

JOURNAL RAIC · L'IRAC

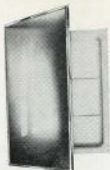
MAY 1966 MAI





SURFACE BATHROOM CABINETS

10 models in a broad range of sizes, colours and finishes. Illustrated: THE CONTEMPORARY, MODEL C 70, with light fixture.



RECESSED BATHROOM CABINETS

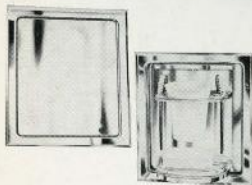
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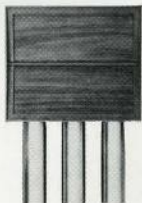
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26 models, from 2 to 4 notes. Traditional and contemporary styling. Illustrated: THE ARISTOCRAT, MODEL M-276. Walnut finish, 2 notes front door, 1 note rear door.

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Fuzzy Business

The bear fact is that because of his special knowledge of the area Jasper has been loaned to the RAIC for the 1966 Assembly by his master Jim Simpkins.

Latest Assembly News

In addition to Sir Tyrone Guthrie, and Morris Ketchum, Jr, FAIA, Assembly participants will include J. B. Jackson, editor of *Landscape* magazine, Sante Fe, N.M.; Edgar H. Davis, consulting engineer, Calgary, Chairman of Banff Olympic Association; and James A. Langford, chief architect, Department of Public Works of Canada. The dinner speaker will be Hon F. C. Colborne, Minister of Public Works, Alberta.

Survey of the Profession

The report on the Survey of the Profession, conducted over the past two years by the Committee for the Profession, is now being printed and will be distributed to members in both English and French editions in May. Discussion of the report is on the agenda for the RAIC Assembly at Jasper.

Cover

The ear on this month's "Op" (audio?) art cover has been reprinted courtesy of the Toronto Public Library Picture Collection (*Ree's Cyclopaedia Vol. 1*, published in 1820).



RAIC Committee on the Profession, left to right at table: Patrick M. Keenleyside, Peter Dobush (F), Peter M. Thornton (F), Mrs G. M. Postill (secretary), Chairman Herbert H. G. Moody (F), James A. Langford, Henri Mercier (F), Douglas H. Lee. At rear: W. Gerald Raymore (F), Fred W. Price (Executive Director RAIC), Gérard Venne (President RAIC).

World Prestressing Congress 1966

The Fifth Congress of the Fédération Internationale de la Précontrainte (Prestressed Concrete) is to be held in Paris from 11-18 June 1966.

Banff Session '67

The 1967 Banff Session sponsored by the Alberta Association of Architects and the Department of Extension of the University of Alberta, will be held at the Banff School of Fine Arts, March 19-23. The theme will be "Architectural Education".

Design Marts

About 500 outstanding Canadian-designed and manufactured products and new product designs will be displayed at a series of design marts, the first of which will be held from April to July at The Design Centre in Toronto. The marts will mark a major stage in the Canadian Design '67 program which was initiated one year ago to bring

forth well-designed Canadian products for use and sale in 1967.

Omission

In our January presentation of the ASTM Building we neglected to include two notes of a personal nature - the architect, J. Roy Carroll, FAIA, Past President of the AIA, was admitted to honorary Fellowship in the RAIC last year; and the current President of ASTM is another Honorary Fellow of the RAIC, Robert F. Legget, Director of the Division of Building Research, National Research Council, Ottawa.

Epitaph

Raise not a monument to him
Who razed all those he bought
And replaced them with his nobler mark
ie a parking lot.
Who's wrecker's ball does this day pound
Against the Pearly Gates
Eternal parking to provide
At God only knows what rates.

Harry Mayerovitch

RAIC/L'IRAC 59th Annual Assembly / 59ième Assemblée Annuelle Jasper Park Lodge, Jasper, Alberta

PROGRAMME

Wednesday June 1 juin mercredi

Registration	8.30	Inscription
RAIC Council	9.00	Conseil de l'IRAC
Architectural Education Committee	9.00	Comité sur la formation des architectes
Research Committee	2.00	Comité sur la recherche
Public Information Committee	2.00	Comité d'information publique
Professional Usage Committee	4.00	Comité sur la pratique de la profession
AAA Welcoming Reception	5.30 to 9.30	Réception de bienvenue par l'AAA

Thursday June 2 juin jeudi

Registration	8.30	Inscription
59th Annual Meeting	9.00	59ième assemblée annuelle
Keynote Luncheon	12.30	Déjeuner-thème
Speaker: Sir Tyrone Guthrie		Orateur: sir Tyrone Guthrie
Afternoon free		Après-midi libre
Barbecue Dinner	6.30	Barbecue
Square Dance	9.30	Danses carrées

Friday June 3 juin vendredi

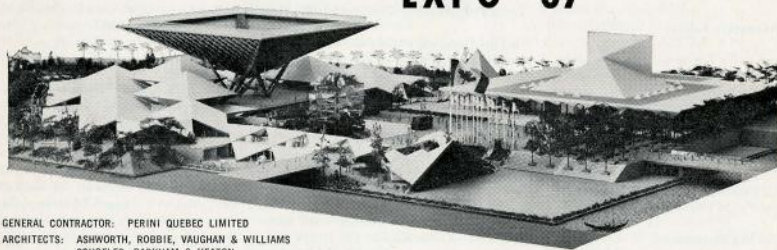
59th Annual Meeting (cont'd):	9.00	59ième assemblée annuelle (suite):
Survey Report		Relevé de la profession
Afternoon free		Après-midi libre
College of Fellows Meeting	1.30	Réunion du Collège des Fellows
Fireside discussion on theme	7.30	Discussion amicale sur le thème

Saturday June 4 juin samedi

Summary of theme discussion	9.00	Résumé de la discussion sur le thème
College of Fellows Convocation	11.00	Assemblée officielle du Collège des Fellows
Reception for new Fellows	12.00	Réception en l'honneur des nouveaux Fellows
RAIC Council: Luncheon	12.30	Déjeuner, Conseil de l'IRAC
Afternoon free		Après-midi libre
President's Reception	7.00	Réception offerte par le Président de l'Institut
Annual Dinner and Ball	7.30	Dîner annuel et bal

CANADIAN GOVERNMENT PAVILION

EXPO '67



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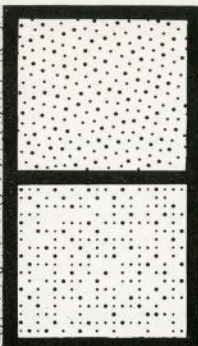
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Canadian Government Pavilion, Expo '67 — General view showing the main architectural feature, the great inverted pyramid called "Katimavik" (Eskimo for meeting place) and on the right, the Arts Centre which includes theatre, art gallery, two restaurants, and administration. The principal exhibits are under the pyramidal roofs, the exhibit of the People of Canada is in the "Tree" (between the Katimavik and the Arts Centre), the band-shell in the right foreground and the children's centre in the middle foreground.

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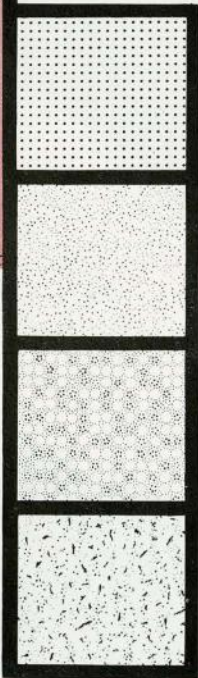
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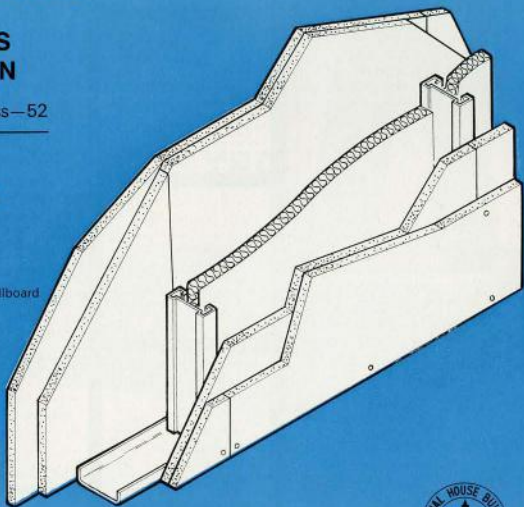
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From Institute Headquarters

Full reports from the Sao Paulo Biennial show that Canadian architects did very well indeed in competition with the world's best.

In the education buildings section, Fairfield and DuBois, Toronto, came second to Pedro Ramires Vasquez who won the gold medal for outstanding design in the exhibition. Their entry: Central Technical School, Toronto (a Massey Medal winner).

John B. Parkin Associates, Don Mills, won second place in the industrial buildings category with their entry, Thomas J. Lipton Ltd., Bramalea (also a Massey Medal winner). Winners were Marconi, Rovanski and Turczynowicz of Poland.

Still in the international realm, we have received a copy of the catalog for the recent Madrid exhibition of contemporary building design in the Americas - *Arquitectura Actual de America*. It includes photos of the following Canadian entries:

Affleck Desbarats Dimakopoulos Lebensold Sise

Church of St Gerard Majella, St-Jean; Fathers of Confederation Memorial, Charlottetown; Student Union, McGill University, Montreal; Leacock Building, McGill University, Montreal; Civic Centre, Chomedey; Norman Wade Warehouse, Pointe Claire; Summerlea Golf & Country Club, Pointe Cascades

Marani Rounthwaite & Dick

Arts Building, Laurentian University, Sudbury; Better Living Centre, CNE, Toronto; British Mortgage & Trust Co., Goderich; Airport Terminal, Sault Ste Marie

John B. Parkin Associates

Toronto International Airport, Malton; Imperial Oil Ltd., Don Mills; Thomas J. Lipton Ltd., Bramalea

Reference is made also to an illustrated address on *Contemporary Architecture in Canada*, given by John C. Parkin (F) during the Exhibition.

At the recent annual meeting of the Society of Architectural Historians, in New York City, Prof Alex L. Murray of York University delivered a paper on *Frederick Law Olmsted and Mount Royal Park, Montreal*.

The SAH tour in Quebec City, August 18-21, will feature tours of the Upper and Lower Town of the old section of Quebec, old suburbs along the Grande Allée, a tour of the Isle of Orleans, and one to Neuville according to Alan Gowans and A. J. H. Richardson, chairmen. An exhibition of photographs of existing buildings and views of former buildings in the vicinity of Quebec City is planned. There will also be a display of original plans taken from the files of a Quebec architectural firm, covering the years 1840-1900. André Robitaille, local chairman in Quebec City, has announced that Louis Beaupré, Jacques de Blois, Paul Lafontaine, Jean Ritchot, and Gilles Vylandré will serve on his committee.

A new AIA research report on Emerging Techniques of Architectural Practice will be of considerable interest to RAIC members. Available at \$3 from AIA, 1735 New York Ave. N.W., Washington, D.C. 20006.

No Time for Ugliness, the excellent film weapon in the AIA War on Community Ugliness, is reaching wide audiences in Canada through prints purchased by the RAIC, Ontario and Alberta Associations, CMHC and the Centennial Commission.

A Canadian Council of Furniture Manufacturers has been organized to improve the design and use of Canadian made furniture. Its facilities are available to architects on request to Director Stanley Conder, 206 Insurance Exchange Building, 202 Queen Street, Ottawa 4, Ont.

We have received the first yearbook of the Trinidad and Tobago Society of Architects. This small but enterprising group has some creditable achievements, illustrated herein.

Fred W. Price
Executive Director

Du siège social de l'Institut

Les rapports de la Biennale de Sao Paulo indiquent que les architectes canadiens ont fait bonne figure à côté de grands maîtres du monde entier.

Dans la section des bâtiments scolaires, Fairfield et DuBois de Toronto n'ont été dépassé que par Pedro Ramires Vasquez, gagnant de la médaille d'or. Ils avaient présenté l'École technique centrale de Toronto, oeuvre primée au concours Massey.

Dans la section des bâtiments industriels, John B. Parkin Associates, de Don Mills, s'est également classé deuxième avec l'immeuble Thomas J. Lipton, Ltd, de Bramalea, autre oeuvre primée au concours Massey.

Les gagnants du premier prix ont été Marconi, Rovanski et Turczynowicz de Pologne.

Toujours dans le domaine international, nous avons reçu un exemplaire du catalogue de la récente exposition d'architecture contemporaine dans les Amériques - *Arquitectura Actual de America* - de Madrid. On y trouve des photographies des oeuvres canadiennes suivantes:

Affleck Desbarats Dimakopoulos Lebensold Sise

Eglise Saint-Gérard-Majella, Saint-Jean; Edifice commémoratif des Pères de la Confédération, Charlottetown; Student Union, Université McGill, Montréal; Edifice Leacock, Université McGill, Montréal; Centre municipal, Chomedey; Entrepôt Norman Wade, Pointe-Claire; Summerlea Golf & Country Club, Pointe Cascades

Marani Rounthwaite & Dick

Edifice des Arts, Université Laurentienne, Sudbury; Better Living Centre, Terrain de l'Exposition, Toronto; British Mortgage & Trust Co., Goderich; Aéroport, Saunt Sainte-Marie

standard desk summit

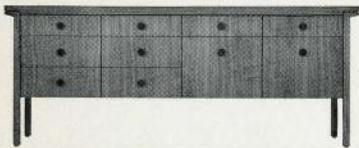
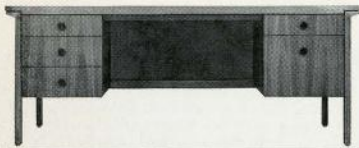
Summit designed by Fuller Robinson for the executive whose working background should be a reflection of his good taste.

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John B. Parkin Associates
Aéroport international de Toronto, Malton;
Imperial Oil Ltd., Don Mills; Thomas J.
Lipton Ltd., Bramalea

On mentionne également une conférence illustrée sur l'Architecture contemporaine au Canada, donnée par M. John C. Parkin

(F) au cours de l'exposition.

Au cours de la récente assemblée annuelle de la Society of Architectural Historians, à New York, le professeur Alex L. Murray, de l'Université York, a présenté un document intitulé *Frederick Law Olmstead and Mount Royal Park, Montreal*.

Le voyage de la Société à Québec du 18 au 21 août comprendra, nous ont annoncé les président M. Alan Gowans et A. J. H. Richardson, des tournées de la haute et de la basse ville du vieux Québec, une tournée des anciens faubourgs le long de la Grande Allée, une visite de l'île d'Orléans ainsi qu'une excursion à Neuville. On songe aussi à une exposition de photographies des édifices existants ainsi que d'anciens édifices des environs de la ville de Québec. Il y aura aussi exposition de plans originaux tirés des dossiers d'un bureau d'architectes de la ville pour la période de 1840 à 1900. M. André Robitaille, président de la Société des architectes de Québec, a annoncé que MM. Louis Beaupré, Jacques de Blois, Paul Lafontaine, Jean Ritchot et Gilles Vylandré feront partie de son comité.

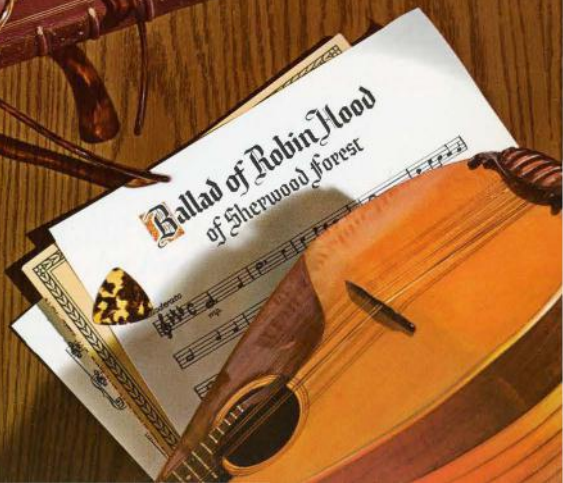
Un nouveau document de recherche publié par l'AIA le titre "Emerging Techniques of Architectural Practice" devrait présenter beaucoup d'intérêt pour les membres de l'IRAC. On peut se le procurer au prix de \$3 l'exemplaire de l'AIA, 1735 New York Ave. N.W., Washington, D.C., 20006.

No Time for Ugliness, excellent film employé par l'AIA dans sa guerre à la laideur des villes, atteint de nombreux spectateurs au Canada grâce aux copies achetées par l'IRAC, les associations de l'Ontario et de l'Alberta, la S.C.H.L. et la Commission du Centenaire.

On vient de former un Conseil canadien des fabricants de meubles afin d'améliorer les modèles et l'emploi des meubles de fabrication canadienne. Ses services sont à la disposition des architectes. Il suffit de s'adresser à son directeur, M. Stanley Conder, 206 Insurance Exchange Building, 202 rue Queen, Ottawa 4, Ont.

Nous avons reçu le premier annuaire de la Société des architectes de la Trinité et de Tobago. Ce petit groupe d'architectes très ingénieux a déjà de belles réalisations, qui sont illustrées dans l'annuaire.

Le directeur général,
Fred W. Price



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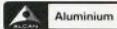
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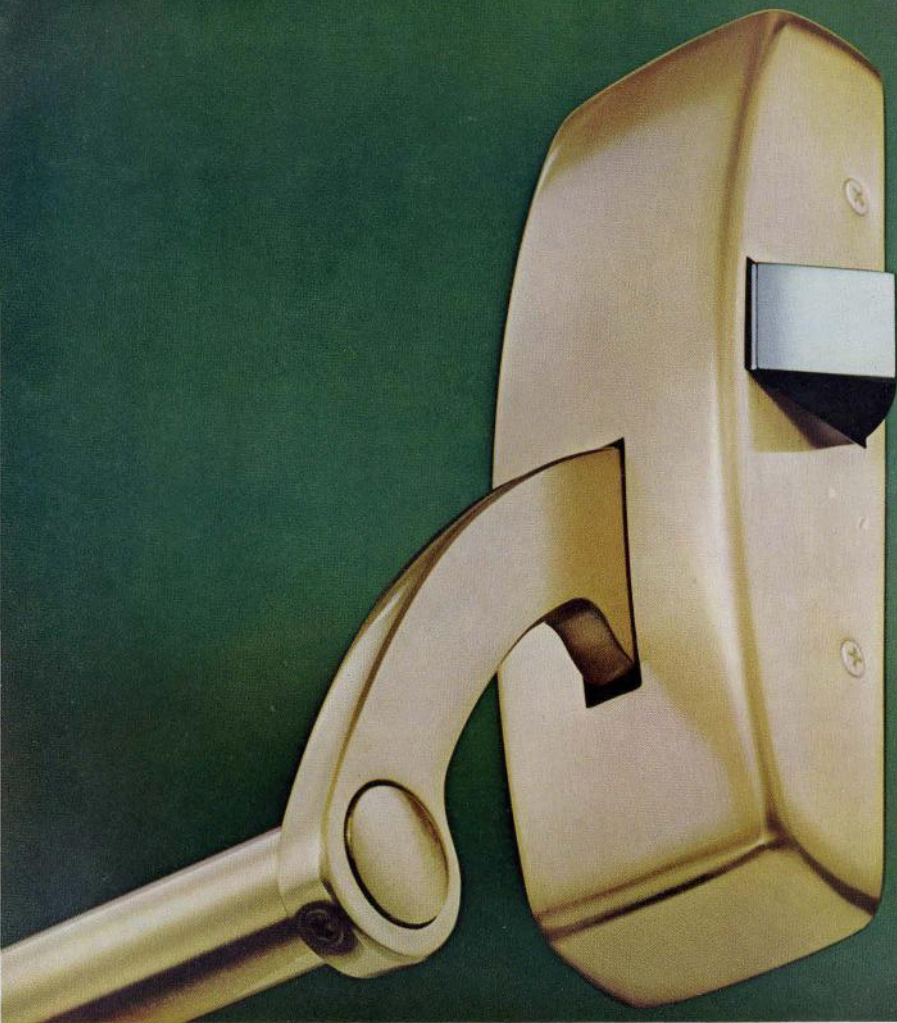
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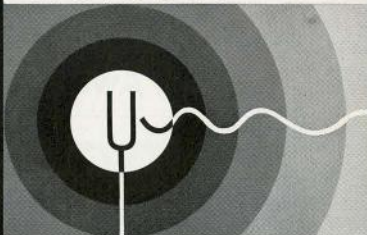


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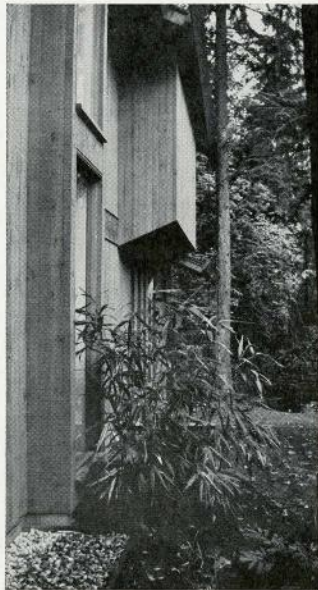


Winners in Canadian Wood Design Awards

Co-winner in the residential category, the Barnett residence, Burnaby, B. C. shows how an exterior of natural cedar boards helps root the house to its "forest" setting.

Architects:
Fred T. Hollingsworth, MRAIC and
Barry V. Downs, MRAIC

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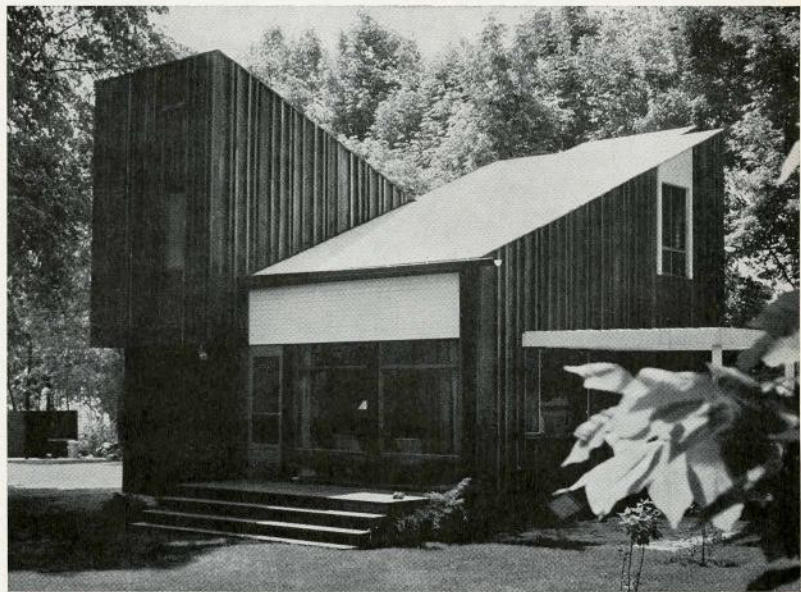
Winnipeg — 201-84 Isabel Street, Winnipeg 2, Man. 775-9075

Vancouver — 1477 West Pender Street, Vancouver 5, B.C. 684-0211



Another winner in the residential category, this Lake Simcoe cottage shows an ingenious design. Siding of rough sawn planking complements the rustic setting. Architect: Jerome Markson, MRAIC

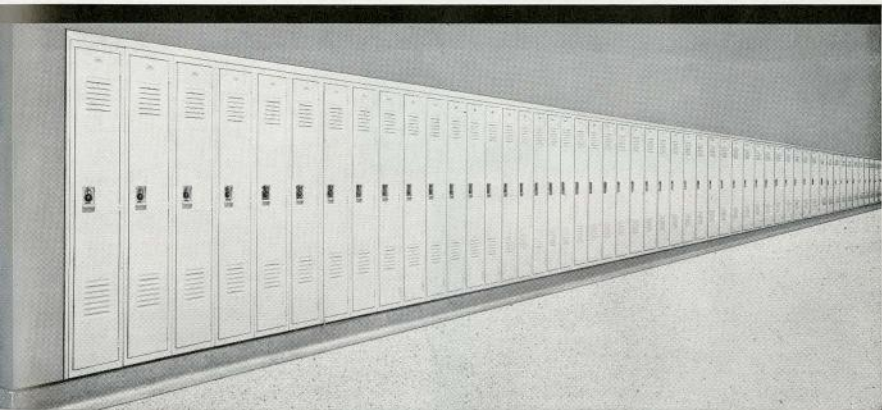
Winner in the school category, Stephen House, Upper Canada College uses wood to create a friendly environment for students and boarders. Architect: C. Blakeway Millar, MRAIC





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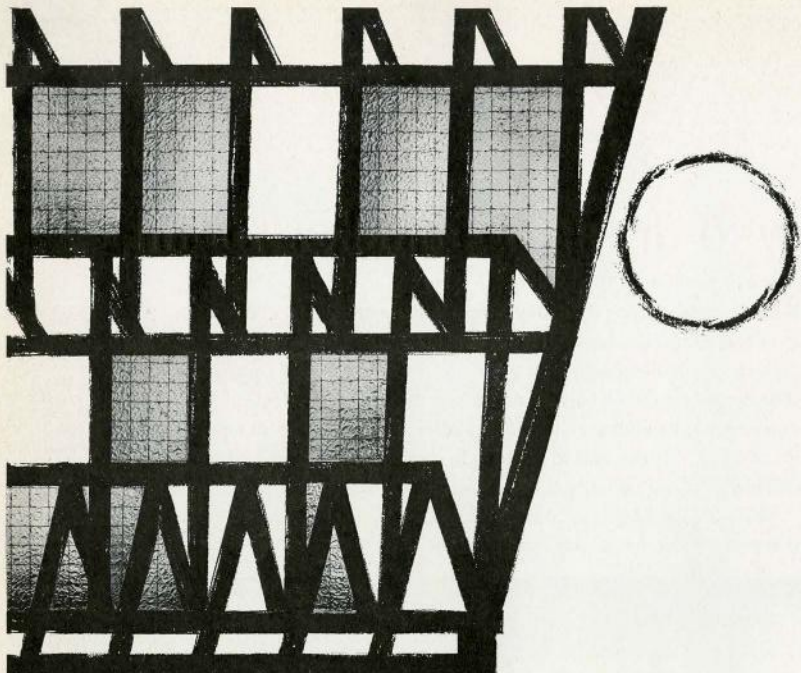


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City Hall Happenings

Controversial, interesting, always intrusive, the new City Hall has given Toronto a new graphic symbol for its external image. It was an adventurous and positive step in the exciting and unpredictable gamble of aesthetics. Hope was seen for the elimination of drabness.

Today however, Toronto is fast becoming the loser in the "fun and games" of acquisition in a battle of civic aesthetics. When wrangles end only in negative solutions, not even conservatism has its pleasures.

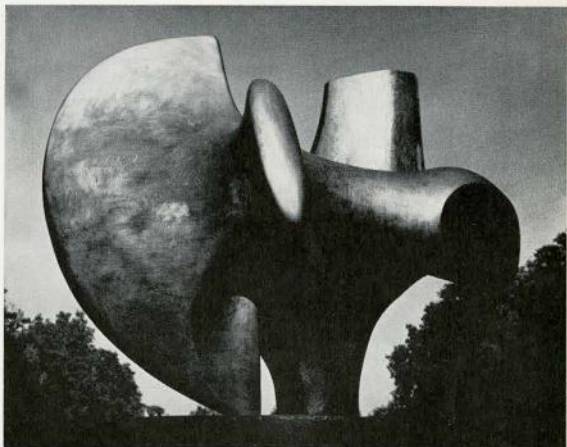
First it was furniture, then murals and now sculpture.

What is the cause of this curious state of negative thinking after such a brave beginning, when suburban development and private enterprise, commercial buildings, shopping complexes, etc. are employing so much aesthetic talent? Are the city fathers, successful in business and commerce, so timorous and fearful in public enterprises and nervous of their aesthetic judgment that they would waste talent needed for Toronto's heart? Are all the causes so wrangled about entirely lost through a dispirited negative pessimism?

I think all problems would be solved if the politicians would adjust to a simple policy of positive action to find the best means to achieve certain ends. Ignorance need not be attended by negativity and suspicion. It would be better to accept as a fact that all projects in themselves are desirable and the best means should be found to bring them about.

Knoll Furniture versus Others

Surely this has been decided once and for all and prejudice should not be carried over from one project to another. The merits and demerits of the decision are no longer worth discussing. Adjustments were made and more are being made where necessary.



1 *The Toronto Moore?*

The Old City Hall

Sooner or later Toronto must decide on the simplest of issues — does Toronto want to keep the Old City Hall for
a Sentimental reasons — historical nostalgia
b Aesthetic reasons — beautiful architecture
Each argument has its points and can be evaluated, but a decision must be made. A case for preservation and future use was made by Prof James Acland in the *Journal's* February issue (Page 61), and on February 19th the Annual Meeting of the Ontario Association of Architects approved a motion by Prof Acland in favor of preservation.

The "Art Work" and the "Henry Moore"

These points are so inextricably bound together that a straightforward approach to a contentious matter would be preferable to selected prejudices in the making of decisions.

Since the recent announcement that the Moore was in the first place designed by both the artist and architect (Revell) for the plaza, this fact presents the most real and positive argument for its acquisition. Why the long delay in making the news public? This is inexplicable.

Moore is an international figure and one of the "greats" of our time. I believe for this reason alone the sculpture should be purchased. It is the right of the artist taxpayer to have some of his tax money devoted to something for his pleasure alongside that provided for the happy skaters. I have not heard any hysterical outbursts from artists or art lovers about the propriety of providing the skating facilities.

As to the constant wrangle over art work for the interior, I do suggest, since the art

committees and city fathers are unable to find a compatible and human ability to tolerate each other's decisions, that a team of artists of the highest calibre be asked to wholeheartedly and selflessly examine the whole problem and suggest a submission for public consideration of how contemporary Canadian talent might best find an acceptable place in the décor of new City Hall. At this late date they may come up with some new, fresh and, perhaps, unusual solutions for a happy ending to the controversy.

In the meantime, let the city fathers cogitate on the important role they play in the history of a city's aesthetics. Tree planters, park developers, fountain builders and others of the past have contributed to the aesthetic pleasures of urban living through feast and famine, peace and war. Let enterprise in 1966 be no less exciting and courageous aesthetically than the economic progress that makes it all possible.

Seminar '66

Further contention arrived with Seminar 66, convened in Toronto, March 25-28 by the Canadian Conference of the Arts, which operates on a \$25,000 grant from The Canada Council. Under the Chairmanship of Alan Jarvis, the subject for discussion was "Unity of the Visual Arts".

Lack of confidence in the seminar was expressed publicly before it even began. Most art organizations such as the Canadian Sculptor Society and the Ontario Society of Artists, and many leading contemporary artists were most vocal in their general denunciation.

Why? It would seem that the method of inviting participants and drawing up the program by autocratic action without consulting various interested bodies, plus the lack of a statement of policy, invited uneasy suspicion.

Press coverage of the sessions was not permitted and no press statement has as yet been issued, so that little as yet can be said about the general outcome.

Two weeks before the Seminar opened an urgent request was made to the editor of this department of the *Journal* for research assistance and a general report on current artist-architect collaboration in Canada. This was provided with, in addition, a comprehensive list of specific recommendations. The success of the quick survey was due to the wonderful response of RAIC members to the emergency. Many thanks to all those who responded with invaluable information and resulted, in effect, in accelerating our own record gathering.

It is only fair comment to criticize an organization spending public monies. One would expect an open statement of policy, even if autocratic action is expedient and in the public interest.

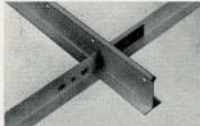

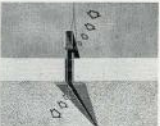
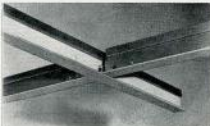

Conclusion

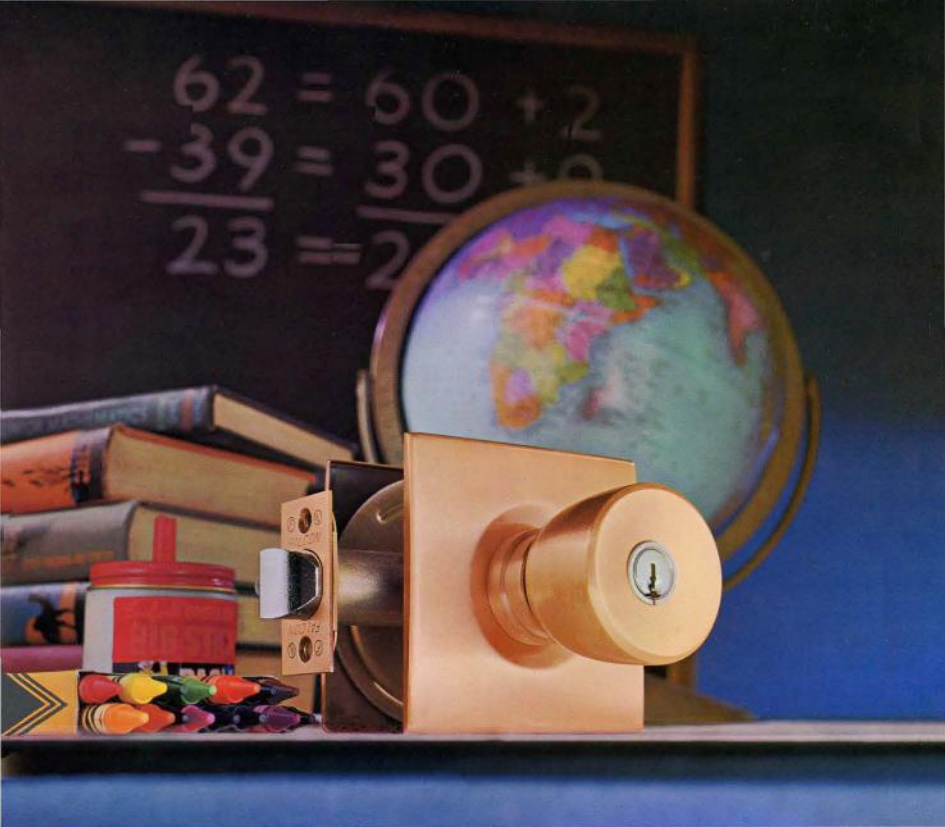
The point of these comments is that criticism must lead to positive action rather than stultifying negation. The critics would have been more effective had they come out with their own statements of policy in addition to complaining.

In thanking RAIC members for their help in our contribution, we can say that for Seminar 66, this was the attitude we adopted. We were, therefore, most happy to be told that the material we supplied was a useful and positive contribution to policy in formulating recommendations on the wisest and most effective way to stimulate the arts in the allocation of Canada Council Funds.

Attention — We apologize to Jordi Bonet that an error in the March issue transformed his 1,320 sq ft mural to 13,200. Our architect readers and admirers of Bonet were quick to analyse the figures and reduce them to "bargain Bonet" economics. Not true, 1,320 sq ft for \$50,000 is the true story.

Anita Aarons

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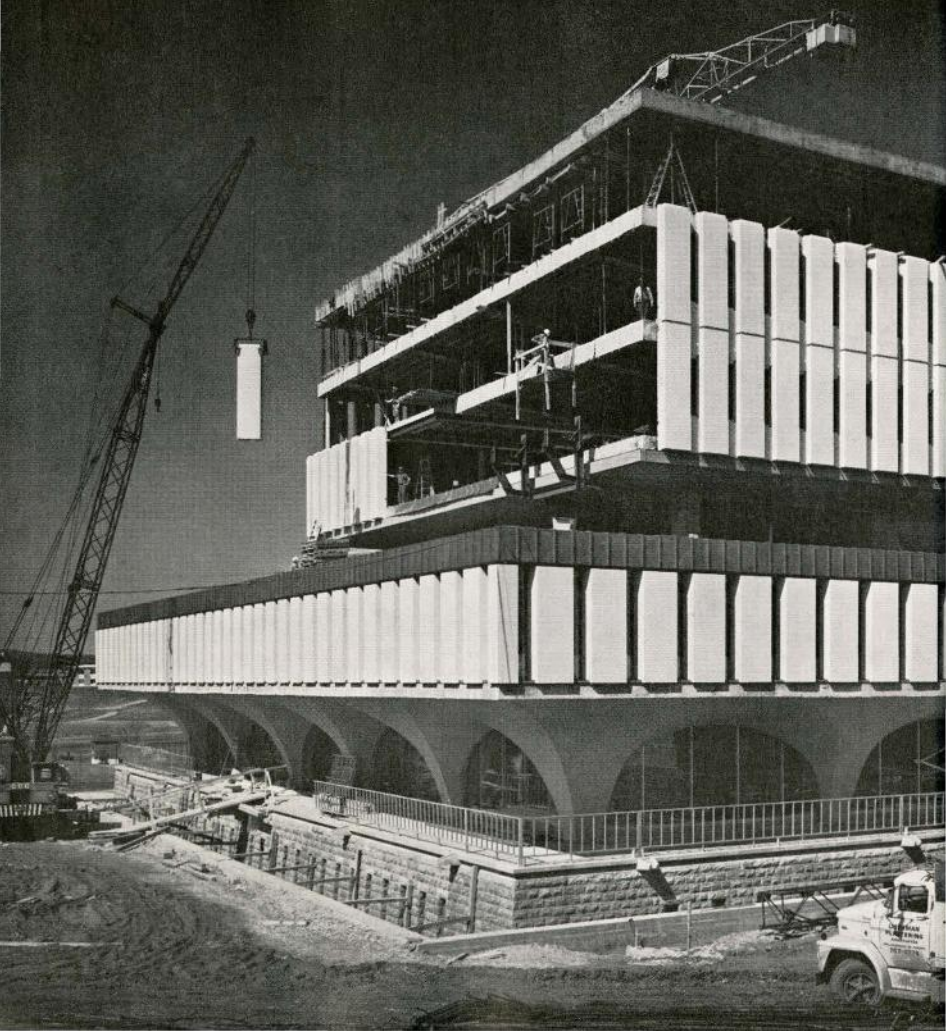


**And many of them are at
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Canada-Design '67 is an exhibition of 300 Canadian-designed products. They include prefabricated building systems and structures; manufactured building components, fixtures and fittings; interior and exterior furniture, furnishings and equipment; and gift ware. The program was arranged by The Department of Industry, in co-opera-

tion with The National Design Council. Some of the products on display may help your 1967 plans. And some of your 1967 plans may help our exhibitors. We want to get you together at The Design Centre (in the Colonnade Building, 131 Bloor Street West, Toronto) between now and June 8th. We think you'll find it more than worthwhile.

Mo-Sai graduates at University



of Waterloo



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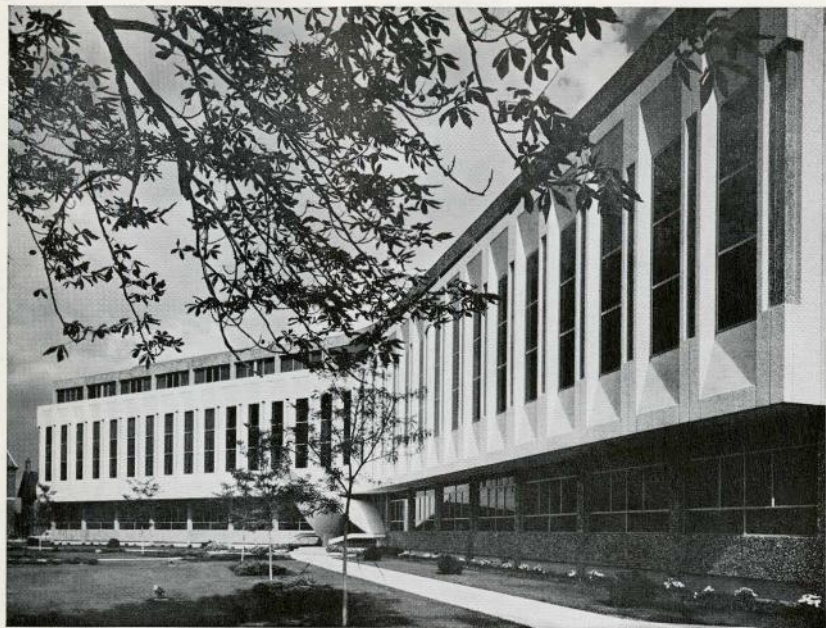
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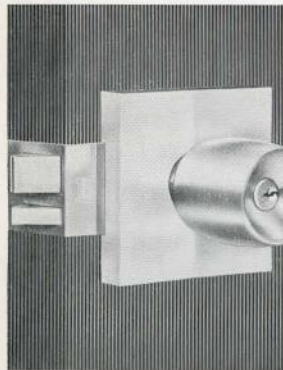
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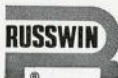
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Snider, Huget & March, Kitchener





1

Ottawa – This model (1) of the National Arts Centre shows three structures occupying the seven-acre site between Confederation Square and the Rideau Canal. The National War Memorial is at the upper right and the British High Commission, The National Art Gallery and the Lord Elgin Hotel are shown in the background. The smallest of the three structures in the foreground is a studio for experimental and amateur theatre. It would seat about 300. The larger one is a 900-seat theatre and the upper structure is a 2,300-seat concert hall.

