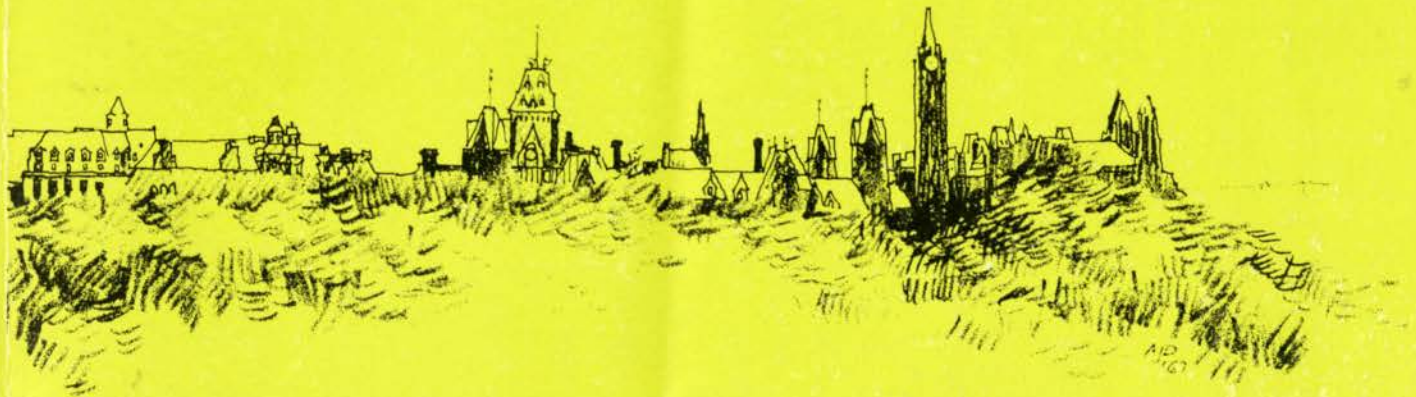


Architecture Canada

Journal RAIC / La Revue de l'IRAC : April / Avril 1967



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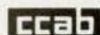
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1 News/Nouvelles	page 7
	page 47 Royal Canadian Academy of Arts 1967 Exhibition
2 Communiqué	page 15 From Institute Headquarters Du siège social de l'Institut
3 Arts	page 21 Art and Industry
4 Review/Revue	page 25
5 Features/Projets	page 29 Résumés page 31 National Capital Plan, Introduction page 32 Glories and Miseries of a Master-Plan, <i>Hans Blumenfeld</i> page 36 Ottawa, Central Area Redevelopment page 41 Ottawa, Transportation Study page 43 Banff Session '67 page 44 Strive for Uniformity? <i>Shadrach Woods</i>
6 Technical/Technique	page 55 Wall Cladding, <i>Derek Buck MRAIC</i> page 46a Use of Wood in Construction, <i>H. B. Dickens</i> , April Building Digest Supplement, Division of Building Research, NRC, Ottawa
7 Schools/Ecoles	page 59 Farewell, <i>John E. Page, S.J.</i>
8 Letters/Lettres	page 67
9 Classified/Annonces Classées	page 69
Index to Advertisers/Index des Annonces	page 72
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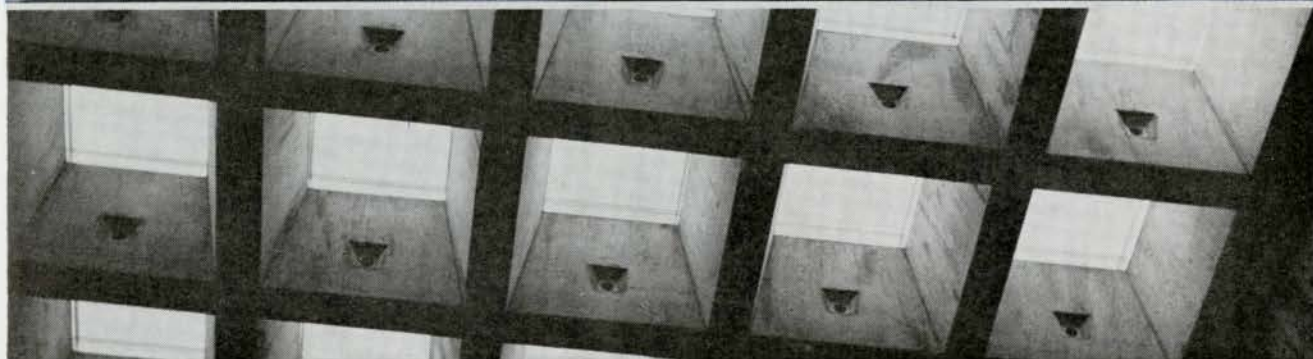
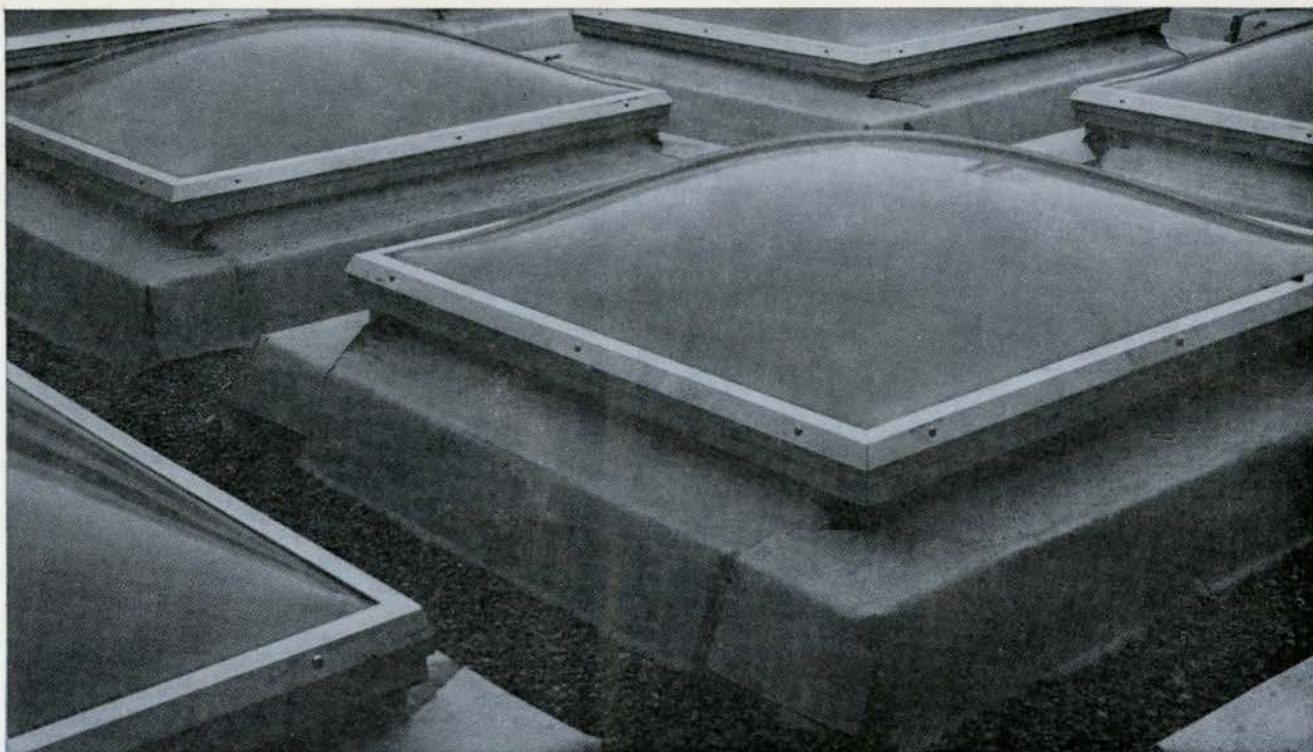
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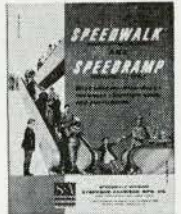
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Osaka Canadian Pavilion Results

The finalists of stage one in the two stage competition for the 1970 Canadian Pavilion at the Japan World Exposition were announced April 4. Out of 453 registrants and 208 entries received, schemes by the following six firms were chosen to continue to Stage 2: Affleck, Desbarats, Dimakopoulos, Lebensold and Sise; Gagnier and Warshaw; Ian Martin, Montreal; John Gallop Toronto; Gardiner Thornton, Gathe Davidson, Masson and Associates; Erickson/Massey Vancouver. Last date for dispatch of entries for Stage 2 is June 12, judging takes place June 26, and the winner is announced July 4.

Chairman and Professional Advisor is Z. Matthew Stankiewicz, MRAIC. The jury consisted of Warnett Kennedy, MRAIC, Vancouver; J. A. Langford, MRAIC, Ottawa; Gilles Marchand, MRAIC, Montreal; Douglas Shadbolt, MRAIC, Halifax; Patrick Reid, Frank Mayrs, Tom Wood. Kenzo Tange from Japan did not appear for the judging.

Structural Steel Design Awards

Winners of the "Award of Excellence" in the second national structural steel awards program were the Montreal Trust Tower, Toronto (1), by Page and Steele Architects; the Atlas Alloys warehouse and offices, Etobicoke, Ontario (2), Bregman and Hamann Architects and Engineers; the Concordia bridge linking Montreal with the Expo '67 site (3), Beaulieu Trudeau et Associés, Consulting Engineers, Consulting Architect Claude Beaulieu of Beaulieu Lambert et Tremblay; and the Seine River Bridge,

Highway 11 near Atikokan, Ontario (4), by Bruce R. Davis, Chester Grebski and Casimir Z. Stolarski of the Ontario Department of Highways.

National Architectural Archives for Canada

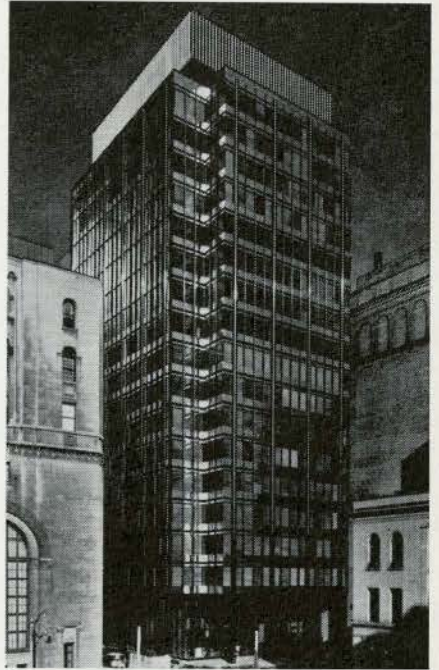
Dr Eric R. Arthur (F) has accepted the invitation of the President RAIC to be chairman of the new RAIC Advisory Committee on the National Architectural Archives. Preliminary discussions with Dr W. K. Lamb, National Librarian and Dominion Archivist in February followed a formal offer by the RAIC to assist in the establishment and maintaining an architectural Archives for Canada, and it is hoped to have an organization meeting of the new Committee and the RAIC Assembly at Ottawa May 24-27.

