible, economically advantageous and culturally attractive. Is it not reasonable then to deploy these lands and works in concerted, commonsense ways that would make for greater health, less waste, more beauty? This need not invade any inherent property right. We know of no entitlement, running with land ownership, to demand dangerous or

extravagant or ugly public efforts. The avoidance of these will be achieved, whether for new development or redevelopment, by the prior preparation of a comprehensive and workable vision for the whole region, and by faithful adherence to that vision by all through whose hands the monthly fragments of development must pass.

130 Whereas the neighbourhood should be conceived completely, almost as a stage design, the metropolitan and regional pictures will look more like electrical diagrams. The local scene can be privately drawn, for public approval. The metropolitan diagram must of necessity be publicly composed. Many alternatives in the local design may be equally economic, and so variation is to be encouraged. But every line on the metropolitan plan is fraught with costs and benefits, private and public alike. The city-wide diagram should be the outcome of rigorous public analysis, where the housing area design can at many points be shaped in the unshamed quest for private beauty and pleasure.

131 The efficiency of the city's network of arteries will make its whole economy workable. The segregation of those arteries from living areas not only makes the arteries more efficient, but is essential if the dwelling districts are to be tolerable and pleasurable. Common sense requires that these bold communication lines of the city should be laid down in advance of the smaller and more detailed private developments. Yet in only a few of our major centres is there a municipally-adopted diagram covering the areas urbanized and imminently to be urbanized: a city plan in force. The adopted or official plan is the city's way of declaring, after due deliberation, that it intends in foreseeable time to create the indicated works and channels of communication, and that its attitude to private proposals will be governed by these firm intentions of its own.

132 Private developers, facing all the uncertainties they do, must lean on such municipal declarations to reduce their areas of risk. Several of the most ambitious development firms in Canada told us the lack of firm and reasonable municipal plans is increasing their risk. In other centres, notably in Alberta, developers agreed that their cities will be better places to live for years to come, because of the public planning activities going on there.

133 Good residential building depends on strong urban government over the urbanizing area, an urban government that has determined the main shapes and channels framing future growth. This requirement raises large questions of local authority unification and administrative structure; of municipal powers, revenues and credits equal to its task; and of the recruiting of a corps of professional personnel adequate to the city's obligations to its future. Some of these needs are discussed in this report; others fall outside its scope. Sufficiency on all these counts is plainly necessary to the realization of good residential environments.

134 Nine conditions favourable to good residential development have been outlined, ranging from the elbow room on the particular site to the plan and program of major works for the urban region. Many of these conditions can be fulfilled only if the design team consists of professionals who are qualified and willing to collaborate in particular ways. Detailed considerations under this heading can be of little interest outside the circle of professionals directly concerned. However, some general observations should be made.

### *Comprehending the program of requirements*

135 Success in design of so complex a product as a residential district calls for a clear and valid statement of the needs of the intended users. Domestic architecture used to be designed after acquaintance with those to be accommodated, or else upon assumptions about living arrangements which those residents would readily accept. It is likely that in future less and less of the briefing for design problems will come from the actual users of buildings. It will more often come to the designers through intermediaries, many of these serving interests other than the residents might entertain. Today's fleeting chance to exploit a bit of land or a bargain in materials or a political impulse may be of no advantage to the residents ten years from now; it may indeed contribute to their discomfort.

136 *The Committee is convinced* for these reasons that the architectural profession should have reference to a more systematic and independent literature and a growing body of knowledge, dealing with human behaviour in and about dwellings as a function of their design; the profession should be able to establish more clearly the specific gains and losses to occupants entailed in design alternatives, not only in dollars but in bother over the years. To this end the Royal Institute is asked to promote behavioral and economic studies of the residential environment, and to encourage the introduction of more such material into the curricula of the schools of architecture.

### *Education in residential design*

137 The design of a good residential environment will involve a team drawn from several professions. Specialized skills for this work can be developed in graduate schools of design of a kind Canada does not yet possess. The country needs many more people who are fully trained to serve in this field, if three million dwellings are going to be combined in twenty years into neighbourhoods and metropolitan cities that will make for satisfaction in 1980.

138 *The Committee urges* present undergraduates and recent graduates in architecture to consider this field for their careers. They should seek opportunities for systematic study and practical experience in the commercial building of residential accommodation. They should travel to know at first hand the prototype housing solutions that are ap-

pearing in every urban society. A number of fellowships, scholarships and bursaries are available for such purposes, more than have been taken up in recent years. It is for younger members of the profession by their application to these problems to prove the need for more study grants.

### *Landscape design*

139 There is at present no school of landscape architecture in Canada. Our rate of urbanization is bound to increase the sizes and numbers of open spaces in our cities, and the intensity of their use. Buildings of a generation ago were often incidents in horizontal space; spaces in the metropolis are much more likely to be incidents among buildings. Letting caretakers decide where to put grass seed or bulbs will hardly do when surface drainage and pedestrian traffic pose problems four times as acute as they are today. Control of noise and polluted air currents, as well as visual seclusion of domestic buildings, will call for higher skills and knowledge.

140 Design problems so intricate as these, and so vital to good housing design, cannot in fairness be thrust upon a handful of landscape architects trained in other countries, even if augmented by self-taught supernumeraries. The practice of domestic architecture depends on advice from artists in landscape design; architects should cultivate the ground in which that art can flourish. Building budgets and appraisals should include proper allowances for landscaping. Architects should enter into early consultation with their landscape colleagues as the design for the residential project develops.

141 *The Committee recommends* that the Royal Institute give its support to the establishment of a professional school or schools of landscape design in Canada; and that in view of the nature of future residential areas, such schools should offer training in earthmoving, drainage and road technique, in addition to horticulture, arboriculture and principles of design.

### *Sale of house plans*

142 The degree to which architects are responsible for the design of dwellings now being built in Canada is much disputed; the percentage attributed to architects runs from 5% of the whole output to 55%, depending on the definition of responsibility. A good part of the difference between low and high estimates turns on the houses built from mail-order plans. These designs are often picked out of a catalogue without expert knowledge of orientation and other site factors; they may be drastically changed in execution by lay purchasers. These circumstances lead many architects to doubt that casting plans into the limbo of a mail-order service can properly be called professional activity. But we have heard concrete suggestions for truly professional modes of service that would serve the same ends.



143 *The Committee urges* the Royal Institute to explore and develop whatever system for provision of dwelling plans promises in a professional manner to produce good designs, well suited to the household, region and site in question.

#### *Modes of practice with merchant builders*

144 Large housebuilding concerns are finding they need architectural services; these they must dovetail with their technical development and market survey organization. The relation of the architect to a builder of houses for sale is quite different from the traditional terms of practice; some old functions disappear and other new ones emerge. The component provincial Associations in the Royal Institute have in most cases told us what new clauses for this professional practice they have devised. There is room for much clarification and advance in this field.

145 *The Committee recommends* that the Royal Institute recognize, and impress upon its component Associations, the urgency of establishing terms that will be mutually satisfactory to the profession and to the appointed spokesmen of the housebuilding industry.

#### *Identification of architects with residential work*

146 Professional service is by nature personal service. Lay discrimination about architecture will largely develop

around discussion of the work of particular architects and schools of architectural thought. This discrimination can be accelerated by the media of mass communication, if they will publish analysis and criticism of finished residential work; they require authors of acknowledged perception and integrity, uttering comment in good faith. Major additions to our urban environment are only beginning to receive the amount of press and broadcast attention long given to the other social arts. Newspapers and television can do much more to awaken that interest which will make better work possible.

147 We are not advocating the cult of architectural personalities. However, great numbers of domestic buildings are illustrated without mention of their designers' names. To obtain a building permit or mortgage approval of a major scheme usually requires declaration of the architect's name; sponsors of such schemes can usually supply their architects' names. But the architect's name is too often withheld where it is not by law required.

148 *The Committee believes* that professional identification of work should be called for by codes of practice; that the individual architectural firm should ensure that its proper name appears on all documents made for presentation, public approval or information about its work, and on the site of the work.

## GOVERNMENTS IN THIS DESIGN PROCESS

149 We have argued that a major project in residential development cannot fairly be judged by written codes, but should be looked at on its own merits. It follows that approving authorities, whether municipalities granting building permits or Central Mortgage and Housing Corporation issuing mortgage commitments, must have advisers able to comprehend the quality of the whole design. These advisers must be of such stature that they will be regarded by the architect who designed the scheme as his professional peers. At the same time these examining architects will have to enjoy the confidence of their elected and appointed superiors for the soundness of their professional judgment. History has made Canadian residential construction into quasi-public business. Its typical products will bear the stamp of quality only when every local public office through which they pass brings ideals of quality to bear on them.

150 Central Mortgage and Housing Corporation employs Members of this Institute at its head office and a number of regional offices, and directs all major schemes for review to these offices. This may be too centralized and too remote from the construction sites; in any case we have no way of knowing how influential these professional judgments are in practice. The majority of National Housing Act loans made in 1959 were within a few hundred dollars of the maximum

allowed by Regulation under the Act, which suggests that projects of poorer quality went through this evaluation relatively unscathed.

#### *Design review of additions to our cities*

151 A number of our major municipalities employ men with architectural training, chiefly in their planning offices. But only in special few cases — e.g. Hamilton, Vancouver and certain sites in Ottawa and Toronto — is municipal power exercised to refuse a building permit because of the appearance of the project submitted. In some of these review procedures, the authority takes advice from a panel of professionals in private practice. However, the great bulk of residential development in Canadian cities is exempt from any such review; and Councils of several of our important cities have arranged no access to qualified architectural advice in the course of approving enormous additions to their cities. Such a municipality is quite unable to examine large-scale proposals, residential or otherwise, with any certainty that they have visualized the meaning of the applicant's drawings. We need hardly wonder that so much of urban Canada consists of bizarre and mishappen assemblies of walls, wires, signs and stoops. Yet the housing entrepreneur while preparing his project should be quite capable of developing a total image of his intended result.

152 The National Building Code, which will shortly be the required standard of construction for National Housing Act loans, is based on an increasing store of knowledge of materials and construction assemblies. This knowledge relates to their physical performance in Canadian weather and other measurable conditions. Adoption of the National Code by those municipalities who have not already done so will thus make for more reasonable and proven criteria for the issue of building permits. But by the nature and provenance of this Code, or any written code, it cannot be sufficient in respect to the appearance of the project.

153 *The Committee recommends* that each approving authority require the applicant to submit a full presentation of the appearance of his intended housing project; that this presentation use drawings, models or photography to show the project in the existing setting; and that the authority establish a standing arrangement for commendation of this presentation by qualified persons and for inspection by affected owners of this presentation and advice, as a condition for granting approval.

#### *Amount of accommodation allowed on the site*

154 Municipal road and service systems can be set out economically only after limits are set on the constituencies they are to serve; just as hotel corridors and kitchens are reckoned to a maximum number of guests. These limits are set for residential areas as maximum densities.

155 Density of residents on the ground is limited by various formulae. The "ground" may mean a whole neighbourhood or even the whole town; but limits upon private developers are clearer if set out in relation to blocks of private land bounded by streets or other ownerships. The maximum development allowed on a given base area may be expressed in several ways. It may be expressed as dwellings, or habitable rooms, or persons per acre. Or it may be stated in floor area allowed, as a multiple of the site area. These limits usually over-ride the other restrictions on building, as how much of the site must remain uncovered by buildings, how high the buildings may be, what vehicle spaces must be left, how others' daylight must not be blocked off. There are many deviations across the country in the terms by which density is controlled; in some major urban areas it is not effectively controlled at all.

156 Greater flexibility and variety in comprehensive design of residential areas would be possible, if cities were enabled and encouraged to impose exact density limits on points of real public concern, and to remove those detailed specifications that are irrelevant both to good development and to good government. This instrument can be used to induce better development; in Vancouver, for instance, it is suggested that an owner who provides extra amenities on his land be allowed to build more rentable space — that good architectural behaviour be made to pay.

157 But too little is known of the real costs, to all the public and private purses affected, of allowing housing at higher densities. The looseness of nomenclature alone makes close cost comparisons difficult. Municipal and social costs go up sharply when gaps of vacant land are left between housing

developments. It is less certain how these costs compare for dwellings at 2 to the acre and 20 to the acre, or whether that is the right basis of comparison at all. Only in the Lower Mainland of British Columbia was analysis of this kind shown us.

158 *The Committee sees the need* for close study under Provincial auspices of the useful identification of density in housing, and the relative costs and benefits of housing development at various possible densities;

this accounting should recognize the divergent social compositions of different residential areas and their varying dependence on thoroughfares, institutional and open spaces; the results should be published in terms of costs to the occupants and to the community over the useful life of the accommodation.

#### *Owners injured by change of land use by-law*

159 Quite as necessary to the city's orderly development as foreknowledge of the number of occupants in an area, is foreknowledge of their kinds. Municipal regulation of the uses made of private land is general on this continent. In dealing with the forces for uniformity in residential development, we recommended relaxing those zoning strictures that tend to place every building in the same way on its lot (paragraph 61). The same by-laws specify for what occupancies buildings may be erected in the designated zones of the city. Changes in these public restrictions on the use of private property will clearly affect its value. Except in Manitoba, the Canadian property owner has no right to compensation for value taken from him by a zoning change nor obligation to pay forthwith for benefits received from such change. That may be a reasonable hazard of being a "tenant in fee simple". But property owners are also municipal voters, so the zoning instrument — so necessary for orderly city growth and change — is applied more tenderly than logically.

160 Many Canadian cities have gone for years without the basic amendments and extensions to their zoning by-laws that real and rapid changes in city patterns require. Still other cities regulate property use by crazy-quilts of compromise; bits and pieces of by-law adopted with more regard for temporary pressures than for the functioning of the community as a whole. Many of these by-laws compel the repetition of single dwellings, without any relieving forms or facilities, over vast urban areas. So great was the struggle for their adoption that these by-laws often seem immune to change. The city fathers deserve sympathy: there are very real problems of equity in the present use of zoning powers as conceived half a century ago.

161 Nonetheless, economic extensions of municipal services no less than prevention of private nuisances, require regular and rigorous review of public controls over land use. Methods to do so with fairness to private owners have been closely studied in the United Kingdom in the past 25 years. The same issues have gained wide attention more recently in the United States. Our cities, in that they are physically more like the American and legally more like the British, can make some use of both sources of experience, but full use of neither.

162 *The Committee recommends* a thorough study by the Provinces of the equitable impact on private property values of the exercise of necessary public regulation over kind and intensity of urban land use, the problem to be seen in the perspective of current rates of city growth and change.

### *Housing and the local road network*

163 Canada is increasing our fleets of cars even faster than our population or our housing stock. Most of those cars are going to spend two-thirds of their existence in residential areas; most of them will try to reach home or get away from it at the same hours. Their errands require several networks: to work, to shopping centres, to weekly appointments (clinic, library, church, music lesson) and to vacationland outside the city. The same road system should be efficient for public transit and one or more school bus circuits. Yet two-thirds of the city's people will never be licensed to drive; for the very young and the very old the nearest busy road marks the end of the known world. The huge expanses of fast-moving vehicles that highway engineers must lace through our cities and have called *freeways* might for the majority of the residents be called *bindways*.

164 As we enter an era of heroic urban roadbuilding, are we going to spoil long stretches of housing by the overpowering sound and smell of cars, repeating what we once did with railways? Housing areas now being built are bound before long to be cut through by an amount of traffic hardly visualized; are we grouping the dwellings to give elbow-room for the arteries we shall need tomorrow? Or is every urban road like every other, equally attractive to motorists trying to save time and so equally extravagant and dangerous as a living address? The better we build our main roads, the more pedestrians we circumscribe with each; where in town are we to walk safely and pleasantly? Failure to find the right answers to these questions can threaten much housing that is still new.

165 Out in the country we do not intermingle picnic parks with rifle ranges; but that could hardly be more lethal than to tangle city ways for wheels with those for feet. How to untangle them was demonstrated thirty years ago by two architects, Clarence Stein and the late Henry Wright: cities for the motor age. The housing they built is free of speed, noise and gasoline fumes; cars are stored at the edge of the road and the houses look away toward the pedestrian world; that quiet space is reserved for persons; it includes parks, schools and local shops. In spite of these lessons, Canadian cities are still passing by-laws that exact wide street pavements and force private garages as far as possible from them; so that asphalt and grease puddles must have more residential land than is left for houses. Good residential design will deal more efficiently with the car and more graciously with space for living.

166 Highways are often laid out to open country ahead of housing developments; the first-class Provincial roads have rights of way wide enough to keep houses well away from moving vehicles, but municipal roads often do not. Municipalities are sometimes prevented by law from buying land for roads as far in advance of development — and hence as cheaply — as they should. But metropolitan arteries are going to be as hard on nearby housing as the inter-city high-

ways are. Miles of half-dead land will soon be left beside such roads, forsaken by all in search of good living environments.

167 *The Committee recommends* to Provincial highway departments and others interested in road transport that they undertake immediate studies of the impact of major roads on adjoining private properties. Such studies might include intergovernmental measures to save residents from road travellers, just as road travellers are protected from railway crossings. These studies should examine the possibilities in planting, in grouping buildings for occupants who will be absent when roads are busiest, and otherwise to ensure economy of urban structure from the several points of view involved.

### *Use of open space and community facilities*

168 The good living area is assumed to include public and institutional property for those activities the residents engage in as groups. There is much difference of opinion about how extensive and where this common property should be. The problem may be illustrated by the case of urban parks for rest or active play. There are standards, accepted from Britain or the United States years ago, of public open space per thousand residents. In those days parks were often donated by leading citizens; today the developer has to dedicate a portion of his land for public open space.

169 The ratio of open land required of the developer varies; for instance in Alberta it is 10%, in Ontario 5%. But the ratio is constant for all developments, small or large, central or suburban. The city may be authorized to sell small dedicated parcels, buying larger and more useful ones with the proceeds. But by the time urban developers reach this stage of their operations, larger parcels have disappeared or become prohibitive in price. Large or small, these open spaces often lie unfinished in municipal hands for years; then they are liabilities to their surroundings instead of assets. Even where these parks were developed with the best of advice, their use by the residents often turns out quite contrary to what was expected: ornamental areas are abused or abandoned, baseball diamonds over-run for some other game.

170 Municipal uncertainty about how and when to spend on park development may stem from fundamental changes in need and use for urban open space. More extensive and better supervised school yards have become general. A shorter work week means leisure time in longer stretches, spent in faster cars at greater distances from home; phenomenal sales of camping, skiing and boating gear attest to this. The meaning of these trends for the right provision of recreation space in districts of rising incomes is far from well understood.

171 *The Committee recommends* that health and recreation authorities, in association with other public and private bodies who serve this field of activity, should cause a thorough investigation to be made of the emerging uses and appropriate standards of area, distribution and equipment relating to open space in urban residential districts.

172 The common life of the neighbourhood will depend

on other facilities or 'social equipment' in addition to open space: community clubs, places of worship, nursery schools, clinics, charitable properties. These are too often the last elements to appear on the scene and must be content with leftover sites; yet their central location and easy access is needed for a coherent living environment. If the main channels and zones of city growth are properly laid out in advance of development, the municipality should have the foresight and means to buy what public property it will need in each residential district: school and utility sites, etc. The neighbourhood facilities that are profitable, such as retail outlets, will readily find their places under municipal guidance. The private non-profit elements may need sites reserved for them, until such time as their constituents move into the area and organize these essential voluntary facilities. Public authorities acquire sites in advance, as trustees for voluntary bodies in Arctic townsites; why not on the metropolitan frontier? The real reason for emphasis on these elements in the neighbourhood, is that early decision on their location and form can give structure and visible identity to the area; whereas if housing entrepreneurs are turned loose to build without any such centres to keep in mind and build around, the finished result will be formless.

173 *The Committee recommends that the Provinces consider enabling legislation if necessary to permit growing cities to acquire lands in advance of need for the common use of residents of future neighbourhoods, it being understood that the municipality could convey parts of the lands to non-profit institutions for completion of the environment.*

174 An important part of the design of the residential environment, given a better understanding of the uses of public space and arrangements for acquisition of institutional sites in their proper locations, will be the co-ordinated development of this public and semi-public land to form the climax of the neighbourhood. This design treatment will be a painstaking professional job: unfortunately professional designers on our municipal staffs are usually too hard pressed to give ample time to minor spaces in the public domain. It would be very fitting that private practitioners in the design professions should contribute to this end. Such a contribution from an individual could perhaps be misunderstood; but contributions of community service organized through local professional bodies follow honourable traditions. This constitutes an additional way to portray what is meant by a good living environment.

175 *The Committee therefore suggests for discussion by local Chapters of the Royal Architectural Institute of Canada, the Town Planning Institute of Canada and the Canadian Society of Landscape Architects, that they might together prepare a presentation study design for the public and institutional sites in each new neighbourhood or redevelopment area; such a design would be offered to the municipality as a professional contribution, after official needs are established and the public lands to meet them are identified.*

### *Places of historic value in residential areas*

176 In older civilizations, each addition to the city invites direct comparison with the architecture and amenities of areas that have been preserved from the past. This is in itself

an inducement to high standards in new work. In our cities, historic buildings are the more precious for being so rare. Where such buildings must be destroyed, as for public safety or because their retention would prevent wholesale redevelopment, their message can be kept faintly alive by incorporating their fragments or their image in new work.