A major problem, in a project of this complexity and size, is circulation of both automobiles and pedestrians – if a wrong turn is taken by the motorist, will he park his car and get to his seat before the curtain goes up?
 Consulting Architect D. F. Lebensold



2

A cluster of individual dwellings. (2) The supporting structure – solid reinforced concrete walls, 15 cm thick, running both horizontally and vertically – creates a series of quadrangular cells, each containing an independent duplex dwelling of prefabricated wooden elements.

The staggering (both horizontal and vertical) of the cells allows the addition of further units to the cluster. The space between adjoining and superimposed units is minimum, and yet acoustical isolation is excellent. Architect Bruno Morassutti *Domus*, February 1966



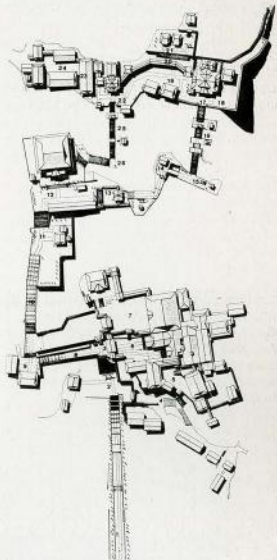
3

The new headquarters of the Engineering Institute of Canada (3) will be the first step in a major redevelopment of the block between Metcalfe South of Sherbrooke Street West and Mansfield Street in Montreal. The institute will occupy only two floors of the building, the remaining 13 floors to be let in preference to engineers.

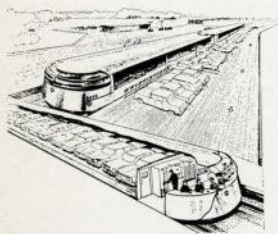
The structure of the building uses Vierendel trusses to at once span the face of the

building, support the slabs and provide the fenestration. The trusses allow a free band of glazing between the spans.

Architectural Design, March 1966 is devoted largely to a study by Günter Nitschke on the Japanese sense of place: or "ma". He points out that Japanese etymology is a key to the understanding of their concepts of planning, and illustrates this both by ideogram and physical form. (4)



4

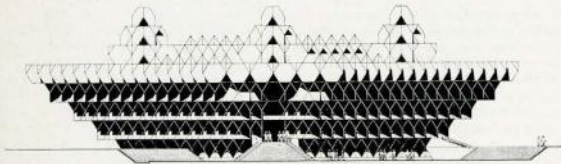


5

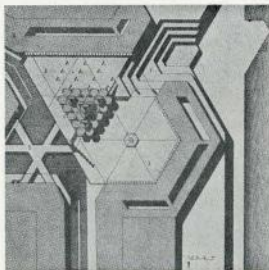
Downtown Idea Exchange, published twice monthly by Laurence A. Alexander, 125 east 23rd Street, New York City, is a basic source for data, news, and ideas on downtown revitalization.

The mid-March issue deals predominantly with transportation; it reports the Edmonton plan for a rapid transit system, and a budget of \$20 million for the first stage to be completed by 1973. The estimate for the whole system is \$126 million.

The illustration shown from this issue (5) is the RRollway transit concept designed by the General American Transportation Corporation. Automobiles are driven directly onto specially designed rail cars. Electronic control systems would permit a high speed operation — up to 200 mph.



6



7

Israel Civic Centre (6) (7)

The City Hall is to be the first building in a new civic centre of Natania designed by Alfred Neumann and Zvi Hecker. (Natania — town of about 60,000 population, known as a recreation and diamond industry centre, 25 km north of Tel Aviv on the Mediterranean Coast.) The City Hall is triangular in plan, is based geometrically on a truncated tetrahedron space packing unit (hexagonal panel walls and triangular window openings). The offices are grouped around the central court, which is roofed by the council chamber floor. The City Hall will be located at the centre of an enclosed pedestrian piazza, accessible from three main directions: from the two existing roads which form the lower sea shore, and by a system of stairs and terraces.

Domus, March 1966

We are not sure which is more curious, the mannered design of the Canadian home of the year 1966 (*Canadian Homes Magazine*) or the press release. The house (8), called "Le Chateau Campagnard", is being built in Winnipeg. This Chateau is "a 1600 square foot bungalow with a split level, three bedroom sleeping area. The focal point of the design is a spacious, sloped ceiling living room which runs back from an impressive cathedral style entrance hall." A Canadian's home is his chateau? Architect E. Gaboury.



8

Harper's Magazine, May, 1966, has published an appraisal by critic Wolf Von Eckhardt of the New York Trade Centre, which is due for construction. Von Eckhardt writes that it will not only be among the tallest, but also amongst the ugliest buildings in the world. He calls it a fearful instrument of "urbicide". Yamasaki, along with Edward Durrell Stone, he says, are the current architectural kitsch mongers. When it came to gift wrapping the world trade package, the architects clearly indicate that they are still involved in the Piazza San Marco cult. The project, says Von Eckhardt, appears much more in reality to resemble those Buck Rogers schemes for the "City of the Future" which we have never taken seriously. "But now the lonely superstructures, super-highways, and surrealist wastelands of these visions are creeping up on us." This is not just true of the United States — we have proposed examples in Canada (eg Eaton's scheme for Toronto). Protestations against such projects, however eloquent, are futile, if in the approach to the problems of the city a comprehensive view of what requires to be done are not proposed. The talk of spaces and human scale, about the Piazza San Marco and urban design has not yielded this. Architects and planners have yet put few found ideas down on their drawing boards.

A. J. D.

Résumé par D. Lamarre de l'article de M. Doelle sur le contrôle architectural du bruit

L'augmentation des bruits à l'intérieur et à l'extérieur des édifices, d'une part, et la tendance vers des systèmes de construction préfabriqués et des matériaux plus légers, d'autre part, ont donné à l'acoustique architecturale une importance particulière.

L'acoustique architecturale a deux buts :

- 1 permettre l'audition des sons désirés (paroles ou musique).
- 2 éliminer ou réduire les sons indésirables.

Il y a deux catégories de sons : les sons transportés par l'air, tels que la radio du voisin, et les bruits d'impact.

Les sons transportés par l'air peuvent passer par des ouvertures, des conduits de ventilation, des plafonds suspendus, des fissures, etc. . . . ou par des vibrations traversant les murs, plancher et plafond de la pièce où le son est émis. (Illustration No 1)

Les bruits d'impact et les vibrations peuvent voyager de plus grandes distances et peuvent être retransmis à partir de grandes surfaces, comme des bruits transmis par l'air.

Méthodes de contrôle sonore

Le moyen le plus économique de contrôler le bruit est de l'éliminer à sa source. Par exemple, les bruits de pas peuvent être éliminés par l'emploi de tapis.

A l'échelle de la ville, une implantation intelligente des quartiers résidentiels par rapport aux grandes artères de circulation, aux industries, aux aéroports peut contribuer au contrôle du bruit. La disposition des rues dans les quartiers résidentiels près des églises, des écoles et des hôpitaux devrait être faite de façon à réduire la vitesse des véhicules. L'implantation des édifices de forme linéaire devrait être perpendiculaire à la rue. Les édifices, tels qu'ateliers, garages,

bureaux, peuvent servir de barrière au bruit si on les place entre les sources de bruit et les quartiers tranquilles.

A l'intérieur des édifices, on peut améliorer, au départ, le contrôle du bruit en observant quelques règles de mise en plan.

a Les locaux susceptibles de produire du bruit doivent être isolés, aussi bien horizontalement que verticalement, des locaux "tranquilles".

b Ces locaux peuvent aussi être placés en des endroits exposés aux bruits intérieurs ou extérieurs.

Ce principe de séparation des locaux bruyants et des locaux tranquilles, au stade de la mise en plan, permet de réduire au minimum le besoin d'insonorisation et, par le fait même, réduit le coût de construction.

Dans les édifices résidentiels, on doit également séparer ces locaux. Les chambres et le bureau, puis le living, doivent être séparés de cuisine, salles de bain, puits d'ascenseur, chambre de mécanique, etc. Règle générale, on doit : (a) grouper les locaux bruyants et les isoler horizontalement et verticalement des autres locaux ; (b) isoler à l'intérieur du même logis les pièces tranquilles et les pièces bruyantes ; (c) placer les chambres du côté calme de l'édifice et à l'abri de la circulation et des voies d'accès ; (d) isoler les salles de bain des living et ne pas les superposer à des living ou à des chambres ainsi qu'éviter de placer des escaliers à côté des chambres.

L'illustration no 3 montre un plan type d'un édifice d'habitation dont la mise en plan a tenu compte de ces recommandations.

On doit également prendre des précautions quant à la structure et à la mécanique des édifices. Une dalle de béton de 3 à 4 pouces peut suffire structurellement, mais ne peut pas apporter une insonorisation satisfaisante entre deux logis. Des appareils de chauffage, de ventilation, de climatisation bruyants ne doivent pas être utilisés.

L'insonorisation des bruits transmis par l'air

La tendance moderne vers des systèmes de construction plus légers, des cloisons moins épaisses, augmente les dangers de la transmission des bruits. Un besoin plus grand se fait sentir pour des cloisons et des systèmes de construction légers, mais comportant un bon facteur d'insonorisation.

Le facteur de transmission d'une cloison dépend principalement de son poids et de la fréquence du son. Ce facteur TL (pour "Transmission Loss") dans le tableau no 4, est déterminé par la courbe de la loi de la masse.

Les cloisons conventionnelles (lourdes et épaisses) comportent une courbe de transmission uniforme et, par conséquent, leur facteur de transmission moyen (TL rating) et représentatif de leur valeur insonorisante. (Voir illustration no 5)

D'autre part, les cloisons légères et évidées présentent une ou deux chutes dans la courbe, ce qui fait que leur facteur de transmission moyen est moins représentatif de leur vraie valeur insonorisante.

L'illustration no 6 montre comment le facteur de transmission moyen peut être trompeur. Alors que deux cloisons ont un facteur de 30 dB, l'une d'elles montre une faiblesse importante à la fréquence vitale de 700 à 1,500 cycles par seconde.

Afin de remédier à cette inexactitude du facteur moyen de transmission, il est suggéré un nouveau système de classification. Il s'intitule "Le système de classe de transmission" (en anglais "Sound Transmission Class" - abréviation STC). Selon ce système, le facteur de transmission d'une cloison ne doit pas être inférieur, pour aucune fréquence, aux niveaux indiqués par une courbe standard STC. Cette courbe STC comporte un segment horizontal de 1,400 à 4,000 cycles, un segment décroissant de 6 dB entre 1,400 et 350 cycles et un segment de basse fréquence décroissant de

14 dB entre 350 et 125 cycles. Dans l'illustration no 6, les courbes 30 et 17 correspondent aux cloisons A et B et démontrent la supériorité de la cloison A.

Il est évident que, dans tous les cas, on doit préférer une classification selon la STC plutôt que le facteur de transmission moyen d'une cloison.

Afin de faire le choix d'une cloison ou d'un plancher insonorisant, on doit :

a Etablir le niveau de bruit acceptable des locaux qu'on veut garder calmes. Ce niveau peut être déterminé par l'emploi de la table appelée "Courbes de critère de bruit" (en anglais - "Noise Criterion Curves" - abréviation NC curves).

b Quand le niveau de bruit est établi selon les courbes de critère de bruit, il faut alors établir le niveau de la source du bruit à éliminer.

c La différence entre le niveau de bruit à éliminer et le niveau de bruit acceptable dans les pièces que l'on veut garder calmes nous permet de faire un choix de la cloison nécessaire. L'illustration no 7 montre les niveaux de bruit acceptables qu'on doit utiliser avec le tableau no 1 qui indique les critères de bruit (NC curves) pour différentes occupations.

Les murs

On ne peut pas s'attendre à ce qu'un mur insonorise d'une façon satisfaisante si (a) il n'est pas installé d'une façon complète et ininterrompue, (b) son poids n'est pas constant pour toute sa surface, (c) il n'est pas convenablement scellé sur sa périphérie et entre ses éléments, (d) il n'est construit entièrement de plancher à plancher.

On peut améliorer la valeur insonorisante d'un mur de différentes façons :

1 en le contruisant en deux ou plusieurs épaisseurs complètement séparées l'une de l'autre ;

2 en utilisant des matériaux élastiques, attaches ou autres, entre les épaisseurs ou entre les panneaux et la structure, de façon à réduire la vibration de surface ;

3 en alourdissant le mur, sans toutefois

qu'il soit trop dur. La raideur d'un mur a tendance à réduire ses avantages acoustiques.

L'illustration no 8 montre des exemples récents de cloisons légères composées.

L'insonorisation des bruits d'impact

Les cloisons doivent insonoriser d'abord les bruits transportés par l'air, mais on doit se rappeler qu'il faut également contrôler la transmission des bruits d'impact. Un plancher léger mais recouvert de tapis donnera une bonne insonorisation des bruits d'impact, mais ne sera pas satisfaisant pour les bruits transportés par l'air. D'autre part, un plancher plus lourd, par exemple une dalle de béton de 6" sans tapis, arrêtera les bruits transportés par l'air, mais transmettra les bruits d'impact.

On peut améliorer la valeur insonorisante des planchers (a) en utilisant des recouvrements mous ou élastiques, (b) en construisant un plancher au-dessus de la structure, (c) en ajoutant un plafond suspendu. On doit noter qu'il faut éviter les contacts entre les planchers surélevés et les murs. D'autre part, les plafonds suspendus doivent être assez lourds (minimum 5 lbs au pi. ca.) et être scellés sur leur périphérie. On doit utiliser des suspensions élastiques, augmenter autant que possible l'espace entre le plafond et la dalle structurale et introduire un coussin isolant au-dessus du plafond. Si on veut réduire les bruits à l'intérieur d'une pièce, on peut ajouter un traitement acoustique au plafond, mais, en aucun cas, peut-il remplacer le plafond insonorisant décrit plus haut.

Conclusion

C'est l'architecte qui est le plus en mesure de contrôler l'insonorisation des édifices d'une façon économique. C'est particulièrement au moment de la mise en plan, même au stade des esquisses, qu'il peut y arriver. Les précautions qu'il aura prises à ce moment éviteront d'avoir recours à des systèmes et à des méthodes d'insonorisation coûteux.

Dr Northwood, in the following article, points out the difficulties in obtaining and maintaining effective noise control legislation. Because of this, there is a particular responsibility architects bear in improving the environment by design that assists in the reduction of noise levels.

It is very difficult to be quantitative about noise. One must consider not only the overall level of noise, but its frequency content, its variation with time and the degree of involvement of the people exposed to the noise. It is for this reason that noise control legislation is not very common anywhere in the world and many of the regulations that exist are unenforceable. It is very difficult to prove in court that a specific noise is a nuisance whereas other noises are not. Noise control legislation, furthermore, is not uniform, as most noise control matters are within the jurisdiction of the provinces or municipalities.

However, in the Building Code there are recommendations covering the minimum sound insulation to be provided between various occupancies. The supplement dealing with residential construction includes requirements for party walls and floors between dwelling units. These regulations therefore are applicable in most Canadian municipalities and are also used by Central Mortgage and Housing Corporation in connection with the financing of such dwellings. The regulations represent minimum requirements such that perhaps half the occupants of such dwellings would be fully satisfied. Somewhat higher "recommended values" of sound insulation are also given and there is a tendency today to build to these higher requirements.

Most Canadian cities have by-laws dealing with noise as a public nuisance. These are rarely quantitative, however, and as a result they are seldom used, except for certain specific problems. For example, they may be used to deal with automobiles without mufflers, or with construction operations during off hours. In Ottawa there was until recently a peculiar anomaly that prevented milk deliveries before 8 am, although many other noisy operations, such as garbage collection, began at 7 am.

In some cities, including Toronto, there have been proposals for the control of motor vehicle noise in addition to the simple one of requiring mufflers. This is a good example of the problem of being quantitative about

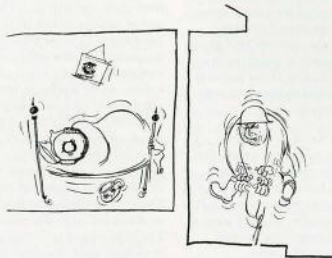
noise. Whatever system is used for measuring noise, it must be simple enough that it can be applied by relatively untrained personnel. At the same time the measurements must be sufficiently meaningful that there is no discrimination between one particular category of vehicle and another.

Similar problems arise in attempts to control noise in the vicinity of airports. Here the problem is further complicated by the fact that the suburban locations of airports place them usually among several jurisdictions. Technically speaking, the sensible solution to airport noise problems lies in careful planning of land use. An airport and its associated traffic arteries provide an excellent area for occupancies such as warehouses, manufacturing plants and even hotels, provided that they are designed for a noisy location. The one unsuitable land use is residential development. I do not know of any airport in Canada where an attempt has been made to deal with the problem on any large scale, but I believe there have been

a few instances where a residential development at the end of an airport runway has been prevented.

As I have mentioned, the degree of acceptance of a particular noise depends on the degree of involvement of the general public. For example, one of the most obnoxious noises in residential areas today is the power lawn mower. Given a little pressure in the form of noise control regulations, the manufacturers of such devices could quickly reduce the noise to any specified level, but there is not likely to be such pressure. A similar instance is the development of traffic arteries. In Toronto, for example, Highway 401 has ruined large residential areas north of the city. But the general public accepts the need for such traffic arteries and will continue to build them despite the pleas of affected householders in the vicinity.

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Architectural Noise Control

Fig. 1
The transmission of air-borne noises (A) through openings, and (B) by means of forced vibrations.
Transmission des bruits transmis par l'air (A) par des ouvertures, (B) par des vibrations forcées.

General considerations

The unprecedented increase of noise sources inside and outside our buildings, the ever-increasing shift from the use of heavy and space-consuming building constructions to light-weight, thin, movable and prefabricated building elements, in conjunction with the growing demand for better hearing conditions in the large number of various auditoria built all over the world, have made architectural acoustics an important factor in the environmental control of buildings.

Architectural acoustics, or the sound control of buildings, has two goals:

- 1 to provide the most favorable hearing conditions for the production and perception of wanted sounds (speech or music). This field of sound control is termed Room Acoustics; and
- 2 the elimination or reasonable reduction of unwanted sounds (noises) in our buildings. This section of sound control is called Noise Control.

The problem of noise control and its effect on architectural design will be briefly discussed in this article.

The complete elimination of noises in buildings is not only difficult and uneconomical but undesirable as well. We need a certain amount of noise in our environment in order to drown out minor disturbances which would otherwise interrupt our privacy. Noises travelling through the air, such as, undesirable speech, music from the neighbor's radio, etc., are called *air-borne noises*. When noise sources, such as, footsteps, vibrating machinery, etc., radiate their energy not only through the air but simultaneously set into vibration solid parts of the building structure, they are termed *structure-borne noises*, or *impact noises*.

Air-borne noises will travel as follows (Fig. 1): (A) through openings; ventilating ducts and grilles; pipe shafts, suspended ceiling spaces; open joints, cracks, etc.; and (B) by means of forced vibrations set up in the boundaries (walls, floor, ceiling) around the noise source, and transmitted to the boundaries of the recipient's room.

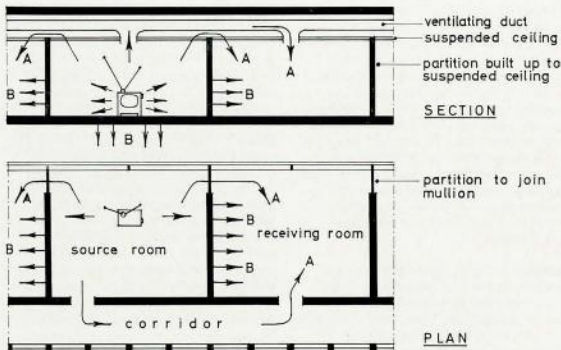


Fig. 1

Structure-borne noises and vibrations – unless suppressed right at the source – will travel with little attenuation over great distances, and will be re-radiated from large surfaces (walls, slabs, panels, suspended ceilings, etc.) as air-borne noises.

Methods of noise control

The most economical noise control measure is to *suppress the noise right at the source*, eg footstep noises can be eliminated by the use of soft floor finishes (carpet); noises from door slammings can be avoided by the use of sponge rubber door-stops. *Town planning* with some thought given to acoustical requirements can effectively contribute to the control of unwanted urban noises, eg by a suitable layout of traffic arteries and by careful segregation of residential districts from highways, industrial areas, railways, airports, or other noisy areas. Sensible *site planning* can also efficiently promote the noise control of buildings. Roads within residential areas or close to churches, schools and hospitals should be so designed as to discourage speeding. Linear blocks of buildings should be built with their ends to noisy traffic routes, ie the

buildings should stand at right angles to the street. Buildings not particularly susceptible to noises (shops, garages, offices) can be used as baffles placed between noise sources and areas requiring quietness (Fig. 2). It is recommended, wherever possible, to set a building back from the street line in order to make use of the noise reducing effect of the increased distance between street line and building line.

Good architectural design with aspects of noise control in mind is vital to the satisfactory noise control of buildings. Rooms or spaces from which noises are expected, and which can therefore tolerate noises (a) should be isolated from those areas of the building which can least tolerate noises and this applies in section as well as on plan, or (b) should be located on those parts of the site which will probably be exposed to other (interior or exterior) noises. For example: hospital bedrooms should not face parking areas or loading platforms; auditoria should not be adjacent to a noisy mechanical equipment room, etc. Adherence to the principle of separating noisy rooms from quiet ones at the planning stage should reduce to a minimum the need for sound insulating

Fig. 2

Sensible site planning can effectively contribute to the noise control of buildings. Une bonne implantation peut aider au contrôle du bruit des édifices.

Fig. 3

Typical floor plan of a soundproof apartment house.

Plan type d'un édifice à logement insonorisé.

building materials or systems, thereby reducing building costs.

In the design of residential buildings the rooms should be grouped into quiet quarters and noisy ones. A quiet quarter includes the habitable rooms, in the first place the bedrooms and the study, and in the second place the living room. A noisy quarter contains the kitchen, bathroom, utility room, staircase, elevator shaft, boiler room, mechanical equipment room, etc. In a residential building, that is meant to be "soundproof", the following general design rules should be observed:

- Quiet and noisy quarters should be grouped and separated from each other horizontally and vertically by means of adequately sound insulating walls or floors, so that rooms adjoining party walls horizontally, or party floors vertically, will be of similar use. Separating of quiet and noisy quarters can also be accomplished by using rooms not particularly susceptible to noises (corridor, cupboard) as baffles.
- The separation between quiet rooms and noisy rooms should always fall within the same dwelling unit.
- Bedrooms should be located in a

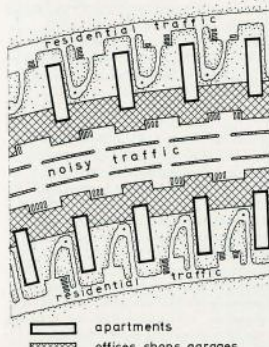


Fig. 2

relatively quiet part of the building and should not overlook traffic lanes or drive-ways.

d Bathrooms and lavatories should be suitably isolated from living rooms and should not be planned over living rooms or bedrooms, whether within the same dwelling or over other dwellings. Bathroom fixtures should not be installed along walls which separate living room and bathroom.

e Staircases should not be adjacent to bedrooms.

Fig. 3 presents a typical floor plan of a soundproof apartment house incorporating most of the recommendations listed before.

In a reasonable *structural design* noise control criteria must often complement the structural requirements. For example, the thickness of an ordinary or prestressed concrete floor slab cannot be established on the basis of structural requirements alone because chances are that a 3 to 4 in. thick slab would not even provide a bare acoustical minimum for the required horizontal separation between two occupancies.

In the *mechanical and electrical design* of buildings the noise hazard also can be greatly reduced, if proper attention is given to acoustics. In the selection of heating, ventilating, or air-conditioning systems, preference should be given to silently operating fixtures. In lightweight and hollow partitions fixtures recessed back-to-back (medicine cabinets, switch and outlet boxes, etc.) should always be staggered and the resulting holes carefully packed with an efficient sealant so as to avoid direct transmission of sound through the partition wall.

In many situations annoying noise control problems can be cured by the use of artificially created masking noise. A tolerable amount of continuous noise, such as, ventilating noise or traffic noise can provide a useful *masking noise* that will beneficially suppress minor intrusions and will contribute efficiently to a required quiet, though not necessarily, silent acoustical environment.

The noise level within a room can also be reduced by the use of a *sound absorptive*

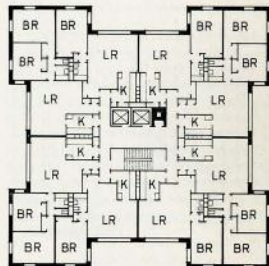


Fig. 3

treatment. It will require, however, a large amount of acoustical treatment in order to achieve an appreciable drop in the noticeable noise level.

If none of the architectural noise control methods, described briefly so far, can be followed, then, the transmission of air-borne noises, structure-borne noises, or vibrations can be intercepted only by the use of sound insulating boundaries, such as sound insulating walls, floors, doors, and windows.

Sound insulation against air-borne noises

In the past heavy and space consuming building materials had been used for the construction of sound insulating enclosures, and the so-called "mass law" had to be considered in architectural acoustics: the heavier and thicker the enclosure was, the higher was its sound insulating efficiency.

In contemporary trends of architectural design we can no longer afford the use of the traditionally thick walls and floors, for the following reasons:

- to obtain the maximum use of space in buildings, construction thicknesses have to be reduced;
- to achieve saving in construction costs, construction loads have to be reduced too;
- to shorten the construction time; and
- to provide flexibility in design.

Fig. 4

The sound transmission loss for homogeneous and single-leaf partitions depends on their surface weight and the frequency of the sound.

La perte du son de transmission des murs homogènes ou composés épend de leur poids et de la fréquence du son.

Fig. 5

(A) The TL curve of an 8-in. thick plastered brick wall indicates a uniformly rising curve, its average TL (51 dB) is a reliable value. (B) The TL curve of a staggered wood stud partition with 3/8 in. gypsum lath and 1/2 in. plaster on both sides, shows a serious dip around the 1500 cps frequency, making

this wall far more inferior than its average TL (49 dB) would suggest.

(A) La courbe d'insonorisation d'un mur de brique de 8" plâtré montre une courbe ascendante constante. Son facteur de transmission moyen (51 dB) est une indication finale. (B) La courbe d'une cloison en colombages posés en chicané et enduits sur les deux faces, présente une augmentation importante de la perte vers 1500 cycles/sec. Son facteur moyen de 49 dB n'est pas si bon qu'on peut le croire.

Fig. 6

The average TL of a partition often does not represent a true characteristic of its acoustical performance against air-borne noises.

Average TL values of partitions A and B are the same (30 dB), corresponding STC contours, however, reveal the superiority of partition A over partition B.

L'insonorisation moyenne d'une cloison ne représente pas toujours sa vraie valeur insonorisante. Dans le cas des cloisons A et B, ce facteur est le même, toutefois, les courbes CTS (classe de transmission sonore) démontrent la supériorité du mur A sur le mur B.

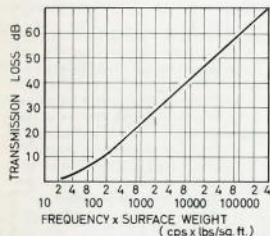


Fig. 4

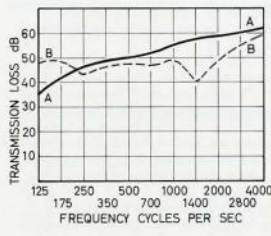


Fig. 5

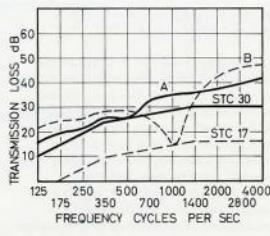


Fig. 6

These requirements have stimulated the demand for thin, light-weight, prefabricated and movable building construction elements, thus creating many problems for the acoustician and all too often considerable loss of privacy for the occupants of buildings.

As is well known the sound transmission loss (abbreviated: TL) of a homogeneous and single-leaf partition, that is, the measure of its sound insulation will depend primarily on the product of its surface weight (measured in lbs per ft²) and the frequency of the disturbing sound. The TL of such a partition can be determined from the mass law curve (Fig. 4).

This Figure also shows that for single-leaf partitions the TL increases about 5 to 6 decibels for each doubling of frequency or weight.

Conventional (heavy and thick) partitions mostly possess a comparatively even TL diagram; therefore, their sound insulating efficiency is well characterized by their average TL rating. Fig. 5 shows the uniformly rising TL diagram (curve A) of an 8-in. thick brick wall, plastered both sides; consequently the average TL value of this wall, easy to predict from the mass law curve in Fig. 4, will clearly reflect its acoustical performance (51 decibels).

On the other hand, in the TL diagram of

light weight and hollow partitions one or two dips will always appear (curve B in Fig. 5), rendering the average TL of this wall (49 decibels) as an unreliable and misleading rating, because (1) an average value gives equal weight to all test frequencies regardless of their importance, and (2) it gives equal weight to both high and low TL values as if particularly high values at some frequencies could compensate for deficiencies at other frequencies.

Fig. 6 will illustrate how misleading the average TL values could be in the evaluation of their sound insulating performance.

Diagrams A and B of this Figure show the TL curves of two partitions both having by chance an average TL rating of 30 dB, even though it is noticeable that partition B shows a serious deficiency (dip) in the vital frequency range of 700 to 1500 cps. To avoid the misleading attribute of an average TL value, especially for rating light weight structures, the revised relevant standard has adopted a new type of single-figure rating, called the Sound Transmission Class (abbreviated: STC) contour. According to this classification system, the measured TL value of a partition can at no frequency be less than the level corresponding to a certain STC contour, thus eliminating ambiguities of average TL ratings. An STC contour consists of a horizontal segment from 1400 to 400 cps, at a level corresponding to the

STC rating; a middle segment that decreases 6 dB from 1400 to 350 cps; and a low frequency segment that decreases 14 dB from 350 to 125 cps. The STC rating for a given wall (or floor) corresponds to the closest STC contour so that the measured TL curve does not fall below the STC contour at any frequency except for some specified tolerances at the high and low frequency end of the contour. The STC rating is then obtained by reading the position of the horizontal segment of the contour. STC contours 30 and 17 are shown in Fig. 6, as corresponding contours to partitions A and B respectively. It will be obvious, therefore, that partition A representing an STC rating of 30 decibels is far superior to partition B which represents an STC rating of 17 only.

Regrettably, only a few leading manufacturers of architectural materials and building products have adopted the use of STC ratings in their publications (pamphlets, catalogues). It is of vital importance that in all trade literature the sound insulating performances of various building products be characterized in terms of STC ratings. Until this will be generally introduced, both average TL values and STC ratings might simultaneously be shown for purposes of comparison; the preferred criterion, however, is the STC rating. It is worthwhile to note that in a surprisingly large number of residential, institutional, educational, and

Fig. 7
Noise Criterion curves (NC curves) for use with Table I in determining the permissible or desirable noise levels for various occupancies.
Courbes critiques de bruit à utiliser avec le tableau I pour déterminer les niveaux de bruit acceptable pour diverses occupations.

commercial buildings, all over the country, the types of partition walls and floors have been mistakenly established on the basis of their average TL rating, thereby creating intolerable living conditions for occupants.

It should also be emphasized that the noise reduction of walls, floors, doors, and windows, achieved on the job, frequently falls short of the degree predicted on the basis of their STC ratings, measured in laboratories under ideal testing conditions. Under field conditions a considerable amount of noise leakage may take place through unpredictable flanking paths. It is, therefore, advisable to provide a reasonable degree of safety in the predicted acoustical performance

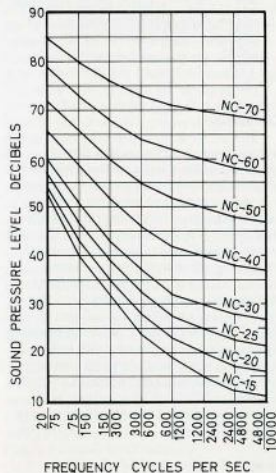


Fig. 7

Table I. Recommended Noise Criteria for rooms

Type of space	Recommended NC curve of Fig. 7
Concert Halls, Studios	NC 15-20
Opera Houses	NC 20
Theaters	NC 20-25
Churches, Lecture Halls, Music Rooms	NC 25
TV or Motion Picture Studios	NC 25
Conference Rooms	NC 25-30
Assembly Halls	NC 25-30

of enclosures actually used in buildings.

Sound insulating building constructions against air-borne noises

- In the choice of a sound insulating enclosure:
- first the desirable acoustical environment on the receiving side has to be established, depending on the use of the room in question. The desirable acoustical environment can be expressed in terms of maximum acceptable (or desirable) noise level, called noise criterion level, generally specified in terms of Noise Criterion curves (abbreviated: NC curves).
 - once the desirable NC curve for a specific room has been established, the existing or predictable level of the disturbing noise on the source side has, then, to be determined.
 - finally the difference between existing or predictable noise level at the source side and acceptable (or desirable) noise level at the recipient's position will suggest the degree of noise reduction to be achieved, that is, the suitable sound insulating enclosure to be chosen.

Figure 7 shows the recommended maximum permissible or desirable noise levels in the eight representative octave bands, for use with Table I (see above), which lists recommended NC curves for various occupancies.

If a background noise prevails on the receiving side and this background noise is within the acceptable range, then, the basic objective is to reduce the transmitted portion of the exterior noise just below prevailing background noise level. The background noise in a room is a mixture of different noises created by the ventilating and mechanical installations of the building, by household equipment (TV, radio, etc.), by outside vehicular traffic (trucks, vehicles), by general office activities, etc. It is generally agreed that a reasonable amount of background noise will beneficially cover up other disturbing noises, assuming that the background noise is (a) continuous, (b) nonobtrusive, and (c) does not carry information (such as intelligible speech or identifiable music).

Apartments, Hotels	NC 25-30
Libraries, Motion Picture Theaters, Hospitals, Courtrooms	NC 30
Restaurants	NC 40-45

Walls

It must be stressed that maximum insulation against air-borne noise cannot be expected from a wall, unless: (a) it is installed as a complete, uninterrupted barrier; (b) it has uniformly distributed mass over its entire area; (c) it is effectively sealed around its edges and between its elements, if any; and (d) it is built from structural floor to structural floor, or, if constructed up to a suspended ceiling only (as shown in Fig. 1), adequate measures be taken for the acoustical restoration of its missing portion above the suspended ceiling.

The sound insulation of a wall can be improved in the following ways:

- If it is built as a multiple partition, that is, of two or more layers, entirely separated from one another.
- If resilient materials, clips or resilient underlayments are used between individual layers of the wall and the inner framing or core, in order to reduce the transmission of surface vibration.
- If the wall is made heavy but not too stiff. The stiffness of a wall tends to counteract the acoustically beneficial effect of the mass and of the separation between individual layers of the wall. Therefore, a sound insulating wall should not be stiffer in relation to its weight than is structurally necessary.

Fig. 8 illustrates recent examples of light-weight sound insulating multiple wall constructions.

Sound insulation against structure-borne (impact) noises

While walls primarily have to provide adequate protection against air-borne noises, it must be remembered that in the design of a floor construction the control of both air-borne and structure-borne noises is equally essential. A very light but carpeted floor that provides adequate insulation against impact noises (footsteps), might be unsatisfactory against air-borne noises (loud music, shouting). On the other hand, a very heavy floor, such as, a 6 in thick bare concrete slab will give satisfactory insulation

Fig. 8

Recent examples of sound insulating multiple wall constructions. (A) *Montreal Neurological Hospital*. Bolton, Ellwood and Aimers, architects. Est. STC rating: 58 dB. (B) *Psychiatric Institute, Montreal*. André Blouin and Beauvais and Lusignan, architects. Est. STC rating: 52 dB. (C) *Faculties of Law and Social Sciences Building, University of Montreal*. Beauvais and Lusignan, architects. Est. STC rating: 56 dB. (D) *Trinidad and Tobago Pavilion for the 1967 World Fair, Montreal*, P. Bynoe and F. A. Dawson, architects. Est. STC rating: 50 dB. Acoustical consultant for examples (A), (B), (C) and (D): Leslie L. Doelle.

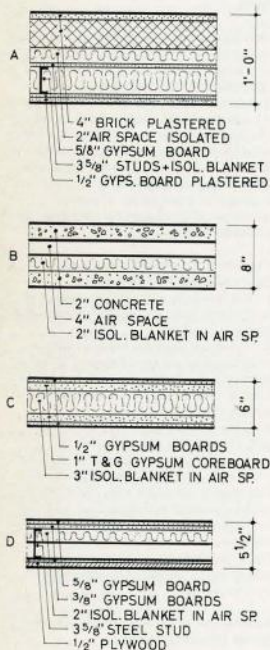


Fig. 8

against air-borne noises but will not provide adequate protection against impact noises originating from the room above.

The sound insulating quality of floors can be improved as follows (Fig. 9): (A) by the use of a soft, resilient flooring. This will have, however, negligible effect on the

Exemples récents de cloisons insonorisantes. (A) *Montréal Neurological Hospital*. Bolton, Ellwood, Aimers, architectes. Classification CTS: 58 dB. (B) *Institut Psychiatrique, Montréal*. André Blouin et Beauvais et Lusignan, architectes. Classification CTS: 52 dB. (C) *Faculté de Droit et des Sciences Sociales, Université de Montréal*. Beauvais et Lusignan, architectes. Classification CTS: 56 dB. (D) *Pavillon de Trinidad et Tobago à l'Exposition Universelle de 1967*. P. Bynoe et F. A. Dawson, architectes. Classification CTS: 50 dB. Conseil en acoustique pour les exemples (A), (B), (C) et (D) — Leslie L. Doelle.

air-borne sound insulation of the floor; (B) by the use of a floating floor. This will provide substantial improvement against impact noises alike; and (C) by the installation of a suspended ceiling under the structural floor.

To obtain maximum efficiency of a floating floor, it is of vital importance that a consistent and uninterrupted separation be provided not only between floating floor and structural slab, but any contact between floating floor and surrounding walls should be carefully avoided.

Suspended ceilings attached to the structural floor will contribute considerably to the control of both air-borne and structure-borne noises, if they possess the following characteristics: (a) a solid, reasonably heavy (min. 5 lbs per ft²), continuous, and air-tight ceiling membrane, eg a solid 1 in cement plaster ceiling is used with hermetically sealed joints all around; (b) the number of points of suspension from structural slab above is reduced to a minimum, and the use of resilient hangers is preferred to ordinary ones; (c) the depth of air space between ceiling membrane and structural floor is increased to a reasonable maximum, with a sound absorbing blanket installed in the air space above the membrane.

If the reduction of unwanted noises within a sound insulated room is desired, the use of a sound absorptive treatment is also needed along a sound insulating suspended ceiling. This sound absorptive treatment has to be installed in addition to but by no means instead of the solid ceiling membrane, described before.

The selection and specification of appropriate materials for acoustically efficient floating floors and suspended ceilings, their workmanlike detailing and assembly has become a delicate problem in architectural acoustics. This will definitely require the full attention of the architect and his closer cooperation with structural, mechanical, electrical and acoustical consultants.

Fig. 9

Floors with improved acoustical qualities by the use of: (A) resilient flooring; (B) floating floor; and (C) suspended ceiling. Plancher dont la valeur insonorisante a été améliorée par l'emploi de: (A) couvre-sol élastique; (B) plancher flottant; (C) plafond suspendu.

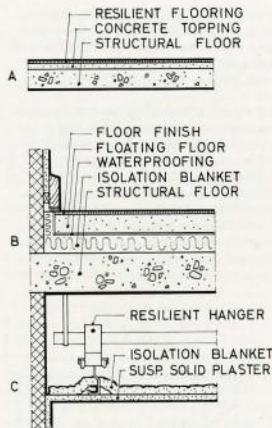


Fig. 9

Conclusion

In conclusion, it cannot be too strongly emphasized that it is the architect who can offer the most valuable contribution towards a more successful and economical noise control program. The architect must realize that planning against noise starts at the early stages of the design process, and he should pay proper attention to the basic noise control aspects in architectural, structural and mechanical design. By observing the above rules of procedure, the solution to sound insulation or noise reduction problems by expensive acoustical measures will be reduced to a minimum. As a result society will gain those desperately needed environmental conditions which are essential to our comfort, general good health, and more efficient production.