Seek Director of Professional Services

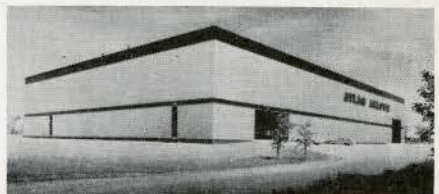
The RAIC invites applications for a newly created full-time position at Headquarters in Ottawa, Director of Professional Services. Applicants must be members of the Institute, and the responsibility will be to provide staff services in implementation of recommendations in the Survey of the Profession Report. Applications should be addressed to the Honorary Secretary at RAIC Headquarters, 151 Slater St, Ottawa.

New Schools of Architecture

The extension of architectural education facilities in Canada, a subject of much study and discussion in recent years (Banff Session '67 last month was on architectural education) made concrete progress in March with the announcement of one new school, at the



1



2



3



4

**66th Annual Assembly/Assemblée Annuelle
Hôtel Chateau Laurier, May 24-27 mai, 1967**

University of Waterloo; there are strong indications that within a year a third school will be established in Ontario at Ottawa's Carleton University, and one in the West in the Province of Alberta. So far there is no indication of whether the Alberta school would be located on the Edmonton or Calgary campus of the University of Alberta.

Earlier, at the Ontario Association of Architects annual meeting in February, it was announced that the U of T School of Architecture had become the Faculty of Architecture, Urban and Regional Planning, and Landscape Architecture, with Dr Thomas Howarth, formerly director of the School of Architecture, as Dean.

Education expansion in Ontario became a major project of the Ontario Association of Architects in 1964. A thorough study was made and the committee's report indicated that new schools were required rather than an extension of the University of Toronto School. (See *Architecture Canada*, October 1966, page 5.) The Ottawa area and Southwestern Ontario were considered the best locations. The OAA annual meeting in February supported this approach against the view of Dr Thomas Howarth, who said that the best course would be to establish elementary level satellite schools in various centers which would feed his school at the University of Toronto. On March 6 representatives of the OAA (President Keenleyside, Past President W. M. Smale and D. M. Blenkhorne, Vice Chairman of the Registration Board) presented the Association's recommendations to the Curriculum Committee of the Ontario Department of University Affairs.

Opposition was again expressed to Dr Howarth's proposal for satellite schools in favor of an independent school; and establishment of an independent faculty, rather than an appendage of existing engineering or other faculties or allied disciplines, was favored. The OAA, because of its responsibilities for the registration of architects, felt it had a legitimate interest in the education of undergraduates while at University, as well as in postgraduate, pre-registration and the continuing education of members.

Because of this there always existed some concern that OAA interest in undergraduate programs would be misunderstood as interference in the "academic freedom" of the University. The Curriculum Committee apparently did not so interpret it, saying that OAA interest in undergraduate education was appreciated and the Association was commended for its responsible attitude.

According to President J. G. Hagey of Waterloo, the new school is expected to admit first year students this fall, with a total enrolment of 260 when all years are in

operation. (Present enrolment at the Toronto School of Architecture is 263.) The course will be a three year pre-professional degree program, followed by a two-and-a-half year professional degree program. University departments which will be closely related to the new program are civil engineering, design, geography and planning, psychology, sociology, economics and mathematics.

Newfoundland Association of Architects

E. A. Steinbrink was elected president of the Newfoundland Association of Architects at their Annual Assembly January 25 in St. John's, succeeding F. Noseworthy. Other officers elected were B. E. Murphy, vice-president; T. P. Bolton, secretary-treasurer; and Councillors C. J. Congdon and Jon Oliver.

Special guest C. A. E. Fowler (F) RAIC President, spoke to a record attendance of members on the structure and role of the RAIC in relationship to the provincial associations. Max Baker of the Division of Building Research of the NRC spoke on his role as liaison architect between the NRC and the NAA and NRC services available to the profession.

AANB Annual Meeting

New Brunswick architects devoted six hours of their annual meeting—February 3 and 4, in Moncton, to an item to item comparison of the existing and the proposed Act and Bylaws. The initial draft was prepared by a committee of council members under the chairmanship of D. W. Jonsson. Its discussion drew a large attendance of members from all parts of the province. The association now hopes that it will be able to submit the final draft to a general meeting later this spring before presentation to the Legislature.

Jacques Roy succeeded Alfred Chatwin as President. New officers are J. R. Disher, vice-president; J. R. Myles, secretary, and Councillors, N. M. Stewart (F), D. W. Jonsson, Peter Siemers and Cyrille Roy.

Ontario Association Convention 1967

The accrual system over the cash method of accounting was recommended to Ontario architects at a seminar on Management for Architects at the OAA annual convention held February 16-18 at the Royal York Hotel, Toronto.

Chartered Accountant K. H. C. Landy, in a discussion on the "*Accounting for Architects*" manual (published by the OAA and available at \$10.00 postpaid) dealt with methods of accounting, labor unit costs and time records, depreciation, overhead, billing clients, paying consultants, payroll practices,

use of a project ledger, staff availability and job planning.

Following Mr Landy, a panel consisting of Jerome Markson, MRAIC, Loren Oxley, FRAIC, Frank Woodcock and A. L. Greaves discussed management practice from the point of view of the small, medium and large office.

The idea of an increase in architects' fees was strongly supported at the Annual Meeting and a resolution instructing the fees committee to draw up a new schedule by February 1968 was carried with only one dissenting vote. Warren Smale, retiring president, in his report also called for the formation of a fee schedule "fair to all concerned" but he emphasized that this must be related to "performance standards". The meeting rejected a proposal that the three principal buildings of Toronto's Nathan Philips Square—the Old City Hall, Osgoode Hall and the New City Hall—be declared a national historic site. Prof. James Acland at this time spoke vehemently on behalf of saving the Old City Hall. A resolution was carried, however, that the profession support the Ontario Governments' intention of setting up a trust to acquire and restore buildings of historical or architectural merit.

Speakers at this 52nd Annual Convention were Kevin Roche, Aaron Lemonick and Marshal McLuhan. Mr Roche, with the firm, Kevin, Roche and John Dinkeldoo and Associates, (formerly Eero Saarinen Associates) gave an informal illustrated talk on the work of his office and its design approach. The dinner speaker on Friday evening was Aaron Lemonick who described the structure of the universe as the physicist sees it. Marshall McLuhan spoke to a capacity luncheon audience of members and guests on Saturday.

A scholarship was awarded to second year U of T architectural student Norman Hotson, and cash prizes went to a number of other students from the School of Architecture and Ryerson Polytechnical Institute.

First World Congress of Engineers and Architects, Israel

The Association of Engineers and Architects in Israel has announced plans for the forthcoming First World Congress of Engineers and Architects, along with a series of tours of Israel and other Countries. The Congress is to run from June 20 to June 27. Tours of 17 to 30 days duration are scheduled to depart New York from June 7 to June 19. Information on both the Congress and the available tours may be obtained by writing Secretary: Mrs Z. Tennenbaum, 98-05 67th Avenue, Forest Hills, N.Y. 11374.

Specification Writers Association Conference

The 9th Annual Specification Writers Association Conference will be held April 26-29 at the Chateau Champlain, Montreal.

11th Urban Design Conference, Harvard

"The New Technology: Its Implications for Urban Design", is the subject of the 11th Urban Design Conference of the Harvard Graduate School of Design at the school on Saturday, April 29th.

MIT Summer Program on Form and Color

A special summer program, "Form and Color" is being offered to members of the product design and architectural design professions by the Visual Design Section of the School of Architecture and Planning at MIT from July 17-28.

Write Prof. James M. Austin, Room E19-3506, MIT, Cambridge, Mass 02139.

Canadian Standards in Building Codes

The principal Canadian standards called up in the National Building Code of Canada, 1965 edition, are now available in book form. (NRC 8993, Price \$5.00) This volume has been prepared and is now published by the NRC Associate Committee on the National Building Code as a further service to all users of the National Building Code of Canada. It constitutes a companion volume to ASTM Standards in Building Codes published by the American Society for Testing and Materials from its offices at 1916 Race Street, Philadelphia, Pa. 19103.

Victorian Architecture in Hamilton

Hamilton-Niagara Branch, The Architectural Conservancy of Ontario, Box 20, McMaster University Post Office, Hamilton, Ontario, 30 pages, \$1.50.

This attractive little pocket size booklet, one of the best of its kind we have seen, illustrates and comments upon some of Hamilton's domestic, institutional and commercial architecture of the Victoria Era, 1837-1901. The editorial board for the booklet was Dr A. G. McKay, FRSC, who wrote the text, Gillian Simmons and Arthur W. Wallace, MRAIC, who was the architectural advisor.

Coming Next Issue

- Waterfront Development
- Interior Vertical Elements



Newfoundland Association of Architects 1967 Council, front, left to right: F. Noseworthy, Past President and Councillor; C. A. E. Fowler (F), President RAIC; E. A. Steinbrink, President NAA. Back: C. J. Congdon, Councillor; B. E. Murphy, Vice-President; T. P. Bolton, Honorary Secretary-Treasurer; J. Oliver, Council.



Architects' Association of New Brunswick 1967 Council, back, left to right: Peter Siemers, Councillor, John Disher, Vice-President, Neil Stewart (F), Councillor; Jack Myles, Secretary; D. W. Jonsson, Councillor. Front: Fred Chatwin, Councillor, Charles Fowler (F), RAIC President; Jacques Roy, President AANB, Moncton. (Absent: Cyrille Roy, Councillor)



The 1967 OAA Council, seated, left to right: Douglas Johnson, councillor; Norman Critchley, treasurer; Warren Smalé, past president; P. M. Keenleyside (F), president; Robert C. Fairfield (F), Ronald E. Murphy, Timothy V. Murray, councillors. Standing: John D. Miller, secretary; Stan H. Butcherd, councillor; and John G. Spence, vice-president.