177 *The Committee recommends that those Provinces not now doing so should take specific steps to preserve good historic buildings, if necessary to find new uses for them, and to compensate their owners in whatever way is fairest in the circumstances;*

further, that redevelopment authorities and their architects make every effort to retain the values these old buildings represent for future citizens; and

that architects study the techniques of the preservation of buildings and with this and their other abilities support the Institute's committee and voluntary bodies dedicated to keeping the best of our architectural inheritance.

### *Rehabilitation, slum clearance, public housing*

178 The overwhelming impact of our residential environments must always be of older ones, notwithstanding the rate at which we are adding new dwellings. In these older areas there is much to be done to enhance the whole quality and livability for millions of citizens. This may be action as direct as the closing of certain streets to discourage through traffic, the creation and equipment of additional recreation spaces, the adaptation and refurbishment of municipal property. Such steps place beyond doubt the community's concern that its more venerable — and generally less demanding — quarters will live up to their potential attractions. Some of these areas appear to be municipally abandoned; they can be left to wither only at great public cost.

179 Other parts of our standing stock of housing will not warrant the municipal and private effort required to make them decent. They are too far gone in disrepair, too ill-equipped or too badly placed in the changed and changing city ever to give good residential use again. Every city we visited has doomed housing of this sort; most of them are studying closely on what terms they can be rid of slums and blight. A half-dozen cities have struck out boldly at their worst areas: Saint John, Toronto, St. John's, Montreal, Halifax and Windsor. Others must soon do likewise if Canadians are all to have worthy habitats to live in.

180 There are still seventeen households for every sixteen usable dwellings in Canada, so even the most dilapidated housing in our cities must usually be filled to overflowing. Federal provisions for slum clearance rightly require that suitable alternative accommodation be available for those dispossessed. Real improvement in the housing conditions of any community must involve creation of good public housing for those compelled to share accommodation with others or live in squalor. In our economically mobile society, the tenure of a family in public housing is likely to be for only a couple of years; their dependence on this aid diminishes as their circumstances improve. Canadian public housing arrangements provide that when that dependence comes to an end, the family is encouraged to yield its dwelling to others now in need of it.

181 *The Committee is convinced* that every municipality genuinely concerned for the living environments of its citizens will have vigorous and steady programs for removal of housing that cannot in all conscience be redeemed, and for creation of public housing for those citizens who are for the time being less fortunate.

182 *The Committee commends* the Province of Ontario for exploring, in collaboration with Central Mortgage and Housing Corporation and other Provinces, what public steps will ensure the continued livability of older houses and stimulate the rehabilitation of those that can again be made livable. We urge that the appropriate measures, when found, will be vigorously prosecuted in all our municipalities.

### *Municipal tax revenues from land*

183 There are many views about the strictures on municipal finance. Cities are hard pressed to complete the physical environment in step with the beginnings made by private developers. There seems to be general agreement that Canadian municipal governments are not collecting as large a share of the disposable dollars of their citizens as they did thirty years ago. There is less agreement why this is so; but it seems clear that private wealth is less adequately reflected than it used to be in urban real property, which is the chief base of municipal revenues. With so mobile a society as ours, municipal expense on such heavy items as traffic, health, education and welfare services may well benefit another municipality than the one that met the expense. Where a number of urban municipalities are clustered — and this is the situation where most Canadians live — there is competition among them to cultivate what they regard as rich tax plums. Suburban governments usually encourage factories instead of dwellings, a preference that puts severe strains on the logical distribution of development in the whole metropolitan area. There is some doubt that the plums are so rich as they are thought to be. Meanwhile, the owner of the large development tract is under municipal pressure to entice industry on to his land; this may well be to the detriment of the layout, quality and price of the housing he had meant to build.

184 An international group has given a good deal of study to the practice of taxing urban real property according to a valuation on the site only, without regard to the value of structures and improvements on it. It is claimed that this practice, among its other advantages, offers quicker adjustment to value as affected by zoning change; that it encourages building improvements and discourages both the retention of run-down buildings on valuable sites and the speculative holding of vacant sites; that it generally reduces the tax burden on residential areas by increasing it on central area uses. Not all these claims are universally endorsed, and we have no way of testing them. Some of the experience described was gained where modes of assessment, public planning and private development are different from ours.

185 *The Committee is certain* that the Provinces, at no great expense, can ascertain for Canadian conditions the benefits or disadvantages of a general change from taxes levied on land and improvements, to a system of real property tax on site value only. The difference in these assess-

ment methods clearly has great import for the quality of the huge residential areas we shall have to create and maintain in the years before us.

### *Provincial leadership in regional planning*

186 A report much longer than this would be required to detail the many responsibilities that lie with the Provinces of Canada in the improvement of the residential environment. We have touched on but a few salient issues: protection of agricultural land, rationalization of road and other communication networks, consolidation and administrative reform of metropolitan governments, review and adjustments to a wide range of municipal powers of land acquisition and control. Great elaboration of these points is not necessary here, given the calibre of the civil servants in the Provinces where these problems are most acute. There is however one specific and far-reaching activity that only a Province can initiate, and which in relation to our terms of reference must be singled out prominently. That is the co-ordinated analysis of the wealth of its major land regions, and the delineation of policies of development based on that analysis.

187 Almost every Province has prescribed planning procedures for its municipalities, the avowed purpose of which is to obtain long-term consistency in the use of their powers to order or permit physical development in their area of jurisdiction. The works placed in a municipality by the Provincial or Federal government are exempt from these local planning procedures. The location and impact of these senior government works have come to represent huge areas of uncertainty for the municipality in the conduct of its lawful affairs. One has only to think of highways, on which this country is spending more per caput than is being spent on the Federal system in the United States; yet a great Canadian metropolis can be in the dark as to where on its circumference 3000 cars an hours will pour into its streets in a couple of years. Orderly city planning, which we are satisfied is a necessary condition for the building of sound residential areas, is all but impossible in the face of such uncertainties. There could be many other instances of senior government dominance of the physical changes of cities.

188 *The Committee asks* that the Provinces of Canada be urged in the strongest possible terms to launch energetically on the economic analysis of those regions undergoing fastest urbanization and physical change, with a view to adopting, in consultation with Federal and municipal authorities and through public hearings, plans and programs setting out the main lines to be followed in the publicly initiated development of each such region. The adopted regional plan would also be for the guidance of municipalities in the exercise of their proper functions including those dealing with private property. Such plans and programs should be subject to periodic review in the same way they are first established.

### *Federal policies in development*

189 Finally, all facets of city development — municipal and provincial, private and professional — are realized within a milieu created by the decisions of the national government. Fiscal and trade policy, immigration and social secu-

rity, employment and tax agreements, such major functions fix the boundaries within which residential building can proceed. Far as these great currents may seem from the minutiae of house construction, that activity will drift, recede or move forward as the ground swell of national policy frustrates or supports it.

190 *The Committee believes that the Government of Canada needs machinery superior to anything we have seen, for the co-ordination of its functions insofar as they impinge on the physical development of Canadian cities in the years of growth ahead of this country.*

## DEVELOPMENT OF URBAN DESIGN DATA

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191 The Committee has regarded as part of its duty to note questions on which the search for additional knowledge is necessary before significant advances can be made in shaping the urbanization about to occur. Our recommendations for such studies are summarized in Table I, according to the topics to be studied and the likely sponsorship for the indicated research.

### *Interprofessional collaboration*

192 Organized bodies in the design professions can do much to add to the stock of accumulated wisdom in this field, and to disseminate it. Seminars, refresher courses and publications can all be made means to this end. Architectural societies should arrange joint meetings with members of the other professions involved in housing, to learn more of the factors these others must deal with – and perhaps to impart some sense of the importance of architectural design considerations.

193 The collaboration we look for could be perfected in those special situations that inspire determination and patience beyond the ordinary. The Canadian Association of Geographers spoke of the golden opportunity for a fine new town that was thrown away in the transformation of the upper St Lawrence Valley by the Seaway. Will the celebration of 1967 ignite another supreme occasion of this kind? Or could the development of townsites for atomic power, or the development of the Canadian sub-Arctic, afford such special opportunities?

194 Another kind of incentive to the pooling of specialized design talents springs from harsh necessity, where such talents are very scarce in relation to need. The organization and practice of the District Planning Commissions in Alberta offer some pointers in this direction to the rest of the country. Following this precedent, any Province could help to place a design team at the disposal of a group of smaller towns within a region.

195 Whatever is offered in housing design by such teamwork – and we trust it would yield many attractive alternatives to today's orthodoxy – must in the circumstances of the housing market contain not only demonstrable long-term advantages but also immediately visible appeal. There are good reasons why most people believe that surroundings for private living should (in the eyes of their wives, their

policyholders, their voters) evoke memories of assured comfort. An unassuming modesty becomes domestic architecture in bulk. In this popular art there is little room for exhibitionist antics.

### *An institute of urban studies*

196 This line of thought argues for more fruitful combinations of the talents the various professionals bring to their common task. It calls for fuller understanding on the part of each professional of the necessities and doctrines represented by his collaborators from other disciplines. Each must contribute, not mere opinion expressed in his own jargon, but substantiated experience, put in terms that are useful to his colleagues in urban analysis and design. We are struck, because of what we have seen and heard, with the national importance of applying every available skill and experience to the better building of durable surroundings for Canadians to live in. Much freer communication must flow that we have known among participating professions, and between them and the many other agencies involved.

197 As these interests press ever closer on one another in our cities, their relationships can better develop through a national clearing-house for such issues. This does not mean that some brains trust could settle these questions for us, but our grasp of many of these problems can be refined and our resolution strengthened, by contact through such a centre with those like-minded people who are looking at related problems. The questions we have singled out for study are summarized in Table I, which follows overleaf.

198 There is a need, in our view, for a Canadian Institute of Urban Studies. It should be attached to one of our metropolitan universities. It should be the place in which published material in this field would be found; from which bibliographic help would be expected; and through which all concerned could learn what serious exploratory work in the field is in progress, or is in prospect or in demand. In view of the spreading and ramifying urban fabric all around us, we cannot believe that occasional joint meetings, between which the participants spend long months in isolated labour, are likely to develop the mastery of civic science and art we must command. The facilities of the Institute should however provide, among other things, for the convening of meetings on those occasions when face-to-face consultation offers the best way ahead.

199 The Government of Canada and our major lending institutions have billions of dollars now invested in mortgages on the Canadian residential environment. These constitute the largest single claim on long-term capital. The amount of national savings, both private and public, that will pour through the same channels in the next decade will be equally prodigious. The soundness of this investment, from their point of view, is as vital to safeguard as anything could be; that soundness turns on resolving many uncertainties about the rapidly changing cities in which these vast investments will be made. We have recited but a few of those soft spots in housing logic: on divergency of household needs, on the whole real costs of the environment over its useful life, on the real impact of other necessary urban installations on housing quality. We suggest that those institutions with great amounts of capital at risk, whose returns are contingent upon the continued efficiency of living and moving in cities, can hardly afford not to support research that promises to yield better understanding of those cities. Great private corporations, whether financing or producing for the urban population, should lend their support to the Institute

we have proposed, to ensure its permanence and efficacy.

200 It is for all those who could participate in this institution to decide on its exact form and functions. Consideration of its possible uses and programs should take place where those people can take part. We are convinced from this Inquiry of the value of such an Institute. Its structure should now be formally determined.

201 *The Committee recommends* to Central Mortgage and Housing Corporation, as the agency with a national mandate in housing and planning research, that it should convene a conference on the idea of a permanent Canadian Institute of Urban Studies. The Corporation need not in so doing commit itself in advance to this instrument. It should invite to the discussion the representatives of those governments, universities, national corporations and other research bodies that have already made significant contributions in urban studies in Canada.

202 Our recommendations for action are summarized in Table II, which follows Table I.

*All of which is respectfully submitted,*

PETER DOBUSH  
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C. E. PRATT  
MEMBERS

**TABLE I: SUMMARY OF RECOMMENDATIONS FOR STUDIES**

TOPICS TO BE STUDIED	AGENCIES ADDRESSED				
	MUNICIPAL	PROVINCIAL	FEDERAL AND LENDING COS.	ARCHITECTS AND ALLIED PROFESSIONS	SPECIALISTS IN SOCIAL STUDIES
Dwelling Design				136 Research in human behaviour as a determinant of dwelling design	
				138 Graduate courses in housing design	39 To study what variants in household composition call for differentiation in dwelling types and siting
				145 RAIC to develop terms of practice with merchant builders	
				143 RAIC to foster professional modes in use of stock plans	
Site Selection and Community Planning	62 To develop logical codes for siting of residential buildings			141 RAIC to help establish a school of landscape design	171 To discover trends in the uses made of urban open space
		162 To overcome the unfair impact of zoning on site values			
		167 To reduce the impact of major roads on the livability of nearby housing			
Costs and Revenues of Housing in Use		158 To find the whole cost of housing at various densities	95 CMHC to study accounts of housing now in use as to economics of design		
		185 To ascertain the benefits of taxation on site values only	99 CHMC and lenders to build and study new dwelling types		
		69 Utility regulating authorities to study real costs of neater distribution systems			



**TABLEAU I – RÉSUMÉ DES RECOMMANDATIONS PORTANT SUR DES ÉTUDES**

SUJETS D'ÉTUDE	ORGANISMES EN CAUSE:				
	MUNICIPAUX	PROVINCIAUX	FÉDÉRAUX ET SOCIÉTÉS PRÊTEUSES	ARCHITECTES ET PROFESSIONS CONNEXES	SPÉCIALISTES EN SOCIOLOGIE
La conception de l'habitation				136 Recherche sur le comportement humain, facteur déterminant dans la conception de l'habitation	
				138 Cours universitaires en architecture de l'habitation	39 Etude des facteurs qui selon la composition des occupants d'une maison, exigent des types de logis et des emplacements différents
				145 L'IRAC doit mettre au point, avec les constructeurs, des règles de pratique communes	
				143 L'IRAC doit favoriser le recours à des méthodes professionnelles pour les plans-types	
Choix de l'emplacement et urbanisme	62 Mise au point de règles logiques pour situer les maisons			141 L'Institut doit aider à la création d'une école pour architectes paysagistes	171 Découvrir les tendances de l'utilisation des espaces libres dans les villes
		162 Elimination des effets injustes du zonage sur la valeur des terrains			
		167 Réduire les désavantages des voies principales sur les conditions d'existence dans les habitations avoisinantes			
Coût et rendement des habitations présentement en usage		158 Trouver le coût total de l'habitation, à diverses densités de population	95 Etude, par la SCHL, aux habitations présentement en usage, quant à l'aspect économique		
		185 Rechercher les avantages d'une imposition d'après la valeur des emplacements seulement	99 Construction et étude de nouveaux genres de logis par la SCHL et les prêteurs		
		69 Etude, par les autorités responsables des services d'utilité publique, du coût réel de meilleurs systèmes de distribution			

**TABLE II: SUMMARY OF RECOMMENDATIONS FOR ACTION**

FIELDS OF ACTION	AGENCIES ADDRESSED			
	MUNICIPAL	PROVINCIAL	FEDERAL AND LENDING COMPANIES	ARCHITECTS AND ALLIED PROFESSIONS
Dwelling Design	153 Permits for projects to require full visual exhibit		72 Appraisals to favour built-in quality	
			79 N.H.A. to be used to foster variety of dwelling types	
Site Selection and Community Planning	51 Use of N.H.A. for assembly of housing land	188 Provinces to prepare regional plans and programs	190 Co-ordination of Federal development policies	175 Local Chapters of design professions to offer sketches for development of public sites in new neighbourhoods
		56 Federal-provincial action to identify and protect areas of irreplaceable agricultural value		
		173 Powers for cities to buy land for community facilities in new neighbourhoods		
	181-182 Vigorous programs of housing rehabilitation, slum clearance and public low rental housing			
Public Awareness	177 Preservation of historic architecture			177 Skill in restoration of historic buildings
				148 Architects to sign all their work
				85 Design award winners to be widely publicized
				86 National catalogue of good street furniture to be issued
Organization for Research			201 Initiate and support steps for establishment of an Institute of Urban Studies.	

**TABLEAU II – RECOMMANDATIONS PORTANT SUR DES ACTIONS**

DOMAINES D'ACTIVITÉ	ORGANISMES EN CAUSE:			
	MUNICIPAUX	PROVINCIAUX	FÉDÉRAUX ET SOCIÉTÉS PRÊTEUSES	ARCHITECTES ET PROFESSIONS CONNEXES
La conception de l'habitation	153 Documents visuels complets exigés avant l'émission de permis pour construction		72 Etude des moyens d'ajouter à la qualité de la construction	
			79 Recours à la Loi nat. sur l'hab. pour encourager la variété des maisons	
Choix de l'emplacement et urbanisme	51 Recours à la Loi nationale sur l'habitation pour grouper les terres destinées à l'habitation	188 Elaboration de plans et programmes régionaux par les provinces	190 Coordination, par le fédéral, de sa politique relative à la croissance du Canada	175 Les groupes locaux des professions intéressées devraient soumettre des plans et croquis pour l'aménagement des sites publics dans les nouveaux quartiers
		56 Action concertée du fédéral et des provinces pour déterminer et protéger les zones indispensables à l'agriculture		
		173 Pouvoir accordé aux villes d'acquérir des terres communales dans les nouveaux quartiers		
	181-182 Programmes de rénovation domiciliaire, d'élimination des taudis et de construction d'habitations à loyer modique			
Information du public	177 Conservation des structures d'intérêt historique			177 Compétence dans la restauration des édifices historiques
				148 Les architectes devraient signer toutes leurs oeuvres
				85 Les gagnants de distinctions en architecture devraient être bien publiés
				86 Publication d'un catalogue de fournitures pour l'aménagement des rues
Organisation en vue de la recherche			201 Prendre et appuyer toutes mesures en vue de la création d'un Institut d'urbanisme	



*An impression by C. E. Pratt of the City  
of Toronto Council Members' Room  
from the Committee table*

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Henderson, David  
MTPIC, Associate Planner,  
Manitoba Planning Service

Simpson, E. G.  
MRAIC, Deputy Commissioner  
of Buildings, City of Winnipeg

Pickersgill, T. B.	<i>CMHC Regional Office, Prairies</i> Regional Supervisor	Kerr, Rev. R. H. M.	<i>Presbyterian Church in Canada</i> Committee on Church Architecture
Buchanan, D. B.	Regional Architect	McCullough, Rev. David	Committee on Church Extension
Beehler, Frank	CMHC Branch Manager, Winnipeg	Grant, Miss Charity L.	Liaison Officer, Citizenship Branch Dept. of Citizenship & Immigration
Blankstein, Morley	MRAIC	Kohl, Harry	MRAIC
Hanna, Alan	House Designer	Andrews, Stewart M.	General Manager, Webin Community Consultants
Lord, Mrs. Elizabeth	MRAIC	Faludi, Dr E. G.	MTPIC, Town Planning Consultants
Brown, Mrs. A. F.	Winnipeg Council of Women	MacDonald, Hugh	General Manager, Brick & Tile Institute of Ontario
Russell, Norman C. H.	MRAIC	Fliess, Henry	MRAIC
Blankstein, Cecil N.	MRAIC	Berman, J.	Secretary, Cadillac Contracting (1959) Ltd.
Pilcher, Miss Elizabeth	AMTPI	Saracini, D. A.	Saracini Construction Company
Kushner, Mayor C. N.	West Kildonan	Emery, Frank H.	Vice President, Curran Hall Limited
Michener, Mel P.	MRAIC	Blumenfeld, Hans	Asst. Commissioner of Planning Metropolitan Toronto
Morriss, W. E.	Ladco Company, Limited	Legge, J. W.	Planning Director, Brantford & Suburban Planning Board
Pratt, Kenneth R. D.	MRAIC	Thurgood, R. J.	Chairman, East Canadian Committee, Royal Institution of Chartered Surveyors, Brantford
<b>T O R O N T O</b>			
Doty, Robert V.	Industrial Department, Central Region CNR	Fraser, Ronald K.	<i>Grisenthwaite Investments</i> <i>Hamilton</i> Secretary
Adams, W. Eric	Managing Director, Meadowvale Developments, Ltd.	Dobell, Norman Wallace	MRAIC
Gibson, George D.	FRAIC	McGee, William S.	Citizens Group to Save "The Elms", Etobicoke Township
Dempsey, William A.	AMTPIC	Page, Rev. John H.	S. J., Regis College, Toronto
Scott, W. W.	<i>Ont. Dept. of Planning &amp; Dev't.</i> Director, Housing Branch	Caspari, Peter	MRAIC
Collum, Howard	Housing Branch	Schwam, Alan	President, Advertising & Research Associates, Toronto
Nash, Col. A. L. S.	Director, Community Planning Branch (and President TPIC)	Rice, L. A.	Rice Construction Co. Ltd., Brampton
Brown, J. F.	Urban Redevelopment Officer	Rogers, Mrs P.	Bishop Homes, Port Credit
Armstrong, C. T.	Housing Branch	Jackson, Anthony	ARIBA, Technical Editor, The Canadian Architect
Ross, G. Edward	MRAIC	Scott, Alan J.	<i>Urban Development Institute</i> <i>(Ontario Division)</i> President (Toronto)
Lawson, M. B. M.	MTPIC, Director, City of Toronto Planning Board	MacDonald, Don G.	Vice President (Hamilton)
Dembek, Klemens	Planning Director, Sudbury Area Planning Committee	Cullis, C. W.	Director (Hamilton)
Fryer, Geoffrey	Director, York Township Planning Board	Dixon, A. K.	Executive Director (Toronto)
Cox, E. C. S.	FRAIC	Collins, E. J.	Member (Hamilton)
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Pearson, Norman	<i>Hamilton Wentworth Planning</i> <i>Area Board</i> Director	Morrison, Mrs D. M.	Past President, University Women's Club, Port Credit
Horsbrugh, Patrick	Deputy Director	Bacon, Michael J.	Director of Planning, Township of Toronto Planning Board
Armstrong, Dr John B.	Medical Director, National Heart Foundation	Goodhead, Norman	<i>Township of North York</i> Reeve
Gunby, Lloyd	G. S. Shipp & Son Limited	Garipey, A.	Councillor
Dashkin, A. A.	MRAIC	Hermitage, W.	Property Owner, Director of Credit Union, Agincourt
Hancock, Macklin L.	MTPIC, Project Planning Assoc. Ltd.	McAdams, W. F. H.	AMTPIC
Stephenson, Prof. Gordon	MRAIC, Head, Division of Town and Regional Planning, U. of Toronto	Deacon, P. Alan	MRAIC, MTPIC
MacNaughton, R. E.	Home Smith Company	Arnett, J. L.	MRAIC
Cornish, F. Joseph, Q.C.	Chairman Municipal Law Section, Canadian Bar Association	Powell, Hugh	Barrister, Toronto
Falkner, Mrs J. W.	<i>Metropolitan Toronto Housing</i> <i>Authority</i> Member		
Brady, P. E. H.	Executive Director		