Leslie L. Doelle, Eng., M.Arch.,
Acoustical Consultant,
Montreal

Health and Efficiency in Our Noisy World

We live in a noisy world. The quiet clip-clop of the horses' hooves and the rattle of the stage coach has given place to the roar of the automobile, the rumble of the train, the swish of the jet plane, and the earsplitting crack of the supersonic aircraft. In industry, the rhythmic ring of the smith's hammer has been replaced by the whirrs, screeches and thumps of great machines. Pneumatic hammers, riveters, bulldozers and power shovels turn modern construction projects into a babel of noise. Even in the home, we cannot escape: the vacuum cleaner is noisier than the broom, the washing machine than the scrubbing board, the oil furnace than the coal stove. In the midst of all this welter of sound, let us pause for a moment to ask "what is all this doing to us, as individuals; what is it doing to the health of the nation, and the efficiency of the work force"?

None of these questions can be answered at present with any great accuracy, in spite of the considerable amounts of research and investigation which have been undertaken in various countries. The subject is one of great complexity and meaningful research is extremely difficult, since we are trying to isolate the effect, often over a long period of time, of noises of various sorts of human behavior, notably one of the most difficult characteristics to measure or assess. Not too surprisingly, the greatest wealth of evidence available relates to the direct effect of prolonged exposure to loud noise on the hearing ability of individuals, and it is now generally agreed that permanent damage is unlikely in surroundings where the sound pressure level does not exceed 85 db above the threshold of audibility. To place this figure in perspective we may say that it lies between the level of a loud radio or typical city street corner (75 db), and that of a streetcar or subway train (90-95 db). Noise levels above 85 db are increasingly more dangerous, although individuals differ considerably in susceptibility to damage. A level of 130 db (around the threshold of pain) can do permanent damage to normal ears after even a relatively short exposure.

The foregoing is, of course, a gross generalization, and many other factors must be

taken into account in assessing the danger of a noise situation, such as the frequency spectrum of the sound, and in particular the presence or absence of narrow bands of high pitched noise which can cause selective hearing loss at the frequency concerned, even though the overall noise level may be as low as 75 db. In fact, according to a public health investigator at Atlantic City, even everyday noise, planes, trains, factory or domestic, may be sufficient to cause some ear damage.

The importance of hearing loss due to industrial noise may be gauged from the fact that claims under Workmen's Compensation filed throughout the United States for this reason exceed a billion dollars, and it has been called "the biggest single problem we have facing us under the Workmen's Compensation today". Under the circumstances, therefore, it is hardly surprising that the US is spending around \$100 million dollars a year on noise reduction in industry alone. In many companies, it has become standard practice to measure the hearing ability of their employees for two main reasons, firstly to make sure that they hear well enough to perform their jobs safely, and secondly to check whether any hearing deterioration occurs which can be attributed to their work. At the first sign of any such changes, the worker, if possible, is shifted to a quieter occupation.

It is when we delve into the effects of noise upon general health and efficiency that we encounter wide differences of opinion resulting from the great difficulties presented by accurate experimentation. Perhaps the most extreme view was stated by a member of the French Academy of Medicine who claimed that noise was a greater threat to health than germs, causing not only psychic troubles, but also organic damage, which may lead to hardening of the arteries, ulcers or even goiter. Few authorities would go this far, but almost all would agree that noise has a definite effect on the nervous system, increasing blood pressure and muscular contraction. These changes in turn result in excessive fatigue, which may slow down reaction time and increase the chance of

accidents. The fact that noise interferes with all forms of auditory communication, whether voice or warning signals, may also lead to increased accidents. At the same time, the excessive fatigue, produced by noisy surroundings, may react with any number of other conditions and result in increased susceptibility to disease, indigestion, air sickness, and irritability. The last named alone can in turn give rise to an almost infinite catalogue of tragedies from arguing with the boss to divorce!

There appear to be very few experimental results to establish a relationship between noise conditions and working efficiency. Unfortunately, experiments along these lines tend to be marred by the peculiar human tendency to increase efficiency when any change whatsoever is made to the working conditions, a fact established many years ago by the famous Hawthorne experiments of Western Electric. Since in most changes of auditory environment, there is an accompanying move, for example, to a new building, it is seldom possible to isolate the effects of the various simultaneous changes on production. Laymon Miller, in an article published in *Safety Maintenance and Production* (June, 1956) summed up the situation as follows for noise levels lower than those likely to damage the ear:

"1 Noise does not appear to affect significantly the mental and motor skills of individuals. In the performance of simple tasks, action becomes automatic and is not adversely influenced by noise. In the performance of difficult tasks, action is concentrated on the task and the noise is ignored.

"2 With prolonged exposure to noise, individuals become adapted to the noise environment. Short-term changes in the noise environment require short periods of readjustment and frequently produce short-term improvements in performance because of the break in an otherwise monotonous environment.

"3 High noise levels give rise to feelings of annoyance and irritability, and possibly fatigue."

To summarize what has been said so far, it is well established that prolonged exposure to high noise levels will cause progressive irreversible hearing loss. There is little indication that noise has a direct influence on efficiency, but it seems clear that it can have an indirect effect, both as a cause of tension and irritability, and as an obstacle to good communication. It is interesting to note that there is no correlation between the level of a noise and its annoyance factor. To a musical individual, out-of-tune whistling can be far more aggravating than a full military band. In general, reverberant sounds tend to be more annoying than those reaching us from a clearly defined direction, and intermittent noises are harder to ignore than, for example, the steady sound of a ventilating system.

"What are architects doing to assist in the battle against noise?" Not as much as they might, in the opinion of Emerson Gobie, as expressed in an editorial in *Architectural Record* (November 1964), entitled "Lip Service to Noise Control". If only a fraction of the effort applied to the visual aspect of a building were to be expended on

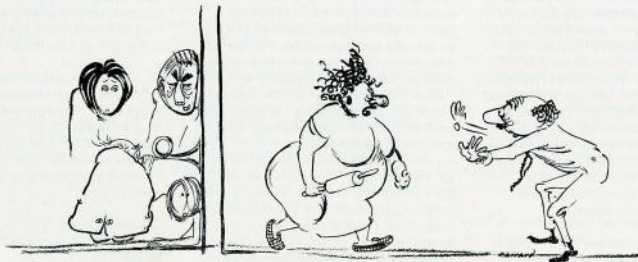
acoustical considerations, the world could be a much quieter place to live in, and at least one of the major causes of individual tension could be drastically reduced. It is perhaps unfortunate that while ugliness is observed and resented by our conscious mind, noise tends to react more at the subconscious level, so that people are often completely unaware of its effect upon them.

The various methods whereby noises can be controlled, reduced and isolated are by now well known; in the course of research for this article, it became very evident that much more has been written on *how* noise can be dealt with than on *why* it needs to be reduced. In general, if the requirement for a quiet building is introduced early enough in the design procedure, the effect on the overall cost will be little or nothing, and the effectiveness of results can be most gratifying. A hotel can be built on the edge of an airport in which one may sleep peacefully, unconscious of the jet planes taking off overhead; radio studios may be included in buildings which also house newspaper presses without interference; the Lincoln Centre Concert Hall can be built almost on top of

a subway. In the face of technology of this kind, it is depressing to find new hotels in which the television set is clearly audible from one room to another, and in which one is woken up each time a neighbour goes to the bathroom. Worse still, perhaps, is the apartment house where similar conditions prevail, since here subjection to them is not confined to a short stay. Even in the single dwelling, many noises, from the roar of the oil furnace to the flushing of a toilet, can be reduced and confined to their proper locations, instead of being carried all over the house by ducts and plumbing.

Up till now, too much attention has perhaps been given to the dangers of hearing loss in factories, etc., which is more a matter to be dealt with by employers, than to the problems of tension and fatigue. The architect who keeps these latter in mind in the design of all his buildings, and seeks the right kind of expert advice, will be contributing in no small manner to the quiet, the relaxation and perhaps the peace of the world.

Robert H. Tanner



Noise and Vibration Isolation of Mechanical Rooms

During the past several years, mechanical equipment, including boilers, refrigeration machines and high pressure fans, have been more frequently installed on upper floors. Usually, they are supported by light flexible structural slabs directly above prime office space, or other occupied zones requiring low noise levels. Satisfactory results have been dependent on the ability of the consulting mechanical engineer to design quiet systems and to select efficient noise and vibration control equipment.

The mechanical engineer has, in most cases, proven his ability to cope with the problem. As a result, architects are now becoming even more daring by designing equipment rooms over auditoriums and other extremely critical occupied zones. However, efficient and complete "mechanical" noise and vibration isolation treatment alone will not be sufficient to obtain satisfactory results. The architect and mechanical engineer will now have to work together, perhaps with the assistance of a noise control specialist, to obtain a satisfactory solution to this more critical problem.

The purpose of this article is to outline various "architectural" noise and vibration control treatments which can be used in conjunction with standard "mechanical" treatments to obtain a high degree of isolation.

"Mechanical Noise Control"

The obvious place to start applying treatment is at the source. Equipment radiating excessive sound power should be adequately silenced so that all major pieces of equipment in the mechanical room radiate very approximately the same sound power. This "balanced design" approach will result in the most economical noise control.

The following are examples of mechanical noise and vibration control treatments, which can be applied by the mechanical engineer:

— silencers at air intakes to forced draft fans, which are "open" to the mechanical room.

— acoustic enclosures around reciprocating refrigeration machines.

— acoustic absorption materials on walls and ceilings near high horsepower centrifugal refrigeration machines. (This treatment is much less effective than increasing the transmission loss of the walls. However, human hearing conservation and communication in the mechanical room may dictate its use.)

— prefabricated acoustic plenums around high pressure high horsepower fans. (This is the highest potential noise source in commercial buildings. Sound pressure levels as high as 110 DB have been measured inside unlined plenums.)

— installation of resilient mounts and hangers to isolate piping, ductwork, breeching and mechanical equipment.

Massive Walls and Floors

The next step is to introduce a massive barrier between the mechanical room and the adjacent critical occupied zone. Although light building constructions, such as double layers of gypsum board separated by resilient clips, have been developed and promoted as sound barriers with high sound transmission class ratings, they make very unsatisfactory mechanical room walls. The reason for this apparent paradox is that their high acoustic ratings are based on reducing speech transmission, which is in the medium and high frequency range. Mechanical equipment, however, radiates much more sound power in the low frequency range and the low frequency resonances in these light panels prove to be efficient transmitters! This misapplication of light panels is one of the most common errors in isolating mechanical rooms, and the results have, in many cases, been tragic.

Double Walls and Floating Floors

There is an economical and structural limit reached by increasing the mass. At that limit a double wall separated by an air space should replace the single wall. For example,

two six inch thick concrete walls, separated by a four inch air space, is much more effective acoustically than a sixteen inch thick solid concrete wall.

In the case of the floor barrier, the upper "floating slab" must be supported, but isolated, from the lower structural slab. This is accomplished by pouring the upper slab on plywood panels, which are supported by two to four inch thick unit isolators.

These isolators should be highly resilient to give a low natural frequency (below the lower audible limit), which will be maintained for a long period of time. Long life is extremely important, due to the isolator inaccessibility after installation. Pre-compressed moulded fiberglass pads, which have been specially developed for this application, best satisfy these requirements.

A complete continuous floating mechanical room floor is not always necessary. Balanced design may dictate that "floating sub-bases" be installed under equipment which produce high noise levels between their bases and the floor, or in their near sound field.

When the noise level in a fan plenum far exceeds the surrounding equipment room level, the entire plenum floor should be floated separately. (Plenum wall vibration caused by air pressure fluctuations can be successfully isolated by this treatment.) Areas of the mechanical room which have the highest noise levels, or which are above more critical occupied zones, may be the only floor sections requiring treatment.

Space Separation

The double barrier can be made more effective by increasing the depth of the separating air gap, particularly in the important low frequency range. By increasing this gap to room dimensions, optimum results can be achieved and there will virtually be no possibility of objectionable noise and vibration transmission.

A storage area located between a mechanical room and occupied zone is an ideal example.

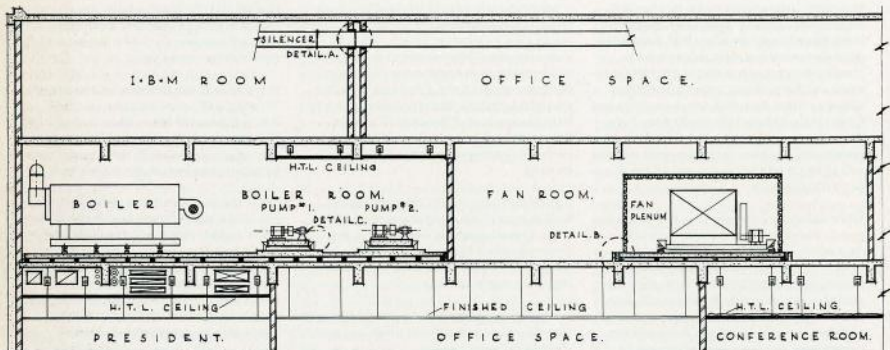


Fig. 1

Another example is the installation of duct distribution spaces, approximately 5 ft high, below fan rooms. This space can be used for duct cross over areas and return air plenums. The height of the fan room will, as a result, be partly reduced. Although a costly second structural slab has been added, there are many compensating "mechanical" advantages. The positioning of high noise criteria areas, such as IBM rooms, adjacent to mechanical rooms can serve a similar purpose.

High Transmission Loss (HTL) Ceilings

If there is sufficient vertical space, a resiliently suspended high transmission loss (HTL) ceiling can often be used as a very acceptable alternative to the floating floor. It is the best method of increasing transmission loss between the mechanical room and occupied zones above. Increased performance can be obtained by using the HTL ceiling in series with the floating floor.

A resiliently suspended HTL ceiling consists of a dense impervious membrane, which is resiliently supported by combination spring and rubber hangers. The massive membrane usually consists of multiple layers of gypsum

board, gypsum board covered with two or three pounds per square foot lead sheet, or plaster. The spring hangers should give at least one inch static deflection under load and the rubber element should be at least one inch thick. Extreme care must be taken that the suspension rods are installed plumb and isolated from the hanger frames with rubber grommets.

It is sometimes feasible to use the finished ceiling as the HTL ceiling, particularly if room partitions extend only to the finished ceiling. All ducts which puncture this ceiling must be acoustically lined, covered with gypsum board or lead sheet, or plastered and resiliently suspended. It may be necessary to back lighting fixtures with sheet lead. These complications, plus the difficulty of providing access into the ceiling space, usually dictate the necessity of installing the HTL ceiling as a second ceiling above the finished ceiling. Where deep beams are used to support the mechanical room floor slab, it may be possible to conserve ceiling space by installing the HTL ceiling in sections between beam webs near the lower flanges. However, since this space is often used to run piping from floor drains and main trunk

ducts, the provision of access may again present a difficult problem.

Barrier Penetrations

Duct, pipes, doors and other penetrations should not reduce the sound transmission loss of the barrier more than a few decibels. Obviously, a 22 gauge sheet metal duct, which passes through a massive double wall barrier, will provide a short circuit transmission path. That is, the transmission loss across a sheet metal wall - duct air space - and sheet metal wall is much lower than across a massive double wall barrier. Typical solutions to prevent this short-circuiting are the installation of fan silencers at the barrier, plastering the ductwork, enclosing the ductwork in a gypsum board enclosure and internally lining the ductwork if the duct cross sections are small.

All openings between ducts and pipes should be caulked with high density fiberglass and sealed with a mastic. This fiberglass packing should not be used as a means of support. When space limitations prevent treatment around the complete periphery of the duct, special installation methods are

Fig. 2

Duct Penetration, Detail A
Pénétration de conduite, détail A

Fig. 3

Floating Floor, Detail B
Plancher surélevé, détail B

Fig. 4

Spring Inertia Base, Detail C
Base sur ressort d'inertie, détail C

Fig. 5

H.T.L. Ceiling Detail
Plafond à facteur de transmission élevée

required. Large ducts installed in wall-ceiling corners, or in groups, often present such a problem. The installation of short sections of duct in the double wall which are completely caulked before the ductwork is extended at both ends, is one possible solution.

Return air openings in the barrier should be fitted with wall-duct silencers which are selected to pass design air quantities without excessive pressure drops. Since excessive pressure differentials across any doors in the barrier will hinder their operation, the correct selection of silencer pressure drops for this application is extremely important. Air intakes through exterior walls which are close to balconies, entrances or open windows, may have to be similarly treated.

Doors should be massive and sealed with gaskets at all four edges to give high transmission loss performance. Where silencers are not acceptable automatic bottom

closures can be installed. For access through double walls, double doors or double doors separated by an air lock may be required.

Concluding Remarks

The science of acoustics is becoming more exact every day. Although laboratory sound power ratings are not usually available from suppliers of large mechanical equipment, sound levels can usually be obtained from similar existing installations.

Noise reduction requirements can, therefore, be calculated with reasonable accuracy and noise control treatment can be chosen to assure that design noise criteria are obtained.

The science of vibration isolation as applied to mechanical systems in commercial building is not nearly as exact. Vibration sources, such as machinery unbalance and pressure fluctuations, cannot be rated in

absolute levels. The reaction of these vibration sources with the supporting floor depends on the dynamic characteristics of the structure. At present, the structural engineer has enough problems calculating accurately static deflections, without having to calculate dynamic impedances. If all this information was available, the cost of analysis would likely exceed the cost of isolation. As a result, selections must be based on past experience and percentage risk.

The vibration transmission path of machinery feet to the supporting floor is a much more effective path than from machinery radiating surfaces to the surrounding air, which must then physically vibrate the floor. Even with the installation of efficient vibration isolation this path is usually the most critical. Therefore, barriers between mechanical equipment rooms and occupied spaces below are usually selected based on vibration isolation effectiveness. On extremely critical applications, such as the installation of a mechanical room immediately above an auditorium, it is not unlikely that several barriers in series will be required. For example, a high pressure fan is installed on vibration isolators and in a factory prefabricated acoustic plenum to reduce plenum wall vibrations caused by pressure fluctuations. This plenum and fan are isolated from the structural floor slab by a floating plenum floor.

The plaster ceiling required in an auditorium is converted into a high transmission loss ceiling by the addition of spring hangers. This extra insurance is obtained at very little additional cost.

Obviously, the architect and consulting mechanical engineer must consider the noise problem in the early stages of design if the solution is to result in economical balanced noise control which is practical. These early decisions must then be followed by meticulous attention to all details during design to prevent acoustic "leaks" and "short circuit transmission".

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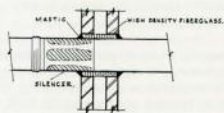


Fig. 2

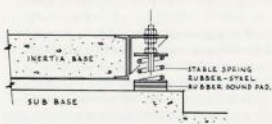


Fig. 4

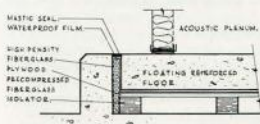


Fig. 3

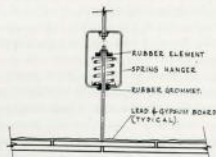


Fig. 5

Acoustical Privacy

Stop reading this article for about two minutes and listen to what you hear around you.

If you are in a large drafting room area, you will undoubtedly hear voices of other people, typewriters clicking, footfall noises, paper rustling, and so on. On the other hand, if you are sitting in a large, comfortably furnished private executive office, you may hear nothing but the whoosh of air coming through the air supply grille in your ceiling, or perhaps you may hear the gentle purr of traffic in the streets. In the drafting room, you surely have no privacy. However, in the executive office, you undoubtedly have more privacy than most people feel is minimum. When planning for the construction of offices, hotel rooms, hospital rooms, etc., a generally accepted design goal is to separate adjacent rooms with the least costly construction commensurate with each occupant's definition of "acceptable privacy."

You might think that if you were the person in the drafting room mentioned above, you would have an entirely different concept of the meaning of "acoustical privacy" than if you were the person who normally occupies the executive office.

Several months ago, we conducted a series of tests to find out whether people did vary in their privacy requirements. Surprisingly enough, these tests have shown that though people do vary in their concept of privacy, the variation does not relate to their present position, but rather to the type of tasks they do.

We found that if some fixed degree of isolation is provided between two adjacent offices, some fixed percentage of people using offices of that type will probably be satisfied. For example, in a typical air-conditioned Manhattan office, a standard metal, prefabricated movable partition to the height of the suspended ceiling, will, if well installed, satisfy about 90 per cent of the office workers.

What, then, are the ingredients that contribute to the solution of a problem of acoustical

privacy? What are the factors which enter into a privacy problem, and over which factors does the architect have control?

What is Privacy?

First, in answering that question, let's assume that we are talking about the privacy you get when people cannot overhear what you are saying, or conversely, when your neighbor's speech is not sufficiently loud to disrupt your train of thought.

Limiting ourselves to "speech privacy" would not seem to be unreasonable since, whether the people complaining about existing situations say "I have no privacy," or perhaps, "I have a terribly noisy office," what they mean most often is that they can understand what their neighbor is saying in his office.

Indeed, one suspects that what they really mean is that because they can hear what their neighbor says, they assume that he can overhear them. Throughout this discussion, therefore, let us limit ourselves to the privacy problem in which you can hear more or less clearly what your neighbor is saying.

The *first factor* which enters into the degree of privacy achieved in your office is how much of a "loud mouth" your neighbor is. Even if he speaks continuously, in a loud voice, the voice levels will be reduced by any partitions or other barriers separating your office from his.

These barriers and their detailing and construction are, in fact, the *second factor* in obtaining privacy since they will establish the loudness of speech sounds arriving in your office and at your ear.

The *third factor* is one seldom considered in problems of this type and certainly is a very important one — the level of steady, continuous noise in your office which "covers up" the transmitted voice of your neighbor.

We have all observed the privacy obtained in an airplane in flight. Even with no partitions between seats, we can talk to our

seatmate in complete confidence because the engine noise is loud enough to cover up the voice by the time it has passed to the seat across the aisle. This is, of course, an extreme example of the effect of masking noise, but at the other extreme, if your office is as quiet as some special quiet rooms in acoustical testing laboratories and your neighbor's transmitted speech levels are only slightly above the ability of your ears to detect sound, you will have no difficulty understanding what he says with ease.

The *fourth and final factor* is a bit difficult to pin down — how fussy are you?

Your Noisy Neighbors

Many detailed studies have been made on the loudness of normal speaking voices. These studies show that a raised voice is approximately twice as loud as the normal conversational voice and that a shout is approximately twice again as loud as a raised voice. It would probably be unreasonable to plan office partition construction which would be adequate to isolate shouting. We can specify those spaces in which isolation of raised voice levels seems economically justifiable in terms of the probability of a raised voice being used.

For example, if you are planning psychiatric testing rooms, you may expect disturbed patients to use raised voices frequently; or in a room having a conference table 30 ft long you may anticipate the use of raised voices to span the 30 ft distance. If one knows who actually will occupy a given office, one may also know something of his voice levels. In the more general case, it is safe to assume that in a typical business or engineering office almost all speaking will be done at conversational levels.

Heavy Walls

The goal in selecting a partition should be to reduce the transmitted levels of speech from the neighboring office to the lowest possible level. In other words, one should attempt, within economic limits, to provide the maximum degree of isolation between

offices. How, though, are we going to know which construction provides the most isolation? Our advice is to evaluate material qualitatively through the use of the following "rules of thumb":

1 For any given material, the heavier it is, the more isolation it will provide.

2 For two materials having the same average weight (say 10 lb per sq ft of wall surface area), the one having high thickness and low average density will probably provide far less acoustical isolation than high density "limper" materials. Many walls get as much as one-third (10-20 db) less transmission loss than other walls with the same weight.

The first rule of thumb is fairly easy to understand and fairly straightforward. Unfortunately, the second requires a bit of explanation. Generally, partitioning materials which have a low average density and a high stiffness (the poor sound isolators) can be easily recognized because most of their weight is concentrated near the faces of the partition.

To illustrate the problem of low density and high stiffness, let us consider two layers of thin plywood bonded to a lightweight, honeycomb core. Such a construction, used in a partition, will provide a certain measurable degree of sound isolation. If, however, we were to remove the core and support the plywood sheets only by a frame at the four edges, we would find that, in spite of the fact that some of the weight had been removed from the construction, the partition would provide considerably more sound isolation.

This apparently anomalous change in acoustical behavior is caused simply by the reduction in the stiffness of the overall partition construction. Very simply, the reason for this improvement is that some of the favorite resonances of the stiff construction have been eliminated.

Leaky Walls

In studying office areas in which privacy complaints have arisen, we have found that

almost invariably the problem can be completely solved, or very nearly so, without making any alterations to the existing partitioning. We have found, in fact, the greatest cause for complaint is noise transmission around, above and below the partitions through air leaks.

Very few of the significant acoustical "leaks" can be observed by eye. The best way to detect acoustical leaks in a partition construction is to listen! In preliminary testing, this can be done by having a person stand on one side of the partition and talk through the partition to someone on the other side. For more prolonged testing (since the speaker is likely to become tired), we suggest that a steady noise source such as a vacuum cleaner be placed in one of the offices while listening tests are performed in the other.

The air leaks can be sealed simply by packing, caulking, plastering, etc. while the vacuum cleaner is running. When the sound appears to come from the entire partition, rather than specific points, the leaks are sealed.

For the architect, we advise that he start by detailing as carefully as possible to prevent air leaks. Since this cannot assure elimination of all leaks, we feel that he should then insist that his contractor use a vacuum cleaner or other similar noise source during the actual erection of all partitioning in the building.*

Figure 1 shows some of the most common points of acoustical leakage. Of these, the most costly to remedy is the case where the construction of the suspended ceiling is such that the sound isolation provided over the top of the partition is not sufficient for good privacy.

This problem arises when lightweight porous acoustical ceilings are used on mechanical suspension systems or where luminous plastic ceilings are used. In the former case, the addition of an impervious material such as plasterboard, sheet metal, or foil-backed building insulation laid on top of the

suspended ceiling will often solve the problem.

The only feasible correction for transmission through luminous ceilings is to provide an extension of the partition from ceiling height up to the structural floor slab above. In all probability, the partition extension will have to be installed around three or four sides of the office since noise can be transmitted through the ceiling and around through the corridor ceiling space and back down into the neighbor's office.

In the planning stages of a building, the ceiling transmission problem can often be resolved by the selection of one of the several currently available acoustical materials which have been specially designed, not only to absorb sound within the spaces, but also to prevent sound transmission from space to space.

Another very frequent offender is noise transmission through the tunnel formed by continuous underwindow air conditioning unit covers. A typical solution to this problem is to block the opening wherever a partition will occur, using masonry block and mortar.

In one large Manhattan office building recently completed, the space was packed with plastic covered bats of mineral wool. Another technique which is currently being employed is to force a wire mesh into position under the convactor cover and to spray it with "gunite" concrete, making sure that the sprayed material reaches in under pipes and up into all corners of the enclosure.

Noise transmission through ventilating ducts can only be solved by the use of duct linings, mufflers, or more extended duct runs between offices.

If interconnecting doors are the problem, these may be gasketed. If they are louvered or undercut, it may be necessary to substitute prefabricated mufflers (currently available

**Notice we say all partitioning - we do not mean random testing of typical movable partitions. Since many of the leaks will occur due to random irregularities varying from partition to partition, the noise test must be used continuously.*

Fig. 1
Sources of Noise Leaks from Office to Office
Sources d'infiltration de bruit d'un bureau
à l'autre

- 1 Cross-connected air conditioning duct
- 1 Conduite de climatisation raccordi en croix
- 2 Perforated ceiling without barriers
- 2 Plafond perforé sans coussin
- 3 Cracks in movable partition: ceiling, wall, floor, joints
- 3 Fissures dans des cloisons amovibles:

- plafond, mur, plancher, joints
- 4 Cross-connected air conditioning enclosure
- 4 Conduite de climatisation croisée
- 5 Around spandrel beam and through a.c. enclosure
- 5 Autour de la poutre d'allège et à travers de la conduite de climatisation

for installation in walls or ceiling) to facilitate movement of air from room to room. Of course, if office holders insist upon having doors left open, there is practically no solution and they must indeed learn to live without privacy.

A large number of relatively small leaks will usually be found between the partition and the ceiling, the partition and the floor, above the partition baseboard, and between the partition panels. Altogether, these can give a serious noise transmission problem. Though some of the leaks can be packed or caulked, the smaller ones must often be paint-sealed. Any method which is employed to seal such small leaks should be rechecked every few years as they tend to open up and recreate privacy problems.

In general, sound leakage will occur in any type construction. Fixed dry constructions are more likely to have significant leaks than masonry or plaster construction. However, movable constructions are the most serious offenders of all, and in planning a building for flexibility, extreme care must be taken to assure that an airtight job is provided.

Acoustic "Perfume"

The third factor we listed for the provision of privacy is the often-ignored background noise level. Since even in a qualitative discussion it is useful to have some numbers to talk about, we use a special shorthand which is becoming generally accepted in the acoustical engineering profession, to designate how noisy an office is.

For example, we say that an average business office will have noise levels of around "NC-35". The meaning of this term "NC" (the initials actually stand for Noise Criterion) is given in detail in the Heating, Ventilating, Air Conditioning Guide for 1959, Chapter 25 and describes not only the magnitude of the sound but its frequency spectrum — how loud, how much rumble, how much screech, etc.

NC-35 approximates the noise level found in unoccupied business offices. A very quiet

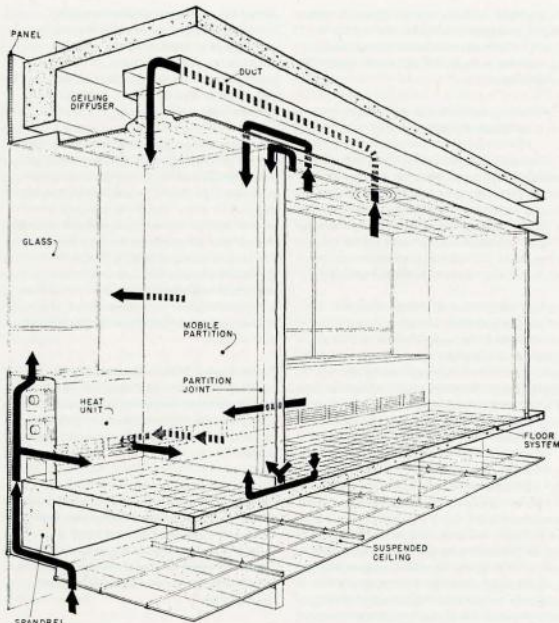


Fig. 1

business office would be more likely to have a noise level as low as NC-20, and by the time levels get as high as NC-45 or NC-50, it becomes difficult to talk at a distance of more than 10 ft and telephone use becomes increasingly difficult. A typical busy restaurant during the lunch hour will have levels of approximately NC-50 to 60.

We stated earlier that there is good privacy between seats in an airplane, and from this

one might assume that the acoustical engineer is now telling you that by providing noise levels as high as those in the airplane, you could completely eliminate partitioning from modern office buildings. Though this method is, of course, impractical, it is not unfair to say that by planning for slightly higher than normal noise levels in an office space, we can in turn plan for more economical than usual partition construction.

We feel that a well designed building should have low, steady noise levels and partitions which provide good acoustical isolation, but if in the interest of economy or flexibility less effective partitions are to be used, we feel that privacy is more important than quiet. Thus, it is better to raise the steady noises than to permit intelligibility of your neighbor's voice.

The study previously referred to was directed toward finding "how audible" transmitted speech sounds from an adjacent office could be before an average listener felt he did not have acoustical privacy. We found that we could relate the average judgment very closely to the number of words which the listener could understand.

At first guess, one might expect that when the transmitted speech was inaudible, the space would be private, or, perhaps being more lenient, audibility of the speech would determine the acceptability. In actual fact, it turns out that most listeners feel they have marginal privacy even if they can understand as many as seven words out of every hundred spoken.

Such a condition is achieved if the level of speech as heard by the listener is just slightly louder than the level of the steady masking noise. If, for example, speech is heard at exactly the same loudness as the steady background noise, the probability is that out of ten listeners, nobody will complain. If either the loudness of the speech is doubled or if the loudness of the noise is cut in half, still only about one person in ten is likely to complain. If the relative speech and noise levels are changed, roughly the same amount again, we would anticipate that five people will complain, and with still one more shift in the relative loudness of speech and noise, we expect three quarters of the people to complain.

Notice that we did not say *how loud* the speech levels or the noise levels must be — merely their ratios. It will not matter whether the offices are very quiet and have excellent partitions from the sound isolation point of view, or if the offices are very noisy and

have rather poor partitions. The same probability of complaints will exist in both cases based on the levels of speech and background noise relative to each other.

Now there must be some standard or criterion by which we can judge the maximum permissible loudness of the steady masking levels. At first consideration this criterion might be based on whether or not levels of noise are high enough to interfere with understanding of the speech sounds that you want to hear. A comparison of measured levels with speech intelligibility within the talking-distances encountered in most normal sized business offices would indicate that quite a high level of noise was acceptable. Most people, however, would balk at having an office as noisy as that which would be indicated by an intelligibility criterion alone. Therefore, we must establish acceptable noise levels simply on the basis of what most people consider to be tolerable or comfortable conditions.

Experience would indicate that levels approximating an NC-40 spectrum are about the highest in which most private office holders are willing to work. NC-35 is, as mentioned previously, typical of most business offices, and only a very small number of people would be expected to complain at levels of NC-30.

Now then, how does this all relate to the architect's problem in designing a building or the building owner's problem of solving an existing problem? Let us begin by following an actual case history in a university in Baltimore.

In a dormitory building there which had recently been completed, students were complaining quite vociferously that they could hear anything going on in the next room. The partitions were practically solid, dense masonry and there were no significant acoustical leaks. Measurements in the bedroom indicated that background noise levels were extremely low — approximately NC-15. Although the relatively high isolation provided by the masonry partitions reduced the level of transmitted speech from an

adjacent room to extremely low levels, the even lower background level permitted almost complete intelligibility of the speech sounds.

Could the architect have predicted this? We believe that two factors were known prior to the design of the building which (had the architect had the results of the privacy tests) would have permitted him to predict that complaints would occur. But even had he predicted complaints, how was he to solve the problem? Certainly he was using very heavy masonry construction to separate the rooms, and looking at the available acoustical performance data supplied in the literature of the various testing laboratories and provided by the manufacturers, this construction has one of the highest rated sound isolating capabilities; therefore, what else could he do?

Well, the answer lies in the two factors which should have originally permitted him to predict the probability of the problem arising. First, the building was not to be air conditioned, and second, the building was to be located right in the middle of a traffic-free campus several hundred yards from the nearest street (a street having very low traffic count at that). It is enough to say here that had he either selected a location for the building near a busy road or had he air conditioned the building, the background levels of the room would have been raised to approximately NC-30 or NC-35 and literally no privacy problem would have arisen.

In this particular case, our recommendation to the owner was to install a ventilation system. Though this was not the first time we have recommended such a solution nor will it be the last, we were immediately faced with the reaction which we expect to get for some time to come. The owners looked at us a bit aghast and said, "What? Make these quiet rooms noisy?"

Of course, the intention of our recommendation was to make these rooms "quieter" by making them *noisier* but not actually noisy, since the levels which we

anticipated after the installation of the ventilation system would only have raised the noise to levels to which people are normally accustomed in spaces of this type. Indeed it would seem that after years of evangelical work in attempting to get quieter buildings and quieter mechanical equipment, the acoustical engineering profession is reversing its ground and proposing that we make spaces noisier and noisier.

It is perhaps more accurate to look at this new point of view as a more precise specification of what levels of noise are acceptable in a given space. Much of the earlier work has been devoted to specifying what levels should not be exceeded. We are now simply saying that there is a second criterion which indicates levels below which noises should not fall. In other words, we are now proposing both a top and a bottom limit for acceptable noise for buildings where many people live or work near each other.

If we accept the thesis that raising noise levels will often be useful, either in the planning stages to permit economical partition selection, or in the remedial steps simply to solve an existing problem, then we must know how such noises can be achieved. Experience to date indicates that the only source of noise which proves acceptable to most listeners and which at the same time is under complete control of the building designers, is the noise produced at the air diffuser or grille in the supply section of the air conditioning system.

Unfortunately the noise of the fans themselves is of little use as a masking noise since it is likely to be disturbingly noisy near the fan room and inaudible at a distance away. Relatively little work has been done on establishing methods for predicting precise noise levels which these air delivery devices generate under a given set of operating conditions. We do know that for a given air supply diffuser, a fairly wide range of noise levels can be achieved without varying the number of cubic feet per minute of air delivery. This is done by opening or closing the terminal device valve and adjusting the

static pressure in the ducts by changing either the fan belts or a main control valve to give a fixed cfm.

For example, in a recent problem, a privacy complaint was registered in the top executive offices of a Manhattan office building and a study of the problem indicated that modification of the partitions would be so costly that some other approach must be observed. It was proposed, therefore, that 11 of the valves in the terminal devices in the air supply system be very nearly closed and that a higher horsepower motor be provided on the fans. In this manner, the cfm would be retained, the static pressure in the system would be increased, and the noise levels in the space would be slightly greater. This slight increase in noise levels, though we felt it would not be noticeable to listeners, would eliminate, or at least reduce the complaints of lack of privacy.

We feel that electronic masking (synthetic) noise sources should be avoided wherever possible. There is always the possibility of electronic failure and our experience indicates that unless the higher noise levels are providing some secondary benefit to the occupants of the offices, the occupants are far more likely to complain.

We are frequently asked about the advisability of using music as the masking noise. In the first place, in the typical business office as opposed to an open secretarial, clerical or drafting area, the music would probably prove as distracting or more distracting than speech transmitted from adjacent offices. Furthermore, since a considerable percentage of the time during a musical recording there is no sound coming from the loud-speaker system, enough speech would be transmitted through a poor construction in an intelligible way that listeners' complaints would remain about as they were before the music was injected into the space.

In one specialized type of problem, we have, on occasion, recommended a very special solution. The problem is the fairly common one of voices from doctors' offices drifting into the waiting room. A small,

electrically-operated table fountain in the waiting room will do much to prevent waiting patients from overhearing those in the office.

Individual room air conditioners are of some value, but only while they are operating. Therefore, we believe that their effect should not be considered in planning. They do, however, bring up an interesting point in that noise levels measured in a typical small office having a window air conditioning unit will have noise levels between NC-40 and NC-45. Thus, you can see that, if a person is both benefiting from the operation of the machine and also able to control it, he will accept noise levels that are considerably louder than the levels we would expect to find in a typical office. Numerous experiences of this type have led us to the conclusion that traffic is seldom a reliable or useful masking noise. An exception might be made to that statement in the case where windows are left at least partly opened throughout all use periods of the room all the year 'round. Since this is probably not certain, and there is the increasing probability that there will be no operating sash in the office at all (thanks to air conditioning), we feel that the main contribution of traffic noise is to provide a low frequency rumbling sound which, combined with the "whoosh" of the air conditioning system, gives the masking noise a balanced and natural character. Such balancing would have virtually nothing to do with the intelligibility of transmitted speech sounds but only with what we are accustomed to hearing.

An interesting aspect of the relationship between the loudness of transmitted speech levels and the steady background noise is the effect which it has on the value of installing sound absorbing materials in an office. First, it is our belief that a comfortable acoustical environment can be provided in an office only by installing a certain amount of sound absorbing material. In the broadest terms, this amount is the amount provided by acoustical material installed over the entire ceiling or through the installation of carpeting and upholstered furniture.

But now what effect does the installation of acoustic tile have on the privacy problem? Let's assume first that this is an existing building without acoustic tile ceilings in which a privacy problem has been observed. Since it is an acoustical problem, the natural reaction of most building owners is to install an acoustical material and this, to most people, means a sound absorbing material or an acoustic tile. Most people know that installing sound absorbing materials in a room will reduce the level of people's voices in that room, but let's go over into the next room and try to listen to the voices. True, the acoustical tile has reduced the level of the transmitted speech as well as the level of speech in the original room. But we must not forget that the installation of acoustic tile has also reduced the level of the masking noise in the listening room, and therefore the relationship of the loudness of the transmitted speech to the noise remains just as it was before the tile was installed, and the privacy problem is not solved.