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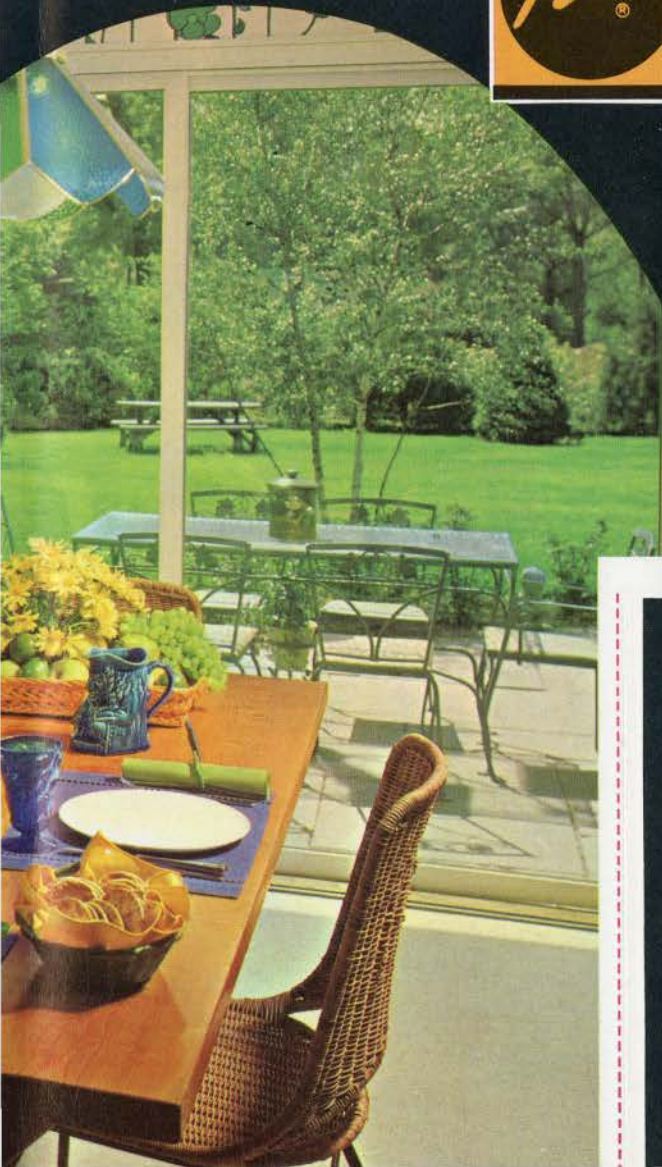
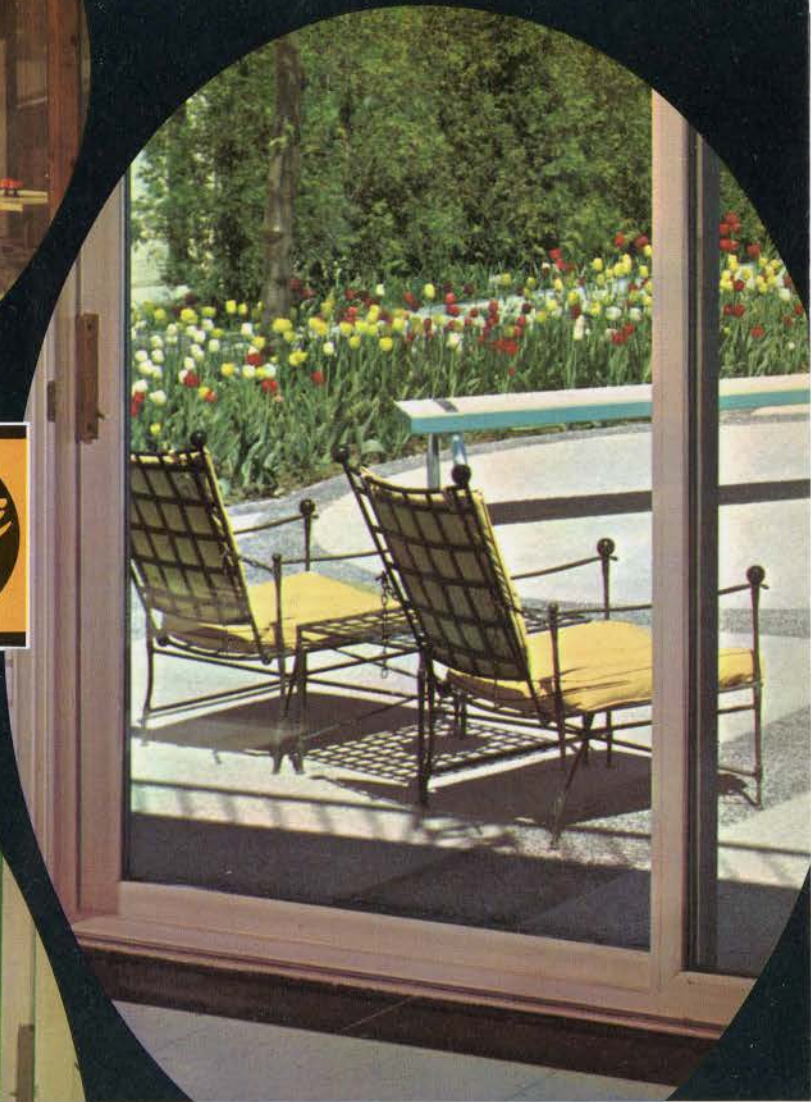
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From Institute Headquarters

RAIC Council met in the headquarters boardroom, in Ottawa, on February 24 and 25. President Charles Fowler (F) was in the chair, and all 15 members attended. Implementation of the *Survey of the Profession* findings occupied most of Council's attention. Encouraging progress reports were received from some of the task forces engaged in this work. A full discussion is planned for the Annual Meeting of the Institute, on May 25.

John L. Davies (F), Chairman of the Committee on Architectural Education, was present with recommendations for a John A. Russell Memorial Lecture and for listing Schools of Architecture recognized by our component associations. These were approved. The Committee is working on plans for a national program of continuing education, for revision of RAIC Minimum Syllabus, and for architectural technologists' classification standards.

Mr Davies also reported on plans for the Commonwealth Architects' biennial conference in India.

Amendments to By-laws concerning Publications Board and Architectural Education Committee will be recommended to the Electoral Board.

Nominations for two major awards were considered. The new RAIC Gold Medal for outstanding contribution to architecture and urban design will be presented at the Annual Assembly to Mayor Jean Drapeau of Montreal. The Allied Arts Medal will be awarded to Gerald Trotter, resident artist at the University of Western Ontario. Council approved recommendation of the Committee on Preservation of Historic Buildings concerning appreciation to the Departments of Transport and of Indian Affairs and Northern Development, Ottawa, for their interest in preserving the character of the Rideau Canal.

Other items on the agenda included payment of per capita dues; discussions with Department of Industry, Ottawa; appointment of Honorary Members; Consultants' Form of Agreement with Department of Public Works, Ottawa; assistance to new Faculty of Environmental Design, University of

Du siège social de l'Institut

Le Conseil s'est réuni au siège de l'Institut à Ottawa les 24 et 25 février. M. Charles Fowler (F), président, occupait le fauteuil et les quinze membres étaient tous présents. Une forte partie de la réunion a été consacrée au travail accompli pour donner suite aux recommandations du rapport de l'Enquête sur la profession. Des rapports reçus de certaines équipes de travail révèlent des résultats encourageants. Il y aura examen complet de la question le 25 mai, au cours de l'assemblée annuelle de l'Institut.

M. John L. Davies (F), président du Comité sur la formation des architectes, a recommandé la tenue de conférences à la mémoire de John A. Russell et l'établissement d'une liste des écoles d'architecture reconnues par les associations composantes. Ces deux projets ont été approuvés. Le Comité travaille à la préparation d'un programme national d'éducation permanente, à la révision du cours d'études minimum de l'IRAC et à l'établissement de normes de classification des techniciens en architecture.

M. Davies a également présenté un rapport sur les préparatifs en vue du congrès biennal des architectes du Commonwealth, qui aura lieu en Inde. Des modifications aux règlements visant la Commission des publications et le Comité sur la formation des architectes seront proposées à la Commission électorale. L'attention s'est ensuite portée sur le choix des titulaires des deux principales décorations de l'Institut. La nouvelle médaille d'or, pour contribution signalée à l'architecture et à l'urbanisme, sera présentée au cours de l'assemblée annuelle au maire Jean Drapeau de Montréal. La médaille des arts connexes ira cette année à M. Gerald Trotter, architecte résident à l'Université Western Ontario.

Le Conseil a approuvé la recommandation du Comité sur la conservation des bâtiments historiques de faire parvenir des témoignages d'appréciation aux ministères des Transports et des Affaires Indiennes et du Nord canadien pour l'intérêt qu'ils portent à la conservation du canal Rideau.

Les autres articles de l'ordre du jour comprenaient : le versement des cotisations

individuelles; des entretiens avec le ministère de l'Industrie à Ottawa; le choix de membres honoraires; la formule de contrat entre les architectes-conseils et le ministère des Travaux publics à Ottawa; l'aide à la nouvelle faculté de planification du milieu, de l'Université de l'Alberta; les plans en vue de l'assemblée de 1967 de l'Institut à Ottawa, et des assemblées subséquentes.

Avant la réunion du Conseil, M. Fowler avait eu des entretiens avec les sous-ministres des Travaux publics et des Affaires Indiennes et du Nord canadien, ainsi qu'avec des représentants de la Commission de la fonction publique au sujet de certains aspects des relations entre la profession et le Gouvernement. Il était accompagné de M. Arthur W. Davison, président du Comité des architectes salariés, et du directeur général.

M. Fowler a eu également des entretiens avec M. Robert Legget (F. hon.), directeur de la recherche en bâtiment au Conseil national de recherches et des membres de son personnel, ainsi qu'avec M. Jean Boucher, directeur du Conseil des Arts.

L'architecte N. M. Zunic, de Winnipeg, a reçu un nouveau mandat comme membre du Conseil d'administration de la SCHL.

M. Norman J. Metz, de Dawson Creek (Yukon), architecte-urbaniste, dirigera la préparation d'un important projet de renouvellement de sa ville.

Le Congrès international sur la religion, l'architecture et les arts visuels doit avoir lieu du 30 août au 1er septembre 1967 au New York Hilton, New York. Pour l'inscription et les détails du programme, s'adresser au Bureau du Congrès, 287 Park Avenue South, New York (N.Y.) 10010.