McClaskey, Angus	<i>Don Mills Development Ltd.</i>	Suffrin, Harry	Market Analyst, Steinbergs Ltd.
Kelly, James	President	Goodfellow, Philip	MRAIC
Wregglesworth, George		Younge, Miss Eva	School of Social Work,
Walton, R. G.	Realtor, Toronto	Lightman, Prof. J.	McGill University
Toland, Mrs D. B.	President, University Women's Club, Oakville	Payer, Mayor Gérard	St Hubert
Lee, Douglas H.	MRAIC	Bird, John	MRAIC
Easton, D. F.	Planning Director, Scarborough Planning Board	Cadieux, Mrs Fernand	Montreal Sanitary Housing Bureau
Barker, Prof. Kent	MRAIC, School of Architecture University of Toronto	Van Ginkel, Blanche L.	MMTPIC
Fellner, Lloyd V.	Secretary, Fellner Construction Co., London	Van Ginkel, H. P. Daniel	
Guard, Donald E.	AMTPIC, Director London & Suburban Planning Board	Edwards, Allan	Construction Manager, Candiach Development Corp.
Bishop, Rex	Upper Thames River Conservation Authority, London	Picard, Louis-Philippe	General Manager, Iberville Construction, Inc.
Richards, John A.	Director of Town Planning, City of St. Catharines	Spence-Sales, Prof. H.	McGill School of Architecture (Renewal Consultant to Moncton)
Crossley, Alan	MRAIC, AMTPIC	Shadbolt, Douglas	MRAIC, McGill School of Architecture
Wandless, G. A.	Planning Director, City of Oshawa	Lawson, Harold	FRAIC
Caskie, Mrs Norman	Secretary, Association of Women Electors of Toronto	Fellowes, Norton A.	MRAIC
Johnson, Mrs Norah	AMTPIC	Linden, David K.	MRAIC, MTPIC, Sec. Quebec Assoc. of Professional Planners
Kemp, Leslie H.	MRAIC	Maron, Harvey	Harvey Maron Development Corp.
McGowan, Mrs J. E. C	Housewife, Willowdale	Cummins, C. R.	Ass't. Sup't. of Mortgages, Sun Life of Canada, Montreal
Foggett, Mrs J.	Housewife, Scarborough	Jones, Mrs. Robert	President, St Lambert University Women's Club
Colter, E. Royden	City Manager, City of Windsor	Jones, Stanley O.	Society of Friends, Montreal
Clements, W. G.	Secretary Manager, Toronto Metropolitan Home Builders Association	Rossinger, André	
Sanders, N. S.	Householder, Toronto	Lehrman, Jonas	
Card, Raymond W. G.	MRAIC		
James, R. W. F.	Realtor, Toronto		
		<b>Q U E B E C</b>	
		Chalifour, Eugene	President, Quebec (Metro) House Builders Association
		Fiset, Edouard	FRAIC, President, Quebec Chamber of Commerce
<b>M O N T R E A L</b>			<i>Community Planning Association</i>
Kivilo, Harry	Trend Construction	Cimon, Jean	AMTPIC, Secretary, P.Q. Division
Affleck, R. T.	MMRAIC	L'Heureux, Jacques	Convenor, Quebec Branch
Lebensold, Fred		Walker, Mrs O. J.	University Women's Club of Quebec.
Sise, Hazen		Laverty, Mrs C. A.	Secretary, P.Q. Federation of Housing Cooperatives
Langlois, Claude	Assistant Regional Planner CMHC, Quebec	Coté, Albert	AMTPIC, Three Rivers
Simard, Jacques	AMTPIC	Bégin, Benoît	<i>P.Q. Dept. of Municipal Affairs</i>
	<i>P.Q. Legion Memorial Housing</i>	Pelletier, Burroughs	MTPIC, Director, Town Planning Bureau
McLeod, Norman H.	Past President	Nantel, Alain	Legal Officer
Illsley, Peter	MRAIC	Cloutier, St Georges	Superintendent of Mortgages Industrial Life Insurance Co.
Lamarche, Rev. M.	S.J., College Jean-de-Brébeuf	LaHaye, Jean-Claude	MTPIC
Legault, Guy R.	MRAIC, Planning Department, City of Montreal	Germain, Yves	Yves Germain Inc., Builders
Miron, Isaac	MRAIC, MTPIC	Carrier, Louis	MRAIC
Mayerovitch, Harry	MRAIC		
Gilbride, Mrs R. G.	Citizen's Housing Committee of Montreal		
Magil, Louis B.	B.ARCH., Builder	Martin, Prof. J. M.	<i>Laval University</i>
Plunkett, Thomas J.	Town Manager, Town of Beaconsfield, P.Q.	Rocher, Prof. Guy	Dean, Faculty of Social Science
		Hodgson, Prof. James	Director, School of Social Work
		Reny, Gerard	Manager, Town of Ste Foy

Bédard, Rolland

MTPIC, Quebec City Plan Officer

**HALIFAX**

*City of Halifax*

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Alderman  
AMTPIC, Director of Planning  
MRAIC  
Commissioner of Works

*Halifax Metro Home Builders*  
President

Vaughan, Chas. A.  
Lane, Abbie  
Munnich, K. M.  
Napier, John J.  
West, George

Oxner, Lloyd  
Wright, H. M.  
Stevens, Laurie

Reardon, Charles

Planning Engineer,  
County of Halifax

Nelson, Miss Norma

Public Service Commission of  
Halifax

Prince, Dr S. H.

*Nova Scotia Housing Commission*  
Chairman (and Convenor, Anglican  
Council of Social Service)  
FRAIC, Architect to Commission

Priest, A. E.

Dumaresq, Philip

MRAIC, AMTPIC

Black, Gordon

Barrister; Executive Member, N.S.  
Division, Community Planning  
Association of Canada

Whynacht, Cecil F.

President, Halifax-Dartmouth  
Real Estate Board

King, Alvin

Vice President, Halifax-Dartmouth  
Real Estate Board

Anderson, G. Douglas

Commercial Officer, Nova Scotia  
Light & Power Co., Ltd.

Hatfield, Byron

Barrister & Builder

Bird, Donald J.

Director of Planning, N.S. Dept. of  
Municipal Affairs

Smith, Fletcher

Apartment Building Owner

*University Women's Club, Halifax*  
Architectural Study Group

More, Miss Marion  
Falconer, Miss Dora  
Bigelow, Mrs John  
Harris, Mrs R. F.

Marshall, G. J.

MRAIC

Waller, Fred

General Supervisor, Rates &  
Development, Maritime  
Telegraph & Telephone

Digby, George

Mortgage Manager, Sun Life  
Assurance Company, Halifax

Eagle, G.

Representing Mutual Life, Halifax

Smith, P. B. F.

Representing Canada Life, Halifax

Zatzman, Joseph

Former Councillor, Dartmouth

Borland, Homer  
Henderson, A. L.

*CMHC Atlantic Regional Office*  
Regional Supervisor  
Regional Architect

**ST. JOHN'S**

Dunfield, Sir Brian

Justice, Supreme Court of  
Newfoundland

Vardy, Oliver L.  
Burling, George

*St. John's Housing Corporation*  
Chairman  
Controller

Ryan, W. J.

MRAIC

Mews, Harry

*City of St. John's*  
Mayor

**MONCTON**

Baig, M. M.

*City of Moncton*

Cook, A. M.

Mayor

Godfrey, J. A.

City Clerk

Gorbell, A. L.

Chairman, Town Planning Com.  
Town Planning Manager

MacBeath, Ronald

President, Greater Moncton  
Home Builders Association

Gaudet, Gerald

MRAIC

Mitchell, M. F.

Manager, Grey Bus Line Co. Ltd.

Pickard, Keith

MRAIC, Charlottetown

Paterson, John A.

Deputy Minister, Dept. of  
Industry & Development of N.B.

Tait, Harold

*N.B. Dept. of Municipal Affairs*

White, George

Director of Planning  
Finance Officer

Parsons, Mrs R. Lloyd

President, Moncton  
University Women's Club

Parsons, R. Lloyd

Parsons Construction Company

Burchill, John G.

Secretary, Geo. Burchill & Sons,  
Limited, South Nelson

*Moncton Real Estate Board*

Page, Gordon

President

Ryder, L. G.

Member

Willis, E. A.

Member

Watson, Nevill

Member

**SAINT JOHN**

Flood, George

John Flood & Sons, Contractors

Flood, Harry

Duschenes, Rolf

MRAIC

*Town Planning Commission of  
Metropolitan Saint John*

Zides, Murray

MTPIC, Director

Duek-Cohen, Elias

AMTPIC

Stewart, Neil M.

MRAIC, Fredericton

Evans, Lt. Col. H. I.

Chairman, Board of Commissioners,  
Town of Oromocto

McCallum, W. James

Manager, Development  
Corporation of Oromocto

Hazen, William

Manager, Saint John Housing  
Authority

Mitton, Clifford D.

Housebuilder, Saint John

Woodroffe, Mrs W. J.

University Women's Club of  
Saint John

Teed, Eric L.

Chairman,  
Saint John Citizenship Council

Smith, H. H.

Executive Director, Port &  
Industrial Bureau, Municipality  
of the County of Saint John

Disher, John R.

MRAIC

Emmerson, Stanley W

MRAIC

Haycox, Fred

Sec., Saint John Urban Renewal  
Commission  
Sec.-Treas., 6 Cities of N.B.

**ST. JOHN'S**

Dunfield, Sir Brian

Justice, Supreme Court of  
Newfoundland

Vardy, Oliver L.  
Burling, George

*St. John's Housing Corporation*  
Chairman  
Controller

Ryan, W. J.

MRAIC

Mews, Harry

*City of St. John's*  
Mayor



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Foran, E. B.	City Clerk	Tattersfield, Philip W.	Vice President, Professional Landscaping Assoc. of B.C.
Sharpe, Duncan	City Engineer		
Balston, Roy	City Planning Officer		
Condon, Stanley	Realtor	Lasserre, Prof. Fred	<i>University of British Columbia</i>
Butt, Harvey	President, Newfoundland Building & Loan Association	Oberlander, Prof. H. P.	FRAIC, Dir. School of Architecture
		Marsh, Dr Leonard	Associate Professor of Planning
			Professor of Social Work
Lench, T. A.	MRAIC		
Rogers, Frank	Gen. Mgr., Chester Dawe Ltd.	McGrath, Tom A.	<i>Vancouver Metro House Builders</i>
Pennell, W.	General Manager, Newfoundland Engineering Ltd.	Huff, H. L.	Chairman
Dawe, Claude E.	Eastern Canada Savings & Loan Co.	Lansdell, J. D.	<i>Yorkshire Corporation</i>
Carnell, Geoffrey	Vice Chairman, St. John's Housing Authority	Brown, Norman	Vice President
			Director, Mary Hill Estates
Vivian, A.	CMHC, St. John's Branch Manager		
Gibbs, James A.	Solicitor, Longshoremen's Protective Union	Woodward, Geoffrey G.	<i>Community Arts Council of Vancouver</i>
		Oberlander, Mrs H. P.	Vice President
Horwood, Cyril F.	President, Horwood Lumber Co.	Erickson, Arthur C.	MRAIC
O'Reilly, A. E.	Newfoundland Light and Power Co.		<i>Vancouver U. Women's Club</i>
Henry, C. W.	Chief Engineer, Avalon Telephone Co.	Peck, Mrs C. E.	
Noel, A. C.	Gen. Commercial Mgr., Avalon Telephone Co.	Black, Miss Charlotte	
Elliott, W. W.	Chief Engineer, United Towns Electric Co.		<i>Burrard Inlet Crossing Committee</i>
Bartlett, E. H.	Newfoundland Fire Commissioner	Lancaster, C. S.	Chairman
Ryan, Frank J.	Fire Chief, St. John's	Mostyn, I. H.	Vice Chairman
Vivian, Fred	President, Railway Employees Welfare Association	Erickson, Mrs Margaret	Secretary
Ryan, J. V.		Gould, J. R. G.	Barrister
		Brown, Douglas	Barrister
		Hollingsworth, F. W.	House Designer
		Leblond, Harry J.	MRAIC
Allston, John T.	<i>Nfld. Dept. of Municipal Affairs</i>	Kerr, William	AMTPIC, Planning Officer
Seymour, James L.	MTPIC, Director, Urban and Rural Planning		Township of Richmond
Conroy, C. H.	Director, Housing & Rent Control	Boulton, P. A.	<i>Boulton, Sweet and Company Ltd.</i>
	Chief Engineer, Nfld. Dept. of Public Works	Clee, H. A.	Realtor
		Nairne, R. S.	Realtor
Hopkins, Lloyd W.	MRAIC, District Architect, Dept. of Public Works of Canada	Dudley, James E.	MRAIC
Horwood, R. F.	MRAIC		MRAIC (Housing Chairman, Vancouver Chapter AIBC)
Eaton, Mrs Elinor	Secretary, Canadian Federation of University Women		
		Ray, Hugo, Q.C.	<i>Metropolitan Joint Committee</i>
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		Gower, Rt. Rev. Godfrey P.	Director of Research
		Hill, Robert	Bishop of New Westminster
VANCOUVER		Ostrander, L. E.	Insurance Official, Vancouver
Richardson, Nigel H.	Community Planner, Lower Mainland Regional Planning Board		Industrial Commissioner, CNR, Winnipeg
Sutherland, C. G.	Secretary-Manager, Vancouver Housing Authority	Burns, Roy E.	Executive Assistant, Fraser Valley Lands, Ltd.
		Hardman, Gilbert	Grosvenor-Laing Companies and Macdonald-Buchanan Group
		Willoughby, P. D.	Manager, British Pacific Properties Ltd.
Pickstone, Harry W.	<i>City of Vancouver</i>		
	Assistant Director of Planning (and Chairman, Activities Committee, Planning Institute of B.C.)	Murray, Hugh C.	<i>Community Planning Association of Canada (B.C. Division)</i>
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Terriss, K. G.	MRAIC	Justice, Clive	Landscapist Architect
Parker, W.	Past Chairman, Advisory Planning Commission, Coquitlam		
Lane, William T.	City Solicitor, Richmond	Miller, Dr Selwyn A.	<i>Vancouver Bd. of School Trustees</i>
			Director, Research & Special Services

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	<i>Vancouver Chapter, Society of Residential Appraisers</i>	Pickett, Stanley H.	Assistant Chief Architect & Planner
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Sunderland, G.	B.C. Regional Architect, CMHC		
Livingstone, Percy	Manager, District of Surrey		<i>Joint RAIC/CMHC Committee</i>
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Campbell, Clive	MRAIC, Member		
Siddall, Robert W.	MRAIC, Member		<i>The Dominion Mortgage and Investment Association</i>
	<i>Capital Region Branch, Community Planning Association of Canada</i>	Golden, G. A.	Sun Life Assurance Co., Montreal
	Treasurer	Falkner, J. N.	Prudential Insurance Company of America, Can. Head Office
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Shepherd, Mrs W. J.		Douglas, Monteath	Director, Canadian Office, National Industrial Conference Board
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Bullivant, John	House Builder	Dore, Richard F.	Councillor at Large, Canadian Institute of Surveying
	<i>Victoria Council of Women</i>	Hatfield, Dr Leonard	General Secretary, Social Service, Anglican Church in Canada
Noel, Mrs B.	President		<i>The National Council of Women</i>
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	<i>Victoria University Women's Club</i>	Jarvis, Alan H.	Editor, Canadian Art
		Legget, Robert F.	Director, Division of Building Research, National Research Council
South, Mrs Don			<i>Canadian Library Association</i>
Johnson, Miss Muriel		Lamb, Dr W. K.	National Librarian
	<i>B.C. Dept. of Municipal Affairs</i>	Aubry, C. B.	Chief Librarian, Ottawa Public Library
Brown, J. Everett	Deputy Minister	Van Loon, M. R.	Trustee, Ottawa Public Library
South, Don	Director of Regional Planning	Hardie, Betty D.	Chairman, Committee on Housing
	<i>Capital Region Planning Board</i>		<i>RCAF Headquarters</i>
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Johal, D. F.	Assistant Planner	Underwood, W/C C. E. F.	
	<i>District of Saanich</i>	Senior, S/L F. R.	
Chatterton, George L.	Reeve		
Parr, Anthony L.	Municipal Planner		
Lougher-Goodey, W. D.	MTPIC, B.C. Dept. of Public Works		
Potter, Russell	Consulting Engineer		
<b>OTTAWA</b>			
Chutter, Don	Canadian Construction Association		
	<i>National House Builders Assoc.</i>		
Joubert, Maurice	President		

Gallop, F. A. H.	Pres., Asphalt Roofing Manufacturers' Association		<i>Association of Municipal Electrical Utilities (of Ontario)</i>
Brady, George R.	<i>Canadian Transit Association</i> Gen. Mgr., Ottawa Transportation Commission	Pfaff, W. R. Williamson, J. S. Torrance, John A. Hyde, Harry Gordon, D. G. York, F. G. Mathieson, W. R.	President, St Catharines Past President, Niagara Falls P.Eng., Etobicoke P.Eng., Toronto P.Eng., Toronto P.Eng., Ottawa Secretary-Treasurer, AMEU
Fairchild, B. C. Brown, Alan	<i>Canadian Electrical Association</i> General Manager Commercial Vice Pres., Gatineau Power Co.	Maines, Miss Joy A.	Executive Secretary, Canadian Association of Social Workers
Rattee, George L.	Executive Vice President, Southern Canada Power		
Beecroft, Eric	Executive Director, Community Planning Association of Canada	Shipp, Gordon S.	President, G. S. Shipp & Son Ltd.
McDonald, D. L.	Director of Planning and Property, National Capital Commission	Slater, Prof David	Dept. of Political & Economic Science, Queen's University
Clark, T. A.	General Manager, National Warm Air Heating & Air Conditioning Assoc. of Canada	Perry, J. Harvey Finnis, F. H. Hardy, Herbert C.	<i>Canadian Tax Foundation</i> Director Municipal Research Associate Canadian Mobile Homes Assoc.
Leeming, Jack E.	<i>Canadian Electrical Manufacturers</i> Canadian General Electric, Toronto		<i>Canadian Association of Geographers</i> Dept. of Geography, University of Toronto Geographical Branch, Government of Canada
Knowles, Stanley H.	Exec. Vice Pres., Canadian Labour Congress	Spelt, Prof. Jacob Raymond, C. W.	Director of Public Relations, Canadian Lumbermen's Assoc.
MacDonald, Jim Swerdlow, Max	<i>National Labour Cooperative Committee</i> Executive Secretary Chairman	Schryburt, J. A.	
Paradis, J. C.	General Manager, Campeau Construction Co.	Dochstader, J. A. Anderson, A. G.	<i>Telephone Association of Canada</i> Assistant to President, Assistant Vice President, Bell Telephone Company of Canada
Dixon, M. G. Belcourt, Victor P.	MRAIC MRAIC		B. Arch. President, Ottawa House Builders President, Teron Construction Company Householders
Flaherty, Mrs Frank Plewes, Dr Doris Bailey, Mrs D. J.	<i>University Women's Club of Ottawa</i> Past President Committee Chairman Committee Member	Harvor, Stig Connolly, W. G. Teron, William	
Cowan, H. Bronson	Research Director, International Research Committee on Real Estate Taxation	Smith, G. M. Sheridan, A. H. Hilling, Miss R.	Secretary, The Canadian Research Committee on Taxation
Webber, Mrs Simon Schreier, W. E. Duncan, Ted	<i>Briarcliff Cooperative Group</i> Solicitor MRAIC	Kent, C. D. Samuel, Hon. Godfrey	President, Ontario Library Assoc. Sec., Royal Fine Art Commission, London
Borrowman, Ralph Gitterman, S. A.	Planning Engineer, City of Ottawa MRAIC	Wall, William M.	Senator, Winnipeg
Lowden, James A. Katz, Bert Bosley, Murray Fitzsimmons, Clayton	<i>Canadian Assoc. of Real Estate Boards</i> President Vice President Realtor Realtor	Pratt, R. John Bourque, Romuald Regier, Erhart Beech, William G. Herridge, Herbert W. McGee, Frank Kindt, Dr. Lawrence E. Thomas, W. H. A. Campeau, Charles E.	<i>House of Commons</i> Jacques Cartier-Lasalle Outremont-St. Jean Burnaby-Coquitlam York South Kootenay West York-Scarborough Macleod Middlesex West St Jacques (Montreal)
Clark, Prof S. D. Mooney, George S.	Dept. of Political Economy, University of Toronto Executive Director, Canadian Federation of Mayors and Municipalities	Highland, John N. Jr.	American Institute of Architects



## INIGO JONES

1573 — 1652

Through the generosity of Mr Hugh Allward, the OAA has just been presented with an oil painting of Inigo Jones. There is only one portrait of Jones for which he is known to have sat, and that is by Van Dyke in the Hermitage in Leningrad. One good copy of that picture was made by Gainsborough but its whereabouts is unknown. Inquiries at the RIBA have produced quite a lot of interesting information about Jones' portraits and the OAA copy. It happened that the arrival of a colour-transparency from Toronto coincided roughly with the purchase of a good copy of Jones by the RIBA itself.