On the other hand, if we are considering a building in the planning stage and make the assumption that we have control over the level of background noise and can adjust it after the building is completed, the picture is different. The talker, our neighbor in the adjacent office, will not raise his voice to compensate for the effect of the tile on his ceiling, and, therefore, the voice level in his office will indeed be somewhat lower than if the acoustic tile had not been applied. Going again to the listening room, the levels of transmitted speech will be reduced but now our mechanical engineers are going to come in and adjust the level of background noise to some predetermined value, say NC-35. Thus, we succeed in rendering a significant improvement in the privacy conditions in the building because the voice levels transmitted from our neighbor's office have been reduced by sound absorption, but the masking noise has remained constant.

Fussy Listeners

The final link in the privacy chain is the sensibility of the listener to the transmitted speech sounds as they are heard over and

above the steady noises in the room. Unfortunately, we cannot predict this fussiness or sensitivity in the same way that we are able to predict the probability that he will speak in a raised voice. We must, therefore, rely on the evidence provided by the privacy test. In a purely qualitative discussion, we must limit ourselves to a statement that the most critical decisions will be based on whether we want to satisfy, say 85 per cent of the people likely to occupy an office, or 95 per cent. The top 5 per cent are likely to require very elaborate and special constructions and even then may not be satisfied, and there are about 25 to 50 per cent of the people who will not complain regardless of how bad privacy conditions are. It is our experience that a building designed to satisfy 90 per cent of the people represents a practical, economical limit on the degree of speech isolation provided between adjacent spaces.

The privacy tests were set up in such a way that they did indicate one standard of judgment of the degree of "fussiness" of individual listeners. People engaged in normal business activities or engineering activities will demand a certain degree of privacy. However, people doing work of a confidential nature, for example, personnel work, discussions of cost and fees, etc., will require a considerably higher degree of isolation. Therefore, in planning a building, the architect should indicate that though the executive vice president may be satisfied with an office similar to offices throughout the building, the chief accountant or the personnel man may require even better construction.

Where Do We Go From Here?

Of the various factors involved in a privacy problem analysis, really only two of them are directly under the control of the building designers. The first of these is the partition construction (or the ways in which sound can travel around the partition) and the other is the level of steady background noise in the building.

We would therefore propose that the

following general rules of thumb be observed when planning a building in which speech privacy is an important consideration, and indeed, in what building is it not important?

- 1 Select partition panel materials which have high weight, high density and low stiffness.
- 2 Avoid partition panel materials which are designed to be both stiff and light.
- 3 Detail partition drawings, ceiling drawings and convactor drawings to minimize the possibility of air leaks through and around the partitions.
- 4 Always use a noise source on one side of the partition while checking for leaks on the other.
- 5 Design mechanical equipment so that no spaces have levels exceeding some pre-established criteria, but also so that no spaces have levels below some pre-established bottom limit. This is usually done by using undersized air diffusers and grilles on the ducts.

Our only further piece of advice goes to the building owners themselves, and to them we say, "make sure that you only hire people with very soft voices and who are extremely insensitive, if you can find them."

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Architctural Applications of Lead for Noise Control

Control and reduction of noise presents a problem of increasing concern to society. The growing popularity of many automatic household appliances and the expanding use of efficient but noisy business and data processing machines have resulted in a general increase in ambient noise levels and the development of a new source of acoustical problems. Adding to these problems is the increased number of noisy vehicles on our streets and highways and the increased popularity of air transportation. The overall result of this combination of circumstances is that the noise level with which we live is increasing and will continue to increase unless adequate corrective measures are taken. At the same time there is a definite trend toward the use of more economical lightweight construction materials which inherently give a low degree of sound insulation. The result of these trends is an increasing demand for materials which can provide a high degree of sound isolation while maintaining the desirable property of lightness.

The design of proper acoustical environments is a most important and often most neglected consideration in the design of modern buildings. The use of a good sound absorbing acoustical ceiling is not, in itself, sufficient to ensure a satisfactory acoustical environment. Sound absorbing materials only control reverberation of noise originating within a room. The exclusion of outside noise

and the preservation of the privacy of conversations within a room can be accomplished only by using materials which are good barriers to airborne sound. It is necessary, therefore, to consider the specific requirements of the occupants of a space and to design a partition and ceiling assembly to give the desired acoustical absorption and also the required degree of privacy and freedom from external noise.

The prime requirements of a good sound barrier material are: high density, natural limpness, good damping capacity and non-permeability. Weight is of first importance because the sound vibrations are reduced in intensity in overcoming the inertia of the barrier. The acoustical efficiency of a material as a sound barrier, however, depends not only on its weight, but also on its bending stiffness. If the barrier is too stiff it can actually lose much of the advantage it gains by being heavy. This occurs because stiffness increases much more rapidly than weight as the thickness of a barrier is increased. The physical requirements for high transmission loss barriers are most effectively combined in thin lead sheet. Pound for pound, lead is a more effective sound barrier than any other conventional building material. For this reason acoustical barriers constructed of lead are invariably lighter and thinner than barriers of equal sound transmission class constructed of other materials.

Fig. 1
Effect of Lead Sheet on the Transmission Loss of 2 1/2" Thick Moveable Steel Office Partition.

Action du plomb en feuille sur l'insonorisation d'une cloison métallique de bureau de 2 1/2" d'épaisseur.

Fig. 2
Effect of Lead Sheet on Transmission Loss of 1/2" Gypsum board on Both Sides of 2 1/2" Steel Stud.

Action du plomb en feuille sur l'insonorisation d'une cloison en colombages d'acier de 2 1/2" recouverts de plaques de gypse de 1/2" sur les deux faces.

This almost ideal combination of properties has been recognized for many years and the first uses of lead for acoustical purposes date back to antiquity. Lead sheet, however, was never used extensively due to the high cost of rolling the sheet to the thin gauges generally required. The recent development of a continuous lead sheet casting machine has significantly reduced its cost and made its application economically attractive. Recent research has resulted in the development of lead-containing high transmission loss barriers which are thin, lightweight, simple, and very easy to install.

Partitions and Walls

Lead sheet can be used in many thin lightweight partition systems to increase their sound transmission loss. It can be readily attached to other materials with elastomeric adhesives to add weight without increasing the stiffness. In this manner the maximum available improvement as predicted by the theoretical mass law for transmission loss can be obtained. Additional and sometimes spectacular benefits can be obtained if the material to which the lead is bonded has a coincidence effect in the speech range. In cavity wall constructions, the frequency at which cavity resonance occurs can often be shifted out of the range of interest by the use of a small amount of lead.

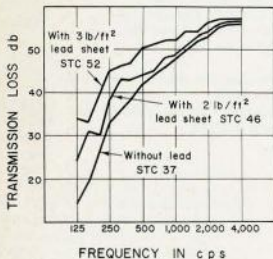


Fig. 1

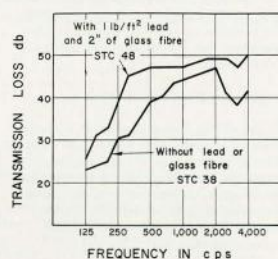


Fig. 2

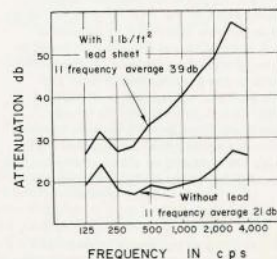


Fig. 3

Fig. 3
Attenuation of Low-TL Ceiling Board with and without Lead Ceiling Blanket. Tested by Geiger and Hamme Inc.
Insonorisation de carreaux acoustiques à faible facteur de transmission, avec ou sans coussin de plomb. Epreuves par Geiger and Hamme Inc.

Fig. 4
Transmission Loss of Low-TL Ceiling Board with or without Lead Plenum Barrier. Tested by Geiger and Hamme Inc.
Insonorisation de carreaux acoustiques avec ou sans coussin de plomb dans le plenum. Epreuves par Geiger and Hamme Inc.

The effect of lead on two types of partition is shown graphically in Figures 1 and 2. Figure 1 illustrates the improvement obtained by the addition of lead to a 2 1/4" thick movable steel partition. The acoustical ability of the partition without lead was restricted by the occurrence of a cavity resonance effect at about 125 cps. The incorporation of only 2 lb/ft² lead sheet (1/32" thick) into the internal construction of the steel partition by bonding to the inside of the metal skins with a rubber-based adhesive lowers the resonance frequency sufficiently to result in a significant increase in transmission loss. Further improvement is obtained by the use of a heavier weight of lead.

Another example of the efficient use of lead sheet is illustrated by Figure 2. In this case the gypsum board-steel stud wall is inherently weak at approximately 300 cps due to the occurrence of a coincidence dip. The use of only 1 lb/ft² of lead (1/64" thick) has almost completely removed the coincidence effect and significantly increased the sound transmission class of the partition system. The result is a lightweight, low cost wall in the STC 45-50 range, suitable for offices requiring confidential speech privacy.

Suspended Acoustical Ceilings

In many buildings the suspended acoustical

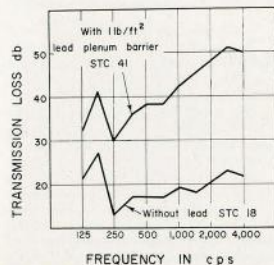


Fig. 4

Fig. 5
Recommended Method of Installation of Lead Plenum Barrier.
Mode d'installation recommandé des feuilles de plomb pour plenum.

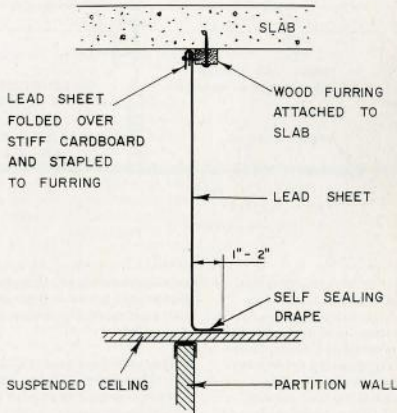


Fig. 5

ceilings which control reverberation and make speaking and listening conditions pleasant are responsible for low transmission loss between adjacent rooms or offices. The properties which make these materials good acoustical absorbers are their combination of lightness and porosity. It is this combination of properties which also makes these materials poor barriers to the transmission of sound. The use of thin lead sheet offers two simple but very effective methods of strengthening suspended acoustical ceilings to prevent the transmission of "over-the-ceiling" noise which is often the cause of speech privacy problems.

Laboratory data for lead ceiling blankets and plenum barriers are presented in Figures 3 and 4. Both methods are equally effective, but the free hanging plenum barrier (Figure 5) is usually preferred because it uses less material and often costs less.

Due to the inherent softness and ductility of thin lead sheet it can be easily cut and fitted around pipes and ducts or other obstructions in the plenum chamber to provide a tight

barrier. Other materials used in this application are either more expensive or more difficult to install. If return air is not ducted a hole must be cut in the plenum barrier above the corridor partitions, having approximately the same area as the return air grille; this allows the return air to escape into the open plenum. The use of silencers at these openings is not usually required because the sound waves are forced to travel a relatively lengthy route to reach the adjacent offices.

The ceiling blanket arrangement is sometimes preferred if the plenum chamber is badly cluttered. The ceiling blanket can be laid directly over the light fixtures and actually assists in dispersing heat from the fixtures. If the return air is not ducted, it is often necessary to cover the ceiling grilles with hoods or cross-talk silencers.

Mechanical Noise Problems

A problem of major concern in modern high-rise buildings is the isolation of noise

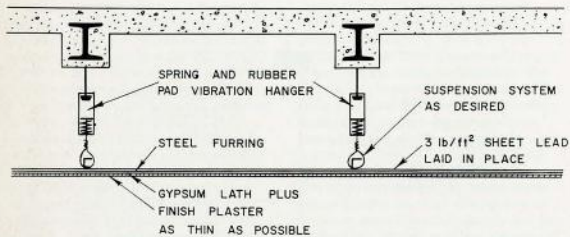


Fig. 6

generated in mechanical rooms located on the upper floors. The noise problem is often compounded by structural vibration; however, proper vibration isolation of the machinery is not always the complete solution. There are various ways of obtaining the required transmission loss between a machinery room and the floor below. Two common methods are the use of a thicker structural slab or the use of a floating slab. The floating slab is the more effective of the two, but its effect is mainly to increase the transmission loss between the machinery room and the area below, and it is still necessary to completely isolate all the machinery. As an alternative to these two methods of increasing airborne transmission loss, vibration isolated, high transmission loss ceilings incorporating thin lead sheet have been used effectively on several occasions. The use of this method has several advantages. It provides a further high transmission loss barrier, in addition to the slab to which it is resiliently attached, plus a considerable air space. This effective combination provides increased sound transmission loss at minimum cost. Figure 6 illustrates schematically the floor-ceiling arrangement designed by Goodfriend-Ostergaard Associates, Cedar Knolls, New Jersey for the new Canadian Pacific hotel "le Chateau Champlain", now under construction in Montreal. Modified versions of this ceiling have been used with good results at CIL House in Montreal to isolate the machinery

penthouse from the top occupied level,¹ and at Champlain School in Ottawa where a band practice room is located under the library.

Lead has also been used to quiet noisy duct work. The lead can either be adhered directly to the duct or used as an outer wrapping around fibrous material applied to the outside of the duct, depending on the gauge of metal which is used.

Acoustical Design of Private Offices and Small Conference Rooms

Good acoustical design is as important as aesthetic appearance in producing a pleasant environment in which people can work efficiently. They are not incompatible but if acoustics are ignored, even minor design details may result in major acoustical problems. Remedial action after construction is always expensive. The additional cost of effective sound control incorporated in the planning stage is a small part of the overall cost and will be repaid many-fold in occupant satisfaction.

A most important consideration in the design of private offices and conference rooms is the privacy requirements of the

¹ Lead Solves Noise Problem for Montreal Skyscraper, *Building Management*, December 1964.

Fig. 6
Schematic Drawing of Floor-Ceiling
Construction Above and Below Mechanical
Spaces.
Schéma de construction des planchers et
plafonds au-dessus et au-dessous des
chambres de mécanique.

occupants. These requirements should be defined during the preliminary design stage and kept in mind when planning layouts and specifying components and materials. Another important consideration in the acoustical design of a room is the background noise level. Generally it is desirable to have the ambient noise level of a particular room as high as possible without letting it become a distraction in itself. The ambient noise has a beneficial effect in masking noise originating outside the room, but of course, it must not be high enough to interfere with normal conversation within the room, or make use of the telephone difficult. Background levels are generally designed in accordance with the data given in Table I.

Table II contains recommended transmission loss requirements for various degrees of privacy at two different levels of ambient or background noise assuming the use of an acoustical ceiling. The suggested STC ratings are based on a minimum office width of 10 ft and may require adjustment if

Table I. Noise Criteria for Different Types of Spaces

NC Curve	Typical Applications
NC-20 to NC-30	Executive offices and conference rooms for 50 people
NC-30 to NC-35	Private or semiprivate offices, reception rooms, and small conference rooms for 20 people
NC-35 to NC-40	Medium-sized offices and industrial business offices
NC-40 to NC-50	Large engineering and drafting rooms, etc.
NC-50 to NC-55	Secretarial areas (typing), accounting areas (business machines), blueprint rooms, etc.
Above NC-55	Not recommended for any type of office

Reference: Lead Industries Association Publication *Practical Application of Sheet Lead for Sound Barriers* 1965.

dimensions differ from this significantly or if carpeting is used. Any change which tends to increase the amount of absorption in a room with respect to the size of the common partitions will have a slightly beneficial effect on transmission loss.

Installed barriers frequently fall short of their laboratory performance rating since the ideal laboratory test conditions seldom exist in the field. This fact is particularly important when high transmission loss is required. An allowance of at least 5 db should be made when choosing a movable partition to allow for this expected disparity. The variation is not so important when permanent walls are used as their installation more closely approaches the ideal. A more generous allowance of 7 to 10 db should be made when choosing the suspended acoustical ceiling since ceilings are tested in the laboratory without light fixtures or air returns.

When a particular office layout consists primarily of non-critical areas it may be economically advantageous to choose an inexpensive low transmission loss ceiling and then strengthen the ceiling above critical private offices by the use of either a lead plenum barrier or a ceiling blanket. Even when acoustical ceilings with high transmission loss ratings are used a plenum barrier or blanket is usually required to obtain the high transmission loss necessary for confidential privacy.

When high transmission loss walls and ceilings are used the effect of doors and other possible flanking paths for sound must be taken into consideration. When privacy is required in one office, the occupant cannot expect his neighbors to close their doors, and so either solid core or lead lined doors properly gasketed and fitted with drop seals must be used. If air is distributed through continuous perimeter convectors it is necessary to seal the convectors acoustically where they pass through the partitions. This can be accomplished by fitting thin sheet lead around the piping in the convectors. Lead can also be used effectively in

Table II. Recommended Transmission Loss for Different Types of Offices

Typical Applications	Hearing Conditions	Transmission Loss (STC)	
		Background NC-25	Background NC-35
Privacy not required. Partitions used only as space dividers.	Normal speech can be understood quite easily and distinctly through the wall.	35 or less	30 or less
Suitable for dividing non-critical areas. Provides fair degree of freedom from distraction.	Loud speech can be understood fairly well. Normal speech can be heard but not easily understood.	35-40	30-35
Provides good degree of freedom from distraction. Suitable for junior executives, engineers, etc.	Loud speech can be heard, but is not easily intelligible. Normal speech can be heard only faintly, if at all.	40-45	35-40
Provides a confidential degree of speech privacy. Suitable for doctors, lawyers, senior executives, etc.	Loud speech can be faintly heard but not understood. Normal speech is inaudible.	45-50	40-45
Suitable for dividing private offices from noisy areas containing typewriters, telex, computers, etc.	Very loud sounds, such as loud singing, brass musical instruments, or a radio at full volume can be heard only faintly or not at all.	50 or more	45 or more

filler panels above the perimeter convectors or between internal structural columns and window mullions.

A most important factor in the performance of an acoustical barrier is the care with which the installation is carried out. Failure to eliminate sound leaks through cracks around doors and perimeter joints will seriously jeopardize the performance of an otherwise good acoustical barrier. Even hair-line cracks may spoil a good barrier's effectiveness. A leak which constitutes only 1/10 of 1% of the area of concern will reduce the performance of a 45 db partition to only 30 db.

The dramatic improvement in noise control accomplished by the use of thin lead sheet in building partitions and ceilings has been illustrated in a few examples described in this article. While these have referred specifically to office buildings, similar problems exist in schools, apartment buildings, hotels and in private residences, where the use of high transmission loss partitions and ceilings containing lead may also provide the most satisfactory solution to noise problems.

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you won't hear a thing.)



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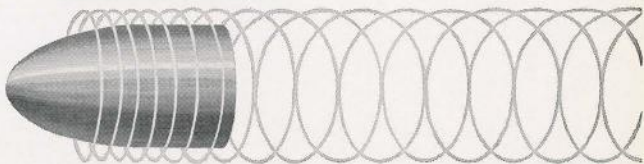
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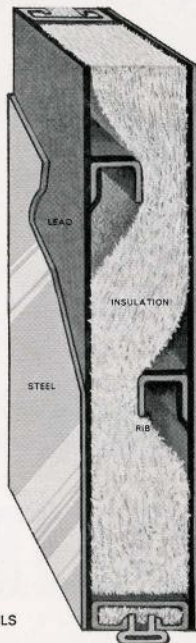


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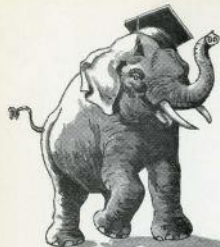
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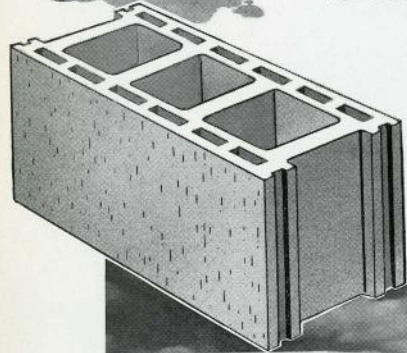
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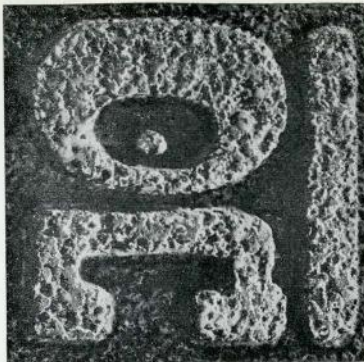
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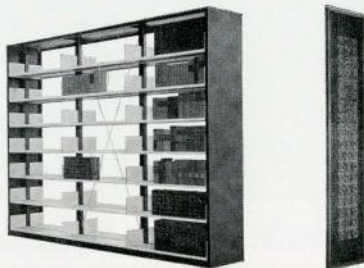
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Report of the President

It is customary for the President to make an Annual Report. It is evident that such a report can be only a résumé of all the others submitted by the different chairmen. Wishing to conform to this custom, I shall try to state briefly the different tasks faced during the past year.

I am glad to say that we had 100% attendance at all meetings, which are listed in the Honorary Secretary's report, and I particularly want to thank all those who have been chosen to act as Council Members for their undeniable devotion to the Institute.

The first task undertaken by your Council, early in 1965-66, was the revision of the By-laws, concerning the Council and the Electoral Board. This revision was completed during the Fall of 1965, was then submitted to the Provincial Associations and accepted by them; consequently, the revised By-laws are now in force, since 1st of January 1966, meaning that what used to be the Executive Committee is now the Council, with a representative from each of the Provincial Associations, and what was the Council is now the Electoral Board.

At the same time, we were studying a reorganization of the *Journal* and that is why the former Journal Committee and Editorial Board have disappeared, to be replaced by the Journal Board which is composed of representatives from all the Provincial Associations, with a few more members chosen by your Council and living near the Journal office; the whole to make the administration and publication easier. I am sure that you must have noticed the improvement in the last numbers. It is, also, at the suggestion of the new Journal Board that the Institute has accepted the new title of "Architecture Canada" with, as sub-title, "Journal of the Royal Architectural Institute of Canada". This title is not only bilingual but would better indicate the aims of the *Journal*, which are not only to inform the members on Institute affairs, but also on the tendencies of architecture in Canada.

From the first days of our term of office, we were faced with the problem of moving our Headquarters into a new building, grouping the principal Professional Associations. This move, permitting us to have more favorable premises at a lower rate, meant an annual saving for the Institute. Accordingly, we authorized the change which should take place during the month of May.

We then studied the problem of liaison between the different Committees and your Council, and for that reason, we have established a table of tasks for the Officers; from now on, each Officer is responsible to the Council for a certain number of Committees for which he acts as liaison Officer. This, evidently, should render the work of your Council members much easier, while at the same time leaving to the different Committees the

Rapport du Président

La coutume veut que le Président fasse un rapport annuellement. Il est évident que ce rapport ne peut-être qu'un résumé de tous les autres soumis par les Présidents des différents comités. Aussi, voulant me conformer à cette coutume, je vous donnerai, ci-après, les principaux travaux qui se sont exécutés au cours de l'année écoulée.

Je dois dire dès maintenant que tous à 100% ont assisté aux différentes réunions tel que donné dans le rapport du Secrétaire Honoraire et je tiens à remercier tout particulièrement tous ceux qui ont été choisis pour agir comme Membres du Conseil pour leur dévouement indiscutable et indéniable.

La première tâche que votre Conseil s'est attribuée au début de 1965-66 a été la révision des règlements, en ce qui concerne le Conseil et la Commission Électorale. Cette révision s'est complétée au cours de l'automne 1965, fut soumise aux différentes associations provinciales et acceptée par ces dernières; et par conséquent, les règlements modifiés sont maintenant en vigueur depuis le 1er janvier 1966; ce qui veut dire que ce qui était autrefois le Comité Exécutif est maintenant le Conseil, avec un représentant de chacune des Associations Provinciales et ce qui était autrefois le Conseil est maintenant la Commission Électorale.

En même temps qu'on étudiait la révision du Conseil, on voyait aussi à la réorganisation du *Journal*; c'est comme ça qu'on a vu les anciens comité du *Journal* et comité de rédaction disparaître, pour être remplacés par la Commission du *Journal*, elle aussi, composée de représentants de toutes les associations constituantes avec en plus certains membres choisis tout particulièrement par votre Conseil, et groupés autour des bureaux du *Journal*, pour en faciliter l'administration et la publication. On aura constaté l'amélioration marquée dans les derniers numéros.

C'est aussi, à la suggestion de la nouvelle Commission du *Journal* que l'Institut a accepté le nouveau titre de "Architecture Canada" avec, comme sous titre, "Journal de l'Institut royal d'architecture du Canada"; croyant qu'en ce faisant, le titre devenait non seulement bilingue, mais reflétait encore plus les buts que se propose le *Journal*, soit: non seulement de renseigner les membres sur ce qui se passe à l'Institut, mais aussi sur les tendances de l'architecture au Canada.

Dès les débuts de notre administration, on nous soumettait un autre problème; celui de déménager à nouveau nos bureaux, pour se grouper avec les principales associations professionnelles dans un même édifice. Ce déménagement nous permettant d'obtenir des locaux plus favorables et à meilleur compte, cela voulait dire, pour l'Institut, une économie annuelle. Nous avons

tasks of fulfilling the terms of reference, as they see fit.

Further on the subject of Committees, it had been suggested that they meet at some time other than at the Annual Assembly, so as to make their work easier and more efficient, and to present at the Assembly reports on future projects apart from that of work done. To do that, your Council has attributed priorities to the Committees, according to their importance, together with a special budget which should permit them to meet at least once and perhaps more between Assemblies.

Your Council laid down rules of procedure for the Council meetings and others, in order to have as much uniformity as possible.

During the year, two pamphlets were published by the Institute and distributed free of charge. The first, called *Décoration 67*, was prepared by Bill Leithead, Vancouver, and distributed throughout Canada in the hope that street decorations for the Centenary year might be improved. The second pamphlet, called *Planning to Build 7*, was prepared by the PQAA at the request of the Institute and gives the different services that a client can expect from his architect, and is also distributed free of charge to all Provincial Associations or other organizations requesting it.

The members of Council also thought that the Institute seal which has not changed since the origin of the RAIC could possibly be studied and, for that purpose, a competition was organized among six well-known artists from Montreal and Toronto. It is hoped that, in the near future, the Royal Institute will have a completely new seal.

During their term of Office, your Council members have taken particular interest in the problems of salaried architects. A committee under the able chairmanship of A. W. Davison has given a lot of time and work particularly to the problems of architects within the Federal Government. The Committee's terms of reference also include all other salaried architects and it is our hope that these will soon benefit from the work of our Committee on Salaried Architects.

The Committee on the Profession, formed three years ago, has completed its work and the full report is at present with the printers and will be submitted at the Annual Assembly, in Jasper. You will realize the enormous amount of work given by those in charge of this Committee. I want to thank publicly and congratulate very heartily those responsible for the report: Messrs. Moody, Raymore, Keenleyside, Lee, Thornton, Dobush, Mercier and Langford.

At the last Annual Meeting in Montreal, following a motion presented and approved, a special Committee was formed under the name of "Committee on Aims and Functions of the RAIC." Mr Howard Bouey was asked

donc autorisé ce changement qui devrait s'opérer au cours du mois de mai 1966.

Considérant ensuite les problèmes de liaison qui existaient entre les différents comités et votre Conseil, nous avons établi un schéma des tâches pour les dirigeants; c'est ainsi qu'on verra à l'avenir que chacun d'eux a la surveillance d'un certain nombre de comités pour lesquels il agit comme agent de liaison entre le Conseil et les dits comités. Ceci évidemment facilite le travail de vos administrateurs en laissant toutefois aux différents comités, les problèmes de remplir leur différents mandats à leur guise.

Toujours sur le sujet des comités, il était question depuis longtemps déjà de leur permettre de se réunir autrement qu'à l'assemblée annuelle, afin de leur faciliter le travail, de le rendre plus efficace, et de présenter à l'assemblée annuelle des rapports de travaux exécutés ainsi que des projets à venir; c'est ce que votre Conseil a fait et il a essayé d'attribuer des priorités aux Comités, suivant leur importance; de même qu'un budget spécial, leur permettant au moins une réunion et peut-être plus si nécessaire, entre les assemblées annuelles.

De plus, votre Conseil a établi des règles bien définies de conduite pour les assemblées du Conseil, et des autres, de sorte que le tout puisse se faire d'une façon aussi uniforme que possible dans tous les secteurs.

Au cours de l'année, deux fascicules ont été publiés par l'Institut, et distribués gratuitement. Le premier, intitulé *Décoration 67*, préparé par Bill Leithead de Vancouver, a été distribué à travers tout le Canada, dans le but d'améliorer, si possible, les décorations qui pourront être utilisées au cours de l'année du Centenaire.

Un deuxième fascicule intitulé *Si vous bâtissez . . .* et préparé par l'AAPO à la demande de l'Institut dénote les différents services que l'Architecte peut rendre au client et il est lui aussi distribué gratuitement à toutes les associations provinciales ou autres organismes qui en font la demande.

Vos administrateurs ont cru, au cours de l'année écoulée, que le sceau de l'association qui est le même depuis ses débuts, méritait peut-être d'être changé, et pour ce faire, on organisa un concours parmi six artistes reconnus de Montréal et de Toronto. Au moment où j'écris ses lignes, le sort n'est pas encore connu, mais il est à espérer que dans un avenir plutôt rapproché, l'Institut Royal possèdera un sceau complètement différent de celui que nous avons actuellement, et qui reflètera quand même les buts de notre Institut.

Au cours de l'année, vos administrateurs se sont penchés tout particulièrement sur les problèmes des architectes salariés. Aussi, le comité sous l'habile direction de M. A. W. Davison, a travaillé sans relâche tout particulièrement en ce qui a trait aux architectes à l'emploi du

to chair this Committee and he submitted an interim report in September, to be followed by the final one at the Annual Assembly. Here again you will note the excellent work done by the chairman of this Committee.

Three other projects have been initiated during our term of office: the first was the preparation of another pamphlet on *Street Improvement* for the Centenary Year 1967. Again, Mr Bill Leithead was asked to prepare this work and we have no doubt that this one will be just as good as the previous one.

The second project studied during the year would consist in the attribution of plaques and scrolls to the best buildings completed during the year. This project is, at present, being studied by the Committee on Scholarship and Awards and it is possible that a definite recommendation might be brought in at the Annual Assembly. The object of these certificates would evidently be public relations since they would be given to the owners and not to the architects who have conceived the plans; thus, the publicity for the profession would be better.

The last project is the preparation of a *Handbook of Architectural Practice*. This is at present being studied and a Committee should be formed in the very near future in the view of submitting a handbook which could be used by all architects, either in a small office or a medium office or even a large one. The tentative date for this Handbook is the beginning of 1968.

Another venture of the past year has been the attribution of special scrolls to Provincial Associations celebrating an anniversary. Those were given to the PQAA, the OAA, the AIBC, the MAA, and the AAA.

From the foregoing you will realize the great amount of work supplied by each and everyone throughout the year. Therefore, it gives me great pleasure not only to underline this complete co-operation from all the members of the Institute, but also to congratulate and thank very particularly all those who have helped in some way: be it by working on Committees, by helping your Council or even by writing to make recommendations or even remarks. To one and all a very grateful "thank you".

One word to congratulate our Editor of the *Journal*, Walter Bowker, and his associate, Prof. A. J. Diamond, for their devotion to the preparation of our magazine.

Last, but not least, I would like to pay a special tribute to our personnel in Ottawa, under the able leadership of Fred Price and Maurice Holdham, who offer us their continued support; and it is due in a great part to them that your Institute can function the way it does.

Gérard Venne (F)
President

Gouvernement Fédéral, mais ses cadres incluent aussi les architectes salariés autres que ceux du service civil et il est à espérer que bientôt, ces derniers pourront bénéficier du travail du comité des Architectes salariés de l'Institut.

Le comité sur la profession, qui avait été formé il y a trois ans, a complété son travail et actuellement, le volumineux rapport qu'il a préparé est à l'impression et sera soumis pour l'assemblée annuelle de Jasper. Vous constaterez facilement à sa lecture, la tâche énorme accomplie par ceux qui avaient la charge de ce comité, et je tiens aussi à féliciter publiquement et à remercier tout particulièrement, ceux qui ont été responsables de sa préparation, soit: MM. Moody, Raymore, Keenleyside, Lee, Thornton, Dobush, Mercier et Langford.

A l'assemblée annuelle de juin dernier à Montréal, à la suite d'une motion proposée en bonne et due forme, un comité spécial était formé, portant le titre de "Comité des buts et fonctions de l'IRAC." La tâche de préparer ce rapport était confiée à M. Howard Bouey et ce dernier a soumis un rapport intérimaire en septembre dernier lequel sera suivi d'un autre complet pour l'assemblée annuelle. Encore ici, vous pourrez facilement constater l'excellent travail fourni par le Président de ce comité.

Trois autres projets ont été mis de l'avant au cours de l'année écoulée: un premier est la préparation d'un autre fascicule sur l'aménagement des rues prévu pour le Centenaire en 1967. Celui-ci a été confié à M. Bill Leithead, et nous ne doutons pas que ce dernier travail sera aussi excellent que le premier qu'il nous a fourni.

Le second projet mis de l'avant au cours de l'année consiste à émettre annuellement des certificats de reconnaissance aux édifices les plus méritants, complétés au cours de l'année écoulée. Ce projet est actuellement à l'étude par le Comité des Bourses et Prix, et il est possible qu'une recommandation définitive soit faite pour l'assemblée annuelle. Le but de ces certificats est évidemment d'obtenir une certaine publicité car ils seraient attribués aux propriétaires des édifices et non pas aux architectes qui en auraient conçu les plans; de cette façon, les relations extérieures seraient beaucoup meilleures.

Un dernier projet est celui de la préparation d'un guide de pratique architecturale. Celui-ci est actuellement à l'étude et un comité doit être formé incessamment avec comme but ultime, la soumission d'un guide dont tout architecte pourrait se servir, qu'il ait un bureau moyen, un petit bureau ou un grand bureau. L'idée est d'avoir ce guide pour les débuts de 1968.

Une autre inauguration qui a été faite au cours de l'année écoulée, consiste en la remise de certificats aux différentes associations provinciales qui célèbrent un anniversaire particulier au cours de l'année. C'est ainsi

Report of the Honorary Secretary

The RAIC Council met on June 11, 1965, in the Queen Elizabeth Hotel, Montreal, during the 1965 Annual Assembly. This was the last meeting of the 31 member Council which, under the new organization, was replaced by an Electoral Board on January 1, 1966.

The Executive Committee held its first meeting at the Montreal Assembly in June, and on September 10 and 11 met in Jasper, Alberta, at which time a joint meeting was held with members of the AAA Council. On November 5 and 6 a meeting was held at the PQAA Headquarters in Montreal at which time a joint session with members of the PQAA Council and Quebec representatives on the RAIC Council was convened. The new Council which replaced the former Executive Committee on January 1, 1966, met in Toronto on February 25 and 26, at which time a joint session was held with members of the OAA Council. The final meeting is scheduled for June 1 in Jasper at the 1966 Assembly. In addition, the Officers met at RAIC Headquarters in Ottawa twice — on October 6 and on December 9, 1965.

The total paid membership in the Institute during 1965 was 2,806, representing 2,638 individual members, a number being registered in more than one province.

It is with deep regret that I record the names of colleagues who have passed away since our last Annual Report: W. J. Abra (F), Victor P. Belcourt, Victor J. Blackwell (F), Bryan D. S. Chadwick, Leopold E. Corbeil, H. G. Duerr, J. P. E. Dussault, John W. D. Greig, Sidney William Kertland, Alvan Sherlock Mathers (F), Robert W. Morton, R. A. V. Nicholson, A. J. C. Paine (F), Arthur Edward Rogers, Harold Semmens (F), William Lyon Somerville (F), S. M. Sproule, Jean Thibodeau, Norman L. Thompson, R. P. S. Twizell and Ernest J. Weir.

The past year has been a productive one as evidenced by the work accomplished by the many Institute Committees and in the Headquarters. I urge that you read the reports which follow and give evidence of Institute activities and accomplishments. I wish to express my thanks to our Executive Director, Executive Secretary and staff for the extra effort they always come up with on our behalf.

Plans for the 1967 centennial year Assembly at the Chateau Laurier in Ottawa are well underway, and the 1968 Assembly in Regina is receiving attention.

James W. Strutt (F)
Honorary Secretary

qu'on a vu des certificats remis à l'Association des Architectes de la Province de Québec, à l'Association de l'Ontario, celle de la Colombie Britannique, celle du Manitoba et celle de l'Alberta.

A la lecture de ces lignes, vous réaliserez la somme énorme de travail que tous et chacun ont fournie au cours de l'année. Aussi, me fait-il énormément plaisir, non seulement de souligner cette coopération pleine et entière de tous les membres de l'Institut, mais aussi de féliciter et de remercier tout particulièrement, tous ceux qui de près ou de loin nous ont aidé, soit en travaillant sur des comités, soit en nous appuyant au conseil ou même en nous écrivant pour nous faire des recommandations ou des remarques. A tous, un cordial merci.

Un mot pour féliciter notre rédacteur du *Journal*, M. Walter Bowker et son assistant, M. A. J. Diamond, pour le travail dévoué qu'ils nous accordent à la préparation de notre revue.

Enfin, je ne voudrais pas oublier notre personnel à Ottawa, qui, sous l'habile direction de Fred Price et de Maurice Holdham, nous offre un concours constant et sans relâche, et c'est grâce à eux si votre Institut peut fonctionner comme il le fait présentement.

Gérard Venne (F)
Président

Rapport du Secrétaire Honoraire

Le Conseil de l'Institut s'est réuni le 11 juin 1965, à l'Hôtel Reine Elizabeth, Montréal, au cours de l'assemblée annuelle. Cette réunion a été la dernière du Conseil de 31 membres qui, par suite de la réorganisation, a été remplacé par une Commission électorale, le 1er janvier 1966.

Le Comité exécutif a tenu sa première réunion au cours de l'assemblée annuelle à Montréal en juin. Il s'est réuni de nouveau les 10 et 11 septembre à Jasper (Alberta) alors qu'il a tenu une séance conjointe avec des membres du Conseil de l'AAA. Il a tenu une autre réunion au siège de l'AAPO à Montréal les 5 et 6 novembre; à cette occasion, il a organisé une séance avec des membres du Conseil de l'AAPO et les représentants du Québec au Conseil de l'IRAC. Le nouveau Conseil, qui a remplacé l'ancien Comité exécutif le 1er janvier 1966, s'est réuni à Toronto les 25 et 26 février, où il a tenu en même temps une séance avec des membres du Conseil de l'AAO. La dernière réunion est prévue pour le 1er juin à Jasper, au cours de l'assemblée de 1966. En outre, les dirigeants de l'Institut se sont réunis deux fois au bureau d'Ottawa, soit les 6 octobre et 9 décembre 1965.

En 1965, l'Institut a reçu 2,806 cotisations de 2,638 membres particuliers, un certain nombre étant inscrits dans plus d'une province.

Report of the Executive Director

The RAIC Survey of the Profession notes the significant changes taking place in the practice of architecture, and makes specific recommendations for your consideration and action. Considerable work has been done in two of these areas:

- 1 Fee Schedules have been examined closely in Quebec and Ontario, and fundamental revisions are under way which are likely to influence all provincial schedules. In Ontario, the study has led into related fields such as management and accounting procedures, employee classification and salary levels.
- 2 Numerous discussions have been held with Federal Government officials and other professional bodies toward upgrading the status of architects – and of architecture – in the government. (See Report of Special Committee on Salaried Architects.) Encouragement has been given to similar efforts at the provincial level.

In the field of architectural education, there has been concern over the failure to keep pace with ever-growing demands for more architects to meet the needs of a booming economy. As a result, it is feared, the essential role of architects may well be defaulted to others at non-professional levels who are unable to meet requirements of good design, safety, efficiency and economy in construction. It is heartening to report that plans for new Schools are now being formulated in Alberta and Ontario, and that the capacity of some of the existing Schools may be increased.

RAIC relations with Federal Government departments and agencies have continued to expand, on behalf of all members of the profession. In several cases, participation in joint projects has been requested – such as the big photographic exhibition, *Three Centuries of Canadian Architecture*, undertaken by the Department of External Affairs for display abroad.

I am glad to report a more encouraging attitude by The Canada Council, which for some years has given slight attention to architecture, despite the fact that it occupies first place in its terms of reference. Council grants were sought and obtained toward our participation in the UIA Paris Congress and our 1966 Assembly; we are now seeking more graduate study awards for architects.

The attention of the Minister of Finance has again been drawn to our demand for income tax provisions permitting architects to average their income over a three-year period, as is done already for certain classes of taxpayers.