Une nouvelle publication trimestrielle du CIB (Conseil international du bâtiment) sera sans doute d'un grand intérêt pour les architectes et tous ceux qui mettent en application les résultats de la recherche. On invite des articles de fond et des abonnements. S'adresser au CIB, Weena 700, Post box 299, Rotterdam, Pays-Bas.

continued overleaf

continué

Alberta; plans for the 1967 Assembly of the Institute in Ottawa, and for future Assemblies.

Prior to the Council meeting, Mr Fowler held talks with the Deputy Ministers of Public Works and of Indian Affairs and Northern Development, and with officers of the Civil Service Commission, on matters affecting relationships between the profession and the Government. He was accompanied by Arthur W. Davison, chairman of the Committee on Salaried Architects, and the Executive Director.

Mr Fowler met also with Dr Robert Legget (*Hon F*), director of Building Research, NRC, and members of his staff; and with Jean Boucher, director of The Canada Council.

Architect N. M. Zunic, Winnipeg, has been reappointed to CMHC Board of Directors for a second term.

Norman J. Metz, Dawson Creek (Yukon) architect-planner, will direct preparation of a large urban renewal scheme in his city.

The International Congress on Religion, Architecture and the Visual Arts is scheduled for August 30 – September 1, 1967, at the New York Hilton, New York City. Registration and program details at the Congress Office,

287 Park Avenue South, New York, N.Y. 10010.

BUILD is a new quarterly published by CIB (International Council for Building Research) which will be of interest to architects and others who put results of research into practice. Feature articles are solicited, as well as subscriptions. Write to: CIB, Weena 700, Post box 299, Rotterdam, The Netherlands.

Among recent speakers in the *Expo-conférence* series of the School of Architecture, Université de Montréal, have been American architects John M. Johansen, Allan Green and Philip Thiel, and Dr Jean Vanier, the founder of the center for training the mentally handicapped at Trosly, France.

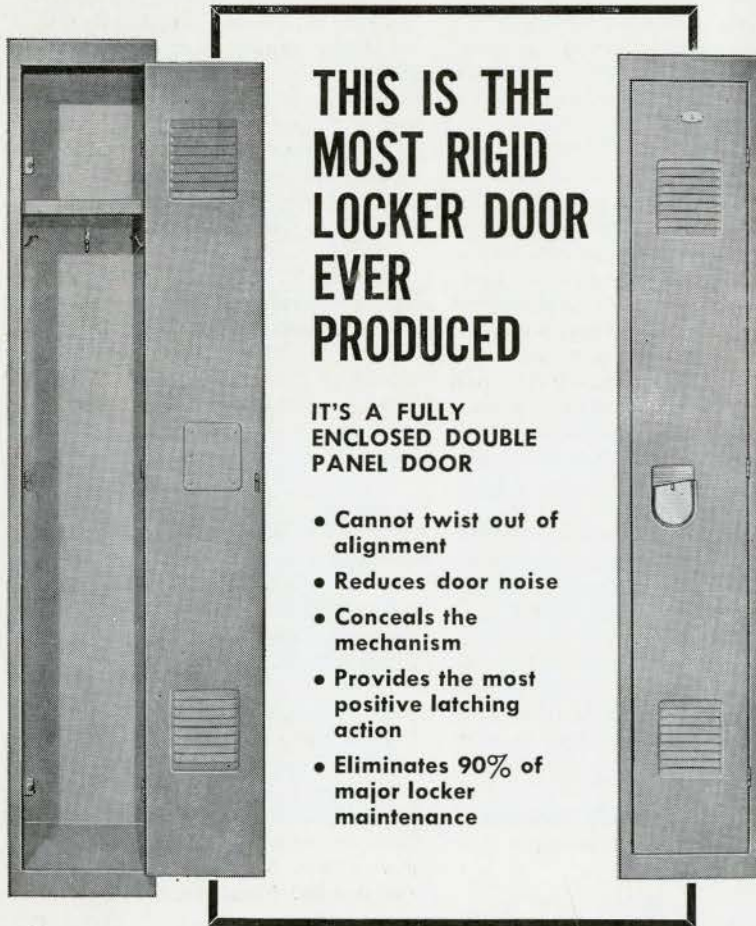
Restoration of the business section of Perth has been undertaken as a centennial project of the Ontario Association of Architects. This eastern Ontario town was built in the 1830's by Scottish stonemasons after they had completed the Rideau Canal. Its unique group of limestone buildings, surviving as a unit, will be renovated by the owners in accordance with a plan prepared by architects Murray and Murray, of Ottawa.

Fred W. Price
Executive Director

Parmi les récents orateurs invités à Expo-conférence de l'École d'architecture de l'Université de Montréal, il y a lieu de mentionner les architectes américains John M. Johansen, Allan Green et Philip Thiel, ainsi que M. Jean Vanier, fondateur du centre d'handicapés mentaux de Trosly (France).

L'Association des architectes de l'Ontario a entrepris, comme projet du Centenaire, la restauration du quartier commercial de Perth. Cette ville de l'est de l'Ontario a été construite vers les 1830 par des maçons écossais qui venaient de terminer le canal Rideau. Un groupe encore intact de bâtiments en pierre calcaire, d'un cachet tout à fait spécial, seront rénovés par les propriétaires selon des plans préparés par Murray et Murray, architectes d'Ottawa.

Le directeur général
Fred W. Price



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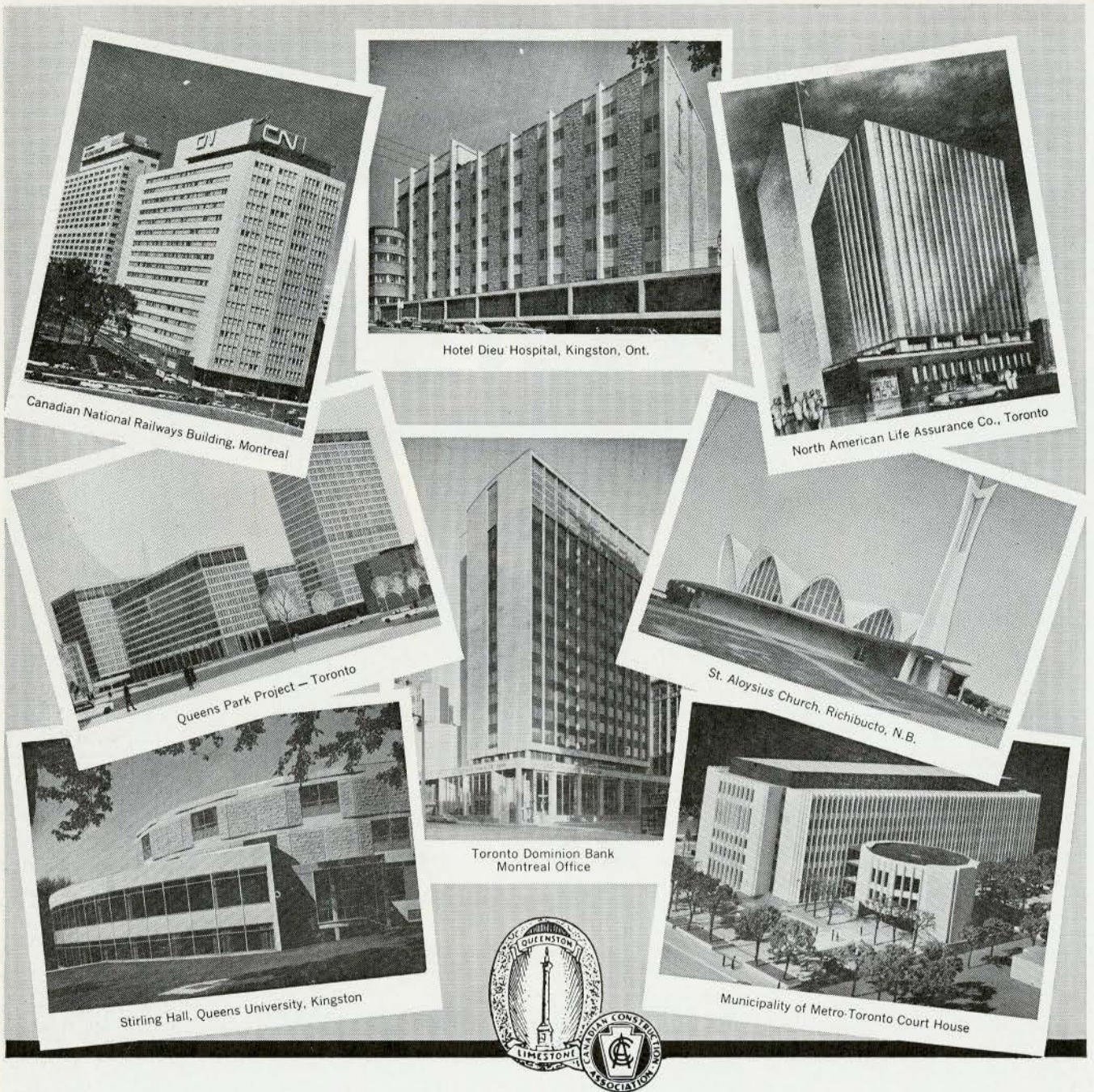
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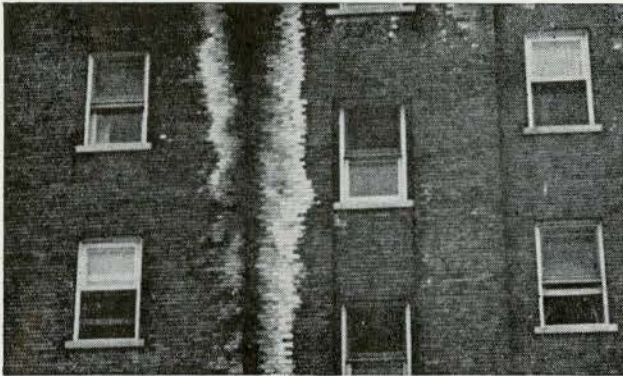
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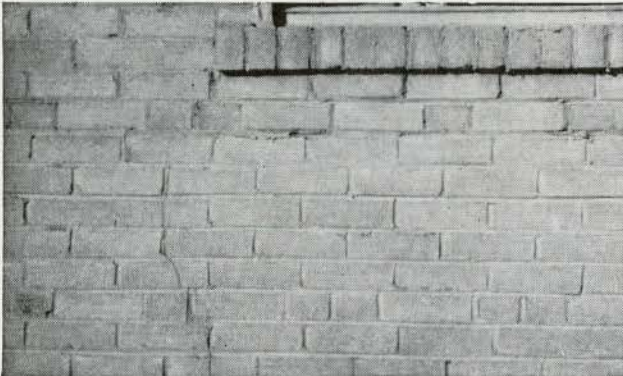
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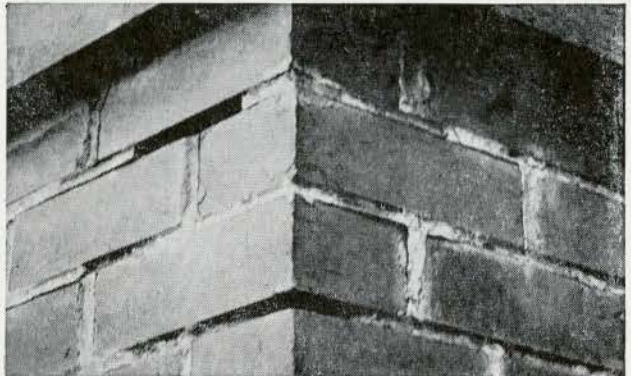
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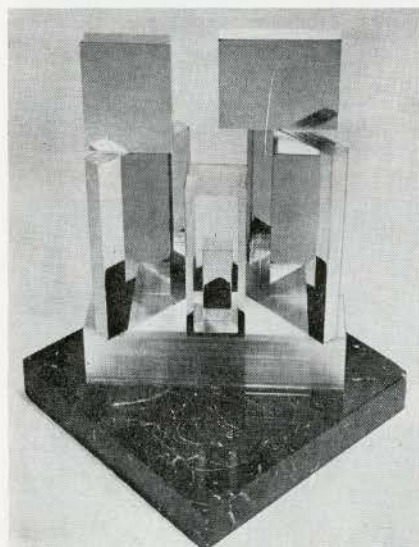
Amidst a great deal of "status" promotion from art dealers and others for industry to buy art objects for executive offices, another new form of patronage is taking place.