I am indebted to Mrs P. Fraser of the Drawings and Prints Collection of the Institute for further information regarding our portrait. She thinks it may be a copy of one of several engravings made during the 18th and early 19th century. "The closest seems to be the one by Thomas Sherratt, Barber, inscribed: *'To The Master Wardens & Court of Assistants of the Worshipful Company of Barbers of London. This portrait of Inigo Jones, engraved by permission from the original picture in their Court Room is respectfully dedicated by their obedient servant, Thomas Sherratt, Barber.'* The Barber Surgeon's Hall in the City of London was destroyed during the war and I have been in touch with Mr R. Theodore Beck (F), architect for the reconstruction, who tells me that all the

paintings formerly at the Barbers' Hall were distributed for safety and so did not perish with the Hall. Six of them, including the famous Henry VIII painting by Holbein, are at Hampton Court Palace and others, including the portrait of Inigo Jones, are stored at the Ironmongers' Hall (Aldersgate Street, London, E.C. 2.)." Mrs Fraser goes on to say, "I have thought for some time that it would be interesting to collect together, and possibly publish, all the known portraits (and engravings of portraits) of Inigo Jones, over which a considerable confusion still exists."

My interest in the Jones portrait goes back many years to a time when I saw it for sale for \$500.00 in a dealer's shop. It took some days to raise the amount of the purchase price, but I eventually succeeded — largely due to the interest of Dr Pearson and Mr Lyle. My disappointment can be imagined when I found that a buyer had been found, and that the ethics of the trade prohibited the dealer from giving me his name. What the peregrinations of the portrait were during the period will probably never be known. It is sufficient that it came to rest in the hands of Mr Hugh Allward and that its ultimate home is the OAA headquarters. Such a happy ending would have given great satisfaction to the two original "donors" who passed away a long time since.

E.R.A.

# CANADIAN BUILDING DIGEST



DIVISION OF BUILDING RESEARCH • NATIONAL RESEARCH COUNCIL

CANADA

## Condensation Between Panes of Double Windows

by A. G. Wilson

UDC 69.028.2:697.147

It is well known that double windows are of value in reducing heat transmission through glass areas and in permitting substantially higher relative humidities in winter than are possible with single glass without excessive condensation on inside glass surfaces. Condensation between the panes, on the inside surface of the outer glass, occurs with most types of double windows under some conditions of use. Windows fitted with factory sealed glazing units are a possible exception, but they may not be without problems, as will be discussed. A small amount of condensation on the outer panes of non-sealed double windows is generally accepted as inevitable; when it begins to obstruct seriously the view through the window for long periods, or when run-off contributes to the deterioration of surrounding materials, there is reason for concern.

Condensation will occur on the inside surface of the outer pane whenever the temperature of that surface at any point is below the dew-point temperature of the air space. The surface temperature of the outer pane is always above outside dew-point and usually below room dew-point under winter heating conditions. The dew-point of the air space will be between room and outside dew-point at a level at which the moisture removal from the space balances the moisture gain. It follows that in designing a window free of condensation under given conditions, consideration must be given to the factors that affect moisture flow to and from the air space between panes.

### *Factors Affecting Moisture Flow*

Water vapour can move into and out of air spaces of double windows under two forces. It moves through cracks and some materials

in window assemblies by diffusion, as a result of differences in partial pressure of water vapour, and it is transported as a component of the air which flows through window cracks under total pressure differences.

It can be demonstrated that vapour flow by diffusion is important as a factor in window condensation or its control only when total pressure differences are zero or very small, except perhaps for extremely tight windows. Under most conditions of exposure vapour transmission by air flow is several times that by diffusion, and the latter can be neglected.

Condensation on the outer pane is unlikely when the flow of air is from outside to inside through the window space, since outside air has a dehumidifying effect and will result in an air space dew-point close to outside dew-point. On the other hand air flow from the room to the air space has a humidifying effect and will lead to condensation unless counteracted in some way. Figure 1 represents the variations in air pressure with height across a double window subjected to a temperature gradient, with air flow from inside to outside. Pressure differences from top to bottom, which are greatly exaggerated for purposes of illustration, result from the changes in air pressure with elevation and differ from inside to outside because of differences in temperature.

Figure 1(a) represents pressure conditions when the resistances to flow around both panes are equal. The air space pressure is approximately mid-way between inside and outside pressures and flow is from inside to outside through all openings. Figure 1(b) represents the pressure distribution when resistance to flow through openings around the inner pane is much greater than that through openings

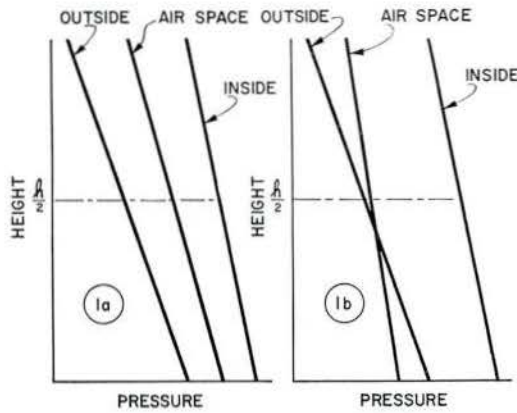


FIGURE 1  
PRESSURE DISTRIBUTION ACROSS DOUBLE  
WINDOWS WITH AIR FLOW FROM INSIDE  
TO OUTSIDE

around the outer pane, these being evenly distributed above and below the mid-height of the window. Under these conditions, pressure at the top of the air space is greater than that outside and the pressure at the bottom is less. Thus air can flow into the air space from outside through lower openings around the outer pane, even though there is an over-all flow from the building to the outside. All outflow passes through the upper openings around the outer pane under pressure difference created by chimney action between the air space and outside.

Values of the minimum ratio of outside to inside air flowing to the air space that are required to prevent condensation on the outer pane are given in Table I. These are based on room and air space dew-point temperatures equal to the surface temperatures of inside and outside panes, respectively, with outside air at 100 per cent relative humidity. The amount of air flow from outside to the air space must be several times that from the building to avoid condensation, the ratio increasing with decreasing outside temperature.

It follows that the inner pane assembly must be much tighter than that of the outer. Unless the inner pane assembly is extremely tight openings past the outer pane assembly must be located both above and below the mid-height of the air space in order to induce air flow

into the air space by chimney action. It will often be necessary to provide intentional openings between the air space and outside. The area of vents required will depend on the total air pressure difference across the window.

#### Total Air Pressure Differences

Several factors may contribute to total air pressure differences across windows. Wind action induces air flow from outside to inside on windward walls and from inside to outside on leeward walls. It is commonly observed that condensation occurs between the panes on leeward windows, while on the windward side of the building windows are clear. Information on the actual pressure differences around buildings owing to wind is relatively sparse.

Chimney action induced by temperature differences between air in a building and the outside is a second major factor contributing to total pressure differences across windows. As a result, air tends to flow into a building through lower openings and leave through upper openings.

With no other forces acting, there is a neutral zone somewhere between at which inside and outside pressures are equal. Unfortunately, information on neutral zone locations is very limited, although windows above it are more likely to exhibit condensation, since flow from the building to outside occurs only above this level. In multi-story buildings it is common to observe severe condensation on the upper stories, while windows at lower levels are clear. This effect may be noted even in two-story houses. In practice the pressure differences across the walls of buildings depend on both wind and chimney effect acting together and are also influenced by the action of air supply and exhaust systems.

TABLE I  
RATIO OF AIR FLOWS TO AIR SPACE  
FOR NO CONDENSATION

Outside Temp. °F	Minimum Ratio of Outside to Inside Air Flow to Window Space
40	7
20	9
0	16
-20	25
-40	41

### *Venting Requirements*

The venting required in an outer sash to prevent condensation between panes can be calculated for selected values of temperature and humidity provided the air leakage characteristics of the inner pane and the design pressure difference across the window are known. Selection of appropriate design pressure differences is the main problem and requires sound judgment based on field experience with window condensation. Air leakage can be measured at any desired pressure difference. For comparative purposes the air leakage characteristics of windows are often expressed in terms of the air flow per foot of crack at a pressure difference of 0.3 inch of water, the dynamic pressure of a 25 mph wind. A double window 3 feet wide by 2 feet high, with an inner glazing assembly having an air leakage characteristic on this basis of 0.075 cfm per foot requires venting equivalent to twenty  $\frac{1}{4}$ -inch diameter holes at both top and bottom of the outer pane when the total pressure difference across the window is 0.004 inch of water. This is for conditions of 0°F and 85 per cent relative humidity outside, and 70°F and 25 per cent relative humidity inside. The same window requires 60 such vents top and bottom at a total air pressure difference of 0.014 inch of water. These pressure differences of 0.004 and 0.014 inch of water correspond to the pressure difference expected across leeward windows at wind velocities of 5 and 10 mph.

Venting to outside of the air space between panes will lower the temperature of the air space and inside surface and thus increase over-all heat transmission. At the temperature and humidity condition referred to above the venting required at a pressure difference of 0.014 inch of water results in an increase in heat transmission of about 2.5 per cent for a window with an air leakage characteristic of 0.075 cfm per foot of crack. The increase is about 16 per cent for a window having an air leakage characteristic of 0.5 cfm per foot (pressure difference of 0.3 inch of water), a value commonly accepted as the maximum allowable for vertical or horizontal sliding windows.

Control of condensation by venting would appear to be a practical approach when inner sash have low air leakage rates. In such cases neither the vent area nor the penalty in heat loss need be considered excessive. For inner

pane assemblies having leakage rates of 0.5 cfm per foot of crack and above, the very extensive venting required will lead to corresponding increases in heat loss and will probably not be acceptable as an alternative to some condensation between panes.

### *Sealed Glazing Units*

Attempts are often made to seal two panes of glass in a single wood sash in order to avoid storm sash and limit the number of surfaces to be cleaned. These arrangements are invariably unsuccessful, since it is impossible to achieve perfect sealing with wood. Changes in air space temperature produce substantial total pressure differences between the air space and outside, and air flow is induced through even very small openings by this pressure. This "breathing" action during normal temperature fluctuations is an important mechanism for moving water vapour into and out of the air space of a semi-sealed double window, although it has only a minor effect on windows having movable inner or outer sash.

A temperature change of only 50°F corresponds to a pressure change of almost 40 inches of water in a sealed space. Pressure changes that occur when rain strikes a warm tightly sealed window can draw water into the space between the panes through very small openings, in extreme cases filling the air space to a depth of several inches. At best, water vapour will be drawn into the space by breathing action and some condensation will later develop on the outer pane. Wetting and drying brings alkali in the glass to the surface where it forms a cloudy film. This is sometimes referred to as scumming and is a common source of glass soiling. When it is accessible for cleaning, this film is readily washed away, but such soiling of inaccessible glass surfaces is a serious form of window failure, since eventually it leads to clouding so serious that it can no longer be tolerated.

Factory sealed double glazing units have been available from two or three sources for several years and the availability of new sealing compounds has encouraged a number of other manufacturers in Canada to take up the production of such units. In factory sealed units the objective is to seal hermetically the space between the panes and maintain the dew-point of the air space sufficiently low to prevent

condensation on inaccessible glass surfaces. A hermetic seal is extremely difficult to achieve, however, and even more difficult to maintain. Pressure changes due to fluctuations of temperature and barometric pressure distort the glass and stress the seal. The seal is thus subjected to flexing and cyclical variations in temperature and pressure as well as to water and sunlight. Though tight initially, it may be broken down slowly over several years.

If leaks exist or develop the dew-point of the air space will rise at a rate depending on the extent of seal failure and on the conditions to which the unit is exposed. Ultimately, wetting and drying will occur on inaccessible glass surfaces as a result of condensation and scumming will develop. In extreme cases the units may fill with water. Desiccant, intended in the

first instance to remove moisture left in the air space during manufacture, will retard the rise in dew-point of leaky units for a limited time, but it will be unable to cope with serious seal leakage. The useful life of the unit will, in general, be limited by the time required to cause seal failure and the development of scumming on inaccessible glass surfaces.

Accelerated laboratory testing to determine the probable life of sealing arrangements in use is greatly needed. Such tests are under development, but like all accelerated service tests they must ultimately be correlated with actual field performance extending over many years. In the meantime, it is necessary to rely on such evidence of quality and probable satisfactory performance as can be obtained, keeping in mind the difficulties which can arise.

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*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.*



## Restoration

Admirers of Louis Sullivan and of his auditorium building in Chicago in particular, will be pleased to hear that a distinguished committee from all walks of life in the United States is raising funds for its restoration. For some years, the rest of the building had been taken over by Roosevelt University, but the auditorium with its diamond horse shoe and gigantic stage could be seen only through the courtesy of the caretaker. I always felt the stage was large — I find it was 97 feet wide and 61 feet deep. The floor was operated hydraulically in twenty sections, each with an elevator. It says much for the beauty of the interior that, in all the student trips to Chicago that I remember over many years, no building, old or new, came in for such wholehearted and genuine admiration.

E.R.A.

## NFB Film Series on "The City"

The National Film Board of Canada plans to produce a series of eight half-hour films on problems and aspects of city growth and planning. Scheduled for production in 1961 and release to CBC Television in late 1962, "The City" series will afterwards be available for 16 mm film distribution in Canada and abroad.

Content of the eight films will be as follows:

1. *Introduction*: A portrait of the deficiencies in Canadian cities today and, for comparison, a composite portrait of Canadian, United States and European cities where good planning and efficiency have resulted in an attractive and satisfying urban environment.

2. *The Heart of the City*: An analysis of the factors that result in a lively, exciting and vital city core and a look at some future Canadian city plans.

3. *The Suburban Environment*: The good and bad in suburban development and an examination of the difficulties in the way of good design.

4. *Living in the City*: A look at the older parts of the city between the heart and the suburbs, their problems in meeting changing needs without destroying their character, beauty and economic utility.

5. *The Strangling City*: The problems of traffic and transportation.

6. and 7. *The Real Problems*: The attitude of citizens towards their cities and practices in land use, taxes and administration which have given rise to the current problems.

8. *Summary*: The first seven films summarized, concluding with a view of the city as man's greatest achievement.

## CMHC Fellowships and Bursaries for 1960-1961

Central Mortgage and Housing Corporation announces Fellowships and Bursaries available for 1960-1961 to assist suitable persons with studies in community and regional planning, housing and related fields of urban analysis and administration.

Up to fifteen Fellowships with a value of \$1,500 will be awarded to candidates registered for full-time professional courses in community planning in Canada.

A limited number of Bursaries with a value of \$800 are offered to assist post-graduate study in fields of housing and urban development other than by registering for professional courses in planning.

In addition, one or two senior Fellowships are offered to persons of outstanding qualifications to enable original work of high calibre to be done in the fields of housing design and management or urban analysis and development.

Further information may be obtained from CMHC, Ottawa, or from the Bursars of the Universities of Toronto, British Columbia, Manitoba and McGill University.

## Sculptors' Exhibit in Quebec

The Sculptors' Society of Canada has arranged an exhibition in the Exhibition Grounds, 1055 Ave Belvédère, Quebec City, August 1-31 inclusive.

## Competition in Ireland

Trinity College, Dublin, has just announced an international architectural competition for the design of a \$1,400,000 extension to the existing eighteenth century library building on its campus in the center of Dublin. Under the chairmanship of Lord Rosse, Vice-Chancellor of the University, the following will serve as judges on the "panel of assessors": Keyes DeWitt Metcalf, Librarian of Harvard College and Director of the Harvard University Library; Sir Hugh Casson, Professor of Interior Design at the Royal College of Art, London; Franco Albini, Professor of Architecture at Venice; and Raymond McGrath, Principal Architect of the Office of Public Works, Dublin. Details regarding submission of entries will be available in April and will be judged in November. First, second and third prizes in the sterling equivalents of \$4,200, \$2,100 and \$1,400 will be given. Including all fees, the first prize will be worth about \$65,000 to the winner.

Further information may be obtained from the American Council for Trinity College, Dublin, at 53 East 93rd Street, New York City 28.

## Partnerships

Wm. H. Gilleland has entered into partnership with Eugene Janiss. The firm will practise under the style of Gilleland and Janiss, Architects, at 234 Eglinton Avenue East, Toronto 12, Ont.

Mr Andris Kundzins, Dip Arch, MRAIC, has become a partner in the firm of Duffus, Romans and Single, Architects and Engineers, 69 Birmingham Street, Halifax.

## Partnerships Wanted

Architect, four years in private practice, U of T graduate of ten years — considering partnership or association with architect in similar position, with a view to mutual expansion and stimulation of practice. Box No. 102, *Journal*.

Engineer desires architect to join as partner in new practice being established in Northern Ontario. Walter Lenson, 543 Ridout St North, London, Ont.

## International Union of Architects Sixth Congress, London, July, 1961

The RIBA has assumed the responsibility of organizing the 6th Congress of the International Union of Architects in London from July 3-7, 1961. Although the RAIC is not a member of the IUA, Canadian architects will be entitled to attend and take part in the Congress as full members.

The theme of the Congress is "New Techniques and Materials and Their Impact on Architecture". It is expected that the Congress will last five days. Excursions will run on afternoons during the Congress to places of architectural and historic interest, and a full program of social activities is planned. The full fee will be £18 (\$60). The provisional program, with a full description of all Congress functions, will be available later this year. Those interested in attending the Congress may write direct to the Secretary, RIBA, 66 Portland Place, London W1, England.

## Erratum

The *Journal* regrets the following errors in the special section on Winnipeg in the April issue: page 132, for Regent Park United Church, read Regents Park; page 142, for Wentworth United Church, read Westworth. The photographs of the Mutual Life of Canada building on page 148-9 were by Henry Kalen. The article on page 153, "A Downtown Plaza for Winnipeg", was provided by Eric W. Thrift, Director, Metropolitan Planning Commission of Greater Winnipeg.

## BOOK REVIEWS

"MATERIALS AND METHODS OF ARCHITECTURAL CONSTRUCTION" by Parker, Gay and MacGuire. Published by John Wiley & Sons Inc.

This is the third edition of a well known construction text first published in 1932. It would seem to be wise to revise texts such as this periodically but only if the revisions are going to be thorough. It is not sufficient to simply add a chapter or two or additional paragraphs to existing material in an effort to cover construction progress in the fifteen years between editions.

There is an apparent imbalance of information between the old methods and materials and the new. Some of the old material could well have been more vigorously reduced and the new material more thoroughly integrated with the old. There is a tendency to mention recent trends by adding a postscript to existing and sometimes rather archaic information.

Such materials as glass and plastics are inadequately covered because of this tendency. In construction, such fields as glued laminated construction, and precasting and prestressing of concrete surely warrant more than a paragraph or two, while roof trusses, carried over from earlier editions, cover nearly forty pages.

Light wood frame construction finds some twenty-five pages devoted to braced frame construction without changing it from thirty years or more ago.

Modular co-ordination, certainly a significant development in construction over the past fifteen years, deserves more than a single paragraph hidden in the chapter on brick.

Finally, such a revised text should look also to its diagrammatic material to bring it up to date. Contrast of old and new drawings and diagrams only add confusion and betray unnecessarily the age of the information.