Your staff has been assisting in plans for a number of events, national and international, connected with Canada's Centennial Celebrations. In collaboration with PQAA, we are making appropriate reception arrangements at EXPO 67 to welcome visiting architects, particularly those from abroad.

C'est avec regret que je dois mentionner les noms de certains de nos membres disparus depuis la présentation de mon dernier rapport annuel. Ce sont : MM. W. J. Abra (F), Victor P. Belcourt, Victor J. Blackwell (F), Bryan D. S. Chadwick, Leopold E. Corbeil, H. G. Duerr, J. P. E. Dussault, John W. D. Greig, Sidney William Kertland, Alvan Sherlock Mathers (F), Robert W. Morton, R. A. V. Nicholson, A. J. C. Paine (F), Arthur Edward Rogers, Harold Semmens (F), William Lyon Somerville (F), S. M. Sproule, Jean Thibodeau, Norman L. Thompson, R. P. S. Twizell et Ernest J. Weir.

Nous venons de terminer une année fructueuse, ainsi qu'en témoignent les travaux des nombreux comités et du bureau de l'Institut. Je vous invite à lire les rapports qui suivent et qui vous donneront une idée des activités et des réalisations de l'année. Je tiens à remercier chaleureusement le directeur général, le secrétaire administratif et les membres du personnel de ce surcroît d'efforts qu'ils ne craignent jamais de s'imposer en notre faveur.

Les préparatifs en vue de l'assemblée de l'année du Centenaire, 1967, au Château Laurier, Ottawa, sont en bonne voie et déjà on songe à l'assemblée de 1968 qui aura lieu à Regina.

James W. Strutt (F)
Secrétaire Honoraire

Rapport du Directeur Général

Le Relevé de la profession, publié par l'Institut, note les grands changements survenus dans la pratique de l'architecture et propose à votre considération certaines recommandations précises auxquelles vous êtes invités à donner suite. Il y a eu beaucoup de travail effectué notamment dans deux domaines particuliers :

- 1 Les tarifs des honoraires du Québec et de l'Ontario ont été étudiés avec soin et des révisions majeures actuellement en cours auront probablement des repercussions sur les tarifs des autres provinces. On Ontario, l'étude a été poussée jusque dans des secteurs connexes, comme les méthodes administratives et comptables, les classes d'employés et les salaires.
- 2 De nombreuses discussions ont eu lieu avec des hauts fonctionnaires fédéraux et d'autres groupes professionnels en vue d'obtenir un relèvement du statut des architectes, et aussi de l'architecture, au sein du gouvernement. (Voir le rapport du Comité spécial sur les architectes salariés.) On a aussi encouragé des efforts dans le même sens sur le plan provincial.

Dans le domaine de la formation des architectes, le fait que le nombre des architectes ne grandit pas au point de répondre à la demande croissante provoquée par les besoins d'une période de forte prospérité économique est un sujet d'inquiétude. On craint que les architectes,

For some years, the Institute has been urged by members to introduce group insurance plans at more favorable premium rates than are available to individuals. Sharp increases in rates for professional liability insurance led, in 1964-65, to a full investigation of the possibilities, in consultation with our component associations. As a result, the Institute completed arrangements through our Insurance Consultants for the first all-Canadian group plan in this field; it was offered to members in November 1965, and has met with a good response.

At the same time, two other group plans – life and disability income insurance – were offered, and these have also met a need. Consideration will be given at a later date to health and pension plans.

The November examinations leading to registration under the Minimum Syllabus, coordinated by the Institute on behalf of seven component associations, were written by 19 candidates.

Every day our mail brings requests for information and advice relating to architecture from all parts of Canada and the far corners of the world. In many such cases we call for the assistance of our committees and other members, and we are grateful for your ready response.

Provision of standard contract forms and other documents and publications is "big business" with us; in 1965 we supplied 47,765 forms, etc., ordered by members. This total will climb again in 1966, partly due to revised issues of contractor agreement documents Nos. 12 and 13.

The Institute has entered into an advantageous arrangement for new headquarters premises, along with a number of other professional bodies and the Association of Universities and Colleges of Canada. We are moving in early May into the new building at 151 Slater Street, Ottawa.

I have had the privilege of meeting and consulting with officers and members of six component associations during the past year, and wish to express my appreciation of their kindness and assistance. I have also paid two visits to the Director and staff of the American Institute of Architects, in connection with plans ahead.

One closing comment, as a result of these travels and observations. Events in the United States have demonstrated the value of the *War on Community Ugliness*, led by the architects. It is time for us to wage a similar war perhaps in line with the Community Improvement and Beautification program initiated by the Centennial Commission. Paraphrasing a recent editorial concerning Canada's war on poverty: "To reduce community ugliness is not only socially desirable; it is economically imperative."

Fred W. Price
Executive Director

étaient trop peu nombreux pour suffire à la tâche, ne soient remplacés dans leur rôle essentiel par des personnes de niveau non professionnel, incapables de répondre aux exigences d'une bonne composition et d'une construction sûre, efficace et économique. C'est donc avec plaisir que nous pouvons annoncer l'existence de plans pour l'établissement de nouvelles écoles en Alberta et en Ontario et la possibilité d'un agrandissement des écoles existantes.

Les relations de l'Institut avec les ministères et organismes du gouvernement fédéral ont continué de se développer à l'avantage de tous les membres de la profession. Dans plusieurs cas, on a sollicité la participation de l'Institut à des projets mixtes, par exemple, à la préparation de la grande exposition photographique "Trois siècles d'architecture canadienne" que le ministère des Affaires extérieures entend présenter à l'étranger.

Je suis heureux de signaler aussi que le Conseil des Arts du Canada, qui pendant plusieurs années avait accordé peu d'attention à l'architecture bien que celle-ci figure au premier rang des arts énumérés dans son mandat, vient d'adopter à notre égard une attitude beaucoup plus encourageante. Nous avons demandé et obtenu des subventions à l'égard de notre participation au congrès de l'UIA à Paris et de notre assemblée de 1966. Nous cherchons maintenant à obtenir de nouvelles bourses pour des études post-universitaires.

De nouveau, nous avons insisté auprès du ministre des Finances afin d'obtenir des dispositions permettant aux architectes de répartir, aux fins de l'impôt, leur revenu sur une période de trois ans, comme peuvent le faire certaines autres catégories de contribuables.

Votre personnel a aidé à la préparation des plans pour un certain nombre d'événements de caractère national et international en rapport avec les célébrations du centenaire du Canada. De concert avec l'AAPO nous prenons des dispositions pour accueillir à l'EXPO 67 les architectes qui visiteront l'Exposition, en particulier ceux de l'étranger.

Depuis des années, des membres demandaient à l'Institut d'établir des plans d'assurance collective à des taux plus favorables que ceux des polices individuelles. En 1964-1965, les taux de l'assurance responsabilité professionnelle ayant augmenté sensiblement, l'Institut a décidé de faire une étude complète des possibilités, avec le concours des associations composantes. À la suite de cette étude, l'Institut, agissant par l'intermédiaire d'experts-conseils en assurance, a établi le premier plan collectif pour l'ensemble du Canada dans ce domaine de l'assurance. Le plan, offert aux membres en 1965, a été l'objet d'un bon accueil.

En même temps, deux autres genres d'assurance, l'assurance-vie et l'assurance du revenu en cas d'invalidité,

College of Fellows

At the twenty-fifth Convocation of the College of Fellows, held in Montreal June 12, 1965, Honorary Fellowship was conferred on His Excellency Pierre Dupuy, C.M.G., Commissioner-General of Canadian World Exhibition 1967, and on Mr Roy Carroll FAIA, the immediate past President of the American Institute of Architects.

Seven members of the Institute were elected to the College of Fellows and of these, six were invested with the collar and medallion, Messrs Paul-Marie Côté, R. C. Fairfield, D. G. Forbes, Harry Mayerovitch, C. F. T. Rounthwaite and James E. Searle. Mr P. M. Keenlyside was unable to attend. Two members of the Institute, elected to Fellowship in 1964, Messrs J. W. Balharrie and P. R. Wilson, also received the collar and medallion. Short biographies of the new Fellows were published in the July 1965 issue of the *Journal*.

Forty-four Fellows attended the Convocation and forty-five signed the attendance register at the business meeting of the College, held on 11th June. Minutes of this meeting and of the Convocation were distributed to all Fellows by the Executive Secretary.

A reception and dinner in honour of the Fellows-elect and Honorary Fellows-elect was held on Friday, June 11, and was attended by a large number of Fellows and ladies. This was the second successive year that this function has been held but it has been decided to replace it at the next Annual Assembly with an informal reception immediately following the Convocation ceremonies.

Since the twenty-fifth Annual Meeting of the College of Fellows death has claimed six distinguished members, Messrs W. J. Abra of Ottawa; Victor J. Blackwell of London, Ontario; Alvan Sherlock Mathers of Toronto; A. J. C. Paine of Montreal, a past President of the Institute; H. N. Semmens of Montreal, formerly of Vancouver, and William Lyon Somerville of Toronto, also a past President.

The present registration shows a total of 163 Fellows and 21 Honorary Fellows.

Neil M. Stewart (F)
Registrar

RAIC Foundation

Thirteen members of the RAIC Foundation, appointed in accordance with the By-laws, met on June 10, 1965, during the Annual Assembly in Montreal, received the financial statement for 1964 as printed in the auditors' report, and re-elected the nine permanent Directors — Randolph C. Betts, F. Bruce Brown, John L. Davies, Charles A. E. Fowler, Herbert H. G. Moody, Earle C.

ont été offerts aux membres et ceux-là aussi ont répondu à un besoin. Plus tard, on songera à des plans d'assurance-santé et de pension.

Dix-neuf candidats ont écrit les examens de novembre en vue de l'inscription sous le régime du cours d'études minimums coordonné par l'Institut pour le compte de sept associations composantes.

Chaque jour, le courrier nous apporte de toutes les parties du Canada et même du monde entier des demandes de conseils et de renseignements sur l'architecture. Dans plusieurs cas, nous faisons appel, pour nos réponses, à l'aide de nos comités et d'autres membres. A tous, nous tenons à présenter nos remerciements pour leur collaboration empressée.

L'envoi de formules types de contrats ainsi que d'autres documents et publications est devenu pour nous une "grande entreprise". En 1965, nous avons expédié, en réponse à des commandes reçues des membres, 47,765 formules, etc. Le total sera encore plus considérable en 1966, à cause notamment de la publication de versions révisées des documents no 12 et 13, destinés aux entrepreneurs.

L'Institut, de même que certaines autres associations professionnelles et l'Association des Universités et des Collèges canadiens, a obtenu à des conditions avantageuses de nouveaux locaux pour son bureau général. Nous déménageons donc au début de mai dans un nouvel immeuble au no 151 de la rue Slater, à Ottawa.

Au cours de l'an dernier, j'ai eu l'avantage de rencontrer et de consulter les dirigeants et les membres de six associations composantes. Je remercie toutes ces personnes de leur amabilité et de l'aide qu'elles m'ont accordée. J'ai aussi rencontré deux fois le directeur et le personnel de l'American Institute of Architects au sujet de projets pour l'avenir.

En terminant, permettez-moi une réflexion que m'inspirent ces voyages et les observations que j'y ai faites. Aux États-Unis, les événements ont prouvé la valeur de la "Guerre à la laideur des villes", dirigée par les architectes. Il serait temps de lancer une campagne du même genre au Canada, peut-être dans le sens du programme d'amélioration et d'embellissement de nos agglomérations inauguré par la Commission du Centenaire. On pourrait sans doute paraphraser un récent éditorial paru au sujet de la "guerre à la pauvreté" lancée au Canada et dire que "réduire la laideur de nos villes est non seulement un objectif socialement désirable mais un impératif économique".

Fred W. Price
Directeur Général

Morgan, James W. Strutt, Harland Steele and Gérard Venne. The members then re-elected the Foundation Officers – Mr Moody as Chairman, Mr Venne as Vice-Chairman and Mr Betts as Honorary Secretary.

The permanent Directors held a meeting on the same day at which the Chairman reported the receipt during 1964 of a bequest from the estate of the late Mr Ernest Wilby of the sum of \$10,000 to establish the Ernest Wilby Memorial Scholarship or Bursary Fund. In accordance with the terms of the bequest, the capital has been invested and the net annual income each year is to be awarded by the Foundation at their discretion to a student or students, or graduate students of any recognized architectural school in Canada, for the advancement of the arts of architecture and design in Canada, with special emphasis on awards for outstanding achievement in design. The Scholarships and Awards Committee was asked to make recommendations on the establishment of this scholarship or bursary.

Maurice G. Holdham
Executive Secretary-Treasurer
RAIC Foundation

Scholarships and Awards

1 The 1966 College of Fellows Scholarship was won by Mr Ronald Brian Walkey, of the University of British Columbia, out of a group of twenty-four candidates.

The previous winners are:

1950	K. Izumi	University of Manitoba
1952	Gerald Carruthers	University of Manitoba
1954	C. Ross Anderson	University of Toronto
1956	David E. Horne	University of Toronto
1958	Richard E. Tustian	University of Toronto
1960	Jean Gareau	École des Beaux Arts, Montréal
1962	John D. Turner	University of Manitoba
1964	Pierre S. Guertin	McGill University

2 The following recommendations forwarded to the RAIC Council for consideration:

a RAIC Medal (awarded to final year student)

Omit Paragraphs 1 and 2 of the Conditions and replace by: "The winner must be the outstanding student graduating from the School."

b RAIC Centennial Scholarship

It is recommended that this Scholarship be awarded in 1967 to commemorate the first one hundred years of Confederation. Amount – \$3,000. It is recommended that it be given to a student about to graduate from a Canadian School, to provide for postgraduate studies, particularly in regard to teaching and research in Canadian Schools of Architecture.

Collège des Fellows

Au cours de la vingt-cinquième convocation du Collège des Fellows, à Montréal, le 12 juin 1965, le titre de Fellow honoraire a été conféré à Son Excellence Pierre Dupuy, commissaire général de l'Exposition mondiale 1967, et à M. Roy Carroll FAIA, président sortant de charge de l'American Institute of Architects.

Sept membres de l'Institut ont été élus au Collège, dont six furent intronisés et reçurent le camail et la médaille, Messieurs Paul-Marie Côté, R. C. Fairfield, D. G. Forbes, Harry Mayerovitch, C. F. T. Rounthwaite et James E. Searle. M. P. M. Keenlyside ne put se rendre à la réunion. Deux membres de l'Institut, élus agrégés en 1964, Messieurs J. W. Balharrie et P. R. Wilson, ont aussi reçu le camail et la médaille. Le numéro de juillet 1965 du *Journal* contenait de courtes biographies des nouveaux agrégés.

Quarante-quatre agrégés ont répondu à la convocation et quarante-cinq étaient présents lors de l'assemblée administrative du Collège, le 11 juin. Le procès-verbal de la convocation et de l'assemblée administrative ont été distribués à tous les agrégés par le secrétaire administratif.

Un grand nombre de Fellows et de dames assistaient à la réception et au dîner qui furent donnés en l'honneur des Fellows honoraires et des Fellows élus, le vendredi, 11 juin. C'était la deuxième année consécutive qu'on offrait ce genre de réception mais il fut décidé que lors de la prochaine assemblée annuelle, on la remplacerait plutôt par une réception plus intime qui suivra immédiatement les cérémonies de la convocation.

Depuis la vingt-cinquième assemblée annuelle du Collège, la mort nous a ravi six membres distingués, Messieurs W. J. Abra d'Ottawa; Victor J. Blackwell de London, Ontario; A. S. Mathers de Toronto; A. J. C. Paine de Montréal, un ancien président de l'Institut; H. N. Semmens de Montréal, autrefois de Vancouver, et W. L. Somerville de Toronto, un autre ancien président de l'Institut.

Le Collège compte présentement 163 Fellows et 21 agrégés honoraires.

Neil M. Stewart (F)
Secrétaire-Archiviste

Fondation de L'IRAC

Treize membres de la Fondation de l'IRAC, nommés suivant les dispositions des Règlements, se sont réunis le 10 juin 1965 au cours de l'assemblée générale tenue à Montréal, ont reçu les états financiers pour 1964 tels qu'ils apparaissent dans le rapport imprimé des

The first Institute Gold Medal was awarded in 1930 for the most outstanding building completed in the previous three years. It was discontinued before World War II. It is recommended that the new Gold Medal be given to an individual and not a building, and that it be awarded to an architect for outstanding achievement and contribution to the Profession, or to a person of Science or Letters. The Award may be international and world wide, and should be made annually, provided a candidate is chosen. First award in 1967.

d Award for Architectural Distinction

This is a new Award with the terms of reference fashioned after the new "RIBA Architectural Award 19 . . ." which replaces their Bronze Medal Award set up in 1923. The aim of the Award is to encourage better architecture and to increase interest and understanding of good architecture by the public and appreciation of the architect. Each province would organize its own Award according to the Terms of Reference identical to all provinces. The Award would be given annually for the best building in various classes in each province, the number of awards being kept to a minimum to maintain its value. A bronze plaque would be put on the building and a diploma given to the owner, architect and contractor. Winners in all provinces would be announced nationally at the same time.

e Ernest Wilby Memorial Scholarship

Approximately \$500 is available each year, and it is recommended that it be given annually to a student entering the year before the final year of the main architectural course, who shows definite promise and talent in his work, and who requires financial assistance to continue his course. The first Award to be in 1966, commencing with the most easterly School and continuing each year across Canada to the most westerly provinces, then repeating.

3 A comprehensive list of Scholarships and Awards available to students and architects, prepared at the RAIC Headquarters, is available.

4 This Committee agreed to take the responsibility of examining and endorsing, if merited, awards by Government Departments, Corporations, Societies, Associations, etc. outside the Profession. (These Awards are not to be confused with competitions.)

A. T. Galt Durnford (F)
Chairman

Henri Mercier (F), Francis J. Nobbs (F), Peter Thornton (F), Earle C. Morgan (F), James W. Strutt (F), Gérard Venne (F)

vérificateurs et réélu les neuf administrateurs permanents : MM. Randolph C. Betts, F. Bruce Brown, John L. Davies, Charles A. E. Fowler, Herbert H. G. Moody, Earle C. Morgan, James W. Strutt, Harland Steele et Gérard Venne. Les membres ont alors réélu les dirigeants de la Fondation : M. Moody, président, M. Venne, vice-président, et M. Betts, secrétaire honoraire.

Les administrateurs permanents ont tenu le même jour une réunion au cours de laquelle le président a annoncé que la Fondation avait reçu pendant l'année la somme de \$10,000 de la succession de feu Ernest Wilby pour l'établissement de l'Ernest Wilby Memorial Scholarship or Bursary Fund. En conformité des termes du legs, le capital a été investi et le revenu net de chaque année sera versé à la discrétion de la Fondation à un ou plusieurs étudiants ou diplômés de toute école d'architecture reconnue au Canada pour l'avancement des arts de l'architecture et de la composition au Canada, et notamment en prix pour des succès particulièrement marquants en composition. Le Comité des bourses d'études a été invité à formuler des recommandations au sujet de l'établissement de cette bourse d'études ou d'aide aux études.

Maurice G. Holdham
Secrétaire-Trésorier de la Fondation de l'IRAC,

Bourses d'Études et Prix

1 L'attribution d'une bourse d'études du Collège des Fellows étant prévue pour 1966, vingt-quatre étudiants ont posé leur candidature et le vainqueur a été M. Ronald Brian Walkey de l'Université de la Colombie-Britannique.

Voici la liste des boursiers du Collège :

- 1950 K. Izumi Université du Manitoba
- 1952 Gerald Carruthers Université du Manitoba
- 1954 C. Ross Anderson Université de Toronto
- 1956 David E. Horne Université de Toronto
- 1958 Richard E. Tustian Université de Toronto
- 1960 Jean Gareau École des Beaux-Arts
- 1962 John D. Turner Université du Manitoba
- 1964 Pierre-S. Guertin Université McGill
- 1966 Ronald Brian Walkey Université de la Colombie-Britannique

2 Après étude des alinéas a, b, c et d, les recommandations suivantes ont été soumises au Conseil de l'IRAC :

a Médaille de l'IRAC (décerné à un finissant)

Substituer aux paragraphes 1 et 2 des Conditions ce qui suit : "La médaille doit être décernée au meilleur élève de la classe des finissants de l'École".

Architectural Research

During the last few months the Committee on Architectural Research, whilst awaiting the report of the Committee on the Profession, has been examining in some detail the field of research work that is being undertaken in the world of architecture.

Whilst the area of research is considerable – and much work is being done – there appears to be little effort to co-ordinate the findings. Most of the work is being carried out in the fields of applied science and building technology, with but little attention being paid to architectural subjects by themselves. In the United States much study has been concentrated upon techniques and methods to be used by the architect in the very near future, and some interesting and imaginative ideas have been produced. In Canada it is hoped that at first the areas of interest will be less specialized, admitting not only an approach to architectural design, but also the procedures involved in the communications from the architect to those who are to carry out the work. Special attention is being given to geographical variations that might occur across our continent. It is also hoped that information may be collected and collated upon the behaviour and maintenance of buildings.

The Committee has under consideration other matters of general interest, such as the introduction of the metric system into Canada and the use of the computer as a tool in the architect's practice.

It is hoped that the year 1966–67 will be the turning point in the subject of architectural research in Canada.

Henry Elder
Chairman

Legal Documents

My report on the Legal Documents Committee's work from June 1965 to the present is, with few exceptions, a report on the activities of the RAIC-ACEC-EIC-CCA National Joint Committee on Standard Documents and Procedures, of which I am honored to be Chairman. This is because the Joint Committee is very active in endeavouring to update and co-ordinate all its standard construction contract documents for publication in 1966 – an urgent undertaking demanding concentrated effort. For this purpose six full-day meetings of the Joint Committee were held since May 1, 1965.

Before outlining the accomplishments of the Joint Committee I wish to stress the vital national importance of the work of this committee. I would remind our members of the unique opportunity the RAIC, and in particular your Legal Documents Committee, has to give leadership through its representation on the Joint Committee in the preparation and revision of our

b Bourse d'études du Centenaire

Il est recommandé que cette bourse d'études soit accordée par l'IRAC en 1967 pour commémorer le premier centenaire de la Confédération. Le montant en serait de \$3,000. On recommande aussi qu'elle soit décernée à un étudiant à la veille de terminer ses études dans une école canadienne afin de lui permettre de poursuivre des études post-universitaires, particulièrement en vue de l'enseignement et de la recherche dans des écoles canadiennes d'architecture.

c Médaille d'or de l'IRAC

La première médaille d'or de l'Institut a été décernée en 1930 pour le meilleur bâtiment terminé au cours des trois années précédentes. Le concours a été ensuite aboli avant la Deuxième Grande guerre. Il est recommandé qu'une nouvelle médaille d'or soit accordée mais qu'elle s'applique aux qualités personnelles plutôt qu'à la réalisation d'un bâtiment. Elle pourrait être décernée à un architecte pour des succès exceptionnels ou un apport spécial à la profession, ou encore à une personne distinguée dans les sciences ou les lettres. Le concours pourrait être international et même mondial et la médaille devrait être remise annuellement pourvu qu'il y ait un candidat méritant. Le premier concours devrait avoir lieu en 1967.

d Prix de distinction en architecture

Il s'agit d'un nouveau concours inspiré par le nouveau "R.I.B.A. Architectural Award 19... ." qui remplace le concours pour la médaille de bronze établi en 1923. L'objet du concours est de simuler, dans le public, l'intérêt envers la bonne architecture, une meilleure compréhension de l'architecture et une meilleure appréciation des architectes. Chaque province organiserait son propre concours selon des modalités identiques pour toutes. Le prix serait accordée chaque année pour le meilleur bâtiment de chaque catégorie dans chacune des provinces; toutefois, on s'efforcerait de maintenir le nombre de ces prix au minimum afin d'en sauvegarder la valeur. Une plaque de bronze serait posée sur le bâtiment et un certificat serait remis au propriétaire, à l'architecte et au constructeur. Les gagnants de toutes les provinces seraient annoncés dans tout le pays en même temps.

e Ernest Wilby Memorial Scholarship

Environ \$500 seront disponibles annuellement et l'on propose que cette somme soit accordée chaque année à un étudiant commençant l'avant-dernière année du cours régulier d'architecture qui véritablement promet pour l'avenir, manifeste du talent dans son travail et a besoin d'une aide financière pour continuer ses études. La première bourse serait décernée en 1966; on commencerait par l'école la plus à l'est du pays et l'on continuerait ensuite en allant vers l'ouest jusqu'à ce qu'on ait traversé tout le Canada, puis on recommencerait.

standard documents and procedures. I am convinced that the RAIC has a challenging national role to play in the construction industry in Canada. I believe, as never before, that the professionals in this industry must provide leadership. If we don't others will and the public and professions may be the losers.

President Venne said in his greetings to the 1966 OAA Convention that greater national participation by RAIC membership was essential to the continued growth of the RAIC. He noted with humor and wisdom that "a kicking horse can't pull and a pulling horse can't kick."

I regret to inform you that all but three provinces will be using the 1966 edition of Document 12 produced without benefit of comment of any kind from their membership, although numerous drafts were circulated to each provincial representative. I hope in future the legal committees of each provincial association will see in the work of the RAIC Legal Committee and the Joint Committee an opportunity and professional duty to support their representative to the Legal Committee by their study and comment on the drafts of its deliberations.

During the past twelve months the Joint Committee completed its review of the Architect version of Document 12, along with the Engineer's identical edition save only for the substitution of the word *Engineer* for *Architect* wherever it occurred. These documents, bearing 1966 revision dates, are printed and in use.

In addition, the Committee recommended major revisions to the Engineer's *unit price* contract form and it too will bear a 1966 revision date. The General Conditions of the new *unit price* contract are identical to the Engineer's 1966 *stipulated sum* contract.

The Joint Committee is now actively reviewing and revising RAIC Document #13 (*cost plus* contract). It is hoped that both the Architects' and Engineers' versions thereof will be published in 1966. These co-ordinated Architect-Engineer-Contractor contract documents represent a very significant step forward in industry standardization and co-operation.

Another important step in joint industry co-operation so essential today is the preparation, now in progress, of what it is hoped will be an expanded *Guide to Bidding Procedure* to be used jointly by the Architects and Engineers.

Your Legal and Joint Committees are also very interested in the CCA's *Contract Administration Manual*. The first draft of this document is still in progress. It is intended, among other things, to provide detailed commentary on the standard contract documents as they concern the administration of the contract. Obviously, a co-ordinated current set of standard contract documents will simplify the work of the committee preparing this manual. The Joint Committee hopes to study the first

3 Une liste complète de toutes les bourses d'études et des prix disponibles, préparée au siège de l'Institut, est offerte aux étudiants et aux architectes.

4 Le Comité s'est chargé d'examiner et d'approuver, quand ils sont mérités, les prix et bourses accordés par les ministères gouvernementaux, les sociétés, compagnies, associations, etc., en dehors de la profession. (Ces prix ou bourses ne doivent pas être confondus avec les concours.)

A. T. Galt Durnford (F)
Président

Henri Mercier (F), Francis J. Nobbs (F), Peter Thornton (F), Earle C. Morgan (F), James W. Strutt (F), Gérard Venne (F)

Recherche en Architecture

En attendant le rapport du Comité sur la profession, le Comité sur la recherche en architecture a fait, au cours des quelques derniers mois, une étude assez détaillée des travaux de recherches entrepris dans le secteur de l'architecture.

Le domaine de la recherche est assez considérable, et il y a beaucoup de travail, mais il semble exister peu d'efforts pour coordonner les résultats. La majeure partie de la recherche se fait dans les secteurs de la science appliquée et de la technologie du bâtiment et l'on ne semble guère se préoccuper des sujets d'architecture proprement dite. Aux États-Unis, les études sont concentrées sur les techniques et les méthodes qui seront très prochainement adoptées par les architectes et on en est arrivé à certaines idées nouvelles très intéressantes. Au Canada, on croit qu'au début les travaux seront moins spécialisés et porteront non seulement sur la composition architecturale mais aussi sur les méthodes de communications entre l'architecte et les exécutants des ouvrages. On accorde une attention spéciale aux différences géographiques qui existent sur notre continent. On espère aussi arriver à recueillir et à classifier des renseignements sur la tenue et l'entretien des bâtiments.

Le Comité étudie aussi d'autres questions d'intérêt général, comme l'introduction au Canada du système métrique et l'emploi du calculateur dans la pratique architecturale.

Nous espérons que l'année 1966-1967 marquera un point tournant dans la recherche architecturale au Canada.

Henry Elder
Président

draft of this manual and comment thereon as our interests appear. Our objective is to see this develop into a manual endorsed by the Architects and Engineers.

I wish to acknowledge the very active support of our Executive Director, Fred Price – who, together with the RAIC Solicitor, serves as a delegate member to the Joint Committee. Mr Edouard Tremblay is the other RAIC member on the Joint Committee.

It is vital to our profession that your Legal Documents Committee receive frequent expression of opinion from Architects across Canada to enable us to keep our legal and procedure documents up to present-day requirements. All suggestions and criticism will be welcomed and considered by your committee.

Robert E. Briggs
Chairman

L. W. Hopkins, E. W. Tremblay, D. Jonsson, F. H. Russell,
I. Coop (F), A. F. Duffus (F), K. L. Bond, K. Izumi

Journal Board

The aim of the new Journal Board is to formulate policies that will search out the many facets of architecture in Canada and publish it well. Members from each of the provincial associations, being elected representatives of their respective councils, now make it clear that there is a definite responsibility for each region to support and promote the Journal of the RAIC. Recent changes in the by-laws of the Institute created the Journal Board and the inaugural meeting was held in Montreal in November 1965. The enthusiasm of that meeting generated by the sincere interest of those present and by the fresh approach of the staff has been realized in the content of the first issues of the new year.

It is the intent of the Journal Board that the publication of the profession should not remain static, but should continue to find methods for improvement. It should appeal to all types of architects in each province. With this editorial service to the profession the Journal attempts to become involved in the activities of the profession. We have, in the past year, brought specially qualified persons from several parts of the country together to discuss such topics as schools, and to obtain outside observation of significant projects such as the Toronto City Hall. In this way we hope we have involved the whole profession and documented the result accordingly.

We have not and do not intend to be concerned solely with the visual presentation of architecture but in our new approach to technical matters, local and international architectural news, the activities of committees of the Institute, the allied arts, education, and special features in general, we expect to be of use and interest to most readers.

Documents Juridiques

Mon rapport du travail du Comité des documents juridiques depuis juin 1965 est, à quelques exceptions près, celui de l'activité du Comité national mixte de l'IRAC, de l'ACEC, de l'EIC et de la CCA sur les documents-types et les méthodes, dont j'ai l'honneur d'être le président. La raison en est que la Comité mixte a travaillé très fort à la mise à jour et à la coordination de tous ses modèles de contrats de construction en vue de leur publication en 1966. Il s'agissait d'une tâche urgente qui exigeait des efforts coordonnés. A cette fin, il a tenu six réunions d'une journée entière chacune depuis le 1er mai 1965.

Avant de mentionner les réalisations du Comité mixte, je tiens à souligner l'importance vitale de ce comité pour l'ensemble du pays. Je veux aussi rappeler à nos membres que, grâce à leur représentation à ce comité mixte, l'IRAC et le Comité des documents juridiques ont une occasion exceptionnelle de donner le ton dans la préparation et la révision de nos documents-types et de nos méthodes. Je suis persuadé que l'IRAC a un rôle national de tout premier plan à jouer dans l'industrie de la construction au Canada. Je crois, plus que jamais, qu'il incombe aux professionnels, dans cette industrie, de battre la marche. Si nous ne le faisons pas, d'autres le feront et ce sera peut-être au détriment de la population et des professions.

Dans son discours de salutation au congrès de 1966 de l'AAO, le président Gérard Venne a déclaré qu'une participation accrue des membres de l'Institut sur le plan national est essentielle au développement continu de ce même Institut. Il a exprimé une grande vérité sur un ton humoristique en disant que "le cheval qui rue ne peut pas tirer et le cheval qui tire ne peut pas ruer".

J'ai le regret de vous informer que toutes les provinces, sauf trois, emploieront l'édition 1966 du document no 12 sans l'avantage de commentaires de la part de leurs membres, bien que plusieurs avant-projets aient été remis à chacun des représentants provinciaux. J'espère qu'à l'avenir les comités des documents juridiques de chacune des associations provinciales estimeront que le travail du Comité des documents juridiques de l'Institut et du Comité mixte leur offre l'occasion et leur impose l'obligation professionnelle d'appuyer leurs représentants respectifs à ce Comité des documents juridiques en étudiant les avant-projets de documents et en faisant connaître leurs opinions.

Au cours des douze derniers mois, le Comité mixte a terminé sa révision de la version de l'architecte du document no 12, ainsi que la version destinée aux ingénieurs; celle-ci est identique à la première sauf que dans tous les cas le terme "ingénieur" a été substitué au mot "architecte". Ces documents portant des dates de révision de 1966 sont déjà imprimés et en usage.

Features of our editorial content indicate how closely associated we are in publicizing the aims of the Institute. We have given special attention to the publication of the Survey of the Profession, the Annual Report and such special presentations as the Manual of Street Decoration. The publication this year of The Architectural Directory Annual was of particular concern. Editing and publication difficulties delayed the directory until the latter part of the year and there was a considerable fall in the advertising revenue. A revised approach to the production of this publication this year should improve the situation.

During the past year the Journal has made additions to the staff. In July, Professor A. J. Diamond was appointed Associate Editor and since then he has made separate trips to the East and West talking over Journal matters with members and explaining our program. He has also skilfully edited much of the material since then in the new format. Miss Anita Aarons, our Assistant Editor in charge of the Allied Arts Department, has also visited the West and discussed her subject with members and continued a never-ending search for material. Mr P. M. Keenleyside assisted greatly during a period early in the year as temporary Associate Editor and we appreciated his work greatly.

In a continuing effort to improve the appearance of the Journal, we have engaged Mr Anthony Mann as our Graphics Consultant. The significant change in format, we hope, has greater appeal to our readership as well as to our advertisers on whom we rely heavily as our only source of revenue for publication. In keeping with general rising costs, we increased our advertising rates in accordance with the trend of the market and at the same time have raised the subscription rates to those who subscribe. All members of the Institute receive the Journal without cost to themselves or to the Institute. The Journal is a self-sustaining operation and it is our intention to maintain a healthy financial position by every means possible.

The work of the former Journal Committee has been continued by the Management Committee of the Journal Board. A major concern has been in connection with budgeting for the high calibre publication which we wish to produce and with the means for obtaining as much advertising as possible to permit a high standard of editorial service to the whole profession. The additional cost of bringing together all members of the Journal Board from each province on a quarterly basis is an increased but most worthwhile use for part of the income of the Journal.

We acknowledge with special thanks the work of past members of the Journal Committee, first under Mr L. A. Oxley last year and Mr R. J. Cripps this year until the formation of the Journal Board. During this time, Mr E. C. Morgan resigned after a number of years of valuable and much appreciated service to the Journal

En outre, le Comité a recommandé des modifications majeures à la formule de contrat à prix unitaires destinée aux ingénieurs; la version révisée de ce document portera également une date de 1966. Les Conditions générales figurant dans ce nouveau document sont identiques à celles que l'on trouve dans le modèle de 1966 de contrat à somme stipulée destiné aux ingénieurs.

Le Comité mixte travaille actuellement à l'examen et à la révision du document no 13 de l'IRAC (contrat en régie intéressée). On espère que les deux versions, architectes et ingénieurs, seront publiées en 1966. Ces formules coordonnées de contrats pour les architectes, les ingénieurs et les entrepreneurs représentent des progrès notables vers la standardisation et la collaboration au sein de l'industrie.

Parmi les autres initiatives tendant à stimuler dans l'industrie la collaboration si essentielle de nos jours est la préparation, actuellement en cours, de ce qui sera, espère-t-on, un nouveau Guide plus complet du soumissionnaire, à l'intention à la fois des architectes et des ingénieurs.

Votre Comité des documents juridiques et le Comité mixte s'intéressent vivement aussi au Manuel d'administration des contrats de la CCA. Un premier avant-projet de ce document est actuellement en voie de préparation. Il fournira, entre autres choses, des explications détaillées sur les formules types de contrats en tant qu'elles s'appliquent à l'administration des contrats. Il est entendu que la série actuelle de formules de contrats simplifiera considérablement la tâche du groupe chargé de la préparation de ce manuel. Le Comité mixte espère étudier ce premier avant-projet et faire les observations que sembleront exiger nos intérêts. Notre ambition est de voir ce manuel adopté par les architectes et les ingénieurs.

Je tiens à souligner l'appui très empressé reçu de notre directeur général, M. Fred Price, qui est, avec le conseil juridique de l'Institut, membre délégué au Comité mixte. L'autre représentant de l'Institut à ce comité est M. Edouard Tremblay.

Il est indispensable pour notre profession que notre Comité des documents juridiques reçoive souvent des architectes de tout le Canada des expressions d'opinions qui lui permettent de garder toujours nos méthodes et nos documents juridiques dans un état répondant aux besoins de l'heure. Toutes les recommandations et toutes les critiques seront favorablement accueillies et étudiées avec soin.

Robert E. Briggs
Président

L. W. Hopkins, E. W. Tremblay, D. Jonsson, F. H. Russell, I. Coop (F), A. F. Duffus (F), K. L. Bond, K. Izumi

Committee. The work of Mr H. D. R. Buck during his period as chairman of the Editorial Board is gratefully acknowledged. It was during the terms of Mr Oxley and Mr Buck that all the preparatory work was developed for the reorganization of the Journal. We wish to express our gratitude to them for this valuable work.

Members of the disbanded Editorial Board all gave a great deal of time in the interests of the Journal and much of the continued improvement in the Journal has been a result of that earlier interest. Each member of the staff in the Journal office is dedicated and it must be specially noted that our Managing Editor, Mr Walter Bowker, has performed the demanding task of Publisher and Editor, sometimes almost without staff and regular professional advice during periods of the past year. It is an achievement of which we are particularly proud and grateful.

W. N. Greer
Chairman

Centenary Planning

Decoration 67 : This excellent manual of street decoration reached all members and other *Journal* subscribers in the August 1965 issue of the *Journal*. In addition, 3,500 reprints were printed at Institute expense; one was sent, with a covering letter, to every municipality in Canada with a population of 1,000 or over. The remainder have been distributed through provincial associations to Chambers of Commerce and other interested groups. At the request of the Centennial Commission and the provincial associations an additional 1,500 copies have been reprinted for further distribution.

William G. Leithead (*F*) and others concerned in the production of the manual deserve our hearty congratulations for a fine effort on behalf of the profession and the public.

Street Improvement Manual : Mr Leithead is now planning another booklet to serve as a guide in improving storefronts and other features of downtown streets. This booklet will provide an RAIC contribution toward the Community Improvement and Beautification program initiated by the Centennial Commission. Hazen Sise has been serving as our representative on the Advisory Committee for the Community Improvement Program. It is hoped that all members will be able to participate in the plans being formulated during the coming year.

Centennial Building Projects : It is evident that new community buildings and parks play a major part in the plans undertaken to mark the Centennial of Confederation. Our records list nearly 100 large projects across Canada, including some of a scope never before seen here – such as the Centennial Centre of Science and Technology,

Commission du Journal

Le but de cette nouvelle Commission du *Journal* est de formuler des lignes de conduite qui d'écouleront les nombreuses facettes de l'architecture au Canada et qui les présenteront de façon intéressante. Les membres de chacune des associations provinciales, élus pour représenter leurs conseils respectifs, ont manifesté clairement l'opinion que chaque région a la responsabilité bien nette d'appuyer et de promouvoir le *Journal* de l'IRAC. Les récents changements dans les règlements de l'Institut ont permis la création de la Commission dont la réunion inaugurale a eu lieu à Montréal, en novembre 1965. L'intérêt très vif des participants et les idées nouvelles du personnel ont engendré un enthousiasme qui s'est reflété dans la matière des premiers numéros de 1966.

La Commission a l'intention de rendre bien vivantes les communications sur la profession et de chercher continuellement à les améliorer. Le *Journal* devrait captiver l'attention de tous les architectes quels qu'ils soient, dans chaque province. Par son service éditorial, le *Journal* aspire à s'intégrer à l'activité de la profession. Nous avons, l'an dernier, fait venir de toutes les parties du pays, des personnes qualifiées pour étudier avec elles des sujets tel que les écoles ou pour obtenir des observations extérieures sur des projets spécifiques comme celui de l'hôtel de ville de Toronto. Nous espérons ainsi avoir engagé toute la profession et présenté une bonne documentation.