Unheralded and certainly without one industry's knowledge of the others' activities, certain outstanding young artists, largely from the experimental school of sculpture are being subsidized by the supply of expensive materials, technical advice and at times practical assistance.

Manufacturers of steel, aluminum, plastics and other industrial processors (e.g. oracium forming) have made available their materials and services for a variety of daring new art projects to see public light in the near future.

The Dorothy Cameron show for the Toronto City Hall will see several of these projects of monumental scale made possible by the generosity of industry. (This show will be reviewed in detail when it is staged later in the year.)

On entering research of this unpublicized



1
 "Prismus", Polished aluminum, height 7 feet, by Gino Lorcini
 "Prismus", aluminium poli, hauteur 7 pieds, par Gino Lorcini

activity I found both artist and his donor somewhat shy and reluctant in exposing to publicity their activities while in the delicate stage of experimental relationship. This was surprising. Status seeking through the image of art is often a reason for seeking publicity.

How did this interrelationship happen? It would seem that in the early stages the creative artist excited interest by working with contemporary industrial materials. The material producers of steel, aluminum, glass, neon, styrofoam or what have you were intrigued by this unusual "cash" customer, his queries, and his problems. Their interest and help has led to a genuine relationship between the industrial processor and the creative designer.

Both parties evince a genuine love of materials and excitement in the possibilities of finding "visions splendid" beyond products of mere functional purpose. With these prospects in mind, yet without "cultural education" or moral persuasion they are gaining mutual respect for each other's role in society.

Bob Murray in his recent experience of building a steel sculpture for the International Symposium in California found his steel workers intelligent and co-operative journeymen when placed at his disposal as assistants.

Gino Lorcini's contrapuntal essays of polished aluminum and light in constructive sculptures have come to my attention primarily through the Alcan newsletter, a "trade" magazine. Alcan are sponsors of Lorcini's new big structure for the Cameron show.

Both artist and promoter show admiration for each other's part in the venture of art production. What is most surprising is that help is available not mainly to prestige artists such as Harold Town with his giant brass commission at Malton Airport, but also to unknown experimenters.

Don Jean Louis, a young and hitherto unseen artist whose evaluation is yet to come, is stating a courageous and experimental exhibition at the Isaacs Gallery, opening April 9 and running through until May. It is an exhibition of illuminated vacuum formed structures, Part 1 of a three part exhibition to be staged yearly. Because of the size and complexity of the exhibition it would not

have been possible to stage it without the sponsorship of a few companies and persons who have brought its ideas into reality. Part I, "Illuminations", demonstrates the use of transparent material, Uvex cellulose acetate, and butyrate sheeting. Louis uses painted plastic structures illuminated with programmed lighting systems. His aim is to exploit the possible uses of light, colored surfaces, and optics using the familiar commercial lighting of neon and fluorescent.

The implications for architecture here would be to produce multiples . . . but, the point is that this exhibition because of size, complexity and expense would not have been possible without the positive attitudes of a few companies and individuals who by some form of sponsorship helped to bring it to reality. Apex Neon, Creative Signs, Design Services, Crystal Glass and Plastics along with a small Canada Council grant are actively highlighting new relationships in this curious business of art and society.

There are other sponsors engaged in exciting and new projects which, at the moment, I refrain from reporting in respect to the wishes of those concerned who do not wish to be pushed into undesirable publicity of a sensational nature while in an early stage of negotiation. This is most refreshing in a world full of publicity seeking ballyhoo promotions for less worthy projects.

When the right time arrives detailed assessment will be made and published. At the moment a purpose is clear to throw out a challenge to the educators of artists and architects to be immediately cognizant of the new trends in society which should affect the training plans of future students. By the state of graduate ignorance to industrial processing it would seem that graduates are ill-prepared for a real working relationship with industry and its many exciting products. Students of both art and architecture have both told me that they rarely if ever visit an industrial plant or major building site. One sculptor engaged in a big commission on visiting a metal industry production plant was enthralled and inspired by the intermediate process. He knew nothing of industrial processes from his training as a "scrap" artist with blowtorch welder's gun (these are believed to be updated equipment

2, 3

Two views of "Crafts for Architecture" Exhibition held at the University of Toronto School of Architecture, March 9-30. Deux vues de "L'artisanat en architecture", exposition à l'Ecole d'Architecture de l'Université de Toronto, 9-30 mars.

4
"Architects Night" at the Exhibition. Architects David Molesworth, E. H. Zeidler and Bill Greer with Allied Arts Editor and Exhibition Co-ordinator Anita Aarons "La Soirée des Architectes" a l'exposition. Les architectes David Molesworth, E. H. Zeidler et Bill Greer avec Anita Aarons rédactrice du Catalogue des Arts Connexes et co-ordinatrice de l'exposition

by our archaic educational planners). I accuse educators at the tertiary level of tragic inadequacy, of lack of foresight in planning future programs for graduating students. Is there a leader who can present me with a program today which shows that students are aware of industrial processes and are capable of co-ordinating with the business world? Is there an establishment in Canada which is prepared to effect unity for artists and architects with individual studies of both business relationships and equipment and the use of the best of industrial production for creative purpose? Criticism gives place to anger when witnessing the complacency of so-called teacher professionals, themselves inadequate to perform in the new arena, while failing to provide the means for students to earn a professional living on graduation. The student from art school expects and is told he will most probably starve in his profession apart from commercial advertising unless he returns to his alma mater to teach and thus perpetuate the ridiculous proposition of certified professional failure ad infinitum.

Bravo to the few artists and sympathetic industrialists who are "forging" new forms of co-operative education and who have survived the condition of being trained on graduation to be the largest "unemployable" trained (?) group in Canadian educational programming.
Anita Aarons

A Toronto Success

Toronto has called "Crafts for Architecture" (see March *Architecture Canada* page 23) one of the best exhibitions of its kind. An average of 400 a day visited the show arranged by the Allied Arts Dept of *Architecture Canada* in conjunction with the Ontario Craft Foundation. Among enthusiastic visitors were 250 artists and architects on Architects' Night, Expo Officials who asked for assistance in staging a similar exhibit, the Dept of Education who took photographs for educational purposes, and Ontario College of Art students. Photographs and slides used in the exhibition plus others are available to travel. Address enquiries to this office. □

5

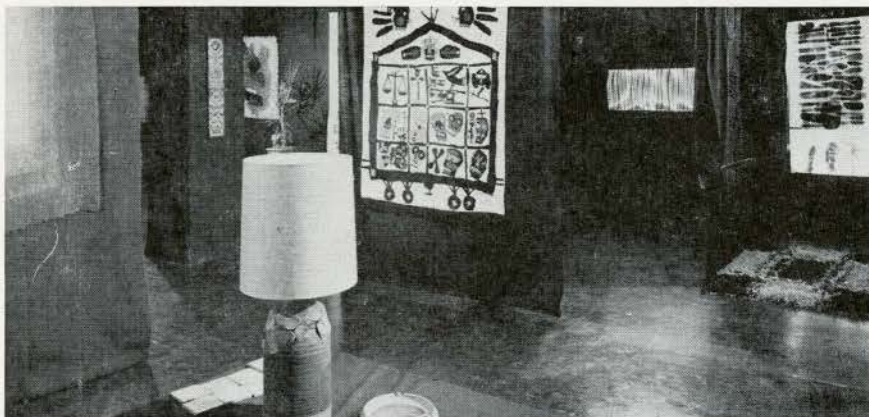
"Architects Night" - D. W. MacDuff, exhibition designer, of J. & J. Brook, Alan Perkins, of Bregman and Hamann, discuss Mr Perkins architectural door handles with architects David Horne and Peter Goering "La Soirée des Architectes" - D. W. Macduff projeteur de l'exposition, de la Cie J. & J. Brook, et Alan Perkins de Bregman and Hamann discutent sur les poignées de portes de M. Perkins avec les architectes David Horne et Peter Goering

6

"Architects Night" - Anita Aarons, Greta Dale artist, and John Farrugia architect participate in CJRT program on the arts "La Soirée des Architectes" - Anita Aarons, l'artiste Greta Dale et l'architecte John Farrugia participent à un programme de CJRT sur les arts

7

"Architects Night" - Gallery owners and magazine representatives were also there "La Soirée des Architectes" - Les propriétaires de galeries et représentants des magazines étaient aussi présents