Notwithstanding the foregoing criticism, this is an excellent construction text with good basic information, information that really does not change and without which we are not going to achieve sound building. It is of equal value in the architectural and construction office as well as the classroom.

This edition, along with "Architectural Construction" by Crane, and "Building Construction" by Huntington (the latter being now overdue for revision), give Wiley, the Publisher, a thorough coverage in this field.

Roy Sellors, Winnipeg

"PLANNING HOMES FOR THE AGED." Edited by Geneva Mathiasen and Edward H. Noakes. Published by F. W. Dodge Corp. 119 pages. Price \$12.75.

What is this book about? It sounds important, maybe good source material for a big job. Should you buy it? I would say yes.

Actually it is a rather curious effort. The first section and the larger one, consists of a series of short pieces by very well-informed professionals about the problem of housing older people, who for one reason or another cannot live in places of their own. The second section shows the winning designs of a competition held by the Architectural Record in 1956 for a "Home for the Aged". This second section is poor. The plans and sketches are reproduced at very small scale on matt paper and are hard to read. The buildings, if you have a magnifying glass to read them by, are oversized boarding houses of no particular charm.

However the first part of the book is good. There are illustrated articles on the residence unit, common services; on facilities for administration and staff; on design problems of structure and mechanical requirements. There are also pieces on community needs and resources and on site location. Architects and clients are made aware of the enormous impact on North American life of the fact that the average age span is lengthening very rapidly. Here is a social and an architectural problem of the first magnitude. The people who have written these pieces know their stuff.

The book has the quality of some of those tomes sent to press by Le Corbusier or the late Mr Wright, in which one reads a great deal of verbiage and then looks at projects and buildings.

One might say that the hazard of this type of book is that it dresses up an extremely old-fashioned building type, the monster boarding house, with a spurious modernity. Many types of clients these days are concerned with building some type of service for old people, some of these clients are churches and benevolent societies, some are service clubs and foundations, others are departments of government. They all tend to think first of all in terms of the monster boarding house, when what the old people of a given community may be much more in need of might be a nursing home, a day hospital, a short-stay rehabilitation centre, or self-contained apartments.

W. S. Goulding, Toronto

"EXPERIENCING ARCHITECTURE" by Steen Eiler Rasmussen. (MIT Technology Press with John Wiley & Sons, Inc.) 251 pages. Price \$4.50.

Mr Rasmussen long ago established a reputation for himself as an experienced architectural experimenter, so that his latest book needs little further recommendation. It is engagingly written, well translated, and very suitable for the purpose indicated in the preface, namely "to tell people outside our profession what it is that we are engaged in." The author further remarks that he has endeavoured "to write the present volume in such a way that even an interested teenager might understand it". It gives the impression of being in fact the careful elaboration of a lecture course given to freshmen at the Royal Academy in Copenhagen, where he is a professor. This is a text book on the theory of architecture, whereby Mr Rasmussen's thoughtful and sensitive observations are used to analyse the traditional categories (corresponding to the chapter divisions) of solids and cavities, planes and textures, proportions, rhythms and scale.

His examples also follow the traditional pattern, and are mainly taken from Rome, Venice, Ronchamps and the United States. Sometimes these illustrations are used to illustrate a particular argument; sometimes they constitute a sequence supplementing a description of the sensations experienced when moving through and around a building — hence the significance of the book's title. One chapter is appropriately illustrated entirely in colour. Most of the buildings depicted are well known, but examples of Danish architecture are included which give added interest for those who are not new to the topic but are unfamiliar with that part of the world.

As in most books on the theory of architecture, from *De Re Aedificatoria* onwards, the text inevitably lapses at times into a catalogue of the obvious, interspersed by admonitions about avoiding undesirable extremes. Yet some chapters, especially that on natural lighting, with its perspicacious and well illustrated remarks about Dutch interiors, constitute a real contribution to architectural theory, and should justify Mr Rasmussen's hopes that his architect colleagues will find something of interest in the thoughts and ideas he has gathered during many years.

Peter Collins, Montreal

## REGISTRATIONS

### Alberta Association of Architects January 20, 1960

LAMB, Shen Chuen, B. Arch. (Man) Dip. Bldg. (Hong Kong Govt. Technical College), ARIBA; 1225-16A Street, N.W., Calgary, Alta. (H. Williams, Calgary)

WARNER, David Henry, Dip. Arch. (Northern Polytechnic, London), ARIBA; 4820 MacLeod Trail, Calgary, Alta.

### March 16, 1960

KUBRAK, Walter, B. Arch. (Man); 4009-113th Avenue, Edmonton, Alta. (D.P.W. Province of Alberta)

ROBERTS, Dennis Gough, B. Arch. (B.C.); 1440-69th Avenue, Edmonton, Alta. (D.P.W. Province of Alberta)

SAHIN, Bela Toth, Dip. Arch. (Jozsef Nador Univ., Budapest); Apt 5-10924-100th Avenue, Edmonton, Alta. (D.P.W. Province of Alberta)

### Nova Scotia Assn of Architects January 1, 1960

HILLMAN, Franklin L., 23 Guysborough Avenue, Woodlawn, Halifax Co., N.S. (C. D. Davison & Co., Halifax)

### January 11, 1960

AVRAMOVITCH, Aza, Dip. Arch. (Geneva); 20 Robie Street, Halifax, N.S. (C. A. Fowler and Company, Halifax)

COOK, Jeffrey Ross, B. Arch. (Man); 38 Lucknow Street, Halifax, N.S. (Napier & Napier, Halifax)

LAMBROS, Gregory Athanasios, B. Arch. (Man); 53 Spring Garden Road, Halifax, N.S. (Keith L. Graham & Associates)

LEBLANC, Rene Normand, B.A., ADBA (St Joseph's Univ., N.B., Beaux-Arts, Mtl.) 28 South Street, Halifax, N.S. (C.A. Fowler & Co., Halifax)

### Ontario Association of Architects January 1, 1960

BOAL, Robert Henry, Dip. Arch. (L'pool), ARIBA; 121 Admiral Road, Toronto, Ont. (John B. Parkin Associates, Toronto)

CORNEIL, Carmen, B. Arch. (Tor) Pilkington Travelling Scholarship 1957; 33 Admiral Road, Toronto, Ont. (Wm. J. McBain and Associates, Toronto)

FARBER, Horst G., Dip. Ingenieur (Hannover); Apt 507, 206 St George Street, Toronto 5, Ont. (Mathers & Haldenby, Toronto)

HUGO-BRUNT, Michael, B. Arch. (Cape Town), MCD (L'pool) M. Arch. (Cornell) ARIBA, MIA, (SA), MTPIC, AMPTI. Awarded CMHC Fellowship for Research 1959. (Asst. Prof. and

Research Associate, School of Architecture, University of Toronto).

JAROSZ, George Antoni, Dip. Arch. (Polish Univ. College, London); 334 Kerswell Drive, Beverley Acres, Ont. (Rexlington Heights Ltd, Toronto)

KING, Harry Leon, B. Arch. (Tor); 70 Millwood Road, Toronto 7, Ont. (George C. N. Tonks, Toronto)

KONOPACKI, Tadeusz, Dip. Arch. (Academie Royale des Beaux-Arts De Liege); Apt 1, 50 Union Street, Ottawa 2, Ont. (Dept of Transport, Air Services, Ottawa)

SALTER, William Millet, B. Arch. (Tor); 136 Bayfield Street, Barrie, Ont. (Salter & Allison, Barrie)

SENIOR, Frank Revill, B. Arch. (McGill); Squadron Leader RCAF, 448 Briarwood Avenue, Ottawa, Ont. (Royal Canadian Air Force, Ottawa)

TANNIS, Egils, B. Arch. (Tor); 54 Wolfrey Avenue, Toronto 6, Ont. (Gilleland & Janiss, Toronto)

TOLCHINSKY, Hyman Martin, B. Arch. (McGill); 5810 Cote St Luc Road, Montreal, Que.

ZAWADZKI, Tadeusz S. K., Dip. Arch. (Polish Univ. College, London); 49 Combermere Drive, Don Mills, Ont. (Gordon S. Adamson & Associates)

### January 19, 1960

ALLEN, Douglas, B. Arch. (Tor); Shore & Moffat, 51 Wellington Street West, Toronto, Ont.

BANELIS, Algimantas, B. Arch. (Tor); 230 Salem Avenue, Toronto 4, Ont. (Jerome Markson, Toronto)

DUBOIS, Gazell Macy, B.Sc. Engineering (Tufts Univ.) M. Arch. (Harvard); 28 Broadpath Road, Don Mills, Ont. (Rounthwaite & Fairfield, Toronto)

FITZPATRICK, John Henry, B. Arch. (Man); 80 Shannon Road, Sault Ste Marie, Ont. (John B. Parkin Associates, Sault Ste Marie office)

MARTIN, Herbert Ian, B. Arch. (Sydney); 4693 Sherbrooke Street West, Montreal, Que.

PYSKLYWEC, Russell Walter, B. Arch. (Penn.); 231 Roehampton Avenue, Toronto 12, Ont. (Visvaldis V. Upenieks, Toronto)

SIEVENPIPER, John Edwin, B. Arch. (Tor), Architectural Guild Silver Medal 1957; Apt 3, 205 The Donway West, Don Mills, Ont. (John B. Parkin Associates, Toronto)

WEBB, Peter John, Dip. Arch. (Northern Polytechnic, London); Penthouse 10, 111 Lawton Blvd, Toronto 7, Ont. (Peter Dickinson Associates, Toronto)

WOOD, Cyril Raymond Meldrum, ARIBA; 240 Fairmont Avenue, Ottawa, Ont. (Dept of Transport, Ottawa)

YAPP, Russell Keith, B. Arch. (McGill); 45A Willcocks Street, Toronto 5, Ont. (Page & Steele, Toronto)

### February 26, 1960

BRADLEY, Richard, B. Arch. (Tor); 87 Northfield Road, Scarborough, Ont.

COOK, Arnold Harvey, B. Arch. (Man); 492 Bloor Avenue, Ottawa 1, Ont. (Dept of Transport, Ottawa)

FISHER, Frederick Richard, B. Arch. (Tor); 410 Bayview Avenue, Toronto, Ont. (Marani, Morris & Allan, Toronto)

MURRAY, George Prescott, B. Arch. (Tor); 215 Birkdale Road, Scarborough, Ont. (Bregman & Hamann, Toronto)

NOTEBAERT, Gerard, B. Arch. (Beaux-Arts), M. Arch. (Harvard); Apt 215, 1440 Towers Street, Montreal, Que.

STEWART, George A., B. Arch. (Man); 700 Riverwood Avenue, Fort Garry, Winnipeg 9, Man.

### April 8, 1960

BORTHWICK, Peter Lamont Burnside, Course Certificate (Glasgow), ARIBA; 33 Eisenhower Crescent, Box 1257, R.R. 2, Ottawa, Ont. (Balharrie, Helmer & Morin, Ottawa)

BREIVIK, Bjarne, B. Arch. (Man); 197 Barker Street, London, Ont. (Douglas L. Matthews & Associates, London)

GRAHAM, Alan, A.A. Diploma (Architectural Association School, London) ARIBA; 24 Cottingham Road, Toronto 7, Ont. (Project Planning Associates Ltd, Toronto)

LIACAS, Walter V., B. Arch. (Tor); 58 Avenue Road Crescent, Toronto, Ont. (Weir, Cripps and Associates, Toronto)

MARTIN, James McClean, Dip. Arch. (Leeds), ARIBA; 189 E. Lakeshore Road, Timmins, Ont. (Howard O'Gorman, Timmins)

MILNER, William Stephenson, Dip. Arch. (College of Art & Crafts, Hull); 230 St Georges Ave, W., Sault Ste Marie, Ont. (J. P. Paivio, Sault Ste Marie)

PITT, Dennis William, Dip. Arch. (College of Technology Art and Commerce, Oxford), ARIBA; Apt 302, 27 Herkimer Street, Hamilton, Ont. (Wm. R. Souter & Associates, Hamilton)

RICHARDS, Reginald Anthony Kennard, Dip. Arch. (Wales); 74 Rouge Crest Drive, Markham, Ont. (University of Toronto)

SKELLY, Raymond, Dip. Arch. (College of Art) ARIBA; 208 Poplar Plains Road, Toronto, Ont. (Property Department, City of Toronto)

STARCZEWSKI, Henry, Dip. Arch. (Polish Univ. College, London), ARIBA; 161 St Lucie Drive, Weston, Ont. (E. G. Faludi & Associates, Toronto)

# INDUSTRY

## Manuals Win Awards

The Metal Stair Manual and the Metal Curtain Wall Manual, publications of the National Association of Architectural Metal Manufacturers, have been selected as award winners in the 1960 Building Products Literature Competition sponsored by The Producers' Council and The American Institute of Architects. The Metal Stair Manual is the most complete work ever published on the subject of metal stair construction. Circular stairs, monumental stairs and conventional stairs of all types in modern architectural metal are completely illustrated, including typical details, in the new 72 page Manual. Design data covers all component stair parts, conveniently arranged according to the type of stair. Several pages are devoted to additional railing designs. Load tables are also given a special section.



## New Wilson Services in West

Availability in Western Canada will be improved for products of J. A. Wilson Lighting and Display Ltd. A recent announcement indicates that the company established a supply facility in Medicine Hat, Alberta, in January, with manufacturing to begin there in April. The company also has announced completion of an agreement with Pyle-National Company, Chicago, for the introduction of a system of environmental control which combines a lighting fixture with an air-handling diffuser. The technique employed is said to virtually eliminate drafts and to reduce noise level as well as the turbulence likely to cause dirt streaks on the ceiling.



## New Johns-Manville Siding

A major advance in exterior siding known as Permatone Colorbestos is being introduced by Canadian Johns-Manville. The new product is an asbestos cement siding to which pigmented acrylic resin is thermally fused, a surface said to be impervious to temperature extremes, salt water air or icing, and is resistant to fire, weather, rot and insects. The surface resists adhesion of dirt. Permatone is available in seven two-tone colors. The new product comes in straight-butt panels, 12 x 24 inches with a thickness of 3/16 inch. Brochure is available from the Company at 565 Lakeshore Road East, Port Credit, Ont.

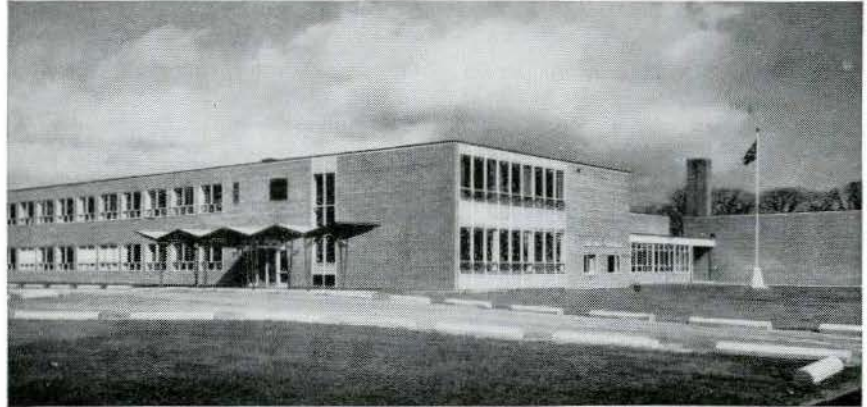
## Television "Eye"

Rohm and Haas Company of Canada Limited announces that tests are being conducted of a Plexiglas shell housing a television camera to facilitate inspection of soil formation beneath large construction projects. With the equipment, the character of the rock formation as much as 150 feet below ground is transmitted to viewing and recording equipment on the surface.

## 1960 Kawneer Catalogues

A set of six new catalogues illustrating and giving technical information on their product line for 1960 is available on request from Kawneer Company of Canada Ltd., 1460 Don Mills Road, Don Mills, Ontario. The catalogues are entitled: The Second New Idea in Entrances; Aluminum Store Fronts; Aluminum Wall Facings; Aluminum Canopies/Louvers; Sealair Windows; and Aluminum Wall Systems.

ARCHITECTS—Page & Steele. CONSULTING MECHANICAL ENGINEERS—Frost, Granek & Associates  
OWNER—North York Board of Education



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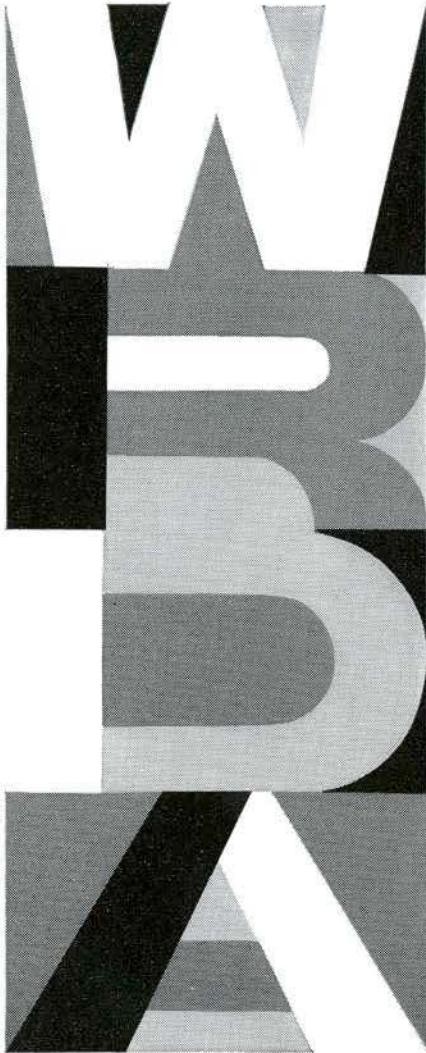
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The beauty and functional value of Thermopane insulating window units are presented dramatically in color in an eight-page booklet, "Good Looking", illustrated with photographs of installations in homes and public buildings throughout Canada. The text explains construction of the units, performance and benefits in layman's language and illustrations and sketches suggest uses in any room under any weather conditions. Copies are available on request, from Pilkington Glass Centres or from 165 Bloor St E, Toronto.



**New Latex Exterior Paint**

Roxalin of Canada Ltd, announces that a new water-based latex exterior paint known as Roxamul Exterior Velvet, has successfully passed months of field testing under Canadian climatic conditions. Drying time of the new paint is said to be less than half an hour and the product is showerproof in less than one hour. Because it is water thinned, Roxamul can be applied safely on damp surfaces. The product resists efflorescence and is available in mildew-proof formulation. Further information may be obtained from Roxalin of Canada Ltd, Dwight Avenue and New Toronto St, New Toronto, Ont.



**New Plumbing Fixture Trim**

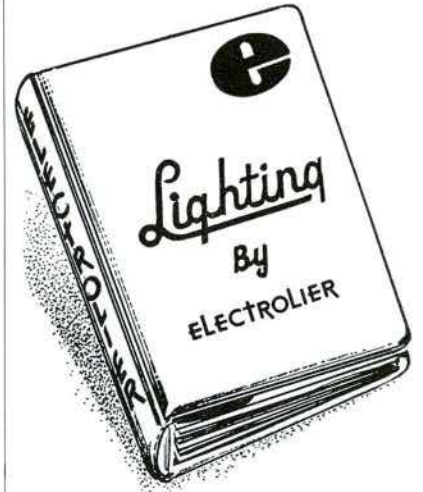
A new line of plumbing fixture trim has been introduced by Mueller Ltd. Known as Beautycraft "MARK III" the line is in modernistic design and includes tub and shower combinations and a choice of several types of lavatory trim, all in harmonizing styling. The new line is illustrated in a new catalogue, PB-21, covering Beautycraft "MARK III" along with Mueller's entire line of plumbing brass products and fixture trims. The 64 page catalogue, fully illustrated and with detailed specifications, may be obtained by writing the Company at Sarnia, Ont.



**New Noranda Handbook**

A recently compiled 44 page handbook entitled "Noranda Tube and Pipe for Plumbing and Heating", is now available to architects. The book includes methods to determine sizes for mains, risers and branches, working pressures; bursting pressures; rates of flow; and how to specify copper drainage tube. Write Noranda Copper and Brass Ltd, Durocher Avenue and Sherbrooke Street, Montreal East, P.Q.