Nous ne nous sommes pas uniquement préoccupés, et nous n'avons pas l'intention de le faire, des aspects visuels de l'architecture, mais notre nouvelle façon d'aborder les sujets techniques, les nouvelles architecturales locales et internationales, le travail des comités de l'Institut, les arts connexes, l'éducation et autres sujets d'intérêt général sera, nous l'espérons, utile et intéressante pour la majorité de nos lecteurs.

Nos articles de fond indiquent combien nous nous associons aux buts de l'Institut et à leur diffusion. Nous avons accordé une attention particulière à la publication de l'enquête sur la profession, des rapports annuels et de sujets spéciaux tel *le Manuel de la décoration des rues*. La publication, cette année, de l'*Annuaire de l'architecture* nous a particulièrement préoccupés. Les difficultés de rédaction et d'impression ont retardé jusqu'à la fin de l'année la distribution de l'*Annuaire* et, en conséquence, le revenu provenant des annonces a considérablement baissé. Des méthodes nouvelles de production devraient améliorer la situation.

Au cours de l'année dernière, le *Journal* a augmenté son personnel. En juillet le professeur A. J. Diamond a été nommé rédacteur associé et il a depuis lors fait plusieurs voyages dans l'est et dans l'ouest du pays, discutant des affaires du *Journal* avec les membres et expliquant notre programme. Il a aussi adroitement adapté une grande partie de la matière au nouveau format.

Toronto, and the Manitoba Arts Centre, Winnipeg. It is gratifying to note the important part played by the architectural profession in this ambitious program and we trust that the buildings and open spaces that emerge will set a very high standard for future developments throughout the nation.

To all this must be added, of course, the Centennial Exhibition in Montreal which, it is expected, will not only serve as a yardstick by which the world will measure Canadian achievement in architecture, planning, and design generally, but as a source of inspiration for all of us.

Thomas Howarth (F)
Chairman

R. S. Nairne, Gordon K. Wynn, George Stewart, Paul-O. Trépanier, Lester Page, Peter Thornton, J. Preston, George Bemis, Alfred Chatwin, Dr E. A. Steinbrink

Preservation of Historic Buildings

The Committee held three meetings made up of members from the Toronto area during the past year. We are pleased to find that our requests going back for some years to the RAIC Council for funds have been acknowledged and we, like other committees, expect to be able to have meetings between annual sessions which better represent the committee members as a whole and are more national in character.

We have been following with great interest the tour, under the auspices of the National Gallery, of the *Exhibition of Historic Buildings* prepared by the Committee two years ago. It has met with a very mixed reception. In some cities there has been a well-organized opening and good mass media coverage. In other cities people do not seem to be aware of the exhibition's presence.

The Committee is very glad to note that after a long period of negotiation between the RAIC and the Centennial Commission, a grant has been made toward the publication of a booklet which will consist of photographs of the panels and the catalogue of the Exhibition. Discussions are now under way with the University of Toronto Press for publication this summer.

During the coming year the Committee plans to:

- a Provide all possible assistance and encouragement to the Federal Government in its preparation of a *National Inventory of Historic Buildings*.
- b Maintain contact with Provincial Associations of Architects to encourage them to promote provincial legislation for preservation similar to that embodied in the Act now in force in Quebec.

Mlle Anita Aarons, notre rédactrice adjointe en charge de la section des arts connexes, a aussi visité l'ouest du pays, discuté de son sujet avec les membres et continué son interminable recherche de matières nouvelles. M. M. P. Keenleyside nous a, au début de l'année, grandement aidé en sa qualité de rédacteur associé intérimaire et nous lui en sommes fort reconnaissants.

Dans notre désir d'améliorer l'apparence du Journal, nous avons retenu les services de M. Anthony Mann, conseiller en arts graphiques. Nous espérons que le nouveau format plaît autant à nos lecteurs qu'à nos annonceurs dont nous dépendons fortement, car ils sont notre seule source de revenus. A cause de la hausse générale des coûts, nous avons dû élever nos tarifs d'annonces en conformité de la tendance du marché et nous avons en même temps augmenté le taux d'abonnement pour nos abonnés. Tous les membres de l'Institut reçoivent le *Journal* sans qu'il leur en coûte à eux ou à l'Institut. Le *Journal* se paye par lui-même et nous avons l'intention d'utiliser tous les moyens possibles pour nous maintenir en bonne position financière.

Le comité d'administration de la Commission du *Journal* a pris en main le travail de l'ancien Comité du *Journal*. Un de nos premiers soucis concernait l'établissement d'un budget permettant de produire la publication de haut calibre que nous envisagions et les moyens d'obtenir le plus d'annonces possible pour réussir à offrir à toute la profession une matière à lire de haute qualité. Les frais additionnels que représente la réunion quatre fois par année de tous les membres du Conseil venant de chaque province augmentent, mais de façon fort précieuse, l'utilisation d'une partie du revenu du *Journal*.

Nous sommes particulièrement reconnaissants du travail des membres de l'ancien Comité du *Journal*, présidé d'abord par M. L. A. Oxley, l'an dernier et par M. R. J. Cripps cette année jusqu'à la formation du Conseil du *Journal*. Au cours de cette période, M. E. C. Morgan a démissionné après de nombreuses années d'un service précieux et fort apprécié au Comité du *Journal*. Nous témoignons aussi notre reconnaissance à M. H. D. R. Buck pour son travail en qualité de président du Conseil de rédaction. C'est au cours des termes d'office de M. Oxley et de M. Buck que s'est accompli tout le travail préparatoire à la réorganisation du *Journal*.

Les membres dispersés du Conseil de rédaction ont consacré un temps précieux aux intérêts du *Journal* et une grande partie de son amélioration résulte de ces dévouements. Chaque membre du personnel du *Journal* se voue à son travail et il faut spécialement noter qu'à diverses époques au cours de l'an dernier, notre rédacteur-gérant M. Walter Bowker a rempli à la fois les deux lourdes fonctions de rédacteur et d'éditeur, parfois sans personnel et sans bénéficier de façon régulière de conseils professionnels. Nous en sommes très fiers et très reconnaissants.

W. N. Greer
Président

c. Support the proposal of *International Committee of the American National Trust for Historic Preservation* to hold a conference on Urban Renewal and Preservation in Montreal in September 1967.

W. S. Goulding
Chairman

James H. Acland, Eric R. Arthur (F), Anthony Adamson (F), William H. Birmingham, John Bland (F), Gabriel Desmeules (F), Guy de Varennes, A. T. Galt Durnford (F), Edouard Fiset (F), Keith L. Graham, Harry B. Kohl, Ian R. MacLennan (F), Hart Massey, Douglas G. W. McRae (F), John A. Russell (F), B. Napier Simpson, Neil M. Stewart (F), Arthur W. Wallace

Salaried Architects

Since the last annual report, the Committee has lost a valued member in the person of Mr W. N. Thomas who resigned from the Public Service. To replace him, Mr H. W. Davies, an architect with the Department of Public Works, has been appointed. Mr O. F. Bush, Director of Architecture, Department of National Defence, has been added to the Committee.

Mr Emile Daoust, a member of this Committee, has been promoted to the responsible post of Director, Construction Branch, Civil Aviation, Department of Transport.

A meeting was held with the then Chairman of the Civil Service Commission, Mr R. G. MacNeill, on June 15, 1965. The discussion led to an arrangement to have regular meetings with two or three of their senior officers who are concerned with the employment of architects in the Public Service. These meetings, at which Messrs Price and Davison represent the RAIC, commenced in July 1965 and have been and will continue to be held on a bi-monthly basis.

Many matters of concern to both sides, including problems of recruitment of architects have been discussed. At a recent meeting, it was reiterated that the Commission was most anxious to work closely with the RAIC and is concerned as to the general acceptance of experience in the Government Service as a prerequisite to registration in Provincial Associations.

At meetings of the Committee, opinions have varied from full support of registration as a requirement for employment in the Public Service to the feeling that the RAIC should first show more tangible evidence of interest in the salaried architect – if this were done, there would be a greater inclination for him to register on his own volition.

The Council of the RAIC has already indicated its full and active support of the work of this Committee, and it is felt that this is a step forward in melding the interests of architects in private practice and those who are employed.

Centenaire de la Confédération

Décoration 67 : Cet excellent manuel sur la décoration des rues a été remis à tous les membres et aux autres abonnés du Journal au moyen du numéro d'acôt 1965 du Journal de l'Institut. En outre, l'Institut en a fait publier à ses frais 3,500 exemplaires dont il a fait parvenir un, avec une lettre de couverture, à chaque municipalité canadienne de mille habitants ou plus. Le reste a été distribué par l'entremise des associations provinciales aux chambres de commerce et autres groupes intéressés. A la demande de la Commission du Centenaire et des associations provinciales, l'Institut en a fait faire une réimpression de 1,500 exemplaires pour les besoins de distribution futurs.

M. William G. Leithead (F) et toutes les autres personnes qui ont contribué à la production de ce manuel méritent nos chaleureuses félicitations pour leur excellent travail et les services qu'ils ont ainsi rendus à la profession et à la population en général.

Manuel sur l'embellissement des rues : M. Leithead songe maintenant à un autre manuel qui servira de guide à l'embellissement des devantures de magasins et d'autres parties des rues des quartiers commerciaux. Cette publication constituera une contribution de l'IRAC au Programme d'embellissement des villes et des campagnes lancé par la Commission du Centenaire. M. Hazen Sise a été notre représentant au Comité consultatif de ce programme. Nous espérons que tous les membres pourront participer aux projets formulés pour l'année qui commence.

Projets de bâtiments du Centenaire : Il est manifeste que les bâtiments et les parcs occupent une large place dans les plans établis pour marquer le centenaire de la Confédération. Nous avons dans nos dossiers une liste de près de cent grands projets en diverses régions du Canada, dont certains, comme le Centre du Centenaire de la science et de la technologie, à Toronto, et le Centre des arts du Manitoba, à Winnipeg, sont d'une envergure sans égale dans notre pays. Il est consolant de noter le rôle que les architectes ont joué dans ce programme ambitieux et, nous n'en doutons pas, les bâtiments et les espaces libres qui en seront les fruits établiront de très hautes normes pour les aménagements futurs dans toutes les régions du Canada.

Il faut évidemment mentionner aussi l'Exposition du Centenaire à Montréal. Celle-ci, non seulement constituera un moyen pour le monde entier de juger de la valeur des réalisations canadiennes dans les domaines de l'architecture, de la planification et de la composition, mais sera pour nous tous une source d'inspiration.

Thomas Howarth (F)
Président

R. S. Nairne, Gordon K. Wynn, George Stewart, Paul-O. Trépanier, Lester Page, Peter Thornton, J. Preston, George Bemí, Alfred Chatwin, Dr E. A. Steinbrink

A meeting was held on February 16, 1966, with the Executive Director of the Professional Institute of the Public Service of Canada, Mr L. W. C. S. Barnes. In addition to Messrs Price and Davison, there was Mr D. H. L. Evans, Chairman, Architects' Group, PIPSC. The impending collective bargaining legislation was discussed and Mr Barnes indicated that tangible evidence of support of the PIPSC as bargaining agent for doctors and veterinarians had been received from the Canadian Medical Association and the Ontario Veterinary Association. The Canadian Council of Professional Engineers has recently ameliorated its position toward collective bargaining. Mr Barnes bespoke the active interest of the RAIC.

At a meeting of Council on February 26, 1966, a letter from Mr Evans, seeking the support of the RAIC in its forthcoming collective bargaining, resulted in agreement to give such support.

A previous report to Council by the Chairman of the Committee was circulated to Provincial Associations recommending that committees should either be formed or expanded with terms of reference covering the interests of the salaried architects, not only in Federal, but in Provincial, Municipal, Corporation and private employ.

Following a request to the present Chairman of the Civil Service Commission for another meeting, arrangements are in hand to meet Mr G. A. Blackburn, Director-General of Staffing, when it is expected that our President will attend.

Although the work of the Committee to date has been directed primarily toward Federally-employed architects, it is hoped that this field will be broadened, taking into account the recommendations contained in the reports of the Committee on the Profession and the Committee on Aims and Functions of the RAIC.

Arthur W. Davison,
Chairman

O. F. Bush, E. Daoust, H. W. Davies, F. W. Price

The Canadian Conference of the Arts

The Canadian Conference of the Arts is the successor to the original Canadian Arts Council founded in 1945. Our Institute was a charter member of the original Council which was, in turn, the prime mover in the establishment of The Canada Council.

Conference membership presently includes 32 national and regional societies representing most professional and amateur creative artists in Canada, as well as interested patrons.

Conservation des Édifices Historiques

Au cours de l'année, le Comité a tenu trois réunions de ses membres de la région de Toronto. Nous avons le plaisir d'annoncer qu'après quelques années l'Institut s'est rendu à nos demandes de fonds et que, dorénavant, nous pourrions, comme les autres comités, tenir entre les assemblées annuelles des réunions où nos membres en général seront mieux représentés et qui seront de caractère plus national.

Nous avons suivi avec beaucoup d'intérêt la tournée, organisée par la Galerie nationale, de notre Exposition d'édifices historiques montée par le Comité il y a deux ans. L'accueil a varié beaucoup d'une localité à une autre. Dans certaines villes, il y a eu ouverture officielle bien organisée en présence de représentants de tous les organes d'information. Ailleurs, la population n'a guère semblé au courant de la présence de l'exposition.

Le Comité est heureux de signaler qu'après de longues négociations entre l'Institut et la Commission du Centenaire, celle-ci a accordé une subvention pour la publication d'une brochure comprenant des photographies des panneaux et le catalogue de l'exposition. Des pourparlers sont actuellement en cours avec l'University of Toronto Press en vue de la publication au cours de l'été.

Durant l'année qui commence, le Comité entend :

- a Donner au gouvernement fédéral toute l'aide et tout l'encouragement possibles dans la préparation d'un inventaire national des bâtiments historiques ;
- b Demeurer en contact avec les associations provinciales d'architectes afin de les encourager dans leurs efforts pour obtenir des provinces des lois sur la conservation des édifices, semblables à celle qui existe déjà dans la province de Québec ;
- c Appuyer la proposition du Comité international de l'American National Trust for Historic Preservation visant la tenue à Montréal en septembre 1967 d'un congrès sur le renouvellement urbain et la conservation.

W. S. Goulding
Président

James H. Acland, Eric R. Arthur (F), Anthony Adamson (F), William H. Birmingham, John Bland (F), Gabriel Desmeules (F), Guy de Varennes, A. T. Galt Durnford (F), Edouard Fiset (F), Keith L. Graham, Harry B. Kohl, Ian R. MacLennan (F), Hart Massey, Douglas G. W. McRae (F), John A. Russell (F), B. Napier Simpson, Neil M. Stewart (F), Arthur W. Wallace

Last year's report referred to the highly successful seminar conducted by the Conference at Ste. Adèle in January, 1965. This seminar has enjoyed both immediate and practical results, perhaps the most significant of which was a Federal Government grant to The Canada Council of an additional \$10,000,000 to be spent during the three years 1965, 1966 and 1967. It is a matter of importance, we think, that no adverse comment, either in Parliament or in the press, was the result of this *ad hoc* grant. Further immediate results of Seminar '65 were of concern to the performing arts. One example was the setting up of a Canada Festival by the Centennial Commission of \$3,000,000 for the touring of plays and orchestras.

A further recommendation of the Conference seminar was a grant to the Canadian Museums Association to establish an Ottawa secretariat and to begin studies of a training program under the direction of Mr A. F. Key.

Noteworthy was a recommendation at Seminar '65 that a special seminar be convened wholly concerned with the environmental arts and the visual arts. This has resulted in a further grant from The Canada Council for such a seminar to be held in Toronto on March 23 to 26, 1966, and attended by many prominent members of our Institute.

The preparation of a brief to the Royal Commission on Bilingualism and Biculturalism has occupied much of the attention of the Conference during 1965.

This submission, whose principal author is Herman Voaden, runs to more than 80 pages and contains individual submissions from all member societies, together with submissions from two non-member organizations – the National Ballet School and the Royal Canadian Academy. In preparing this submission Mr Voaden travelled from Newfoundland to Victoria interviewing 165 individuals. He also convened 18 meetings in each of the major centres across Canada. The Conference brief has been endorsed by our Institute. The submission was presented to the Royal Commission in Ottawa on December 11, with our Institute represented by James Strutt (F) and the Executive Director.

On November 17, His Excellency the Governor General presented the Diploma of Honor of the Canadian Conference of the Arts to Dr Albert Trueman in recognition of his outstanding services to the arts during his eight-year tenure as Director of The Canada Council.

In addition to a National Executive and representatives from each component society, our Executive consists of:

President: Arthur Gelber; *Past President:* Robert Elie;
Vice-Presidents: Philip Torno, Gilles Lefebvre, A. F. Key;
Treasurer: J. M. Reynolds; *Secretary:* D. J. Ongley;
Chairman Advisory Board: John C. Parkin; *National Director:* Alan Jarvis

John C. Parkin (F)
RAIC Representative

Architectes Salariés

Depuis le dernier rapport annuel, le Comité a perdu un membre de valeur dans la personne de M. W. N. Thomas qui a démissionné de la fonction publique. M.

H. W. Davies, architecte attaché au ministère des Travaux publics, a été nommé pour le remplacer. M. O. F. Bush, directeur de l'architecture au ministère de la Défense nationale s'est aussi joint au Comité.

M. Emile Daoust, membre de ce Comité, a été promu au haut poste de directeur de la Construction de l'aviation civile, au ministère des Transports.

Le 15 juin 1965 nous avons eu une réunion avec M. MacNeill qui était alors président de la Commission du service civil. La discussion a résulté en arrangements qui permettent de tenir régulièrement des réunions avec les hauts fonctionnaires qui s'occupent de l'emploi des architectes dans le service civil. Ces réunions, où M. Price et M. Davison représentaient l'IRAC, ont débuté en juillet 1965 et se sont continuées depuis et se continueront bimensuellement.

Plusieurs points concernant les deux organismes, y compris les problèmes de recrutement des architectes, ont été discutés. Lors d'une réunion récente, la Commission a réitéré son désir de travailler étroitement avec l'IRAC et elle voudrait que l'expérience acquise au service du gouvernement soit généralement acceptée dans les conditions d'inscription aux associations provinciales.

Au cours des réunions du Comité, les opinions ont varié, allant de l'approbation de l'inscription aux associations provinciales comme condition d'emploi dans la fonction publique jusqu'au sentiment que l'IRAC devrait d'abord donner des preuves plus tangibles de l'intérêt qu'il porte à l'architecte salarié; dans ce cas, l'architecte serait plus porté à s'inscrire de lui-même.

Le Conseil de l'IRAC a déjà manifesté son appui total à l'égard de l'activité de ce Comité et nous croyons que c'est déjà un pas vers la fusion des intérêts des architectes en exercice privé et de ceux qui sont salariés.

Le 16 février 1966, nous avons eu un entretien avec M. L. W. C. S. Barnes, directeur exécutif de l'Institut professionnel du service publique canadien. M. D. H. L. Evans, président du groupe des architectes de l'Institut professionnel y assistait en plus de M. Price et de M. Davison. La législation proposée sur les négociations collectives fut discutée et M. Barnes a indiqué que l'Association médicale canadienne et l'Association des vétérinaires de l'Ontario s'étaient engagées à reconnaître l'Institut comme agent de négociations en faveur des médecins et des vétérinaires. Le Conseil canadien des Ingénieurs a récemment amélioré sa position à l'égard des négociations collectives. M. Barnes a apprécié l'intérêt actif de l'IRAC.

Architect-Engineer Advisory Committee on Winter Employment

Members

J. L. Richards, *P.Eng., Chairman*; S. Lithwick, *B.Arch., MRAIC*; F. W. Price, *Exec. Director, RAIC*; C. R. Crocker, *MEIC, National Research Council*; G. J. McGee, *MEIC, Council of Professional Engineers*; Miss M. McIrvine, *Unemployment Insurance Commission*; M. H. W. Leavey, *Unemployment Insurance Commission*; F. M. Hereford, *Department of Labour*; J. Armstrong, *Department of Labour*; H. V. Kneen, *Department of Labour, Secretary*

This committee met on six occasions during the past twelve months and discussed winter employment in the construction industry and matters relating to same.

Once again the Committee arranged for members of the Architectural and Engineering professions across Canada to receive literature dealing with the Municipal Winter Works Incentive Program. In considering the program, the Committee agreed that it was not in the best interests of winter work to grant extensions to the time limits which are established at the commencement of the program.

The Committee reviewed the progress of the 1965-66 Incentive Program throughout the period during which it was in effect and members were pleased to find an increase in its acceptance across the country.

The Committee took steps to encourage maximum coverage of the promotion of winter construction in national magazines and periodicals.

Members suggested that there was a lack of architectural draughtsmen and engineering technicians and more educational courses should be offered to attract new ones and upgrade those who are presently in this field.

Concern was expressed at meetings held in the fall of 1965 that higher building costs would tend to reduce employment during the winter of 1965-66. Actual figures of unemployed during the winter months which have been released since, have proven this not to be the case, and in fact have shown a decrease over the previous year.

The Committee participated in a number of discussions regarding a film which was produced during 1965 on "Home Improvements" which carried the theme of carrying out such work during the winter months when labour and materials were in abundant supply. A preview screening of the film for the committee was held in July 1965 at which very favourable comments were expressed regarding its quality.

Lors d'une réunion du Conseil, le 26 février 1966, on a lu une lettre de M. Evans demandant l'appui de l'IRAC au cours des prochaines négociations collectives; cet appui lui a été accordé.

Un rapport du président du Comité au Conseil a été envoyé aux associations provinciales recommandant que des comités soient établis ou renforcés afin de promouvoir les intérêts des architectes salariés non seulement au niveau fédéral mais aux échelons provincial et municipal, dans les corporations et dans l'exercice privé.

A la suite de la demande expresse du président actuel de la Commission du service civil, nous préparons une réunion avec M. G. A. Blackburn, directeur-général des besoins en personnel, dès que notre président pourra y assister.

Si le travail du Comité s'est surtout concentré sur la situation des architectes dans la fonction publique fédérale, nous espérons élargir notre champ d'action conformément aux recommandations contenues dans les rapports du comité sur la profession et du comité sur les buts et les fonctions de l'IRAC.

Arthur W. Davison
Président

O. F. Bush, E. Daoust, H. W. Davies, F. W. Price

Conférence des Arts

La Conférence canadienne des arts a succédé au Conseil canadien des Arts fondé en 1945. Notre Institut a été membre fondateur de ce Conseil qui, à son tour, a été le grand promoteur du Conseil des Arts du Canada.

La Conférence compte actuellement comme membres trente-deux sociétés nationales et régionales représentant presque tous les artistes professionnels et amateurs du Canada, ainsi que des bienfaiteurs intéressés.

Dans notre rapport de l'an dernier, nous avons mentionné un séminaire tenu avec succès par la Conférence à Sainte-Adèle en janvier 1965. Cette réunion a eu des résultats pratiques immédiats, dont le plus important sans doute a été le versement par le gouvernement fédéral au Conseil des Arts du Canada d'une subvention spéciale de 10 millions de dollars, à dépenser au cours des années 1965, 1966 et 1967. Fait important à noter, ce versement spécial n'a été l'objet d'aucune critique ni au Parlement ni dans les journaux. Certains autres résultats immédiats ont favorisé les groupes de musiciens et de comédiens. C'est ainsi, par exemple, que la Commission du Centenaire a établi un fonds de 3 millions de dollars pour des tournées de troupes de théâtre et d'orchestres dans le cadre d'un Festival du Canada.

Les participants au séminaire ont également recom-

Amongst recommendations being considered by the Committee at the close of the year were the following:

- 1 Schools of Architecture and Engineering should have facilities for postgraduate studies relating to Winter Construction.
- 2 More accurate records of Winter Construction costs should be kept which would enable more factual comparisons with non-winter construction.
- 3 Chairmen of Architectural and Engineering Associations should be invited to meet with the Committee to help advise in what areas the Architects-Engineers Advisory Committee on Winter Employment may best serve their respective professions.

Sidney Lithwick,
RAIC Representative

Canadian Standards Association

During 1965, many new standards were published by the CSA. Among those we list the following which should be of special interest to architects:

- A93-1965 Vents for Buildings (Jan/66, p. 2).
- A82.1-1965 Burned Clay Brick (Oct/65, p. 9).
- A82.30-1965 Interior Furring, Lathing and Gypsum Plastering (Oct/65, p. 9).
- A123.3-1965 Asphalt Roofing Surfaced with Powdered Mineral Matter (Jan/66, p. 2).
- A123.4-1965 Wide Selvage Asphalt Roofing Surfaced with Mineral Granules (Jan/66, p. 2).
- A123.51-1965 Asphalt Shingle Application on Roof Slopes 4 Inches in 12 Inches and Greater (Oct/65, p. 9).
- A123.52-1965 Asphalt Shingle Application on Roof Slopes 2 Inches in 12 Inches to Less than 4 Inches in 12 Inches (Oct/65, p. 9).
- A146-1965 Linoleum Products (July/65, p. 16).
- A165.4-1965 Concrete Brick Masonry Units (Oct/65, p. 9).
- B51-1965 Code for the Construction and Inspection of Boilers and Pressure Vessels (July/65, p. 16).
- B52-1965 Mechanical Refrigeration Code (July/65, p. 16).
- B200 to B210 Series Gas-Burning Appliances and Equipment (Jan/66, p. 3).
- C92.2-1965 Roadway Lighting (Jan/66, p. 3).
- 080-1962 Wood Preservation - Supplement No. 1-1965 (July/65, p. 17).
- 0132.1-1965 Wood Windows (July/65, p. 17).
- 0141-1965 Softwood Lumber (Oct/65, p. 10).
- 0177-1965 Qualification Code for Manufacturers of Structural Glued-Laminated Timber (Apr/65, p. 11).
- S16-1965 Steel Structures for Buildings (Jan/66, p. 1 and 3).
- W55.3-1965 Resistance Welding Qualification Code

mandé qu'une subvention soit accordée à l'Association des musées canadiens en vue de lui permettre d'établir un secrétariat à Ottawa et d'entreprendre des études au sujet d'un programme de formation sous la direction de M. A. F. Key.

Une autre recommandation digne de mention visait la tenue d'un séminaire entièrement consacré aux arts du milieu et aux arts visuels. Le Conseil des Arts a, en conséquence, accordé une autre subvention pour la tenue d'un séminaire qui aura lieu à Toronto du 23 au 26 mars et auquel assisteront plusieurs membres éminents de notre Institut.

En 1965, la Conférence a surtout concentré son attention sur la préparation d'un mémoire pour la Commission royale d'enquête sur le bilinguisme et le biculturalisme. Ce mémoire, dont le principal auteur a été M. Herman Voaden, dépasse 80 pages et renferme des mémoires particuliers de toutes les sociétés-membres, ainsi que de deux organismes qui ne sont pas membres, l'École nationale de ballet et l'Académie royale canadienne. Pour la préparation de ce mémoire, M. Voaden a voyagé de Terre-Neuve à Victoria et interviewé 165 personnes. Il a aussi tenu des 18 réunions dans les principaux centres du Canada. Le mémoire, qui a reçu l'approbation de notre Institut, a été présenté à la Commission royale à Ottawa le 11 décembre; M. James Strutt et le directeur général y représentaient l'Institut.

Le 17 novembre, Son Excellence le Gouverneur général a remis le diplôme d'honneur de la Conférence canadienne des Arts à M. Albert Trueman en reconnaissance des grands services qu'il a rendus aux arts durant les huit années qu'il a passées comme directeur du Conseil des Arts du Canada.

John C. Parkin (F)
Représentant de l'IRAC

Comité Consultatif d'Architectes et d'Ingénieurs sur le Travail en Hiver

Membres

M. J. L. Richards, Ing. p., *président*; M. S. Lithwick, *MIRAC*; M. F. Price, *dir. gén. IRAC*; M. C. R. Crocker, *MEIC, Conseil national de recherches*; M. G. J. McGee, *MEIC, Conseil des ingénieurs professionnels*; Mlle M. McIrvine, *Commission d'assurance-chômage*; M. M. H. W. Leavey, *Commission d'assurance-chômage*; M. F. M. Hereford, *ministère du Travail*; M. J. Armstrong, *ministère du Travail*; M. H. V. Kneen, *ministère du Travail, secrétaire*

Le Comité a tenu au cours des douze derniers mois six réunions durant lesquelles il a étudié l'emploi d'hiver dans l'industrie de la construction et diverses questions connexes.

for Fabricators of Structural Members Used in Buildings (Jan/66, p. 3).

At the present time new standards are under development for masonry mortars, terrazzo, precast concrete wall panels, concrete masonry units, concrete sewer pipe, metal doors and frames, plaster bonding agents, additional standards on plastic pipe and fuel-burning equipment, solder joint pressure and drainage fittings, electrically welded steel water pipe, warm-air heating and air-conditioning systems, school lighting, lighting merchandizing areas, sprayed metal coatings, particle boards and other subjects related to building construction.

The codes for elevator safety, installation of gas-burning appliances and the Canadian Electrical Code Part One are at present being replaced by new editions.

James B. Craig
Representative on Technical Council

Architect-Engineer Committee

The National Joint Architect-Engineer Committee is continuing to function as a key liaison between the two component professions. The topics which are continually under consideration at the Joint Committee meetings include careful analysis and recommendations regarding performance standards, inter-professional principles of practice, contract documents, the function of technicians in the two professions, and such items of interest.

The Committee last met on June 8th, 1965, in Montreal, coincidental with our Annual Assembly, and although considerable correspondence has ensued from this meeting, a definite date has not been set for our next meeting.

The Committee is still awaiting a recommendation from the Canadian Council of Professional Engineers on the subject of the direct commissioning of consulting engineers by clients as opposed to the present system in use in most provinces where the consulting engineer is retained by the architect. The architect members of the Committee feel that this is an extremely important item and as soon as a report is received it will be forwarded to the RAIC Council for consideration.

The difficulties which we as architects experience in establishing uniform standards of such requirements as registration, fees and licensing, are also experienced by the CCPE and because of the many different component organizations involved across Canada it is immediately apparent that this Committee can function to set up suggested standards only. It does however perform an extremely useful function in correlating the data and serving for a sounding board for matters which affect

Encore une fois, le Comité a pris les dispositions requises pour que les membres des professions d'architecte et d'ingénieur de tout le Canada reçoivent les publications au sujet du Programme d'encouragement des travaux d'hiver dans les municipalités. Après une étude du programme, le Comité en est venu à la conclusion qu'il n'est pas favorable aux travaux d'accorder des délais au-delà des dates établies au début du programme. Le Comité a examiné les succès du programme d'encouragement de 1965-1966 durant toute sa période d'application et il a constaté avec plaisir que ce programme est de mieux en mieux accueilli dans tout le pays.

Le Comité a pris des mesures afin de stimuler la publicité en faveur de la construction en hiver dans les revues et périodiques du Canada. Les membres ont constaté une insuffisance de spécialistes en dessin architectural et de techniciens en génie et ont recommandé l'établissement d'un plus grand nombre de cours afin d'attirer de nouveaux spécialistes et de relever les qualifications des spécialistes existants.

A la réunion de l'automne 1965, on craignait une réduction de l'emploi au cours de l'hiver 1965-1966 par suite d'une hausse des coûts dans l'industrie du bâtiment. La statistique du chômage publiée par la suite a contredit ces prévisions et même indiqué une certaine augmentation de l'emploi par rapport aux chiffres de l'année précédente.

Le Comité a participé à diverses discussions au sujet du film "L'amélioration des habitations" produit en 1965 et préconisant la poursuite des travaux d'hiver alors qu'il y a abondance de main-d'oeuvre et de matériaux. Les membres ont pu visionner ce film en juillet 1965 et ont été favorablement impressionnés par sa qualité.

A la fin de l'année, le Comité avait à l'étude diverses recommandations, dont les suivantes :

- 1 Les écoles d'architecture devraient établir des services d'études avancées sur la construction en hiver ;
- 2 Il faudrait garder sur les coûts de construction en hiver des dossiers plus précis en vue de la comparaison avec les coûts de la construction durant les autres mois de l'année ;
- 3 Il y aurait lieu d'inviter les présidents des associations d'architectes et d'ingénieurs à venir exposer aux membres du Comité consultatif d'architectes et d'ingénieurs sur le travail en hiver les domaines où ils peuvent rendre les plus grands services à leurs professions respectives.

Sidney Lithwick
Représentant de l'IRAC

the two professions, and as such looks forward to continuing and expanding activity.

James E. Searle (F)
Vice-Chairman

C. A. E. Fowler (F), F. J. Nobbs (F), John Dayton,
F. W. Price

Construction Materials

The twelfth meeting of this committee was held April 25, 1965, in Montebello, Que. The thirteenth and fourteenth meetings were held at Montreal and Montebello on June 12 and December 11, 1965, respectively. Ernie Mahoney of the CCA provided the very able and vital secretarial link and handled a major portion of the committee's work.

At the thirteenth meeting I became past chairman on the election of Robert Halsall, MEIC, P.Eng., ACEC, Toronto, as chairman.

The committee continued to pursue its prime objective of fostering closer liaison and better communication between the design professions and manufacturers and suppliers of construction materials through the following major activities.

1 Awards for Excellence in Building Product Literature - 1965

The fourth annual competition, again under the chairmanship of Gordon Arnott, ably assisted by Ernie Mahoney, was held in the Spring of 1965. In honor of the late P. T. M. Barott, a founding member of the competition, it was named the *Peter Barott Awards*, with the consent of Mrs Barott who graciously attended at the Award luncheon held during the RAIC Annual Assembly in Montreal. 73 entries were received and 14 awards plus 13 honorable mentions were made. Those receiving awards will, as in the past, be entitled to use the special award insignia on their winning literature.

The fifth annual *Peter Barott Awards* program is in preparation. Mr James Girvan is chairman of the committee and jury. The 1966 Awards will be presented at a special dinner in Ottawa, in June.

2 Architectural Directory Annual "ADA"

This important publication, endorsed by the committee but under the jurisdiction of the RAIC *Journal*, was published for the second time in 1965.

3 Sweet's Canadian Construction Catalogue File

With the continued encouragement of the committee, Canadian *Sweet's* has been very active and a six-volume

Association Canadienne des Normes

Au cours de 1965, l'Association canadienne des normes a publié plusieurs normes nouvelles, dont les suivantes sont d'un intérêt particulier pour les architectes :

- A93-1965, Evénements pour bâtiments (jan. 1966, p. 2)
- A82.1-1965, Brique de glaise cuite (oct. 1965, p. 9)
- A82.30-1965, Fourrure intérieure, lattage et enduit en plâtre (oct. 1965, p. 9)
- A123.3-1965, Bardeau d'asphalte recouvert de poudre minérale (jan. 1966, p. 2)
- A123.4-1965, Couverture protectrice en asphalte recouverte de granules minérales (jan. 1966, p. 2)
- A123.51-1965, Pose de bardeaux d'asphalte sur toits à pente de 4 pouces sur douze ou plus (oct. 1965, p. 9)
- A123.52-1965, Pose de bardeaux d'asphalte sur toits à pente de 2 jusqu'à 4 pouces sur douze (oct. 1965, p. 9)
- A146-1965, Produits en linoléum (juil. 1965, p. 16)
- A165.4-1965, Unités de maçonnerie en brique de béton (oct. 1965, p. 9)
- B51-1965, Code pour la construction et l'inspection de chaudières et de contenants sous pression (juil. 1965, p. 16)
- B52-1965, Code de réfrigération mécanique (juil. 1965, p. 16)
- Série B200 à B210, Appareils et matériel à gaz (jan. 1966, p. 3)
- C92.2-1965, Eclairage des routes (jan. 1966, p. 3)
- 080-1962, Conservation du bois - supplément no 1-1965 (juil. 1965, p. 17)
- 0132.1-1965, Fenêtres en bois (juil. 1965, p. 17)
- 0141-1965, Bois tendre de construction (oct. 1965, p. 10)
- 0177-1965, Code de qualification des fabricants de bois de charpente lamellé et collé (avr. 1965, p. 11)
- S16-1965, Charpentes en acier pour bâtiments (jan. 1966, p. 1 à 3)
- W55.3-1965, Code de qualification de soudure résistante pour fabricants d'éléments en acier de bâtiments (jan. 1966, p. 3)

Des normes sont actuellement en voie de préparation visant les mortiers de maçonnerie, le terrazzo, les murs en béton précontraint, les unités de maçonnerie en béton, les tuyaux d'égouts en béton, les portes et cadres métalliques, les agents de liaisonnement du plâtre, ainsi que de nouvelles normes visant les tuyaux en plastique et les brûleurs à combustible, les accessoires de soudage de joints à pression et de tuyaux de drainage, les tuyaux à eau en acier soudés à l'électricité, les systèmes de chauffage à air chaud et de climatisation, l'éclairage des écoles, l'éclairage des salles de vente, les enduits en métal pulvérisés, les panneaux en bois pressé et d'autres articles connexes à l'industrie du bâtiment.

Les codes visant la sécurité des ascenseurs, l'installation de brûleurs à gaz et la partie I du Code électrique canadien sont graduellement remplacés par de nouvelles éditions.

James B. Craig
Représentant du Conseil Technique

edition will be distributed free to established architectural practices in the Spring of 1966.

4 Material Standards

The committee again advocated to its sponsoring associations the elimination of lengthy descriptions and the *or equal* clause in specifications, and their replacement wherever possible by reference to standards of materials and workmanship generally recognized in Canada (e.g. CSA & CGSB). It further recommended that a compilation of all CSA and CGSB standards contained in the National Building Code be published in one *Manual of Standards* to complement a similar publication of the ASTM in the United States.

5 Guide to the Preparation of Maintenance Manuals

Your committee undertook to produce a guide to the preparation of maintenance manuals since it is recognized that good maintenance manuals are a much-needed service to the profession, owners and construction industry. This manual will be published in time to promote entries in the 1966 *Peter Barott Awards*.

6 Modular Co-ordination

With the return from the U.K. of Prof. Stanley Kent, the Committee's modular co-ordination subcommittee chairman, it is hoped that increased activities will occur in this field including the appointment of a Technical Advisory Committee to assist manufacturers, nationally, in the field of dimensional co-ordination.

7 The Building Construction Index

I am pleased to report that a replacement for the discontinued AIA/RAIC Standard Filing System has been effected with the February publication in Canada of our own *Building Construction Index* (BCI). The BCI provides a logical system for indexing both building construction specifications and building product literature.

The BCI is based upon the 16-division format for building construction specifications, originally conceived by the Construction Specifications Institute in the United States and introduced into Canada in 1963. It is recommended for use by the Specification Writers Association of Canada and the RAIC and is currently in use by many architectural and engineering offices throughout Canada.

Broadening the format to include a product literature filing system was initiated by representatives of the SWAC, RAIC, ACEC, CIQS and the CJCCM following the initial Industry Conference on Uniform Indexing led by the AIA and CSI, on which your chairman is RAIC's voting member. It is hoped that the BCI will be accepted by the Industry Conference and become an international building construction index.

Comité Mixte des Architectes et Ingénieurs

Le Comité mixte des architectes et ingénieurs continue son travail de liaison entre les deux professions qui le concernent. Au cours de ses réunions, le Comité analyse plusieurs points et formule des propositions sur des sujets tels que les normes d'activité professionnelle, les principes de l'exercice inter-professionnel, les documents contractuels, la fonction des techniciens dans les deux professions et autres questions d'intérêt professionnel.

La dernière réunion du Comité a eu lieu le 8 juin 1965, à Montréal, en même temps que l'assemblée annuelle; en dépit de la volumineuse correspondance qui a suivi cette réunion, la date définitive de notre prochaine réunion n'a pas encore été fixée.

Le Comité attend toujours une recommandation du Conseil canadien des Ingénieurs au sujet de la nomination directe des ingénieurs-conseils par le client contrairement au système actuel en usage dans presque toutes les provinces alors que l'ingénieur-conseil est choisi par l'architecte.

Les architectes membres du Comité admettent tous l'importance de ce point et dès que nous recevrons un rapport à ce sujet, nous le soumettrons pour étude au Conseil de l'IRAC.

Le Conseil canadien des ingénieurs se heurte aux mêmes difficultés que celles que rencontrent les architectes dans l'établissement de normes uniformes au sujet de l'inscription, des honoraires et des permis. A cause du nombre et de la diversité des associations concernées par tout le Canada, il est évident que seul ce Comité peut réussir à établir les normes désirées. Le Comité exerce donc une fonction éminemment utile par la corrélation des données et aussi par le sondage des opinions sur les sujets qui intéressent les deux professions. C'est pourquoi il espère poursuivre son activité et lui donner plus d'envergure encore.