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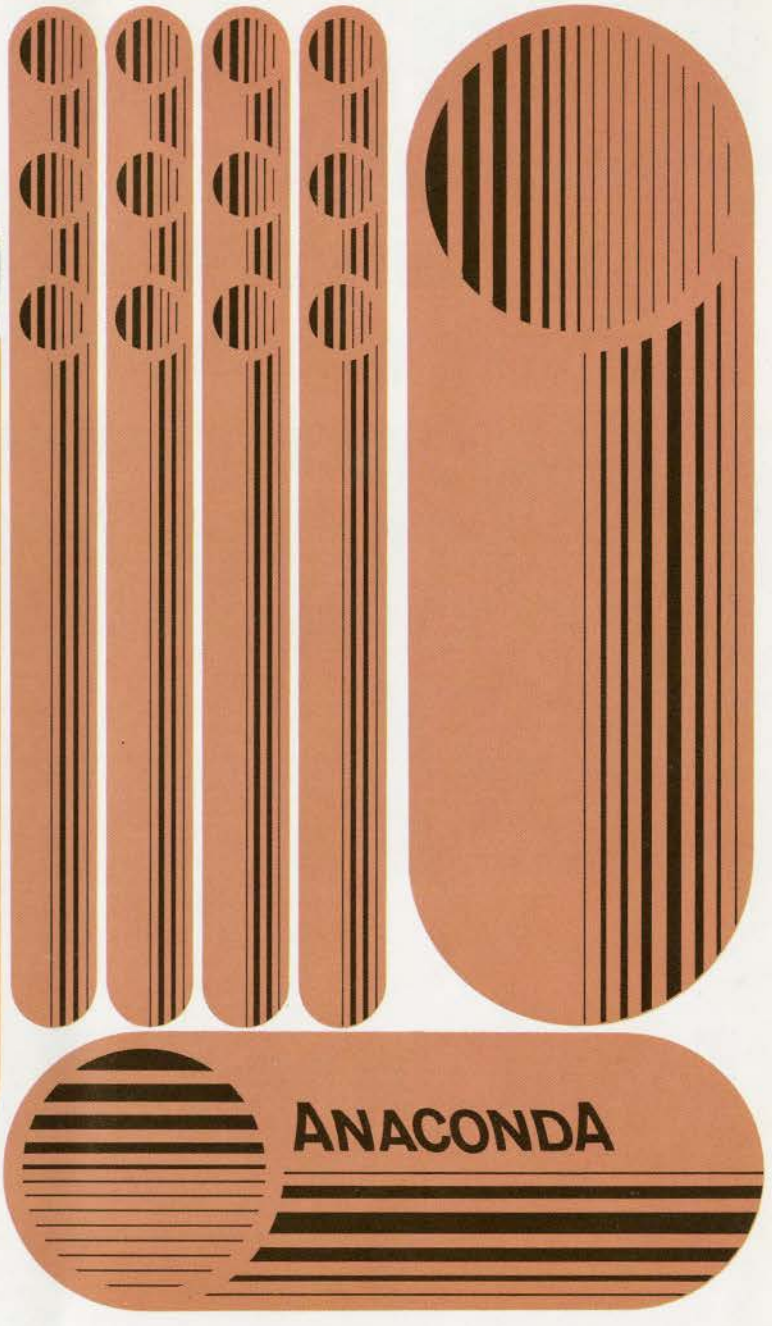
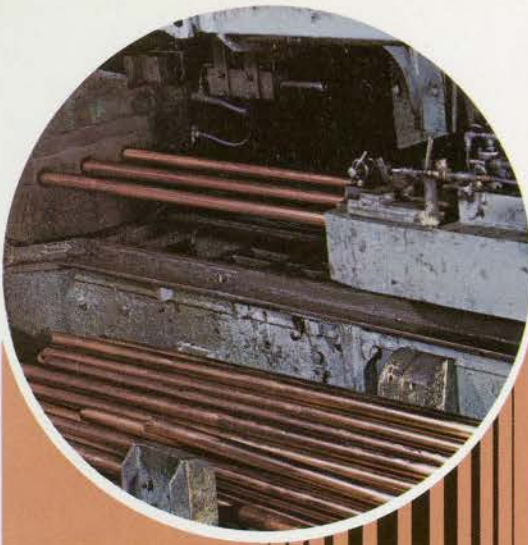
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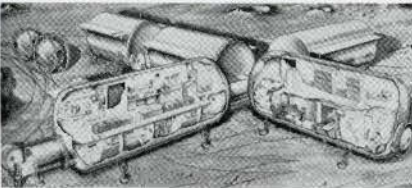
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2000+ is a special number of *Architectural Design* (February 1967) dealing with the future. The material was compiled by John McHale (Executive Director and Research Associate of the World Resources Inventory at Southern Illinois University). The issue began with the suggestion from *Architectural Design* that more attempts might be made "to communicate the idea of technological innovation to an architecture still largely hidebound by a vision of the fine arts". Traces of this original bias may still be found in its pictorial emphasis on the visible "Hardware" aspects of a technological revolution whose more characteristic features are now largely invisible. (1, 2)



3, 4

Two covers of *Bauwelt*, January and February 1967. 3 and 4. An unwitting moral?

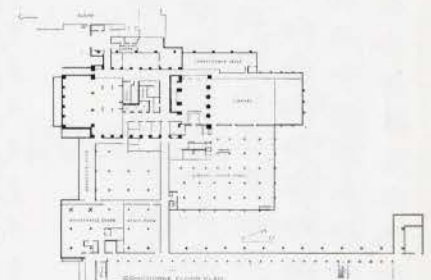
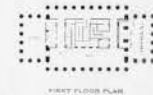
Progressive Architecture, February 1967, has published the Kline Biology Tower (5, 6) for Yale University in New Haven, Connecticut. It shows finally that Philip Johnson cares nothing about architecture. The building is entirely based on appearances, which are kept up in spite of the function. The confused concourse floor plan (6) is graphic evidence that Johnson does not understand the discipline of plan, and the upper floors show how the form is contorted to Johnson's willful ends. The columns are treated in the most whimsical way. Perhaps even more pernicious are the attitudes revealed by those discussing the building. Charles Moore (Chairman, Yale School of Architecture) says on page 24 of PA, "I am terribly impressed that Johnson, after supporting the work of so many mad young architects, has designed a scheme that in site plan is one of the maddest I have seen. The enormous tower on the edge of Hillhouse Square looks lunatic in quite the best sense of the word. It's very elegant in a crazy kind of way." Pure Kafka. And these are the so-called leading architects. It would be funny if it were not so tragic.

The joke of the janitor rushing out of a Mies building and exclaiming in consternation – "My God, someone on the 45th floor has his own venetian blinds" is not as apocryphal as one would wish. The occupants of Toronto's City Hall have received a directive from the powers that be to correct an unsatisfactory appearance: "A practice has developed in some isolated instances of opening the light drape when adjusting the heavy sun curtain." The gaps in the drapes that occur, "spoil the nice clean symmetrical lines of the inner facade". We must, after all, have uniformity at all costs.

AJD



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THE SHAPE OF THE FUTURE IS

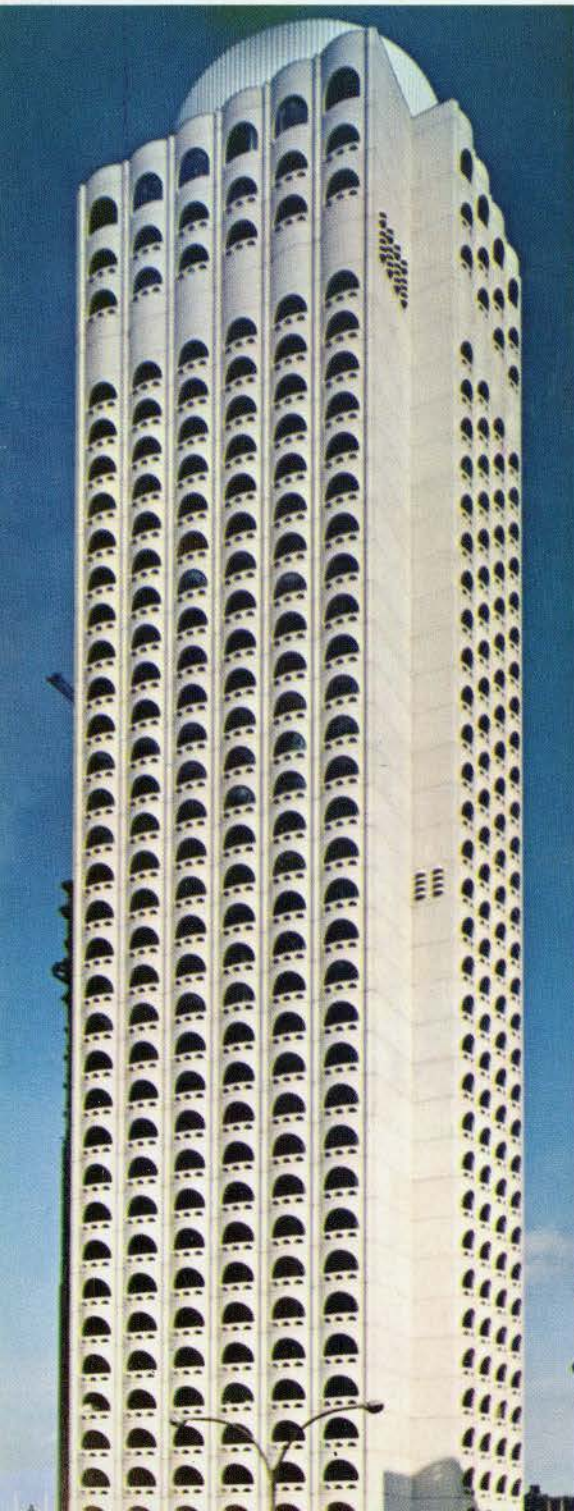
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2

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3. Architects & Consulting Structural Engineers: Intercon Consultants (Canada) Ltd.
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Precast concrete panels: Beer Precast Concrete Ltd.
Ready-mixed concrete: Richvale Ready-Mix Ltd.