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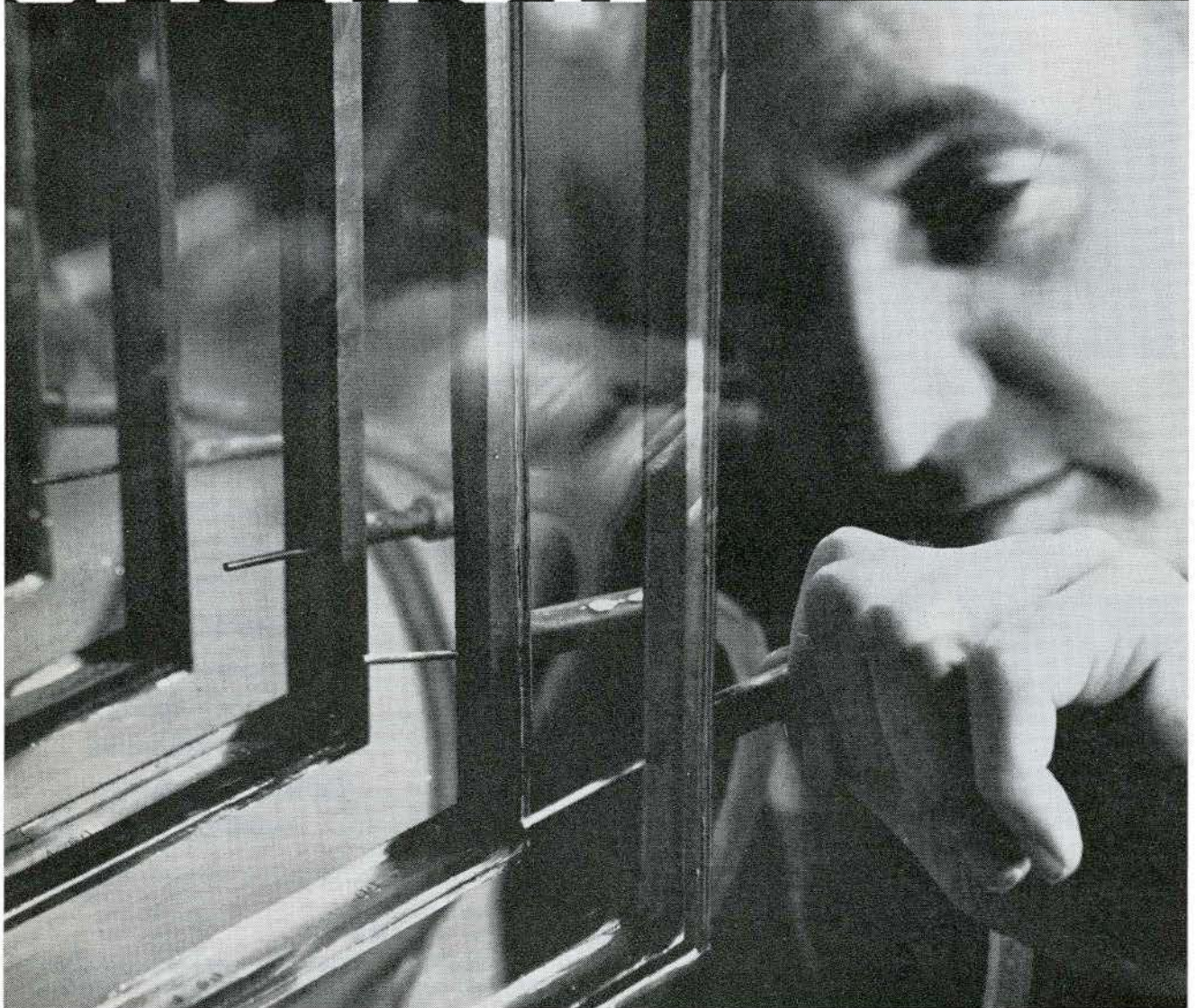
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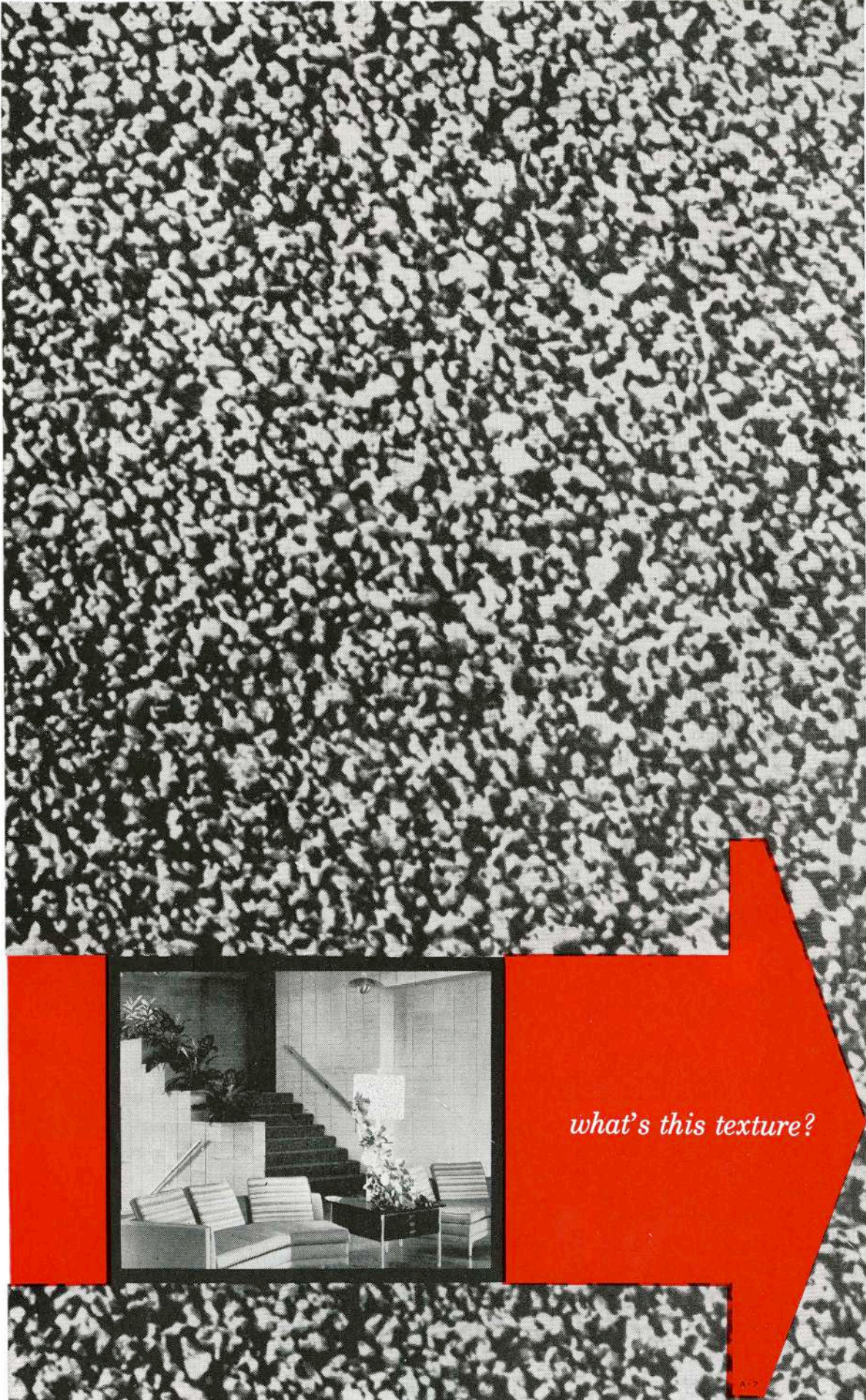
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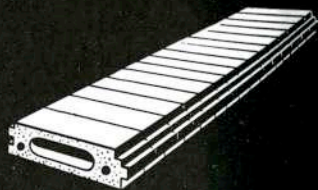
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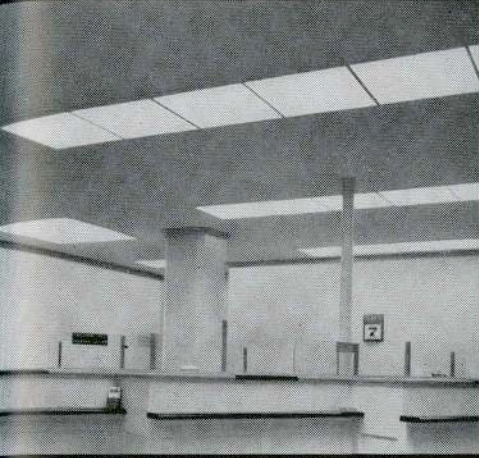
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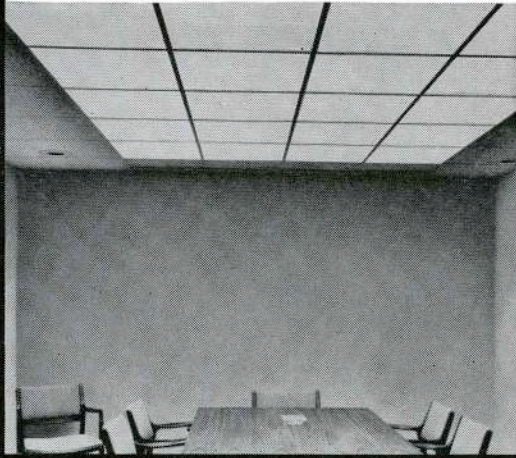
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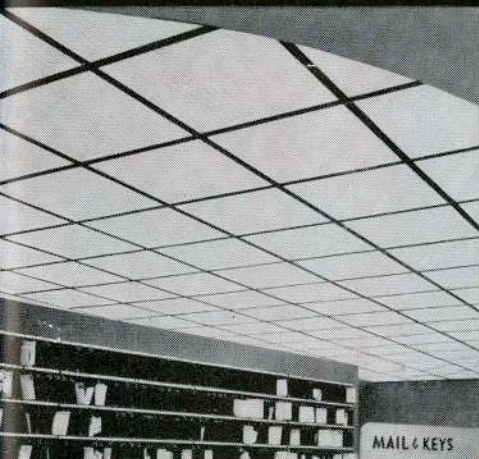
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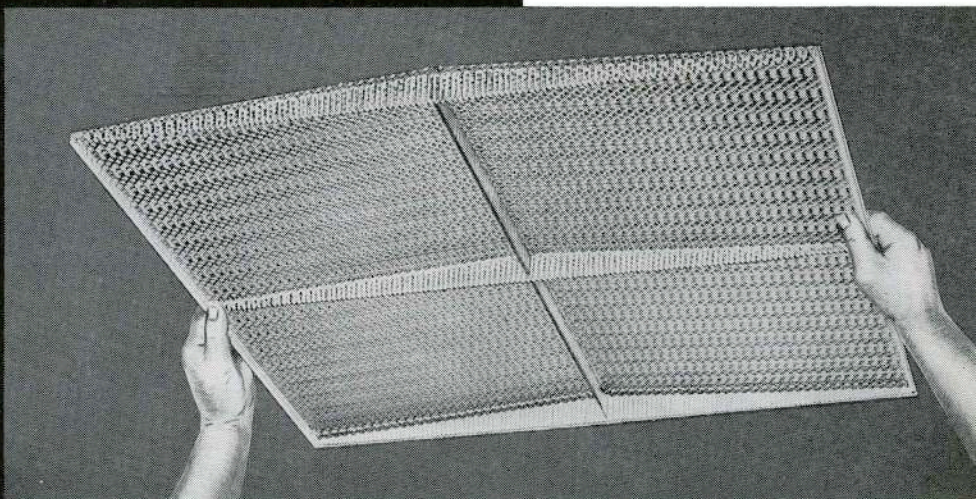


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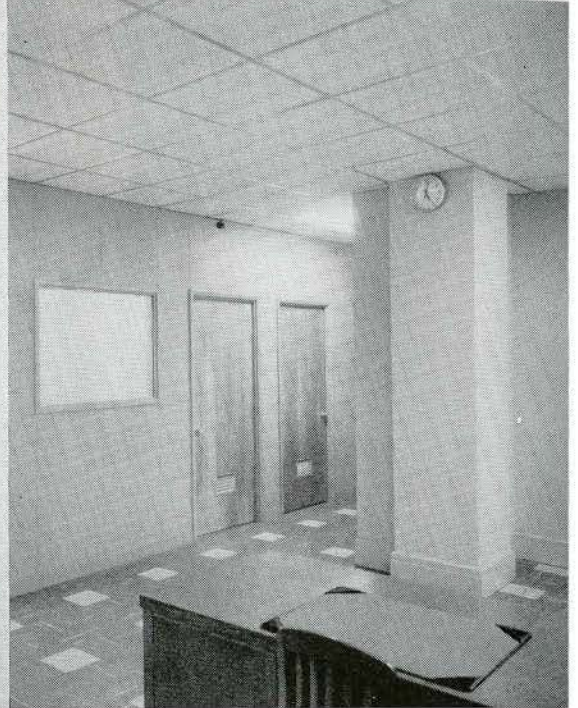
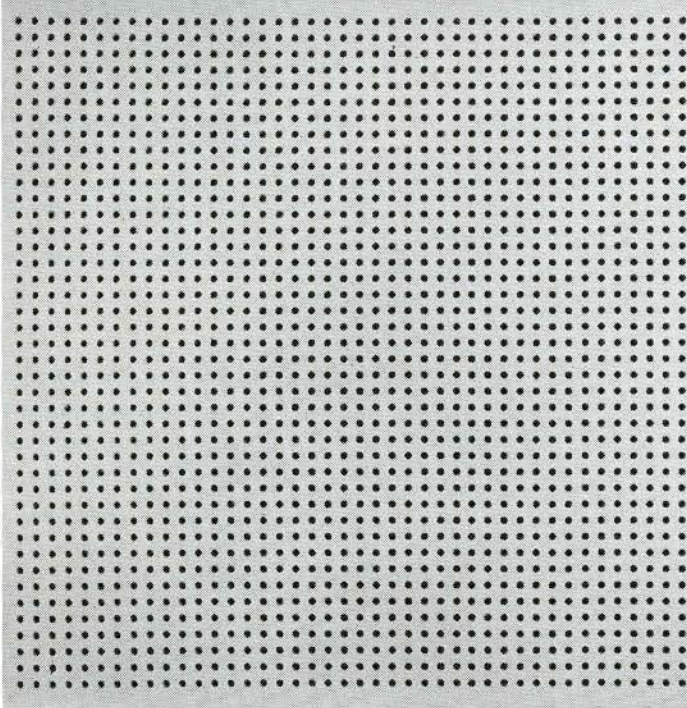
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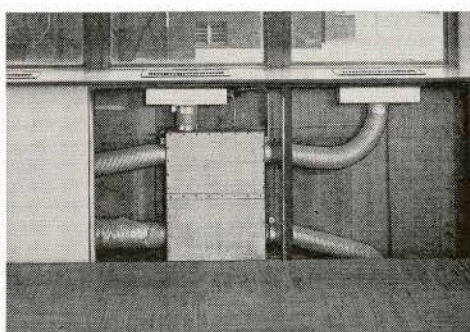
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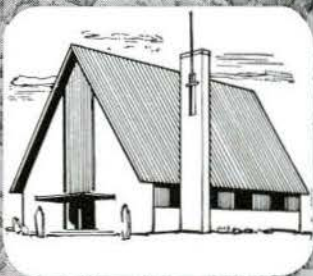
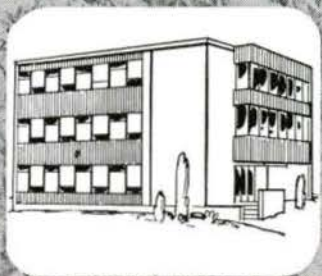
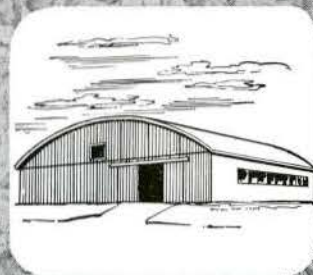
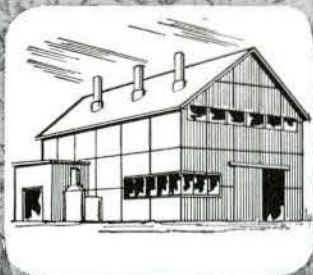


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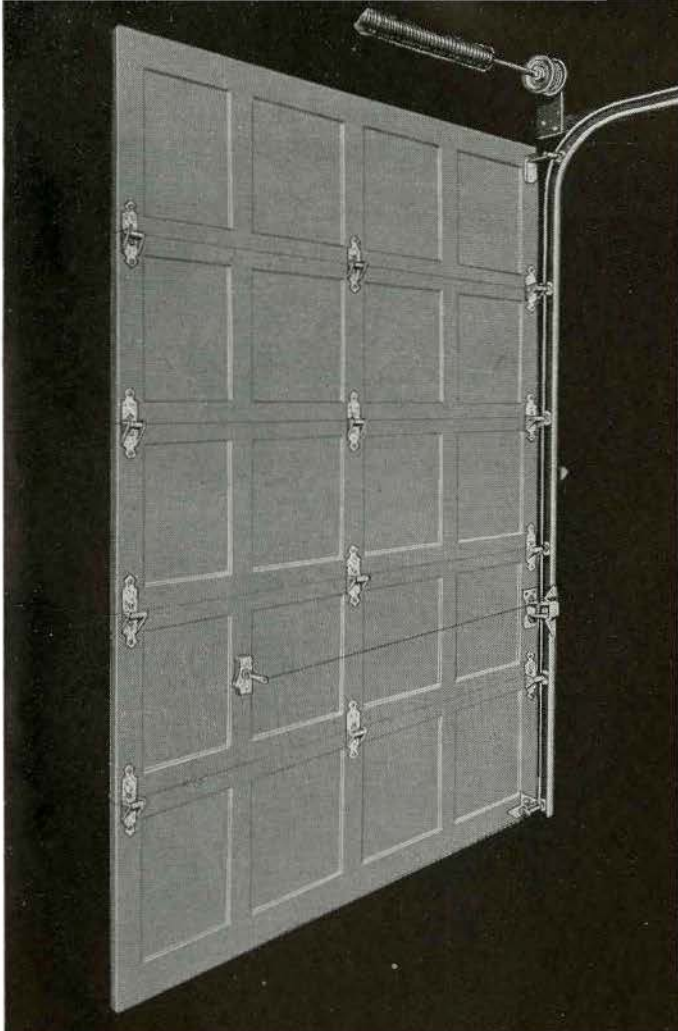
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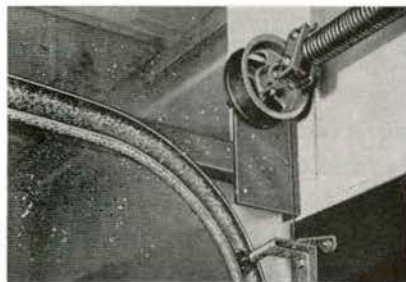
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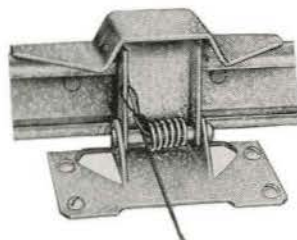
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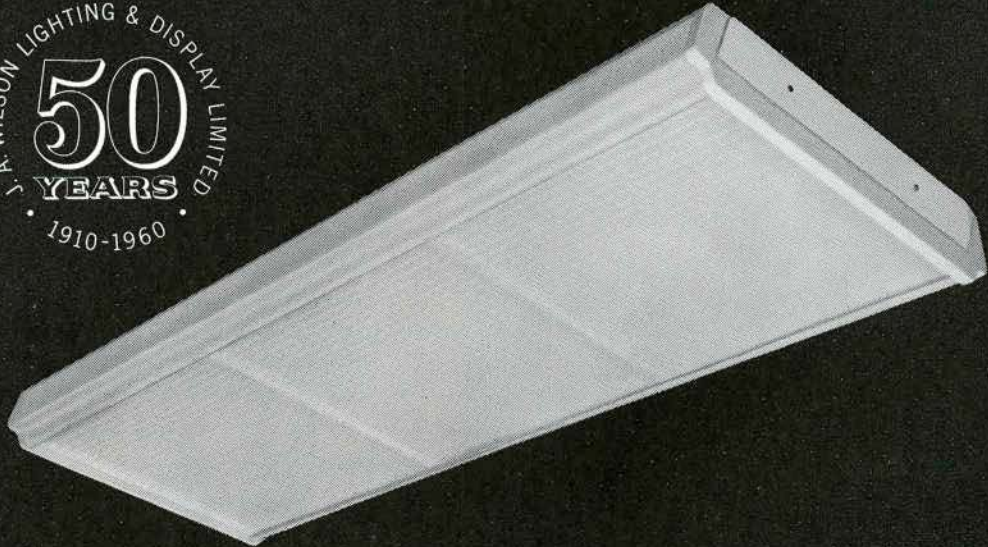
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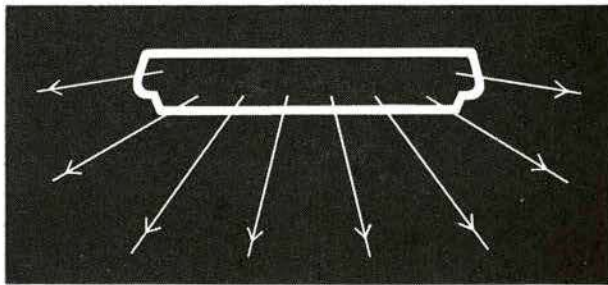
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*Installation showing Bolta handrails and stair nosings in a private home.*