James E. Searle (F)
Vice-Président

C. A. E. Fowler (F), F. J. Nobbs (F), John Dayton,
F. W. Price

Comité Canadien Mixte sur les Matériaux de Construction

Le Comité a tenu sa douzième réunion à Montebello (Qué.) le 25 avril 1965, puis ses treizième et quatorzième à Montréal et à Montebello les 12 juin et 11 décembre 1965, respectivement. M. Ernie Mahoney, de la CCA, a rempli avec beaucoup de compétence les fonctions indispensables de secrétaire et s'est en outre chargé d'une bonne partie du travail du Comité.

Copies of the BCI are available from all of the Canadian sponsoring organizations, at \$2.00 each. Comments on the system may be addressed to the BCI Committee, c/o SWAC, 57 Bloor Street West, Toronto.

8 Department of Industry

Your committee has welcomed the initiative of the Government with respect to its proposed *Program for the Development of the Building Equipment, Accessories and Materials Manufacturing Industry* (BEAM Program). We believe we ought to accept the responsibility for liaison between the Department of Industry and all components of the building industry. Your committee has already established a sub-committee for the assistance of the Department and the guidance of the program, and one liaison meeting has been held with representatives of the Department of Industry.

Robert E. Briggs

RAIC Gordon Arnott, R. E. Briggs, James Girvan, Ernest J. Smith (F), André Tessier

NRC/DBR Max Baker

ACEC Robert Halsall, Philip Benn, J. E. Brett, G. Piette, G. H. Templeton

CCA K. Bayne, J. R. Faulds, C. O. P. Klotz, A. W. Purdy, T. R. Waid

International Union of Architects

The 8th Congress of the UIA, the first to be held in Paris where the Union has its Headquarters, took place from July 5th to 9th, 1965. Among the 18 Canadian architects who participated in the Congress, the Institute was represented by an official delegation which included John Lovatt Davies, James Strutt, Noel Mainguy, and Joseph Pettick.

Under the patronage of General de Gaulle, President of the Republic, approximately 2,500 participants from 65 countries assembled to exchange views on the Congress theme, "Education of the Architect".

At the conclusion of the Congress the following recommendations were adopted:

- 1 That all Public Authorities should be made aware of the importance of Architecture and Town Planning in the life of a nation and devote the means necessary to the training of the men who will be responsible for these.
- 2 That public opinion be informed of the problems of Architecture and Town Planning and that its preparation, in this sphere, begin in childhood.

A sa treizième réunion, le Comité a élu à la présidence M. Robert Halsall, MEIC, Ing. p., ACEC, de Toronto, et je suis ainsi devenu président sortant.

Le Comité a continué de travailler à la réalisation de son principal objectif qui est l'amélioration des relations et des communications entre les membres des professions de composition, d'une part, et les fabricants et fournisseurs de matériaux de construction, d'autre part. Les principaux moyens employés à cette fin ont compris:

1 Concours d'Écrits sur les Matériaux de Construction, 1965

Le quatrième concours annuel a eu lieu au printemps de 1965. M. Gordon Arnott agissait encore une fois comme président et il a été puissamment secondé par M. Ernie Mahoney. Afin d'honorer la mémoire d'un des membres fondateurs du concours, le regretté P. T. M. Barott, et avec l'assentiment de Mme Barott qui a gracieusement accepté d'assister au déjeuner de remise des prix, le concours et les prix ont reçu le nom de Peter Barott. Le Comité a reçu 73 inscriptions et décerné 14 prix et 13 mentions honorables. Les gagnants des prix, comme ceux des années précédentes, ont reçu l'autorisation d'apposer l'insigne du concours sur leurs produits primés.

Le cinquième concours annuel Peter Barott est en voie de préparation. M. James Girvan a été nommé président du comité et du jury. Les prix de 1966 seront remis aux gagnants au cours d'un dîner spécial à Ottawa, en juin.

2 Annuaire de l'Architecture "ADA"

Cet important répertoire, approuvé par le Comité mais confié aux soins du *Journal* de l'Institut, a été publié pour la deuxième fois en 1965.

3 Version Canadienne du Catalogue "Sweet" de Matériaux de Construction

Avec l'encouragement soutenu du Comité, la Société *Sweet* du Canada a travaillé très activement et une édition de six volumes sera distribuée gratuitement aux bureaux établis d'architecture au printemps de 1966.

4 Normes de Matériaux

Encore une fois, le Comité a invité les associations qu'il représente à éliminer des devis les longues descriptions et les clauses "ou l'équivalent" et à les remplacer autant que possible par des mentions des normes de matériaux et d'exécution généralement reconnues au Canada, par exemple celles de l'Association canadienne des normes et de l'Office des normes du gouvernement canadien. Il a aussi recommandé qu'une liste des normes de l'ACN et de l'ONGC soit publiée sous forme d'un Manuel des normes destiné à compléter une publication semblable de l'ASTM aux États-Unis.

3 That elementary teaching programs give attention to stimulating, amongst the young, the natural need to create, and to multiplying the occasions for developing the gifts of perception, imagination and ingenuity.

4 That, with the assistance of architects and the profession, teachers of basic education be initiated into the problems of Architecture and Town Planning.

5 That UNESCO, with the assistance of the UIA, carry out the preceding recommendation.

6 That adolescents be given information concerning the nature of the architect's profession and on the means of entering it.

7 That admission to Schools of Architecture be dependent on an adequate standard of general and scientific education.

8 That, in order to permit the essential personal contacts between teachers and students, the teaching bodies of Schools be sufficiently large and adequately qualified.

9 That teachers and student of Architecture have the opportunity of working in common with those of other disciplines.

10 That artistic, functional and structural studies be conducted in parallel, in order to accustom the student to thinking of Architecture as a whole.

11 That the scientific and technical training of architects be the subject of specific teaching.

12 That Architecture be taught with a constant concern for integration in the social and economic setting and physical environment.

13 That Town Planning be considered as one of the principle components of the full education of architects.

14 That acquisition of information and furtherance of knowledge be held as indispensable during the entire length of the architect's career.

15 That courses of seminars for refreshing and perfecting the knowledge of architects and teachers be organized.

16 That teams of architects, technicians and specialists in human and economic sciences be assembled with the aim of conducting complete studies on concrete cases.

17 That Centres or Institutes for Architectural and Town Planning Research be created under the responsibility of architects, to develop basic and applied research.

18 That the developing countries be urged to set up their own Schools of Architecture, and that technical

5 Guide pour la Préparation de Manuels d'Entretien

Le Comité a entrepris la publication d'un guide pour la préparation des manuels d'entretien. On sait, en effet, que de bons manuels de ce genre rendront de précieux services à la profession, aux propriétaires et à l'industrie de la construction. Le manuel devrait être publié à temps pour stimuler les inscriptions au concours Peter Barott de 1966.

6 Coordination Modulaire

Avec le retour du Royaume-Uni du président du sous-comité sur la coordination modulaire, le professeur Stanley Kent, il y a lieu de prévoir une recrudescence de l'activité dans ce domaine, et notamment la création d'un comité consultatif technique chargée d'aider les fabricants de tout le pays en matière de coordination des dimensions.

7 Système d'Indexation pour l'Industrie du Bâtiment

Je suis heureux d'annoncer la publication, en février, de notre propre système d'indexation pour l'industrie du bâtiment (Building Construction Index) destiné à remplacer l'ancien AIA/RAIC Standard Filing System aujourd'hui abandonné. Le nouveau document présente un système logique d'indexation des devis de construction de bâtiments et d'écrits sur les matériaux de construction. Le nouveau système est fondé sur le système de répartition sous 16 chefs des devis de bâtiments créé aux États-Unis par le Construction Specifications Institute et introduit au Canada en 1963. Il est recommandé par la Specification Writers Associations of Canada et l'IRAC et il est déjà employé dans de nombreux bureaux d'architectes et d'ingénieurs de tout le Canada. Le document a été élargi par l'addition d'un système de classification d'écrits sur les produits recommandé par les représentants de la SWAC, de l'IRAC, de l'ACEC, du CIQS et de notre Comité à la suite du premier Congrès de l'industrie sur l'indexation uniforme dirigé par l'AIA et le CSI, auquel votre président représente l'IRAC avec voix délibérative. Il y a lieu de croire que le nouveau système sera accepté par le Congrès de l'industrie et deviendra un index international pour l'industrie du bâtiment.

Vous pouvez vous procurer le nouveau document (BCI) de toutes les associations canadiennes qui ont participé à sa préparation aux prix de \$2 l'exemplaire. Si vous avez des commentaires à formuler, veuillez les adresser au BCI Committee, c/o SWAC, 57 rue Bloor ouest, Toronto.

8 Ministère de l'Industrie

Votre Comité a accueilli avec empressement l'initiative du Gouvernement visant l'établissement d'un Programme pour le développement de l'industrie de fabrication du matériel, des accessoires et des matériaux de construction

assistance be directed towards setting up such Schools and seeing that they function.

19 That the UIA maintain permanent contacts with the International Union of Students of Architecture on all matters of common interest, and in particular in respect of problems relating to program exchanges, training periods and scholarships.

20 That encouragement be given to the publication of an international information and documentation bulletin for the use of students and Schools of Architecture.

21 That a permanent body for the study of problems relating to architectural training and education be set up within the UIA.

These recommendations and resolutions have been forwarded to the Architectural Education Committee of the RAIC for consideration and action.

Sir Robert Matthew concluded his term as President of the UIA and was succeeded by Eugène Beaudouin, a distinguished French architect.

Plans are now being made for the 9th Congress which will be held in Prague, Czechoslovakia, in July 1967. The Congress theme "Architectural and Human Environment" relates very closely to our RAIC 1966 Assembly theme. We will look forward to obtaining the assistance of Institute members who are prepared to participate actively in the forthcoming Congress.

Peter Dobush (F) has been nominated and accepted to the Working Commission on Housing. Canadian participation in other UIA Working Commissions is being proposed at the present time.

The work of the UIA is the intimate concern of each member of our Institute. The Union exists for the purpose of seeking ways and means to improve the total physical environment of peoples throughout the world. We have at the present time the heavy responsibility of realizing that we are in fact the only international body in the professional sense solely dedicated to this purpose.

The Charter emphasizes: "If the architect is to express the aspirations and minister to the needs of his age, he must have both knowledge and understanding of the human situation in its widest sense, whilst showing a constant regard for economic and other relevant factors. Whatever the form of his practice, the architect must not lose sight of the fundamental nature of his calling. Thus through his work he will contribute to the advancement of mankind."

Joseph Pettick
RAIC Representative

du bâtiment. Nous estimons qu'il nous incombe de maintenir la liaison entre le ministère de l'Industrie et tous les éléments composants de l'industrie du bâtiment. Votre Comité a déjà établi un sous-comité chargé d'aider le ministère et de travailler à l'orientation du programme. Ce comité a déjà tenu une réunion avec des représentants du ministère de l'Industrie.

Robert E. Briggs

L'IRAC Gordon Arnott, R. E. Briggs, James Girvan, Ernest J. Smith (F), André Tessier

CNR/DRB Max Baker

ACEC Robert Halsall, Philip Benn, J. E. Brett, G. Piette, G. H. Templeton

CCA K. Bayne, J. R. Faulds, C. O. P. Klotz, A. W. Purdy, T. R. Waid

Union Internationale des Architectes

L'Union internationale des architectes a tenu son 8e congrès, son premier à Paris où elle a son siège, du 5 au 9 juillet 1965. Dix-huit architectes canadiens étaient présents, dont les membres de la délégation officielle de l'Institut composée de MM. John Lovatt Davies, James Strutt, Noël Mainguy et Joseph Pettick. Sous le patronage du général de Gaulle, président de la République, environ 2,500 participants, venus de 65 pays, se sont réunis et ont échangé des opinions sur le thème du congrès "La formation des architectes".

A la fin du Congrès, les recommandations suivantes furent adoptées:

- 1 Que les pouvoirs publics prennent conscience de l'importance de l'architecture et de l'urbanisme dans la vie d'une nation et consacrent les moyens nécessaires à la formation des hommes qui en seront responsables.
- 2 Que l'opinion publique soit informée dès l'enfance des problèmes d'architecture et d'urbanisme et qu'elle y soit préparée dès l'école.
- 3 Que les programmes pédagogiques s'attachent à stimuler chez les jeunes le besoin naturel de création et multiplient les occasions de développer la sensibilité, l'ingéniosité et l'imagination.
- 4 Qu'avec l'aide des architectes, les maîtres de l'enseignement de base soient initiés aux problèmes d'architecture et d'urbanisme.

Commonwealth Association of Architects

The first Conference of the Commonwealth Association of Architects was held in Malta from 24th to 29th June, 1965. Eighteen societies were represented by thirty-three delegates and observers.

The Conference discussions covered a wide range of professional problems, but the chief topic was Architectural Education.

Information supplied by Conference members confirmed that the shortage of competent teaching staff was one of the major problems in architectural education and called for urgent remedial measure.

The Conference was disturbed by the fact that few postgraduate grants under the Commonwealth Scholarship and Fellowship had so far gone to Architects, possibly because their availability was not widely enough known. The Conference agreed that information on all postgraduate courses, fellowships and other financial aid should be assembled and made available to member societies.

The most far-reaching decision of the Conference was to form a *Commonwealth Board of Architectural Education* for the purpose of raising the standard of architectural education of and providing machinery for inter-recognition of qualifications. This decision, however, should be seen in the context of the function of the architect, which is still inadequately appreciated in a number of countries.

While the Conference was going on a Commonwealth Prime Ministers' meeting in London had decided to establish a *Commonwealth Foundation* whose aims are primarily the promotion of links between the professions in the Commonwealth.

This *Commonwealth Foundation* is now being organized and an approach is being made by the Commonwealth Association for funds to enable the *Board of Architectural Education* to function efficiently.

The Conference was under the chairmanship of Sir Robert Mathew and fortunately he has agreed to carry on as President for at least another two years. The executive committee for the next two years is:

Mr J. R. Bhalla (India); Mr M. Collard (Australia); Prof A. Ling (United Kingdom); Mr Oluwole Olumuyiwa (Nigeria); Mr J. Lovatt Davies (Canada)

John Lovatt Davies (F)
RAIC Representative

- 5 Que l'UNESCO, avec l'aide de l'UIA, s'attache à la réalisation du vœu qui précède.
- 6 Que les adolescents soient informés du caractère de la profession d'architecte et des moyens d'y accéder.
- 7 Que l'entrée dans les écoles d'architecture soit subordonnée à un niveau suffisant de culture générale et scientifique.
- 8 Que pour permettre les contacts personnels indispensables entre maîtres et élèves, le corps enseignant des écoles d'architecture soit suffisamment important et qualifié.
- 9 Que les professeurs et les étudiants en architecture puissent travailler en commun avec ceux d'autres disciplines.
- 10 Que les études fonctionnelles, structurelles et plastiques soient menées parallèlement pour habituer les élèves à penser l'architecture comme un tout.
- 11 Que la formation scientifique et technique des architectes fasse l'objet d'un enseignement spécifique.
- 12 Que l'architecture soit enseignée avec le constant souci de l'intégration dans le milieu socio-économique et l'environnement physique.
- 13 Que l'enseignement de l'urbanisme soit considéré comme l'une des composantes de la formation complète de l'architecte.
- 14 Que l'information et le perfectionnement soient tenus pour indispensables pendant toute la carrière d'un architecte.
- 15 Que soient organisés des stages ou séminaires de perfectionnement et de recyclage pour les architectes et pour les professeurs.
- 16 Que soient réunies des équipes d'architectes, de techniciens et de spécialistes des sciences humaines et économiques en vue de l'étude complète de cas concrets.
- 17 Que soient créés, sous la responsabilité des architectes, des centres ou instituts de recherches architecturales et urbanistiques pour développer la recherche fondamentale et la recherche appliquée.
- 18 Qu'il soit recommandé aux pays en voie de développement de créer leurs propres écoles d'architecture et que l'assistance technique porte sur l'organisation et le fonctionnement de ces centres d'enseignement.
- 19 Que l'UIA assure des contacts permanents avec l'Union Internationale des étudiants en architecture, pour toutes les questions d'intérêt commun, et notamment

National Research Council Advisory Committee on Building Research

The eleventh meeting of this Committee was held on November 16th, 1965, in Ottawa.

The work of the Division of Building Research was reviewed followed by a tour of the Division. Favorable comment was recorded on the Division's work in initiating educational programs on exterior wall and roofing design.

It was noted that problems have arisen in recruiting qualified staff for vacant positions within the Division where funds are available for salaries. A proposal that the Division might accept architects and consulting engineers as workers for one or two years, seconded from their parent organizations, met with general approval. It was felt that such a program would not only allow more work to be proceeded with, but would enhance the flow of information to industry and increase industry's awareness of the work of the Division.

Watson Balharrie (F)
RAIC Representative

National Building Code

The 1965 National Building Code has been published. The new edition contains all the main features of the 1960 edition and is the first of the regular revisions which are to be produced every five years in order to keep the Code abreast of changing building technology. It is produced in both languages. The arrangement of the Code, by now familiar to most architects, permits the easy revision of the individual sections.

A number of notable revisions appear in the 1965 edition. The provisions for "height and area" requirements for different occupancies are a notable improvement on the older tables. Section 4.5 is the result of four years work and provides a completely new reinforced concrete design code incorporating the best advances in American and European practice. A similar revision has been made in Section 4.4 - Masonry.

In the requirements for earthquake resistance, the improved and more reasonable requirements of the 1965 edition are parallel to those of the Uniform Building Code prepared by the International Conference of Building Officials, Los Angeles, California.

Part 5 - Materials, are dealt with in a new manner. For convenience, the Division of Building Research, National Research Council, is bringing out a Directory of Standards in Building which will facilitate reference to all existing standards based on English units of measurement.

en matière de programmes d'études, de problèmes d'échanges, de stages et de bourses.

20 Que soit encouragée la publication à l'usage des écoles d'Architecture d'un bulletin international d'informations et de documentation.

21 Que soit institué au sein de l'UIA un organisme permanent d'étude des problèmes de la formation architecturale.

Ces recommandations et résolutions ont été transmises au Comité de l'Institut sur la formation des architectes afin qu'il puisse les étudier et y donner suite.

Sir Robert Matthew, ayant terminé son mandat de président, a été remplacé par un architecte français de renom, M. Eugène Beaudouin.

Les préparatifs sont commencés en vue du 9e congrès qui aura lieu à Prague (Tchécoslovaquie) en juillet 1967. Le thème "L'architecture et le milieu humain" se rapproche sensiblement de celui de notre propre assemblée de 1966. Nous espérons obtenir le concours de membres de l'Institut disposés à participer activement aux travaux de ce congrès.

M. Peter Dobush (F) a été choisi comme membre et a accepté de faire partie de la Commission de travail sur l'habitation. On propose actuellement la participation du Canada à d'autres commissions de travail de l'UIA.

Le travail de l'UIA touche de près tous les membres de notre Institut. L'objet de l'Union est de chercher les moyens d'améliorer l'ensemble du milieu physique où vivent toutes les populations de l'univers. Nous avons aujourd'hui la lourde responsabilité de bien nous rendre compte que nous sommes, de fait, le seul organisme international exclusivement voué à cette cause.

La charte de l'UIA précise que "Si l'architecte doit exprimer les aspirations et répondre aux besoins de son temps, il doit connaître et comprendre la situation de l'homme dans le sens le plus large de l'expression, sans pour autant négliger les facteurs économiques et les autres facteurs pertinents. Quelque soit la forme de sa pratique, l'architecte ne doit pas perdre de vue la nature fondamentale de sa profession. Ainsi, par son travail, il contribuera au progrès de l'humanité."

Joseph Pettick
Représentant de l'IRAC

While much of the Code still remains of the "specifications" type, Part 9 – Housing is new and has reached complete "performance" style. This section is intended to be used with technical "Supplement No. 5 – Residential Standards". There are altogether seven technical supplements available for consultation and general use.

In the preparation of the Code, policy direction and co-ordination and all the directions of compilation have been carried out by volunteer committees. The Associate Committee and the several committees are most efficiently organized and supported by the secretarial and technical staff of the Division of Building Research. Dr Robert F. Legget (*Hon. F.*), the Director of the Division, serves as Chairman of the Associate Committee. The committee members come from all parts of the construction industry – such as public officials, engineers, contractors and manufacturers. It is gratifying to note that the following members of The Royal Architectural Institute of Canada have actively participated in the development, production and revisions which have resulted in the 1965 edition of the National Building Code: –

Division of Building Research, National Research Council: R. F. Legget (*Hon. F.*), R. S. Ferguson, Murdoch Galbreath, A. W. Stickel.

Associate Committee of the National Building Code: A. F. Duffus (*F.*), H. Elder, H. H. G. Moody (*F.*), R. E. Bolton (*F.*) (*ex officio*), J. L. Davies (*F.*) (*ex officio*)

Supporting Committees: G. Bennett Pope, K. Izumi A. Desautels, J. Pettick, Peter Dobush (*F.*), K. B. Davison (*F.*), D. W. Jonsson, G. W. Peck.

Copies of the National Building Code are now to be found in most countries throughout the world and have been consulted in the preparation of new codes in many places. It is now in wide use throughout Canada by voluntary adoption. For example, it is specifically mentioned in six of the ten provincial Municipal Acts and is in whole or partial use by 138 cities in Canada. This widespread adoption of the Code is leading towards the elimination of senseless variations in practice which are so costly in design, manufacturing and construction.

Richard E. Bolton (*F.*)
RAIC Representative

Public Information

Two RAIC exhibitions, on tour under National Gallery auspices, have continued to draw wide attention. During the last year, *Massey Medals for Architecture 1964* has been shown in Edmonton, Winnipeg, Toronto, Montreal, St. John's, Fredericton, Saint John, and Quebec; and *Historic Architecture of Canada* in Vancouver, Winnipeg, Regina, Toronto, Montreal, Fredericton and Halifax.

Association des Architectes du Commonwealth

L'Association des architectes du Commonwealth a tenu son premier congrès à Malte du 24 au 29 juin 1965. Dix-huit sociétés y étaient représentées par trente-trois délégués et observateurs.

Les délibérations ont porté sur un grand nombre de sujets d'ordre professionnel mais de façon toute particulière sur la formation des architectes.

Les renseignements fournis ont confirmé le fait que l'un des principaux problèmes en ce qui a trait à la formation des architectes réside dans la rareté de professeurs compétents et démontré l'urgence d'y remédier.

Les participants ont noté avec inquiétude que des bourses de perfectionnement décernées dans le cadre du plan de bourses d'études et d'aide aux études du Commonwealth un petit nombre seulement sont allées jusqu'ici à des architectes, peut-être parce que ceux-ci n'en connaissant pas suffisamment l'existence. Il a été convenu qu'il y aurait lieu de recueillir tous les renseignements au sujet des cours de perfectionnement, des bourses d'études et autres formes d'aide financière et de les faire parvenir aux sociétés membres.

La plus importante décision du congrès vise la constitution d'une Commission du Commonwealth pour la formation des architectes, chargée de relever les normes d'enseignements de l'architecture et d'en arriver à une reconnaissance intersociétés des architectes. Toutefois, cette décision doit être considérée dans le contexte de la fonction de l'architecte qui n'est pas encore suffisamment appréciée dans un certain nombre de pays.

Pendant que se tenait ce congrès, les premiers ministres du Commonwealth réunis à Londres décidaient d'établir une Fondation du Commonwealth dont le objet serait de resserrer les liens entre les diverses professions au sein du Commonwealth.

La Fondation est actuellement en voie d'organisation et l'Association fait des démarches afin d'obtenir les fonds nécessaires au bon fonctionnement de la Commission sur la formation des architectes.

Le congrès s'est tenu sous la présidence du professeur Robert Mathew qui, heureusement, a accepté de demeurer à la présidence durant au moins deux autres années. Les membres du comité exécutif pour les deux prochaines années sont: M. J. R. Bhalla (Inde), M. M. Collard (Australie), Le prof. A. Ling (Royaume-Uni), M. Oluwole Olumuyiwa (Nigeria), M. J. Lovatt Davies (Canada).

John Lovatt Davies (*F.*)
Représentant de l'IRAC

The largest photographic exhibition of its kind ever sent abroad from these shores was prepared by the Government of Canada, with RAIC assistance, in 1965. The catalog text was written by Professor W. S. Goulding, University of Toronto. Entitled *Three Centuries of Canadian Architecture*, it included a selection from the *Historic Architecture* exhibition, the winners of *Massey Medals 1964*, and several other buildings of the 1900–1960 period. The exhibition was received enthusiastically on its opening in Prague in September, and subsequently in other cities of Czechoslovakia.

At the RAIC Assembly in June 1965, Montreal members prepared an exhibition called *Artist – Architect Collaboration*, which had a good reception. A tour was subsequently arranged for four Schools of Architecture – Nova Scotia, McGill, Montreal, Manitoba. Showings at other centres will follow.

The select display, *Urban Planning in Sweden*, continued the success which began at the Schools last year. The Swedish Ambassador helped Mayor Don Reid launch its tour of cities across Canada at the Ottawa City Hall in September. It is now at the midway point of this tour arranged by the Canadian Federation of Mayors and Municipalities.

Discussions are proceeding with The National Film Board relative to one or more films on contemporary architecture and trends in urban design, in lieu of the Institute film previously considered.

Many members are giving their support to the Community Improvement and Beautification Program, sponsored by the Centennial Commission. Timely stimulus has been provided by the "War on Community Ugliness" being waged by the American Institute of Architects – notably by its new film *No Time for Ugliness*; prints have been purchased by RAIC, and by some provincial associations and government agencies. Excellent AIA slide films are also aiding in this program, as in the United States.

The major public service project of the Institute during the last year was *Decoration 67*, a gaily illustrated manual of street decoration prepared by William G. Leithead (F) which appeared in the August issue of the *Journal*. Copies were mailed, with a covering letter from the Institute, to the municipal authorities of every town and city in Canada, in order to draw their attention to the importance of downtown decoration in their Centennial celebration plans. The provincial associations have assisted in this project through further distribution of the booklet to chambers of commerce and other key groups.

The 1965 Assembly of the Institute, in Montreal, provided a good opportunity for public information – through the theme discussions, the addresses of Messrs. Bloc and Dupuy, the awards and exhibitions. The

Comité Consultatif sur la Recherche en Bâtiment Conseil National de Recherches

Le Comité a tenu sa onzième réunion à Ottawa le 16 novembre 1965.

Il a passé en revue les travaux de la Division de recherche en bâtiment, dont il a ensuite fait le tour des locaux. Il a félicité la Division des programmes de vulgarisation qu'elle a lancés au sujet des modèles de murs extérieurs et de toits.

Il a noté que le recrutement de personnes compétentes pour remplir les postes pour lesquels des salaires ont été prévus dans la Division devient de plus en plus difficile. A ce propos, une proposition invitant la Division à accepter pour des périodes d'une année ou deux des architectes et des ingénieurs conseils, détachés par leurs employeurs, a été approuvée. Un programme de ce genre aurait pour effet, croit-on, non seulement de permettre une plus forte somme de travail mais d'accroître le flot de renseignements vers l'industrie et de rendre celle-ci plus consciente du travail de la Division.

Watson Balharrie (F)
Représentant de l'IRAC

Code National du Bâtiment

L'édition de 1965 du Code national du bâtiment a été publiée. Elle reprend tous les principaux points de l'édition de 1960. Il s'agit de la première révision régulière qui, dorénavant, se fera tous les cinq ans afin de maintenir le Code au pas des changements technologiques survenus dans le domaine du bâtiment. L'édition est dans les deux langues. La disposition, maintenant familière à la plupart des architectes, permet une révision facile des diverses sections.

Plusieurs changements notables ont été apportés dans l'édition de 1965. Les prescriptions "hauteur et superficie" selon les divers genres d'occupation constituent une amélioration sensible sur les anciennes tables. La section 4.5 est le fruit de quatre années de travail et présente, au sujet du béton armé, un code tout à fait nouveau tenant compte des principaux progrès réalisés dans la pratique américaine et européenne. Une révision semblable a eu lieu pour la section 4.4 – Maçonnerie.

En ce qui a trait à la résistance aux tremblements de terre, les dispositions améliorées et plus logiques de l'édition de 1965 suivent le modèle du *Uniform Building Code* préparé par l'International Conference of Building Officials de Los Angeles (Californie).

La partie 5 – "Matériaux" est abordée de façon nouvelle. Pour la commodité des usagers, la Division de la recherche

Institute has also endorsed and assisted in promotion of national awards – notably those sponsored by the National Design Council (Steel Design, Wood Design) and the Department of Public Works, Ottawa – and of architectural competitions such as that sponsored by the Canadian Lumberman's Association.

Planning to Build? was prepared by the PQAA as a brochure for use of members in client contacts, and has enjoyed wide distribution this year.

Paul-O. Trépanier
Chairman

Mrs Freda O'Connor, P. M. Scott, K. L. McMillan, Frank Nicol, Mrs Dorice Walford, Aza Avramovitch, Alfred Chatwin, Peter Holtshousen, N. C. H. Russell, Warnett Kennedy

RAIC-CMHC Joint Committee on Housing

In submitting this report, it may be timely to recall to the RAIC membership that the purpose of the Joint Committee is to provide opportunity for the Corporation and the Institute to mutually discuss ideas, problems, and activities in the general field of housing and at a professional level. In the past the Committee has sponsored seminars on housing, and has arranged field trips to study housing here and in the USA. In addition it has played a part in the RAIC *Study of the Residential Environment* and in the production of a useful study, *Reflections on Zoning*.

At present the Joint Committee is actively considering the Central Mortgage and Housing Corporation Small Home Design Program, in order to bring it within the framework of professional arrangements regarding approved competitions. In addition, a broadening of this important design is under consideration.

The Joint Committee has submitted to the Institute a suggestion that the membership be enlarged to eight – four from the Corporation and four from the Institute. The RAIC representatives presumably would be chosen both on the basis of experience in housing and to provide a broader geographic representation of this nation-wide Canadian problem.

A range of future items for the Committee's attention are listed below with the invitation to all RAIC members to comment on these proposals or suggest additional housing matters requiring study within the Committee's resources.

en bâtiment du Conseil national de recherches prépare un répertoire des normes en bâtiment qui facilitera le renvoi à toutes les normes existantes fondées sur les unités anglaises de mesure.

Bien que le Code demeure en majeure partie du genre "devis", la partie 9 – Habitation – est complètement nouvelle et du genre "performance". Cette section a pour complément le "Supplément no 9 – Normes d'habitation". Il y a en tout sept suppléments techniques à la disposition de ceux qui veulent les consulter et les employer.

Dans la préparation du Code, tous les travaux d'orientation et de coordination des politiques et de classification des instructions ont été effectués par des comités bénévoles. Le Comité associé et les divers autres comités sont organisés sur une base très efficace et bien secondés par le personnel de secrétaires et de techniciens de la Division de la recherche en bâtiment. M. Robert F. Legget (*F Hon*), directeur de la Division, est président du Comité associé. Les autres membres du Comité viennent de tous les secteurs de l'industrie de la construction et comprennent des hauts fonctionnaires, des ingénieurs, des entrepreneurs et des fabricants. Il nous est agréable de constater que les membres suivants de l'Institut royal d'architecture du Canada ont participé activement aux travaux de mise au point, de production et de révision qui ont abouti à l'édition de 1965 du Code national du bâtiment :

Division de la recherche en bâtiment, Conseil national de recherches M. R. F. Legget (*F Hon*), M. R. S. Ferguson, M. Murdoch Galbreath, M. A. W. Stickel.

Comité associé du Code national du bâtiment M. A. F. Duffus (*F*), M. H. Elder, M. H. H. G. Moody (*F*), M. R. E. Bolton (*F*) (*d'office*), M. J. L. Davies (*F*) (*d'office*)

Comités de soutien M. G. Bennett Pope, M. K. Izumi, M. A. Desautels, M. J. Pettick, M. Peter Dobush (*F*), M. K. B. Davison (*F*), M. D. W. Jonsson, M. G. W. Peck.

Des exemplaires du Code national du bâtiment se trouvent aujourd'hui dans la plupart des pays du monde entier où, dans plusieurs cas, ils ont servi à la préparation de nouveaux codes. Le Code est aussi très largement employé sur une base volontaire au Canada. Par exemple, il est expressément mentionné dans six des dix lois provinciales sur les municipalités et il est entièrement ou partiellement employé dans 138 villes canadiennes. Cette adoption généralisée aide à éliminer les écarts de pratiques illogiques et si coûteux, dans les travaux de composition, de fabrication et de construction.

Richard E. Bolton (*F*)
Représentant de l'IRAC

The Committee reviewed a list of items contained in the minutes of the meeting of October 30, 1964, and agreed upon the following revised list for further consideration and discussion at the next meeting of the Joint Committee:

- 1 Continuation of study seminars and urban field trips.
- 2 Study the single family houses on narrow lots from the point of view of design and production.
- 3 Special *RAIC Journal* issue on some facet of housing.
- 4 Participation in further studies evolving out of the Zoning Study, *ie* development control.
- 5 Study connected with dwelling rehabilitation.
- 6 Housing for non-family persons – boarding houses, hostels, etc.
- 7 The automobile in the housing environment.
- 8 Landscape subject monograph – landscape for high and medium density areas.
- 9 Social and recreational facilities for high density housing.
- 10 Economic building solutions – comparison of capital and operating costs of high, medium and low rise housing.
- 11 Economics of servicing and land development.
- 12 A study arising out of the book *Cities in the Suburbs* – design problems of suburban cores.
- 13 New town design principles.
- 14 Competitions.
- 15 Seminar at Expo 67.
- 16 Training for urban design.

James A. Murray (F)
Chairman

John Bland (F), Ian MacLennan (F), Humphrey Carver,
James W. Strutt (F), Andrew Hazeland

Information Publique

Deux expositions ambulantes de l'IRAC, tenues sous les auspices de la Galerie Nationale, ont soulevé beaucoup d'intérêt. Edmonton, Winnipeg, Toronto, Montréal, St-John's, Frédériciton, St-Jean et Québec, ont tour à tour été les sites de l'exposition *Massey Medals for Architecture 1964*; la seconde, *Architecture Historique du Canada*, a été montrée aux populations des villes de Vancouver, Winnipeg, Régina, Toronto, Montréal, Frédériciton et Halifax.

En 1965, la plus importante exposition de photographies dans son genre à l'intention des pays étrangers, a été montée par le gouvernement canadien en collaboration avec l'IRAC. Le texte du catalogue fut rédigé par le professeur W. S. Goulding, de l'Université de Toronto. Sous le titre *Three Centuries of Canadian Architecture*, il comprenait une sélection extraite de l'exposition sur l'histoire de l'architecture, les noms des gagnants des médailles Massey 1964 et des reproductions de plusieurs autres édifices érigés entre les années 1900 et 1960. Cette exposition a reçu un accueil enthousiaste à sa première, tenue à Prague en septembre, et, subseqüemment dans d'autres villes de Tchécoslovaquie.

Lors de l'assemblée de l'IRAC, tenue à Montréal en juin 1965, les membres ont préparé une exposition appelée *Collaboration Artiste-Architecte*, laquelle a reçu un bon accueil. Subseqüemment, elle fut montrée dans quatre écoles d'architecture, celles de la Nouvelle-Écosse, de Montréal, du Manitoba et de McGill. Il est prévu qu'elle sera organisée dans d'autres centres.

Le succès qu'a connu dans les écoles, l'année dernière, l'exposition de choix qu'est *l'Urbanisme en Suède* se maintient depuis. À l'occasion du lancement de cette exposition à l'hôtel de ville d'Ottawa, en septembre, l'ambassadeur de la Suède a accepté de présider conjointement la cérémonie avec M. le maire Don Reid. Devant se rendre dans diverses villes à travers le Canada, cette exposition en est actuellement à la moitié de son itinéraire arrêté par la Fédération canadienne des maires et des municipalités.

Des pourparlers sont actuellement en cours avec l'Office national du Film relativement à la préparation d'un ou de plusieurs films sur l'architecture contemporaine et les tendances du concept urbain, remplaçant le projet initial de l'institut visant au montage d'un film.

Plusieurs membres prêtent leur concours au programme d'amélioration et d'embellissement communautaire, une commandité de la Commission du Centenaire. Un stimulant très-à-point a été fourni par l'Institut des Architectes des États Unis lors de sa *Guerre à la laideur des villes*, aussi par un nouveau film de cet organisme *No Time for Ugliness* dont des copies ont été achetées par l'IRAC, par diverses associations provinciales et par

Architectural Education

The Architectural Education Committee met at the annual assembly in Montreal, June 9, 1965, and held a full day meeting in Toronto on March 25, 1966.

Under the recently revised By-Laws, the Committee has been enlarged to 14 members with representation from each Provincial Association and each School of Architecture.

Examinations were again organized under the minimum syllabus and 28 examinations were taken and 13 of these achieved pass marks. The minimum syllabus is now being revised and brought up to date and it is hoped to clarify and give more information on the work to be done before examinations are held.

A Visiting Committee under the chairmanship of Mr Rounthwaite went to Quebec last June to visit the School of Architecture in Laval University. No visit is being made to any school this year.

During a recent ten year period; for every 100 architects who entered the profession from Canadian Schools of Architecture, 141 architects entered the profession from other countries. The need for increased training facilities is obvious and plans are under way for the enlarging of some existing Canadian Schools and for the creation of new Schools. A new School is being planned at the University of Alberta and new Schools have been proposed for four Ontario universities.

The Committee is concerned with the shortage of trained Architectural Assistants and with the very varied standards of training existing and a sub-committee is now studying ways of improving the situation. A sub-committee is studying the continuing education of architects and especially the possibility of making a program available to all members.

Henry Elder, *British Columbia*; D. G. Forbes, *Alberta*; R. B. Ramsay, *Saskatchewan*; J. A. Russell, *Manitoba*; Isadore Coop, *Manitoba*; Thomas Howarth, *Ontario*; W. N. Smale, *Ontario*; John Bland, *Quebec*; Guy Desbarats, *Quebec*; Noel Mainguy, *Quebec*; Neil M. Stewart, *New Brunswick*; Douglas Shadbolt, *Nova Scotia*; W. J. Ryan, *Newfoundland*

J. Lovatt Davies (F)
Chairman

des services gouvernementaux. D'excellentes diapositives de l'AIA sont aussi disponibles et, comme aux États-Unis, elles soutiennent bien la lutte entreprise.

Le projet d'intérêt public le plus important préparé par l'Institut au cours de la dernière année fut, sans contredit, *Décoration 67*, une publication préparée par William-G Leithead (F), gaielement illustrée, et qui traite de la décoration des rues. Il en fut question dans notre journal, numéro du mois d'août. Accompagnées d'une lettre de l'Institut, des copies furent adressées aux autorités municipales de toutes les cités et villes du Canada, afin d'attirer leur attention sur l'importance de décorer les villes dans le cadre de leur programme respectif des fêtes du Centenaire de la Confédération. Les associations provinciales nous ont aidé à assurer une meilleure diffusion de cette publication en nous permettant de la poster à l'intention des Chambres de commerce et autres corps intermédiaires.

Les discours de MM. Bloc et Dupuy, les discussions, les prix décernés, les expositions, le thème même, dont notre congrès 1965 à Montréal a été l'occasion, nous ont fourni une excellente opportunité d'informer le public.

De même, en plus d'avoir endossé diverses campagnes, l'Institut y a collaboré, notamment: la promotion de prix nationaux, par le Conseil national de l'esthétique industrielle, le ministère fédéral des Travaux publics, et des concours d'architecture, tel celui commandité par l'Association canadienne de l'Industrie du bois.

Une autre publication a connu une vaste distribution cette année. Il s'agit de "Si vous bâtissiez" préparée par l'AAPQ pour faciliter les relations de ses membres avec leurs clients.