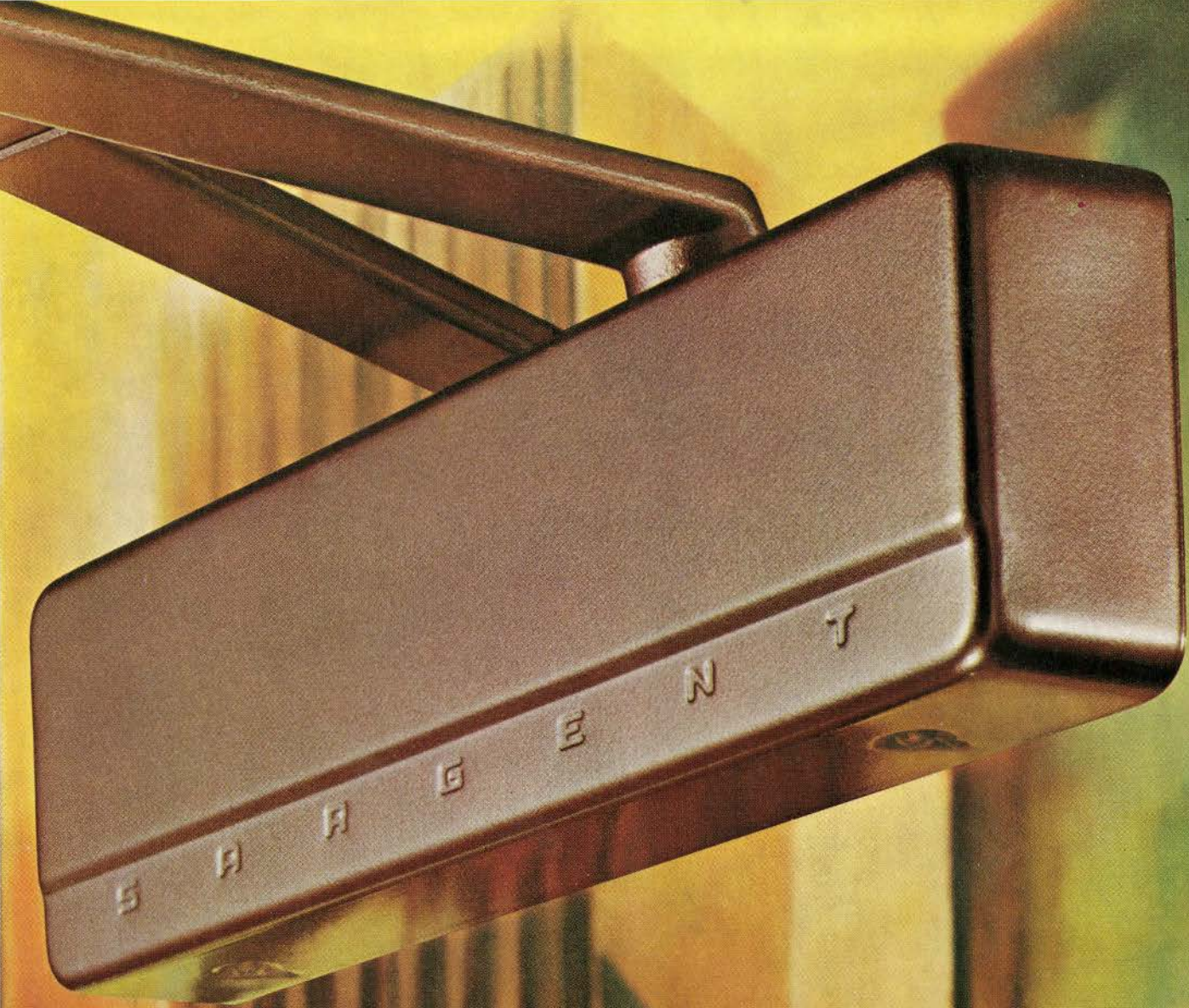
4. Architects: Alberta Department of Public Works
General Contractor: ground floor: Foundation Co. of Canada Ltd. main building: Bird Construction Co. Ltd.
Precast concrete panels: Stoy Concrete Products Ltd.
Ready-mixed concrete: Gallelli Construction Materials Limited.

Effective use of decorative precast concrete panels at the 801 York Mills Building, Toronto, Ont.



The Biological Science Building at the University of Alberta, Calgary, features concrete curtain walls.





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Plan Pour La Capitale Nationale Avant-propos page 31

L'IRAC fête le Centenaire et son propre soixantième anniversaire à l'occasion de l'assemblée annuelle à Ottawa. On profitera de la même occasion pour revoir le Plan Directeur de la ville dont le progrès sera expliqué par l'architecte-urbaniste Edouard Fiset, qui servira également de guide aux délégués à l'assemblée qui se rendront à Montréal pour l'Expo par la suite. Dans les pages suivantes, le Planificateur-Conseil Hans Blumenfeld examine le Plan Directeur depuis sa conception en 1945, sous le titre "Gloires et Misères d'un Plan Directeur". Vingt cinq ans d'évolution ont forcément transformé les concepts originaux de Jacques Gréber. M. Blumenfeld croit que la suppression du chemin de fer est une erreur et que la décentralisation de l'Administration est d'intérêt discutable.

Nous présentons à la page 36 quelques détails du plan de la zone centrale actuellement en cours d'étude par John B. Parkin Associates. Plus loin, nous présentons le projet de la Société DeLeuw, Cather et Cie., en collaboration avec Beauchemin-Beaton-Lapointe, pour la circulation Ottawa-Hull, projet qui a dû être abandonné à cause du prix.

En 1945 le Gouvernement avait dédié le Plan de la Capitale aux morts de la deuxième Guerre Mondiale, ce qui avait inspiré les urbanistes à exprimer la force et l'unité de la nation par un plan ordonné. La lenteur de la mise en oeuvre du plan pourrait être dûe au fait qu'il y a 63 administrations dans les 1200 milles carrés de la Métropole. La population de Hull-Ottawa comprend 400,000 personnes ayant 7 municipalités et 2 cultures. La Commission de la Capitale Nationale, une agence fédérale, a juridiction que sur les propriétés fédérales et non sur l'ensemble de la ville. La ville provinciale n'a pas de plan officiel. Il est fort probable que la communauté fédérale s'empare des terres centrales et de peut-être six autres districts fédéraux sur les mêmes principes que Washington. Ce sera peut-être le seul moyen d'obtenir un plan compréhensif.

Gloires et Misères d'un Plan Directeur par Hans Blumenfeld, MTPIC page 32

Les urbanistes discutent l'idée que le plan directeur est la tâche principale de l'urbanisme, que c'est un concept statique incompatible avec la nature dynamique de l'urbanisme moderne, qu'il faudrait une planification méthodique ("Process Planning") plutôt qu'une image d'un état idéal futur. Toute image d'un état futur ne peut être qu'une vue instantanée d'un développement continu. Il n'est guère possible de donner une direction cohérente aux décisions de

tous les jours sans être guidé par un "Leitbild", une image directrice, même si on comprend que cette image change et se développe. Un plan directeur est un essai de formuler consciemment une préconception, et s'il est employé en tant que guide, tel que le plan Gréber, il est intéressant de suivre ses succès et ses insuccès.

Gréber prévoyait une population régionale de 400,000-500,000 en fin de siècle. Actuellement, on envisage une population de 1.0 à 1.2 millions. Gréber proposait des "villes satellites" pour un excès éventuel de population, mais on a considéré cette éventualité si lointaine qu'elle n'a pas été comprise dans le plan directeur.

La population est employée au service du gouvernement, aux industries du bois et de pâte et aux services locaux requis par ces deux industries "de base". Ces industries quitteraient la région si elles devaient s'éloigner du bord de l'eau. Le Plan est basé exclusivement sur l'usage présumé de véhicules motorisés, sans évaluation du nombre de véhicules prévu pour l'avenir. En 1947, il y en avait 40,000; on en envisage 400,000 en 1999. Gréber était sûr que le déplacement serait réduit par la décentralisation des lieux de travail et par la "nucléation" des communautés et des quartiers, que les gens préféreraient vivre près de leur emploi — il n'a pas prévu que la mobilité accrue réduit l'attrait de la proximité. Les artères sont toutes en surface; les carrefours généralement en rond-points. Gréber a envisagé la Capitale nationale essentiellement en tant qu'une agglomération de villages relativement indépendants entourés de verdure, groupés autour d'un centre voué aux fonctions représentatives du gouvernement et de culture. Ceci, avec la sous-évaluation de l'accroissement de population et de véhicules et l'incompréhension des besoins d'industrie et de commerce montrent que le Plan était typique de l'époque. Mais sa compréhension imaginative du développement du paysage urbain et rural le met bien en avance des autres plans nord-américains.

Sa réalisation dépend de trois facteurs: le gouvernement fédéral, les divers gouvernements municipaux et provinciaux, et les entreprises privées. Gréber ne ressentait pas la nécessité d'identifier un "district fédéral". En fait, les relations entre les municipalités et la Commission de la Capitale Nationale n'ont pas été sans heurts. Les municipalités ont été indifférentes au Plan et Ottawa n'a jamais adopté "un Plan Officiel" incorporant ses propositions. Les municipalités de la Ceinture Verte et en dehors qui devaient rester rurales ont permis et même encouragé le développement industriel, commercial et résidentiel. Par contre, le gouvernement fédéral s'est tenu au Plan et les caractéristiques

les plus importantes du Plan ont été effectuées: ceinture verte et parcs, emplacements des édifices fédéraux, déplacement du chemin de fer, routes principales. Tous les autres éléments du développement urbain sont gouvernés par les considérations financières des entreprises privées et des municipalités.

Renfermer le développement urbain par une ceinture verte était le concept de base du Plan Gréber. La région en dehors devait garder son caractère rural mais les moyens de l'assurer n'étaient pas spécifiés. Immédiatement après l'acceptation du Plan, 15 banlieues s'étaient développées dans la zone verte. En 1956, le gouvernement fédéral a acquis 44,000 acres. La Ceinture Verte consiste donc d'une largeur de 2 à 5 milles. Le Plan a pris pour un fait que tout développement urbain s'effectuera dans les 70 milles carrés renfermés par ce périmètre. Gréber se rendait bien compte de l'effet des valeurs des terres sur la planification, bien qu'il semblait ignorer l'effet contraire. L'effet est que l'industrie et les résidences se sont établies en dehors de la Ceinture Verte, plutôt que dans la zone prévue près des gares. Donc, le plus grand problème de planification est la région en dehors de la Ceinture, contrairement aux prévisions de Gréber.

Probablement la réalisation la plus unique du Plan Gréber a été le déplacement des chemins de fer, et l'insuccès majeur, la perte d'accès pour les voyageurs par train. Gréber proposait une nouvelle gare grandiose à plus de 4 milles du centre, projet qui a été abandonné en faveur d'une petite gare plus près du centre, en considération, il paraît, du peu d'importance accordée aux voyages par train. Nos nouveaux "rapidos" pourraient attirer davantage de visiteurs à Ottawa, comme à Toronto ou à Montréal, mais seulement si les voyageurs avaient un accès facile à leur destination, ce qui ne serait pas le cas à Ottawa. L'exclusion de la gare centrale prévient aussi toute possibilité du développement d'un métro. Conformément au Plan, le Gouvernement fédéral a distribué systématiquement ses nouveaux édifices à travers la région, prévoyant la location des employés près du lieu de leur emploi, donc, menant au décroissement de la circulation par automobile. En fait, leurs résidences sont éparpillées sur toute la région et ils sont obligés de circuler en auto plus que jamais. La manque de magasins et de restaurants dans la zone verte aggrave la situation. Pour toutes ces raisons, bien des opinions optent maintenant pour une politique de centralisation. Gréber voulait résoudre les différences de langue et de race par la création d'un mélange de groupes ethniques et économiques dans chaque quartier. La vie communautaire devait être créée autour des écoles et des

centres d'achat. Ceci ne s'est pas passé à cause des différences entre les trois systèmes scolaires, des distances entre résidences et des centres d'achat. D'ailleurs, l'idée de Gréber que la vie doit s'écouler en petites communautés ne correspond plus à la réalité d'une métropole moderne.