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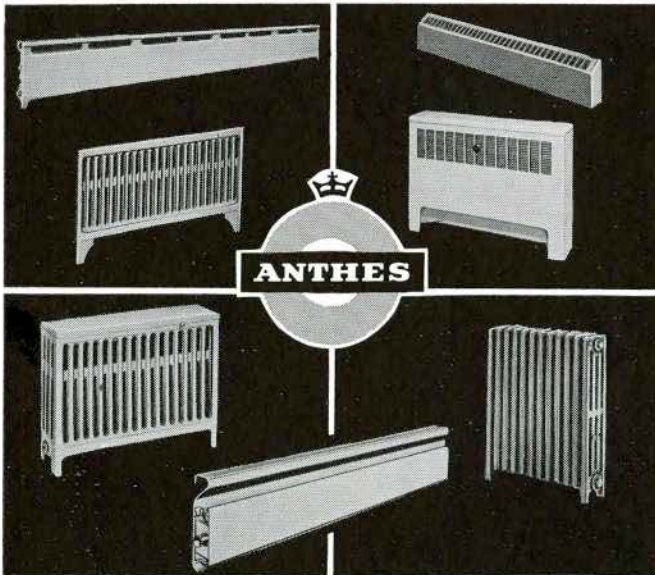
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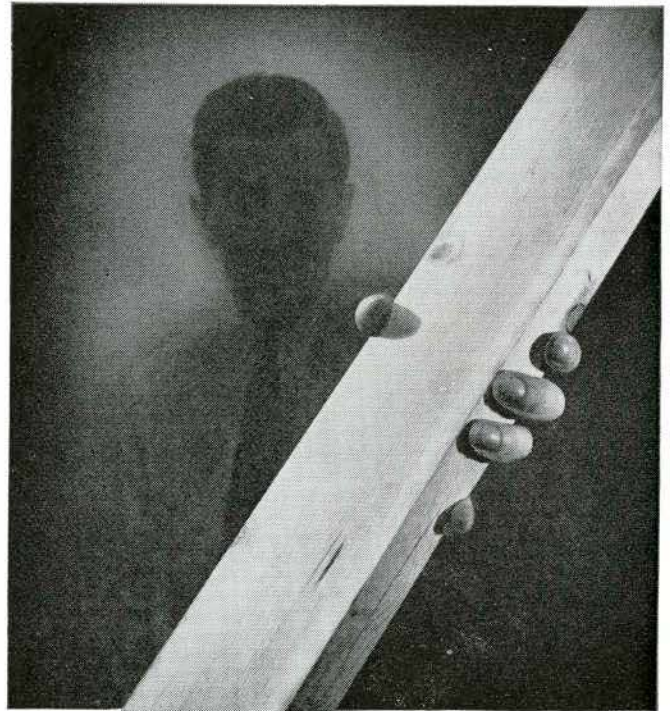
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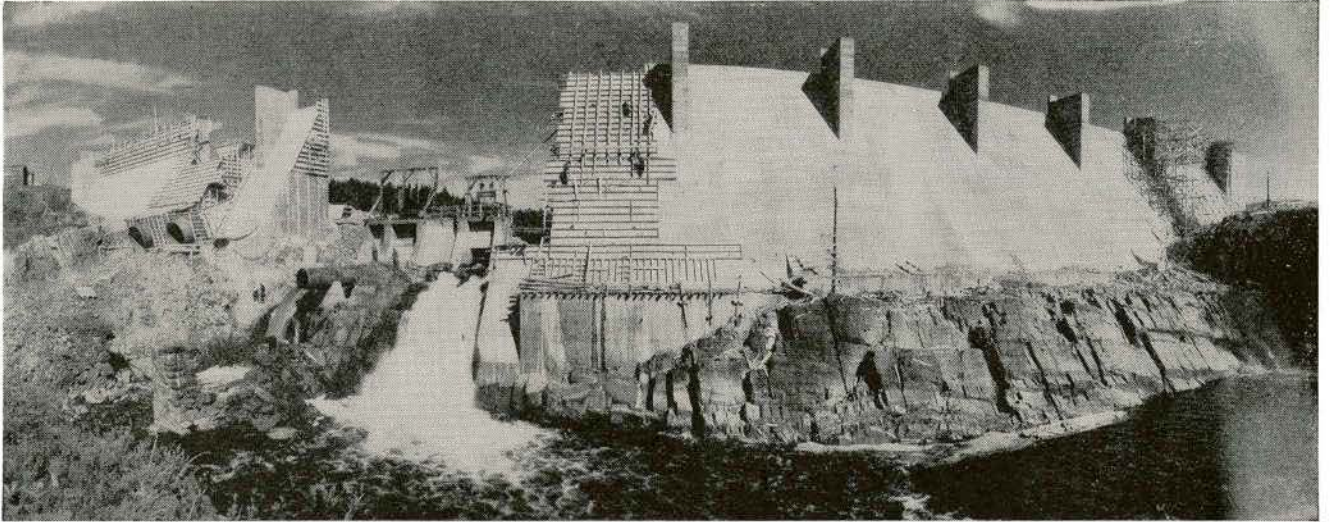
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# PORZITE



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Design & Engineering by  
Commission's Engineering Staff  
Chief Engineer: Mr. G. D. Mader

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Sternson PORZITE was used in over ten thousand cubic yards  
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**WATER REDUCING—  
CEMENT DISPERSING ADDITIVE**  
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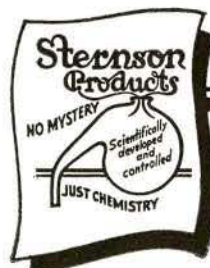
**REDUCED WATER-CEMENT RATIOS** — Porzite lowers mixing water as much as 15% while maintaining good workable mix qualities at low slumps.

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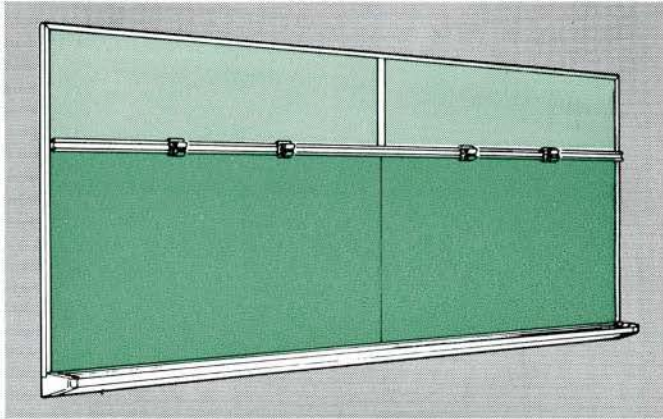


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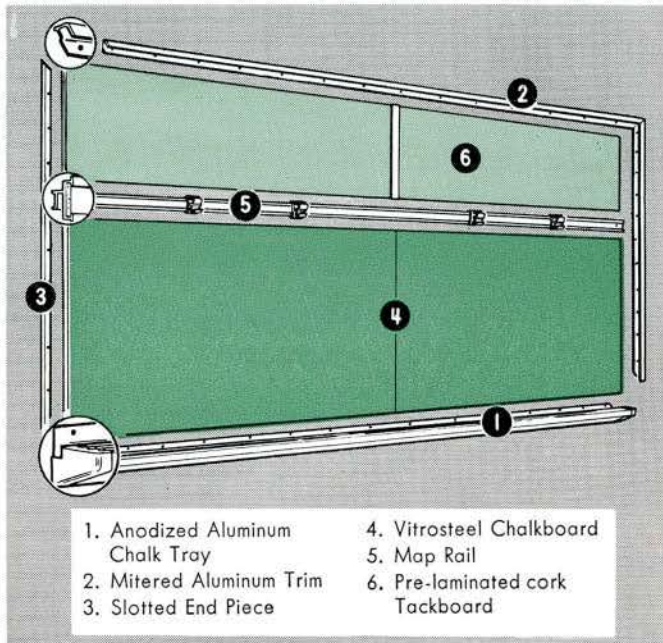
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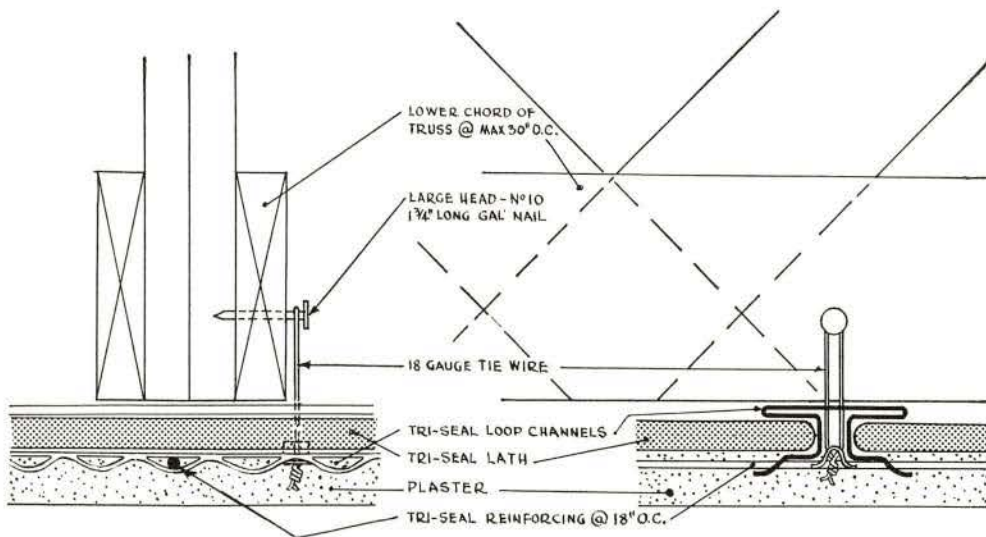
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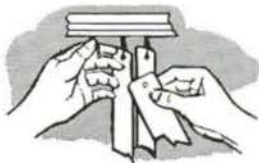
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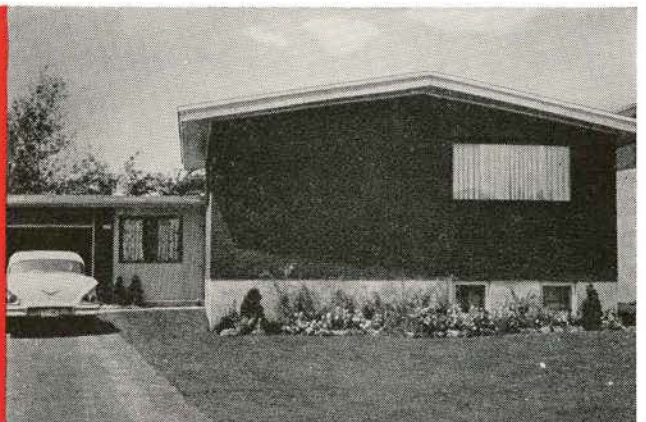
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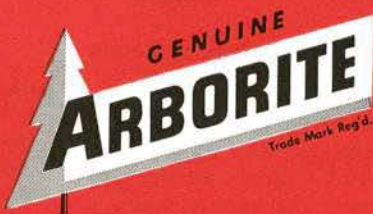
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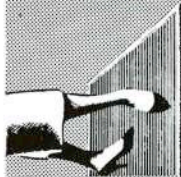
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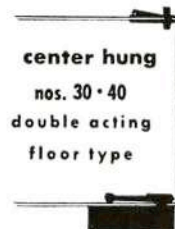
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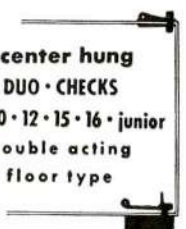
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nos. 318½ • 321 • 326  
single acting  
floor type



**center hung**  
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single acting  
floor type



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*Among apartment owners costs count  
and Coal is the fuel*

# \* Over 400 Apartment owners purchased Coal-burning equipment during the past 24 months

\* (Figures are for Metro. Toronto only)

- (1) To save money
- (2) For cleanliness
- (3) For convenience
- (4) Because coal requires no more man power

#### IN A RECENT SURVEY

it is found that coal is burned in more apartment buildings than all other fuels combined. Already one great Realty Company has installed coal burning equipment to heat over 80% of its 3200 apartments in 23 buildings. Another owner with 2 identical 34-suite apartment buildings used coal to heat one (cost per suite \$55) while the other was heated with oil (cost per suite \$111):



A

has now replaced oil and uses coal to heat all 68 suites thereby cutting fuel costs in half.

In apartment buildings, particularly, overhead must be kept to a minimum to ensure fair

yearly profit in ratio to money invested and also because re-sale value of the building is based on this net annual profit. That's why more than 400 new apartment owners selected coal-burning equipment.



B

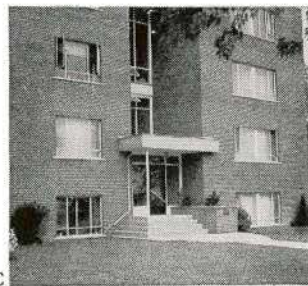
#### FACTS YOU SHOULD KNOW ABOUT COAL

Not only is bituminous coal the lowest-cost fuel in most industrial areas but up-to-date coal-burning equipment can give you 10% to 40% more steam per dollar (on the average). Today's automatic equipment cuts labour costs and

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If you are remodelling or building new heating or power facilities, it will pay you to consult a qualified engineering firm. Such concerns—familiar with the latest in fuel costs and equipment—will effect great savings for you in efficiency and fuel economy over the years.



C

a. Eden Rock Apts. : Owners—Diamond & Shatkowsky Ltd. b. The Gaylord Apts. : Owner—Andrew Ucci. c. Traymore Apartments—Toronto

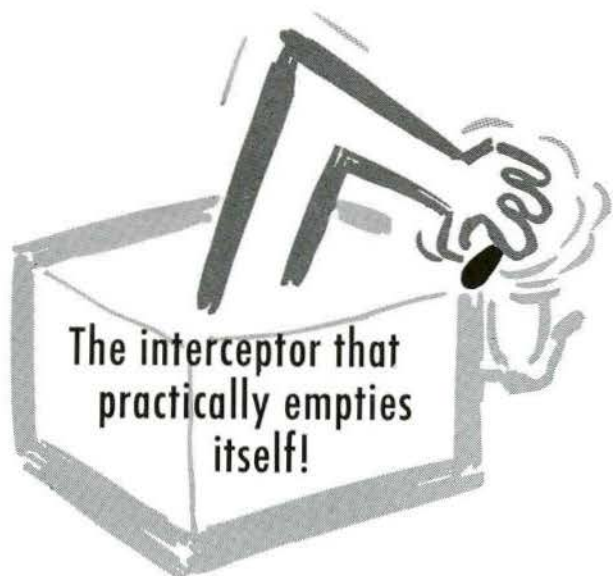


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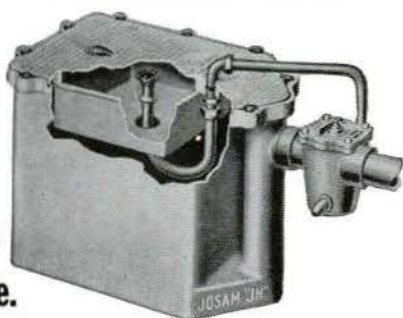


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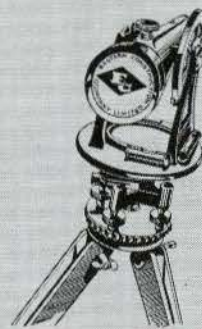
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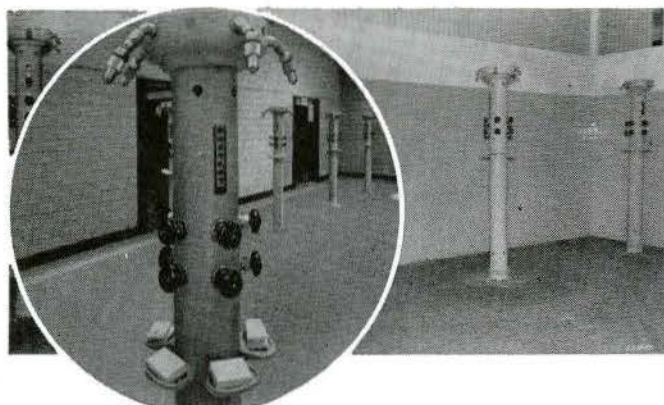
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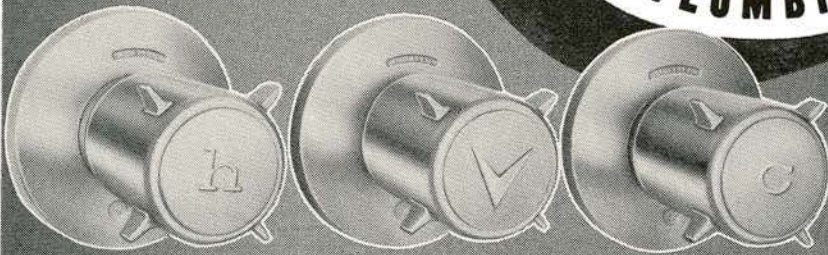
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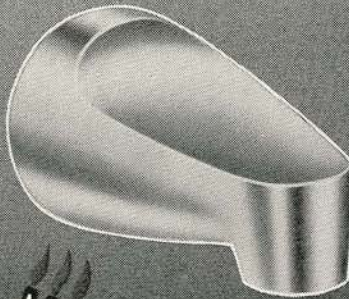
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#### PLUMBING FIXTURE TRIM



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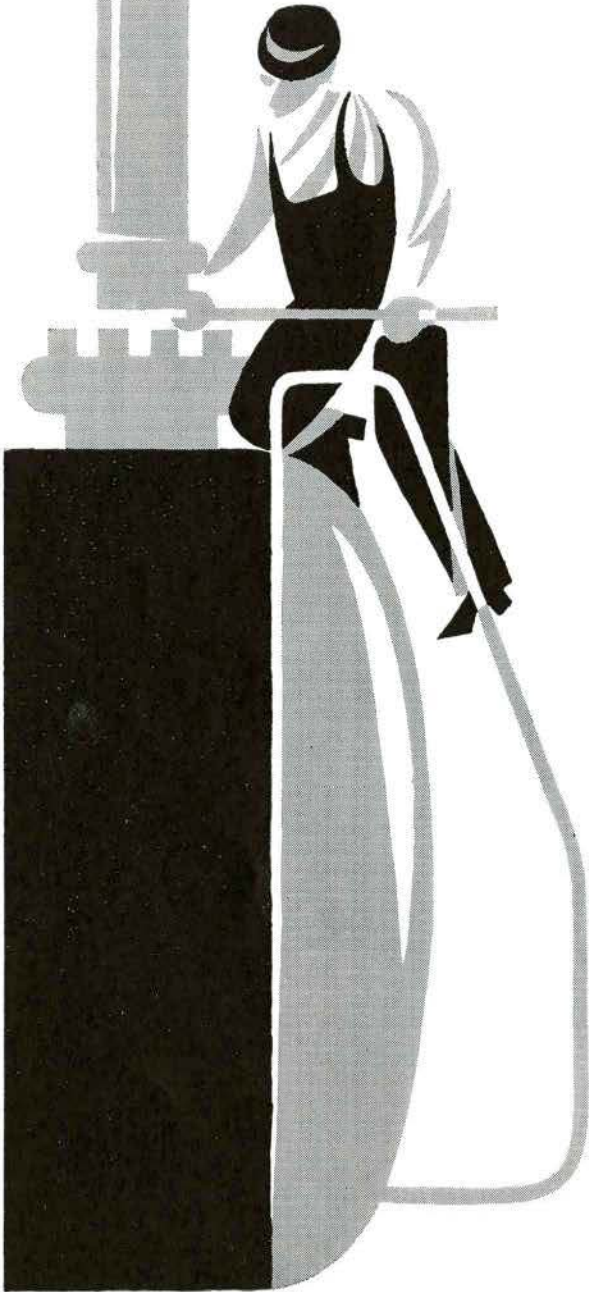
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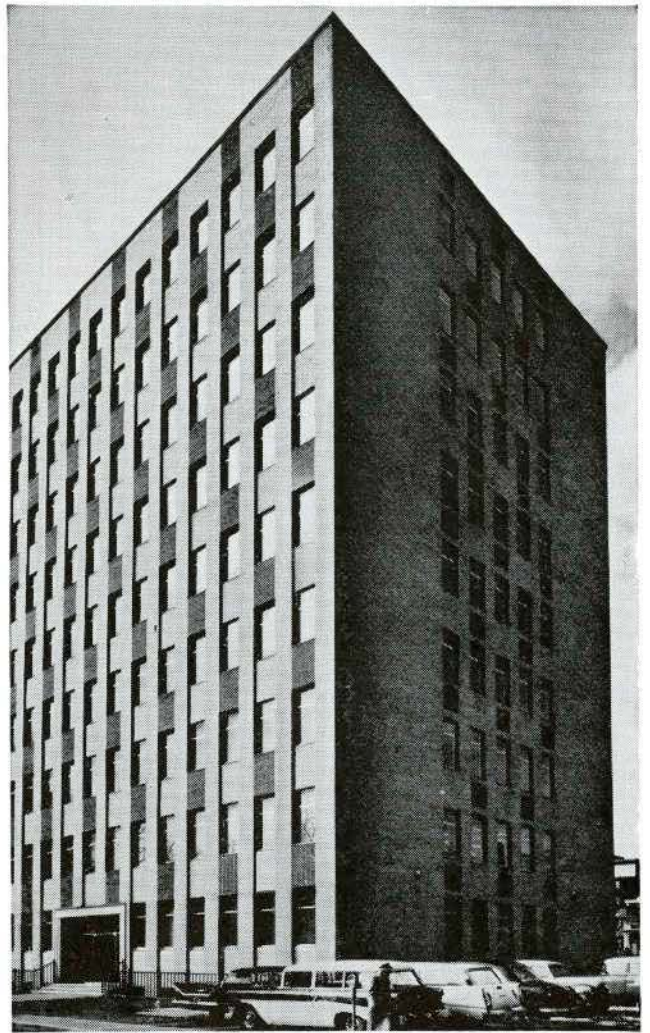