Paul-O. Trépanier
Président

Mme Freda O'Connor, P. M. Scott, K. L. McMillan, Frank Nicol, Mme Dorice Walford, Aza Avramovitch, Alfred Chatwin, Peter Holtshousen, N. C. H. Russell, Warnett Kennedy

Comité Mixte de l'IRAC et de la SCHL sur l'Habitation

A l'occasion du présent rapport, il à propos de rappeler aux membres que l'objet du Comité mixte est de fournir à la Société et à l'Institut les moyens de discuter ensemble divers problèmes, idées et activités du domaine général de l'habitation au niveau professionnel. Dans le passé, le Comité a organisé des séminaires sur l'habitation ainsi que des voyages d'études des conditions d'habitation au Canada et aux États-Unis. Il a en outre contribué à l'étude de l'Institut sur les Conditions de l'habitation et

Massey Medals

The Massey Medals for Architecture Competition will be held in 1967. The revised conditions will be published early in the summer of 1966. The date for submission of entries will be 1st December 1966. It is hoped that the awards will be announced and the presentations made on 24th May 1967 as part of the opening ceremonies for the RAIC Assembly.

Among the several changes to the conditions recommended by the Massey Medals Committee, and to be published shortly, is a request for "up to 20 35mm colored transparencies" of the building and its setting. Groups of buildings *eg* exhibitions and university campuses will probably be included, and the necessity for competitors to classify their entries according to specific building types may be eliminated.

Since 1967 is Centennial year it is expected that entries will be numerous and of a very high standard. The exhibition, therefore, should be of especial significance nationally and internationally.

Thomas Howarth (F)
Chairman

John A. Russell (F), John Bland (F), Guy Desbarats (F),
Henry Elder, N. Mainguy, D. Shadbolt, I. MacIennan (F)

à la préparation d'une étude très utile intitulée "Réflexions sur le zonage".

A l'heure actuelle, le Comité mixte étudie activement le Programme de modèles de petites maisons de la Société centrale d'hypothèques et de logement en vue de le faire entrer dans les cadres établis par la profession pour la tenue de concours. En outre, on songe à donner plus d'ampleur aux modèles.

Le Comité a soumis à l'Institut une recommandation selon laquelle le nombre de ses membres serait porté à huit, dont quatre représenteraient la Société et quatre l'Institut. Ces derniers seraient probablement choisis en fonction de leur expérience dans le domaine de l'habitation mais aussi de façon à assurer une plus grande représentation géographique pour l'étude de ce problème qui intéresse tout le Canada.

Je donne ci-après la liste des sujets qui retiendront l'attention des comités, en invitant tous les membres de l'Institut à nous faire parvenir leurs commentaires et à nous indiquer d'autres sujets visant l'habitation qu'il y aurait bien d'étudier dans les limites des ressources de ces comités.

Programme

Le Comité a examiné la liste des sujets mentionnés dans le procès-verbal de l'assemblée du 30 octobre 1964 et a décidé de soumettre les suivants à la considération et à l'étude du Comité mixte à sa prochaine réunion :

- 1 Maintien de la formule des séminaires et des études sur place des régions urbaines.
- 2 Étude des maisons unifamiliales situées sur des lots étroits, des points de vue du modèle et de la production.
- 3 Numéro spécial du Journal de l'Institut sur certains aspects de l'habitation.
- 4 Participation à d'autres études découlant de l'étude sur le zonage, *ie* contrôle de l'aménagement.
- 5 Étude en rapport avec la remise en état des habitations.
- 6 Maisons non familiales – maisons de pension, hôtelleries, etc.
- 7 L'automobile et les conditions d'habitation.
- 8 Monographie sur le paysagisme – le paysagisme dans les régions à forte et à moyenne densité.
- 9 Services sociaux et récréatifs pour les régions à forte densité.
- 10 Rentabilité des bâtiments – étude comparative des

immobilisations et des frais d'exploitation dans le cas des maisons très élevées, moyennes et basses.

- 11 Étude économique de l'établissement des services et de l'aménagement des terrains.
- 12 Étude inspirée par le livre "Cities in the Suburbs" – problèmes de modèles pour les centres suburbains.
- 13 Nouveau principes d'urbanisme.
- 14 Concours.
- 15 Séminaire à l'Expo 67.
- 16 Préparation à l'urbanisme.

James A. Murray (F)
Président

James W. Strutt (F), John Bland (F), Ian MacLennan (F),
Andrew Hazeland, Humphrey Carver

Rapport du comité sur la formation des Architectes

Le Comité sur la formation des architectes s'est réuni le 9 juin 1965 à Montréal, au cours de l'assemblée annuelle, puis a tenu une réunion d'une journée entière à Toronto le 25 mars 1966.

Aux termes d'une récente revision du Règlement, le nombre des membres du Comité a été porté à quatorze, de façon à faire place à des représentants de toutes les associations provinciales et de toutes les écoles d'architecture.

Des examens ont de nouveau été tenus selon le programme d'études minimums; sur un total de 28 candidats, 13 ont réussi. On travaille actuellement à reviser ce programme et à le mettre à jour; on espère le rendre plus clair et donner plus de renseignements quant au travail à faire avant la tenue des examens.

Un Comité sous la présidence de M. Rounthwaite a visité l'École d'architecture de l'Université Laval, à Québec, en juin dernier. Aucune visite d'école n'est prévue pour cette année.

Au cours d'une récente période de dix ans, pour tous les cent architectes diplômés d'écoles d'architecture canadienne inscrits dans les rangs de la profession, 141 nous sont venus de pays étrangers. Le besoin d'ajouter aux services de formation est manifeste et l'on songe activement à agrandir certaines écoles existantes et à en établir de nouvelles. Des plans prévoient la création d'une école à l'Université de l'Alberta et on a aussi

proposé l'établissement d'écoles nouvelles à quatre universités de l'Ontario.

Le Comité s'inquiète vivement de la rareté d'adjoints formés en architecture ainsi que de la grande variété des normes en matière de formation. Un sous-comité étudie les moyens d'améliorer la situation.

Un sous-comité étudie également la question de permettre aux architectes de poursuivre leur formation et surtout la possibilité de mettre un programme en ce sens à la portée de tous les membres.

J. Lovatt Davies (F)
Chairman

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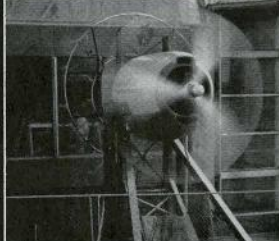
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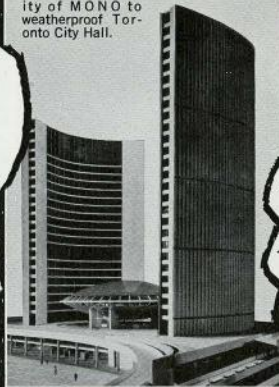
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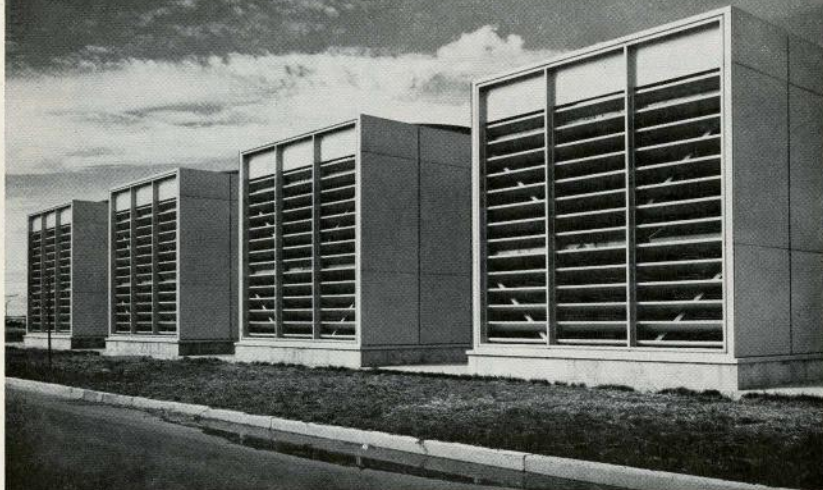
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Movable Partitions and Doors

Versatility, convertibility, expansibility, and flexibility are expressions which one hears whenever educators, businessmen and architects get together. As society and culture are constantly progressing at a fantastic pace, it is becoming evident that we are in need of an almost totally flexible environment in which to work, learn, and live.

One facet of flexibility is the subdivision of internal space by means of some form of movable partitioning system. Recent years have seen considerable advances in this field. Today the purchaser of movable partitions can choose from a wide range of systems which will satisfy his needs as to degree of flexibility, aesthetic appearance, structural capabilities, acoustical privacy, as well as budget.

Although there are many varied systems, the basic components of the majority may be simplified to a series of vertical posts with combinations of panel and door infill units. The key to the degree of flexibility of a wall system is the partition post. The most flexible type of post is generally of aluminum or steel simply designed so as to allow any type of panel unit or door unit to be fastened to it on any or all of its four sides. It must also allow for removal or addition of any of these units without affecting adjacent units. Snap-on trim pieces are generally used to fill the unused sides of the post and function as a design feature as well as concealment for the inner structure of the post. Other wall systems employ a totally or partially concealed post which provides a much simpler and cleaner wall surface.

The infill panels are available in many different combinations of materials, textures and colors, and generally establish the visual appeal of the wall system. Glass, wood, metals, composition boards and plastics are all available as infill panel material. The basic construction of these panels consists of two sheets of solid material separated by means of an airspace, insulation material or

a solid or honeycomb core. The final finish of the surface is then applied over these two sheets and may consist of anything from painted or baked enamel to wood veneer, plastic laminate, natural wall coverings, vinyl or many other natural or synthetic materials.

The majority of partition systems provide for certain types of doors including all the necessary hardware. The purchaser is free to choose from the widest range of doors from hollow to solid core, wood or metal doors, most of which may be finished in the same wide variety of materials available for the panels.

Any type of door from solid to fully glazed can be fitted into a partition system, and most types of hardware may be employed although most manufacturers offer standard door hardware items to fit their particular partition system.

Not all movable wall systems are based on the post and panel principle. Some make use of panels only which are stiff enough to stand alone without the necessity of a vertical post. These particular systems generally may be erected and removed very quickly and easily.

Movable partition systems may be divided into two distinct categories: progressive and non-progressive systems. The most flexible of the two is the non-progressive system of panels and posts which allows for the removal of any number of panels without affecting adjacent panels or posts. Progressive systems tend to involve considerable extra effort when a change of plan layout is desired.

One of the most important problems with many types of movable partition systems is that removal of panels and post leaves the ceiling, floor and wall surfaces in a marked up condition. This fact tends to nullify any advantages of flexibility which the partition system components themselves may seem to have.

Dimensional co-ordination has been cited as the solution to many of the problems of

flexibility, economy, and compatibility of building components. At present the manufacturers set their own standard panel sizes and generally have adopted the 4 inch or the 6 inch module as standard. There is, however, no industry standardization of panel size. Complete building industry acceptance of dimensionally co-ordinated building materials and components would provide a much greater opportunity to achieve true flexibility in all instances.

All types of movable partitions have been laboratory tested for their acoustical properties and the results indicate that the panels themselves have excellent ratings for the most part. However, the panels form only one part of the total enclosure of space and the degree of acoustical privacy attained is greatly affected by the treatment given to sound passing around the panels through ceiling and floor construction, air conditioning ductwork, and the connections surrounding the panels. A great deal of attention must be focused on these problems as well as on the partitions themselves in order to achieve a reasonable degree of privacy within a space. Certain partition systems have attempted to better the situation by placing rubber or vinyl sealing strips on all four edges of the panels and have been able to improve the acoustical properties of their system; however, this sometimes involves a reduction in flexibility.

The problem of locating electrical wiring and switches in movable partitions has been solved to a degree by providing space in the base, head and post members or between the faces of the panels, but quite often the introduction of electrical wiring reduces the flexibility of the system. This reduction in flexibility calls for careful attention to the actual need for installing wiring in certain types of partitions. Most manufacturers offer specially designed switches and outlets for use with their partitions.

For the most part, the variety of partition systems available eliminates most of the problems encountered with permanent partitions and has provided a system which is easily erected, removed and re-erected with a minimum of disruption to normal business operations. Movable partitions eliminate much of the site work required with fixed partitions as hardware installations, and surface finishing may be done during manufacturing processes elsewhere.

In many cases, large buildings are constructed with the intention of renting space to tenants whose needs are unknown prior to actual construction. It is therefore necessary for the architect and engineer to provide a basic structure with assumptions as to loading and occupancy requirements allowing for later subdivision of space by means of light flexible partitions. A fully integrated and co-ordinated system of building components is necessary to achieve true flexibility. Greater co-operation between all persons in the building industry is necessary in order to provide an environment with a system of components each compatible with the other to provide the total flexibility required by today's society.

D. A. Voysey

Estimating

In addition to the movable partitions and doors described in the article above, there are two other categories of interior vertical elements to be included in the preliminary estimate. These are permanent partitions and glazed partitions, both with their associated doors.

The reason for the division of this element into three separate sub-elements are twofold. Firstly there is a distinct price stratification between the three types of partition. Permanent partitions are usually constructed of masonry or concrete. They remain in the building regardless of any subsequent change in tenant occupancy and are not easily removed or re-arranged. Movable partitions on the other hand are usually made of metal, wood or other similar material, and their

prime function is to be demountable. The folding screen usually to be found in a school gymnasium is included under this heading. Glazed partitions are usually made with metal or wood frame. They are permanent in the sense that they are not intended to be demountable, and are to be found as interior screens or entrances or fire screens at stairwells.

The second reason for the separation of the three types of partitions is tied in with the use of the estimate. Every building has some permanent partitions, most buildings have some glazed partitions, but many buildings have no movable partitions at all. If all partitions were included under one heading, it would be difficult to make comparisons between buildings. For example, a speculative office building will have permanent partitions at the core, it may have some glazed partitions at stairwells and at the main entrance, but other than this, the building is an open shell. A comparison with a fully partitioned office building would be difficult unless the additional partitions, assuming they are movable partitions, have been kept separate in the estimate. With this separation it is immediately obvious why, and to what extent, one building will be more expensive than the other.

The measurement of all interior vertical elements is comparatively simple. It merely requires the total length of each type of partition, measured over doors, times the height.

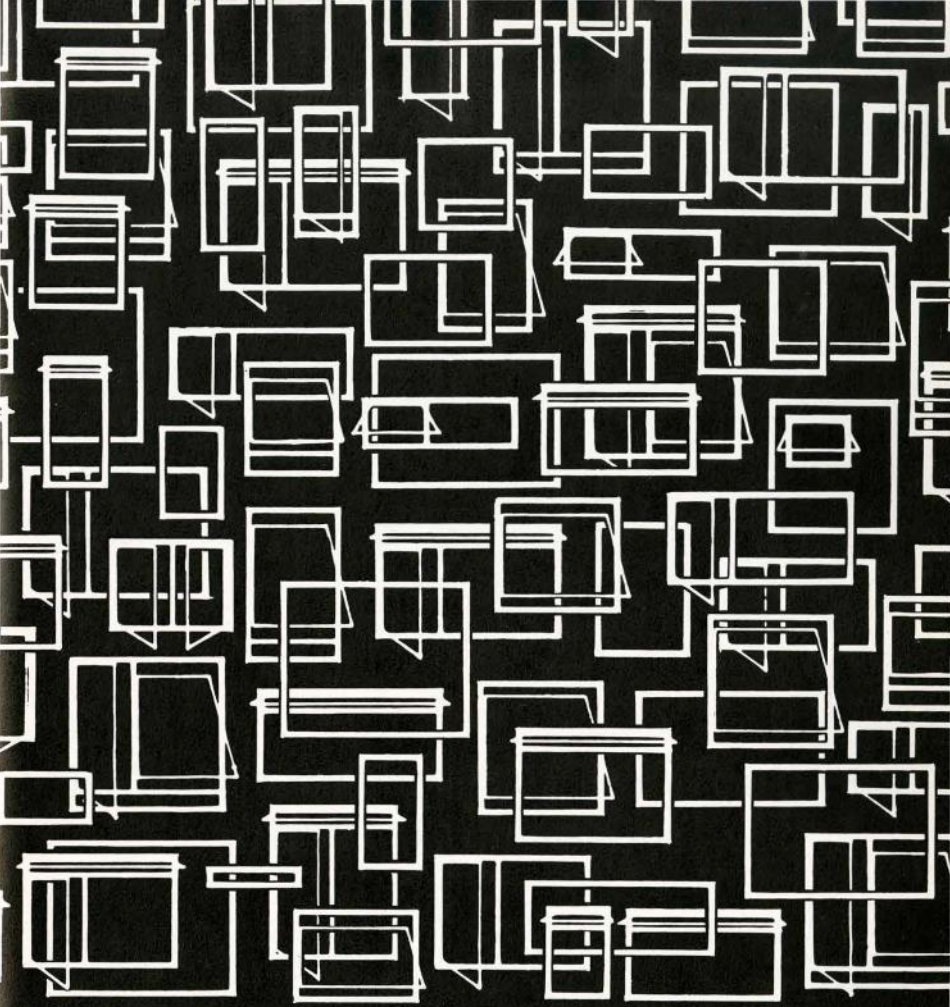
It often happens that partition lay-outs have not been studied at the time of preparing a preliminary estimate, and it is not therefore possible to measure the partitions. If records have been kept of the relationship between the quantities of partitions and the total gross floor areas of various types of buildings, it can be seen that a fairly constant ratio exists. For example, the ratio between the area of the permanent partitions and the gross floor area of schools is usually about .98, that is, for every square foot of floor area there is .98 square feet of partition. Although this is obviously not as accurate as taking measurements, it does at least give

a reasonable quantity of partitions for a preliminary estimate.

Prices which can be applied to these elements for preliminary estimates are as follows:

- 1
 - a 4" Block partition, including doors \$ 7.75 per SF
 - b 6" Block partition, including doors \$ 8.80 per SF
 - c 8" Block partition, including doors \$ 8.87 per SF
 - d 10" Block partition, including doors \$ 11.00 per SF
 - e 12" Block partition, including doors \$ 11.10 per SF
 - f Concrete walls \$ 2.50 per SF
- 2
 - a Movable metal partitions, including doors \$ 3.00 per SF
 - b Movable wood partitions, including doors \$ 2.50 per SF
- 3
 - a Hollow metal glazed partitions, including doors \$ 3.50 per SF
 - b Aluminum glazed partitions, including doors \$ 6.50 per SF

F. W. Helyar



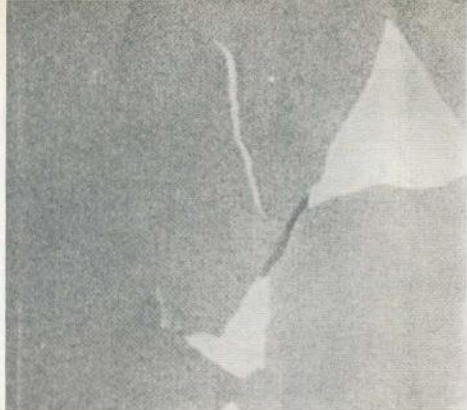
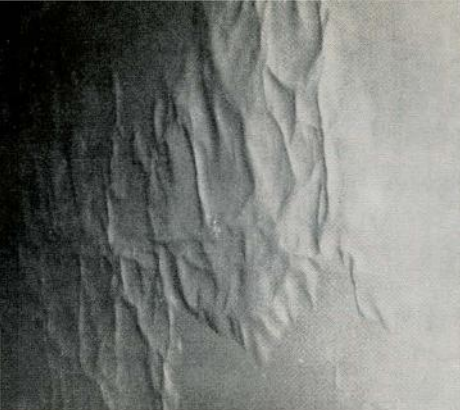
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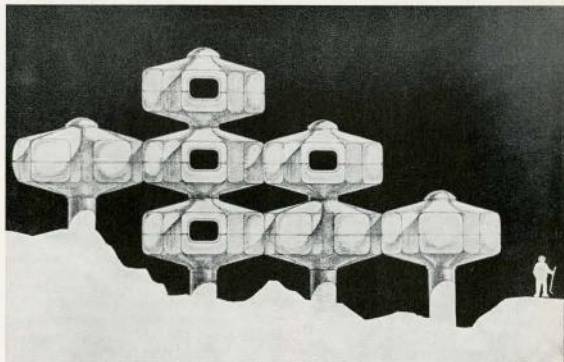
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Plastics in Architecture

Plastics are now accepted building materials, but their present application, even though extensive, is still mainly confined to their use as a substitute for traditional materials in a traditional and usually non-structural context. The problem of the application of plastics to building is a two-fold one in which there is, firstly, the question of the chemical and performance characteristics of the materials. Considerable progress is being made in this area by research, and, as the characteristics of plastics lend themselves very well to the production of the gadgetry with which we are surrounding ourselves, so we can expect that our buildings will be structured more and more out of these materials. However, it is the second aspect of the problem that is the less publicized of the two and the less researched, yet it is the one that we experience daily and that influences the comprehensive use of plastics in a direct way. This aspect is one of context – the form of the physical environment in which we live and to which plastics are applied. The technology that created plastics also created the conditions for a new environment, our surroundings are being modified, and with the current re-structuring of the environment, new ways of modifying technology are in turn being found.

With the industrialization of construction – a hitherto slow yet inevitable process – buildings, for industry, become assemblies and sub-assemblies of fabricated components. From an urban point of view, buildings, as cities, have either grown vastly in size (Place Ville Marie in Montreal), or they are being grouped into large infrastructures (Simon Fraser University or a suburban shopping center) so that they are no longer definitive units but large assemblies or elements of a larger assembly. From an economic point of view, the parameters of building design are also changing so that obsolescence and change itself become dynamic environmental factors. As a result, the built environment, as the tendency of technology itself, becomes a cybernetic study in systems, system analyses and man-machine relationships – the gamut of techniques current, for example, in the aero



1

space industry (in the 1930's, Buckminster Fuller had pointed this out in relation to the aircraft industry). It is interesting to note that with the passing of the recent rocket boom several aero space companies have turned their systems methods on environmental problems such as mass transportation and housing.

In this context, a house can become an assemblage of packages of space and appliances which render life amenable; each package having its own renewal cycle – the kitchen package vs the heating/cooling units. These assemblies-to-live-in can be lodged in an infrastructure, keyed into a service network, and grouped according to social conditions that can analogically promote a backyard, a street, or a neighborhood. The great architecture of history can be seen to have had its sources in indigenous constructions which first responded in a new way to new technology, similarly, in contemporary popular modes of building, one can find a response to a new environment and an indication of things to come. An operative example of the system-to-live-in is the mobile trailer home that is being produced in North America in large number.

These light-weight and compact housing packages on wheels are designed to be plugged into service lines in different cities; there are, as well, several high-rise "parks" being constructed with ten stories of mobile trailers plugged into a concrete cage. If the manufacturers find it feasible, these mobile homes can be structured out of plastics and reinforced plastics without altering the design – in this context, wood and aluminum seem out of place. Educational facilities in this new tech world also become assemblies of space components serving groups of students plugged into audio-visual cores and circulation circuits. And a cultural center, as has been shown in a recent project for London, becomes a machine-to-live-it-up-in where a service structure can assemble a mobile system of prefabricated panels for the presentation of a three ring circus, a bingo fest, or a political rally.

Project 1

Camp cluster; fiberglass reinforced molded plastic panel system cantilevered from aluminum stair tubes. Student, Renata Jentys
 Projet No 1

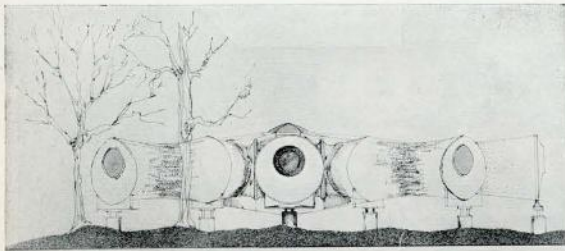
Groupe de cellules; panneaux de plastique moulé, armé de fibre de verre, en porte-à-faux sur des escaliers cylindriques en aluminium. Élève, Renata Jentys

Project 2

Camp cluster; fiberglass filament wound plastic cells plugged into a molded plastic core. Student, Pierre Beaupré

Project No 2

Groupe de cellules; cellules formées de fibre de verre enroulé et raccordées à un coeur en plastique moulé. Elève, Pierre Beaupré



2

These "buildings" create indeterminate environments that are geared to perform their required jobs. The design distinction between a general service infrastructure, and the components that specifically relate spaces to people, allows the designs to profit from both transient and the permanent conditions; the transient elements being clearly designated as expendable. This new context accordingly implies new material needs and new performance criteria for which the unique properties of plastics offer direct answers. The ease with which plastics can be formed and shaped makes them naturally suitable for production techniques and assembly methods. The high strength to weight ratio of plastics becomes a dynamic design factor in a component building system. With the discontinuous loading conditions of plastic assemblies in a concrete superstructure, for example, the dimensional instability of plastics can be controlled.

Environmental and chemical architecture are both at the elemental phase of development where possibilities are inferred and diagrammed. The content of the new technology has only begun to be externalized into viable methods of organizing our physical environment. In this age, the emphasis of national wealth and energy is primarily expended on aero space and military hardware; war and the fear of war are in this age, as in any other, the main motivation

of technological advance. In Vietnam, for example, use is being made of warehouses structured out of inflated vinyl covered nylon skins that can be deflated, folded up, laundered, and shipped elsewhere. The use of filament wound fiberglass reinforced plastics illustrates this "scientific" gap in our environment — the distance between the capacity of how to do things and the knowledge of what to do: In rocketry, nose cones, fuel propellant cases and thrust chambers are being structured out of filament winding techniques; the complex stress conditions of each component are programmed into the winding process. The same company that spins these impressive moon missiles, using the same techniques of winding glass fibres on inflated rubber mandrils, recently prepared a study for a house of the "future" in which a suburban family home, typical of any that can be found sprawled along the peripheries of our cities, was recast in its pristine glory in filament wound shells in a singularly impressive demonstration of what not to do.

Nevertheless, beyond the fringe of the main current of architecture a quiet revolution has transformed some buildings into industrial "design" products that are technologically conceived and produced. These building types are marginal to the construction industry, such as radar domes, polar and military shelters, and exhibit structures. For the most part, these buildings

were conceived of, and made operative, as component systems structured entirely in fiberglass reinforced plastics. The inherent expendability of these buildings, the need for a system of interchangeable parts, and reproduction in quantity were design conditions that were enough to set the problem as one removed from the pale of traditional construction. Also beyond the construction industry is the design of micro-enclosures such as bus shelters and telephone booths. These elements are being industrially manufactured in plastics as other equipment for human use like the telephone itself; these mini-buildings are human engineered and molded to the configuration of the body for which plastics are especially suited. In the technologic *modus operandi* of these quasi-buildings, a faulty component is designed to be replaced, and the assembly conceived a-priori to redistribute the stress circuits at the removal of a member (the geodesic raydome is an example of this device).

New technology is extending man's environment into hitherto uninhabitable parts of the earth and extra-terrestrial space with consequently new environmental conditions. The ease of mobility and the need of natural resources has, for example, opened the arctic and sub-arctic of Canada to settlement. The problem of structuring a place-to-live can here be approached by entirely new means as there is no existing context to limit possible solutions; the logistics of the problem imply new constraints, and hence new possibilities. The light-weight and high strength of the materials used, and a system of building components that can be easily produced, erected and dismantled are design requirements because of accessibility to the site by air, the varying size and the type of the necessary installations, and the inherent need of standardized and interchangeable building blocks. These requirements set out material and production parameters for which reinforced plastics are especially suited.

The housing of workers in sub-arctic conditions was the subject of a study conducted at the School of Architecture of

Project 3

Component and unit system structured in fiber-glass reinforced plastic panels.

Student, André Ostiguy

Projet No 3

Système d'éléments moulés en plastique armé de fibre de verre. Elève, André Ostiguy

the University of Montreal with the fourth year students.¹ The objective here was to orient the students to the methods and content of future solutions, and this project introduced plastics, a new material with which to structure buildings, in the context of a new problem which cannot be solved in a traditional way. The study was called "Project Mini-Camp", and the problem was to design a demountable, transportable shelter system that could be adapted to varying terrain conditions, and that could house men at construction, mining, scientific and settling operations in the remote areas of northern Quebec. The system was to be designed in FRP, and be completely pre-fabricated and equipped so as to minimize fieldwork. The basic camp cell was to sleep four men, and include ancillary services required for their well being. This cell was to be designed to be linked to other similar cells and to recreation and dining cells so as to form a larger camp unit.

A dialogue was set up with the students to program the design. The mobility of the mini-camp introduced the factor of weight control and the optimum design of all enclosed voids. The basic camp cell was both to be an extensible assemblage of components, as well as a component of a larger cluster, and linking conditions had to be studied. The use of FRP introduced stressed skin structures, inflocking surfaces, and a material that can be moulded to specific interior configurations – such as cast in beds – as well as to general structural configurations. The content of a housing environment was thus put to question; there were no possible traditional references, other than human use, that could be assumed without redefinition. For example, a window became a hole to be punched out of a stressed panel, and consequently the shape, purpose, position, and the very need of a transparency and a light source were put to question in such a way that new answers could be proposed. The study was limited to the phase of preliminary models that simulated possible solutions; it was intended that this project, as elementary research, be open-ended so as to encourage future development. Most of the students structured

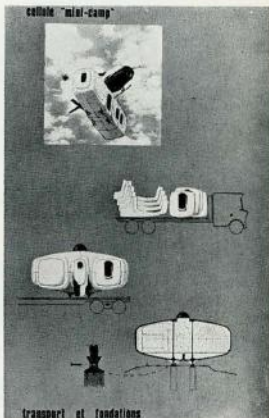
their systems out of shaped sandwich panels with honeycomb or foam cores, a few ventured to use filament winding techniques. The joining of components was found difficult; there was still a screwing, nailing and notching mentality at work and not enough inventiveness with VPC and butyl tapes, and adhesives – part of the chemistry of plastics.

The general feedback from the students was that, for architecture, plastics implied prototype and systems design techniques that in turn imply a different orientation than the one-and-only, non-repetitive building point of view. The study demonstrated that the successful use of plastics in building implied, furthermore, the need for the total uncoupling of the idea of a building itself as an environmental system so that it can be re-programmed and restructured in a new way and in response to new needs and new material criteria. This problem of housing workers can be seen to be a special and reduced version of the larger problem of housing a growing urban population. Perhaps the experience of these new architectures (or non-architectures – really two sides of the same coin) will influence the structuring of the urban environments in a more dynamic way.

¹This project was carried out under the direction of Prof Melvin Charney with the assistance of Profs M. Barcelo and S. Carreau, and the Fiberglas Company of Canada; Mr Eric Brown of Polyfibre Limited, and Henri Finkel, Industrial designer, participated on a final jury.

Melvin Charney, MRAIC
Assistant Professor of Architecture in charge
of graduate research, Ecole d'Architecture,
Université de Montréal

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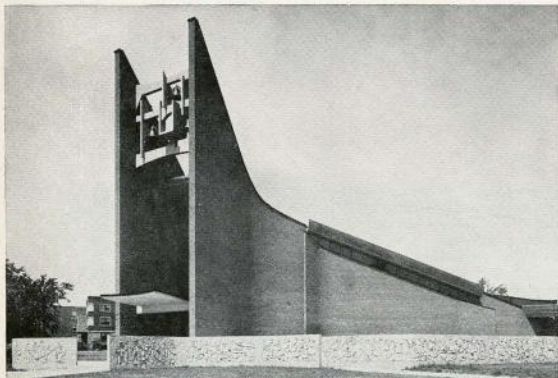


3

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The Editors,

I have recently read an issue of the new *RAIC Journal*. It is an outstanding publication with the best book reviews and technical articles I have seen on this continent. It is a good start towards a great professional journal, which we so badly need.
Robert L. Geddes, Dean, School of Architecture, Princeton University

The Editors,

Congratulations on the new format — the *Journal* is certainly coming of age!
J. W. Strutt (F), Ottawa

The Editors,

It is perhaps revealing to note that the new format of the *RAIC Journal* has now passed into its fourth month without comment on the part of its captive audience. This made even more apparent, because of the layout of the *Architectural Record* also changed at the first of the year and the letter column of the March issue was almost exclusively of comments relating to its new appearance (even Walter Gropius found time to write). The recent changes to the *RIBA Journal* evoked many contributions of criticism or praise.

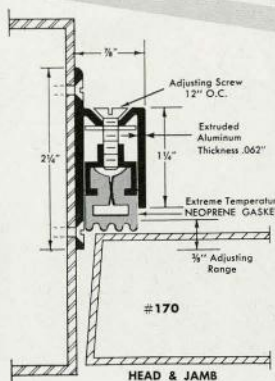
Can it therefore be implied that the Canadian architectural profession is completely disinterested in their own *Journal*? Do we all wish to remain uncommitted?

If it is not too late now I should like to say that the new format and indexing have certainly improved the magazine. The news column is a good idea and the fact that advertising is not now sharing the same pages as magazine material is a progressive step. What I could not understand, however, was why a whole issue was devoted to book reviews. If this is to be an annual event you will not be able to cover many of the new publications, and you will have to improve your current method of selection.
D. Warrilow, MRAIC, Toronto

The Editors,

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J. Hix, Assistant Professor, School of Architecture, University of North Carolina

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DPW Appointments

Air Commodore Richard B. Whiting, 54, Chief of Construction Engineering for the integrated armed services, has been appointed Assistant Deputy Minister for Program Planning in the Federal Department of Public Works. The Civil Service Commission appointment, effective April 1, fills one of three key positions under the Department's Deputy Minister, Lucien Lalonde. G. B. Williams recently was named Senior Assistant Deputy Minister in charge of Operations. The third post, Assistant Deputy Minister in charge of design, has yet to be filled. The appointments are part of an extensive departmental reorganization aimed at delegating greater authority to field managers in various parts of the country.

Positions wanted

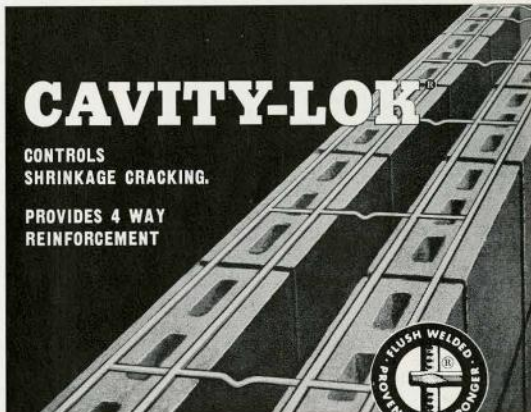
Architect, registered in the Philippines, BS Arch (U of Sto Tomas) 23 years of age, two years experience in perspective rendering and preparation of working drawings, wishes employment with a Canadian architectural firm. Write Antonio R. Encarnacion, 96 K-3rd Kamuning, Quezon City, Philippines.

British architect, 27 years old, intending to immigrate to Canada wishes a position with a Canadian architectural firm. Mr Lazenby has passed the intermediate exams of the RIBA and testimonies for the final RIBA exam. Write David E. Lazenby, 21 Alder Hill Ave., Stonegate Road, Leeds, England.

Filipino architect, 31 years old, graduate from National University Manila (BSc), nine years office experience with architects and engineers, seeks employment in Canada. Write Conrado C. Montoya, 1948-C Gonzales Street, Pandacan, Manila, Philippines.

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as of December 31st, 1965

Premiums Written

1961	\$1,188,266.00
1962	1,341,395.00
1963	1,996,223.00
1964	2,308,485.00
1965	3,004,445.00

Assets
\$1,831,733.00

Liabilities
including premium
reserve \$1,084,313.00

Surplus
for the protection
of policyholders
\$747,420.00

Earned Loss Ratio

1965 - 50%

*For further information of the plan,
communicate with:*

**DUNLOP FARQUHAR INSURANCE
LIMITED**

170 Metcalfe Street, Ottawa 4, Ontario

Oasis On-A-Wall water cooler

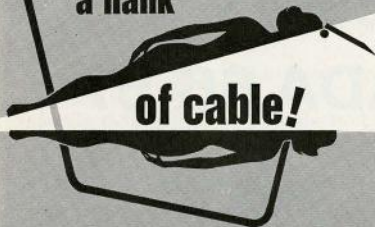


Refreshment
at any height

Built into the wall at any convenient height, this OASIS cooler is ideal for corridors, lobbies or other high traffic areas. Saves space where conventional coolers cause traffic jams. Serves up to 154 thirsty people. Chestnut Tweed vinyl-on-steel cabinet conceals all plumbing and electrical wiring. Front panel opens for easy installation or inspection. Look for this cooler and the complete OASIS line in the Canadian Sweet's Catalog.

OASIS® Water Coolers Products of **EBECO**® Mfg. Co.
Distributed in Canada by **G. H. WOOD & COMPANY, LTD.**
P. O. Box 34 • Dept. JR-12 • Toronto 18, Canada

A rag, a bone,
a hank



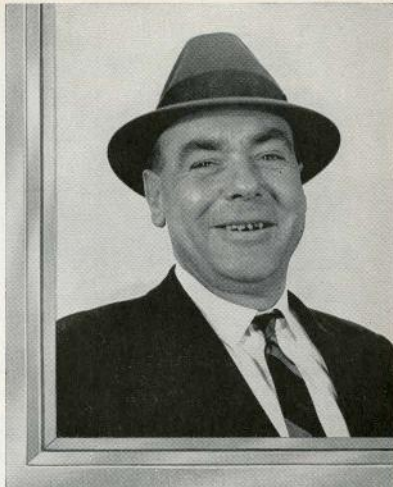
of cable!

Beauty is often a simple thing, for instance our dock leveller: heavy gauge steel, a cluster of springs, a roller or two and cable—ingeniously composed to respond like clockwork to a feather touch, and carry 10 tons!—No motors, no hydraulics, no problems.

Unique but simple . . . Blue Giant, of course.



85 Heart Lake Road, Brampton, Ontario



SOMEBODY SPECIFIED *Sealite!*

Boy is he glad! No fogged up windows in his building, because Sealite units are guaranteed to stay clear all year. As a matter of fact we build them to last the life of the building.

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Before you specify another job, see why triple seal, steel framed Sealite units are your best — your most economical guarantee of glazing satisfaction.

- SELECT QUALITY GLASS
- STAINLESS STEEL CHANNEL
- WELDED CORNERS

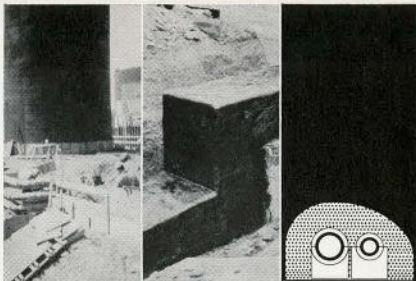


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General Motors Truck assembly plant

Ontario Hospital, London, Ont.

Cross section schematic of Miconite System

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No reinforcement necessary for normal underground installations. The New Miconite System of underground piping insulation utilizes a light weight poured-in-place material. It provides a strong, water repellent high value insulation for underground steam or hot water lines, as well as cold water piping systems and hot air ducts.

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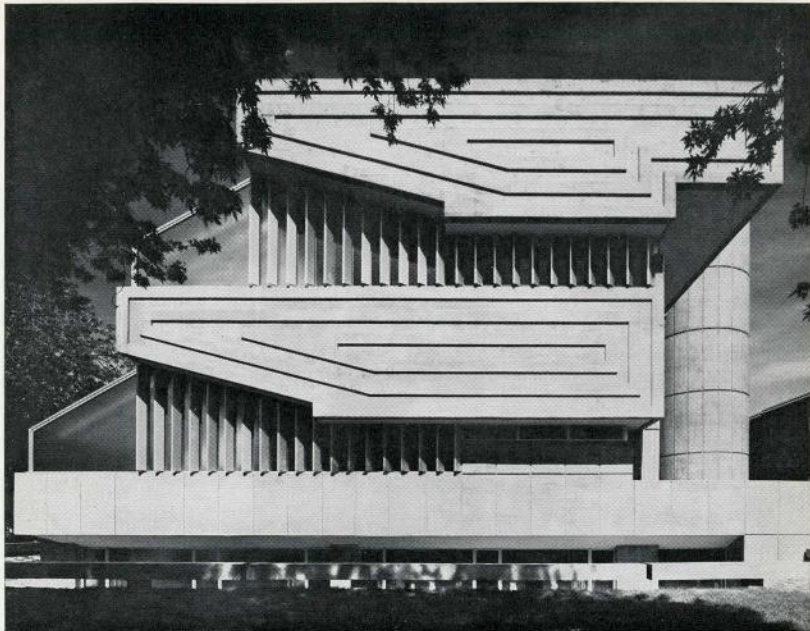
Mailing date July 29

ADA 66-67

- First publication of manufacturers new file number listings
- 1966 Register of Architects
- Up-to-date listing of Architectural Practices by Provinces
- Guide to Building Construction Services

\$15.00 per copy for non-members

Published by the Journal of the Royal Architectural Institute of Canada
160 Eglinton Ave. East, Toronto 12



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