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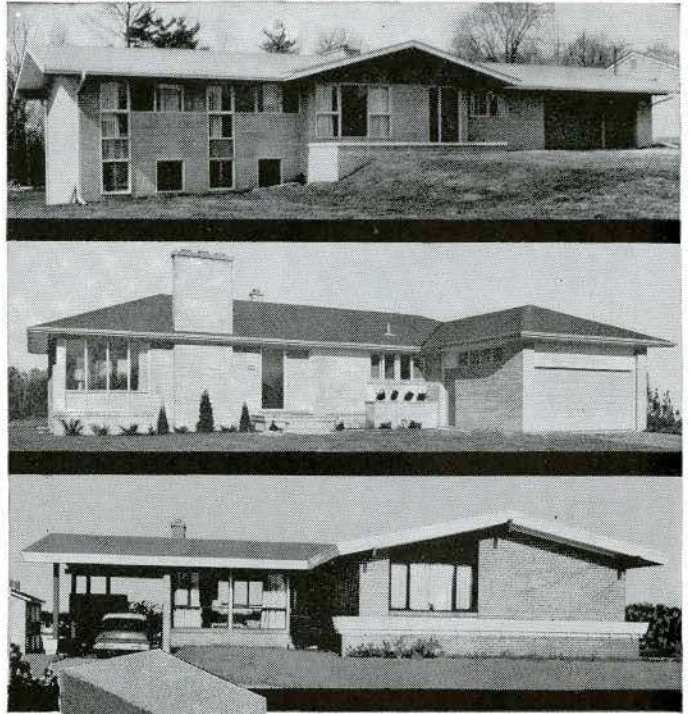


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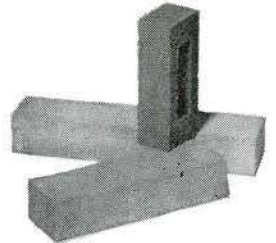
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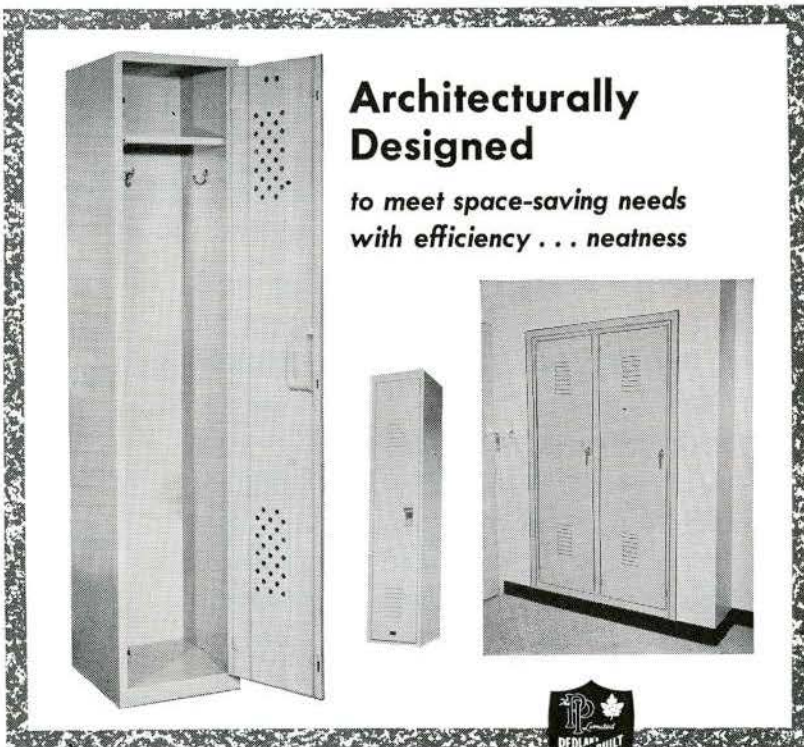
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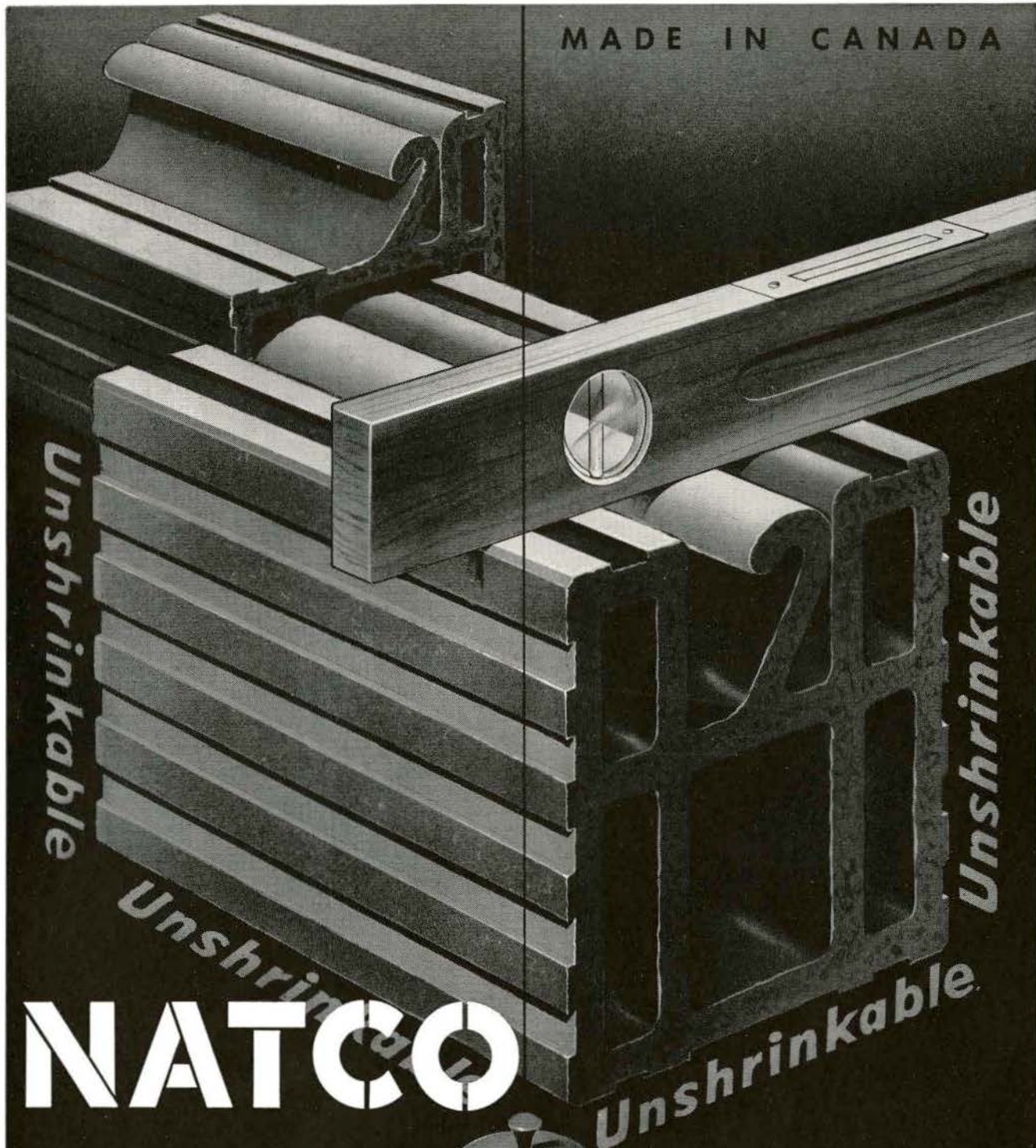
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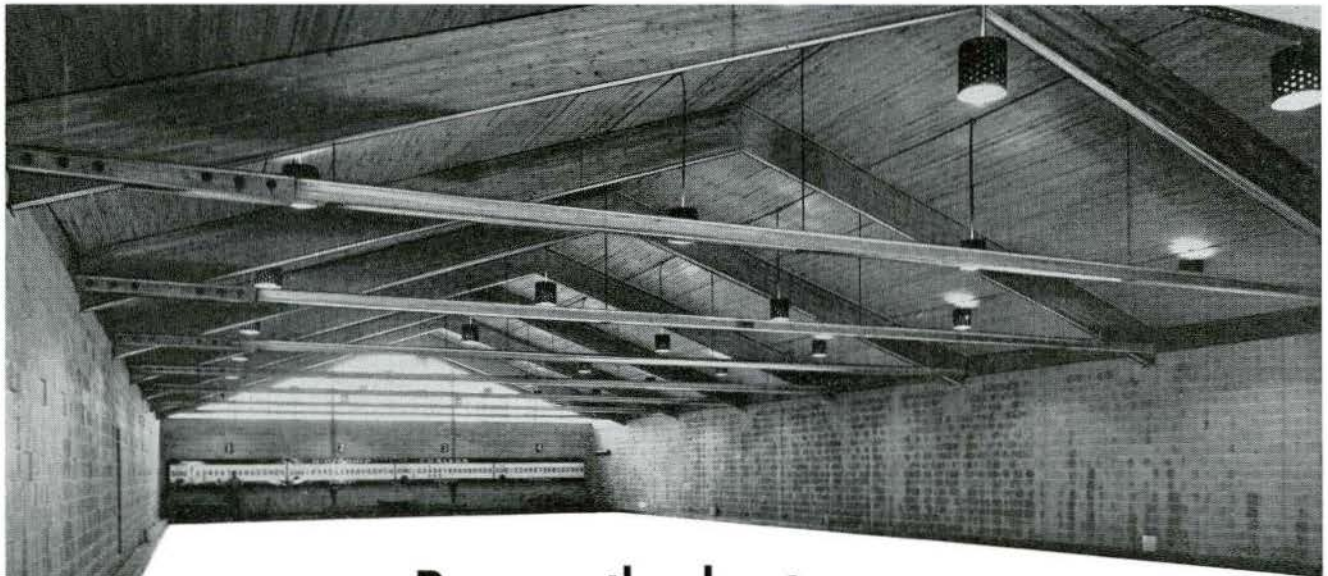
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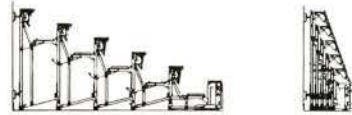
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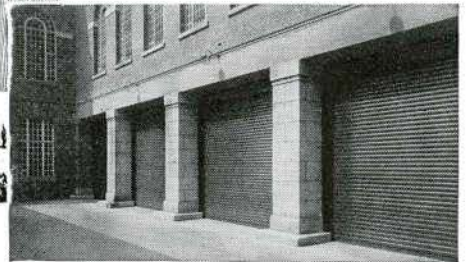
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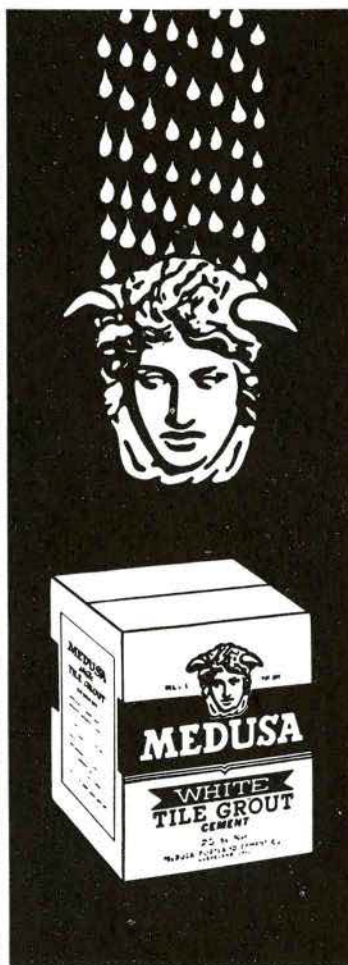
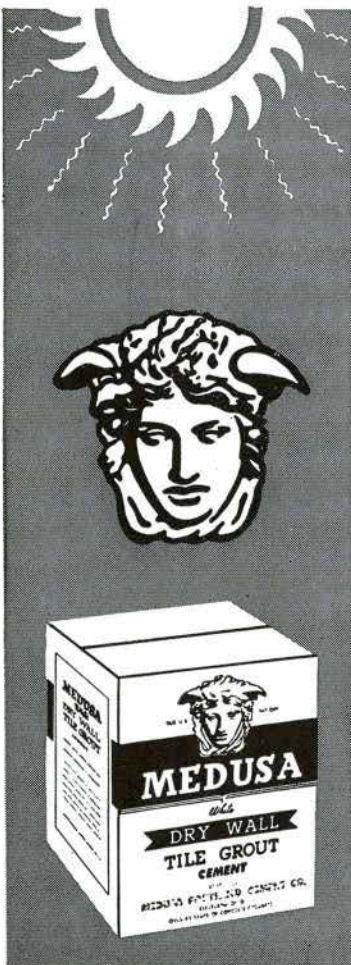
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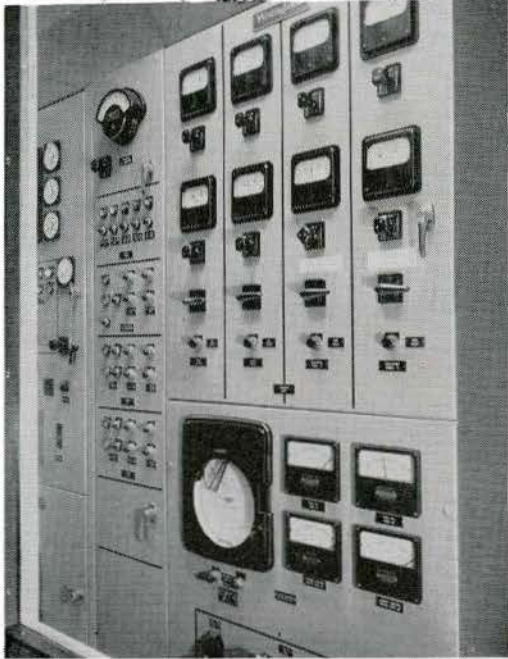
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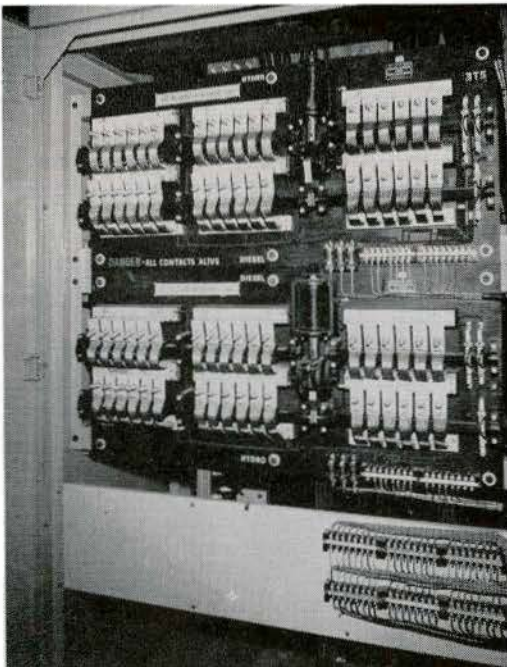
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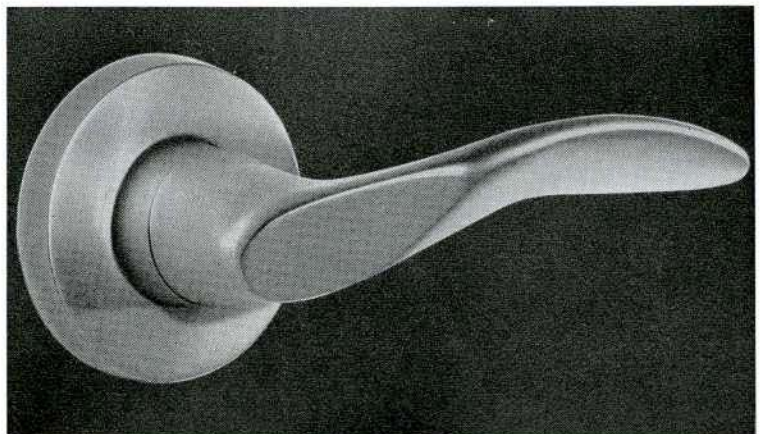
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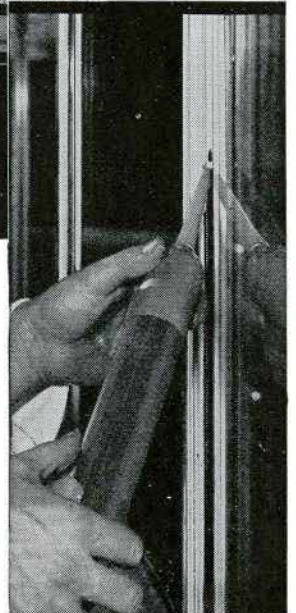
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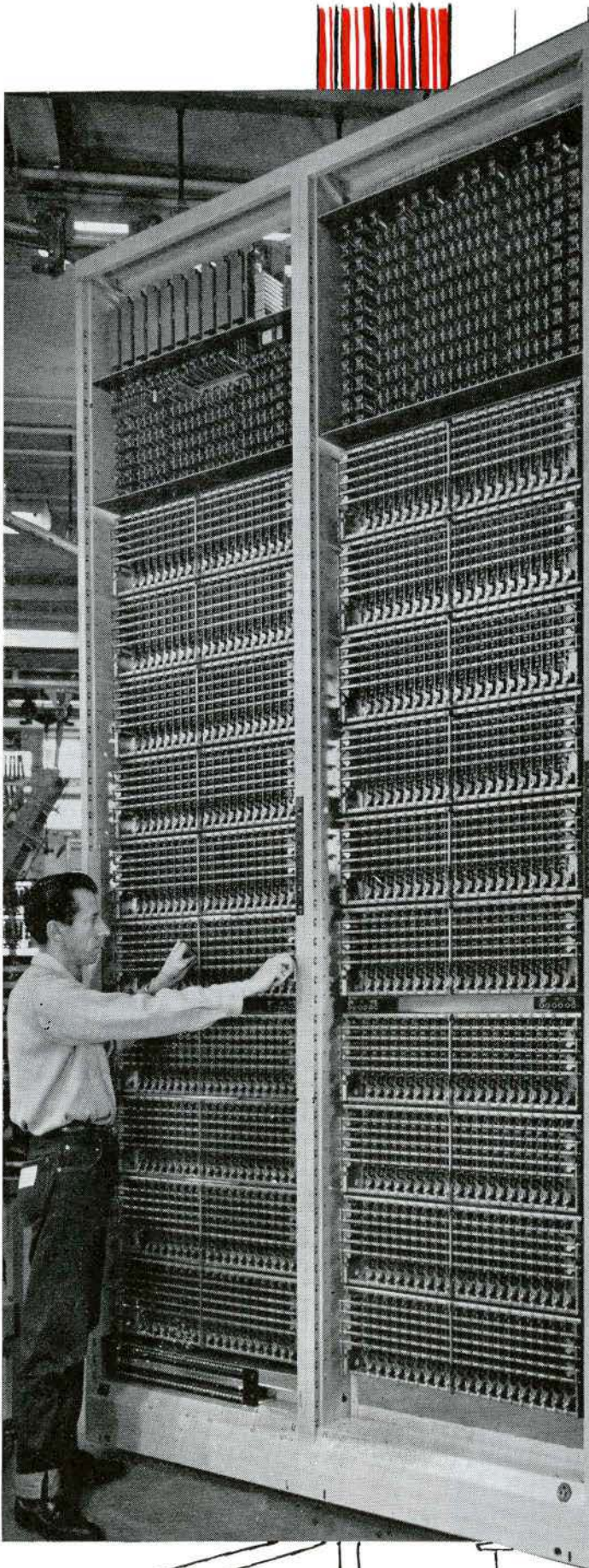
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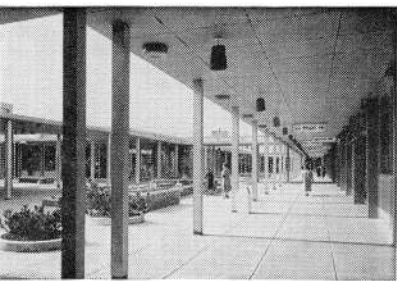


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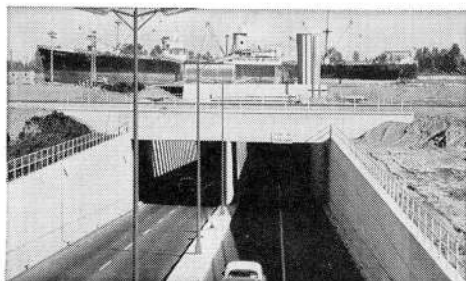




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