Quant aux routes, le Plan Directeur a développé un système complet des routes et un tableau de mise en oeuvre progressive. Ce système et le tableau ont été suivis avec quelques modifications, surtout l'essentielle — l'artère est-ouest, le Queensway. Mais au lieu d'être un "parkway", il est devenu un "freeway" pas très agréable. Le système des routes comprend les autobus mais ne prévoit pas un métro — ce qui tend rapidement vers une situation analogue à celle de Los Angeles. Une autre réalisation associée au système des routes est le système des autoroutes du Plan en conjonction avec les parcs prévus et réalisés depuis le début du siècle, permettant aux automobilistes de jouir des points de vue agréables — si jamais ils descendent de leurs autos. Le Plan Gréber insiste sur la valeur des qualités esthétiques de la Capitale nationale. Ces qualités esthétiques créées par le Plan Directeur s'accroîtront chaque année.

Le Centre National des Conventions Le Centre National des Arts page 36

En février 1962, la Commission de la Capitale Nationale a demandé à John B. Parkin Associates une étude du développement de la Place de la Confédération et de la zone libérée par le déplacement de la gare. Le programme directeur, accepté en 1962, a été soumis à John B. Parkin Associates en 1964 pour des révisions considérées nécessaires comme suite aux études programmatiques et économiques ultérieures. Ces propositions font parties du programme courant de la Commission, dont le renouvellement urbain du centre de la ville d'Ottawa. Leur objectif est de réunir les activités commerciales, politiques, culturelles et récréatives par la mise en communication de la haute ville et la basse ville, le canal, la Colline Parlementaire, de minimiser l'effet des automobiles et des autoroutes en tenant compte des connections avec le centre ville, le Queensway, Hull et la région métropolitaine. Le noyau de ce projet sera un Centre National des Conventions comprenant une salle de réunion et un hôtel entourés de magasins, ayant pour but la création d'un centre vital entre les deux quartiers commerciaux traditionnels des rues Rideaux et Sparks. Pris ensemble avec les édifices publics et privés du projet et les quartiers résidentiels avoisinants, l'intention de ce projet est de créer un cadre essentielle-ment urbain et d'augmenter la viabilité économique du noyau central, en tenant compte de l'importance du piéton.

La portée des travaux de cette étude a été définie par la Commission en termes d'analyses économiques et programmatiques et de la nécessité de coopération pour le développement coordonné d'un programme total employant des conseils spécialisés qui entreprendront le dessin détaillé d'emplacements spécifiques de la Place de la

Confédération, dont: DeLeuw Cather et Cie., Larry Smith et Cie., Hart Massey, Architecte, Affleck, Desbarats, Dimakopoulos, Lebensold et Sise, Architectes, et Thompson, Berwick et Pratt, Architectes. L'article en anglais raconte de façon détaillée l'histoire de la planification de notre Capitale de 1915 jusqu'à nos jours.

Le quartier de la Place de la Confédération est le point de mire de la Région Ottawa-Hull et avec la Colline Parlementaire constituent le centre symbolique de la nation. Son redéveloppement devrait renforcer et exprimer son rôle en tant que centre d'intérêt fonctionnel et visuel. Il faudrait donc développer la Colline Parlementaire, la vallée du canal vers la rivière Ottawa et le Gatineau, le Monument aux Morts et ses approches par la rue Elgin. Parallèlement, il faudrait résoudre les difficultés de la circulation véhiculaire et des piétons, prévoir une place centrale de rencontre libérée de véhicules, et augmenter les facilités commerciales.

Le projet met en valeur les édifices et les caractéristiques existantes qui doivent être préservées: le Parlement, le Bloc Langevin, le Château Laurier, l'édifice Connaught, la plupart des édifices du côté est de Sussex Drive, le Palais de Justice, le Prison et le Poste de Police, l'édifice de l'Administration de l'Université d'Ottawa. A disparaître: l'édifice Daly, le Bureau de Poste de la rue

Besserer, les édifices temporaires de la Défense Nationale au sud de l'avenue Laurier. Les objectifs spécifiés dans les propositions de 1962 restent valides et sont incorporés au redéveloppement de la Place de la Confédération en tant que symbole national et centre culturel, commercial et récréatif. Ces objectifs sont les suivants:

- unifier les caractéristiques physiques importantes du quartier, soit, le Parlement et les environs du Monument aux Morts, le Canal Rideau;
- effectuer une liaison culturelle et économique entre la basse et la haute ville;
- développer un système compréhensif de circulation véhiculaire et des piétons afin de réduire l'effet visuel des véhicules et des routes et qui va:
- diriger la circulation autour du centre, déplacer la circulation efficacement, séparer la circulation des piétons de la circulation véhiculaire de façon à protéger le piéton des intempéries tout en le permettant de jouir des activités du centre, fournir un accès et une sortie efficaces des parkings;
- mettre en valeur le Canal Rideau en tant que facteur esthétique et historique;
- développer les activités commerciales afin d'augmenter la viabilité économique des rues Rideau et Sparks et créer un centre commercial unifié;
- maintenir et rehausser l'approche oblique traditionnelle le long du canal Rideau à la Colline Parlementaire comme centre significatif du quartier;
- avec la Place de la Confédération, redévelopper les terrains libérés par le déplacement de la Gare et des rails de chemin de fer tout en considérant les facteurs esthétiques, économiques, sociologiques et d'urbanisme, tels que définis par ce rapport.

Etude de Transportation page 41

Le Distributeur (autoroute distributive) se trouvera à la limite sud du quartier commercial d'Ottawa avec l'autoroute King Edward près de sa limite est. Ces deux aideront à définir le quartier et avec l'autoroute d'Isle Lemieux rendront le quartier plus accessible par automobile et par transports publics. Le Distributeur sera en tranchée à partir de l'avenue Bronson jusqu'à l'autoroute King Edward. Entre Elgin et Waller, il entrera dans un tunnel pour passer en dessous du canal Rideau et des régions à l'est et à l'ouest. Entre Bay et Elgin il se trouvera bordé par Laurier et Gloucester, une série de rampes faisant la liaison; ces dernières dirigeront la circulation aux garages de stationnement de longue durée ou à la haute ville par les artères nord-sud.

Les considérations de priorité et de dessin géométrique exige que le Distributeur vire légèrement au nord, à l'ouest de Bay pour desservir Lebreton Flats et à l'échange avec la rue Booth et l'autoroute Isle Lemieux. Un échange souterrain serait toute de suite à l'est du canal Rideau permettant le déplacement aux rues collecteurs et aux garages de stationnement afin de desservir les quartiers de redéveloppement de la rive est. Enfin, l'échange à l'autoroute King Edward permettrait la circulation au nord au pont Macdonald-Cartier et au sud, au Queensway. L'autoroute King Edward serait liée aux rues Stewart et Wilbrod, qui seraient reliées aux rues Albert et Slater à l'autre côté du canal. Le seul autre échange au nord est à la rue York, qui dirigera la circulation allant au nord sur l'autoroute à l'échange de l'avenue King Edward ou au marché Byward. Donc, les éléments principaux du quartier central deviennent une série de cellules desservies individuellement par des artères interconnectant directement avec le Distributeur et l'autoroute King Edward. Ainsi, les rues de chaque cellule seront protégées des grands déplacements véhiculaires entre les autoroutes et les autres cellules. L'effet total du plan est de souligner les services aux terrains plutôt que l'usage des rues. En plus, il permet un environnement plus adapté aux besoins du piéton. L'emplacement des autoroutes est tel que le développement du quartier commercial n'est pas étouffé et que l'accès des véhicules venant de l'extérieur est maintenu.

Le rôle principal des ponts Chaudière et Alexandra est de fournir une connection entre l'Isle de Hull, Lebreton Flats et le quartier commercial d'Ottawa. L'autoroute d'Isle Lemieux et le pont Macdonald-Cartier servent aux déplacements régionaux à travers la rivière Ottawa et les autoroutes 8 et 11 protègent l'Isle de Hull de la circulation prioritaire tout en permettant les voyages provenant de Hull. On verra sur le plan les zones considérées comme centres principaux d'activité pédestre, tels que le Mall Sparks. Actuellement, on étudie la possibilité de prolonger l'environnement pédestre de la rue Sparks à travers la Place de la Confédération jusqu'à la rive est, aux moyens d'allées, de places et de passages. □

This year the Royal Institute marks the country's Centennial and its own Diamond Jubilee by a return to Ottawa for the 60th Annual Assembly. It promises to be a both pleasant and interesting gathering — pleasant because the Capital with its spring floral displays and the Centennial decorations should be at its best; interesting because, in addition to participating in a good assembly program, members will have the opportunity for a professional assessment of the progress and the effects of the Master Plan for the development of the Capital and its region. Of the three architect-planners who produced the monumental General Report on the Plan between 1945 and 1950, the Parisian, Jacques Gréber (*Hon.F*) and the Canadians, Edouard Fiset (*F*) and John M. Kitchen (*F*), only Mr Fiset remains and he, as Chief Architect for Expo '67, will have the proud duty of guiding delegates to the assembly around the Exposition in Montreal after the Assembly.

The Ottawa Plan has been given two major presentations in this publication. The first, in December 1945, took the form of an illustrated synopsis of the official report; and the second, in November 1955, was an extensive review of progress. Members attending the 1957 Assembly in Ottawa, also saw current developments at first hand. What is needed now, we feel, is a general assessment of the results of the first quarter century after the Plan's inception in 1945. We invited the distinguished planning consultant Hans Blumenfeld to undertake this task and his "Glories and Miseries of a Master Plan" begins overleaf. The earlier concept of a master plan as the main task of city planning, he says, is now challenged. Some of the things Mr Gréber thought would happen have not happened. Removal of passenger rail service from the central area, Mr Blumenfeld asserts, was a mistake; and decentralization of federal office complexes throughout the urban area has now become questionable policy.

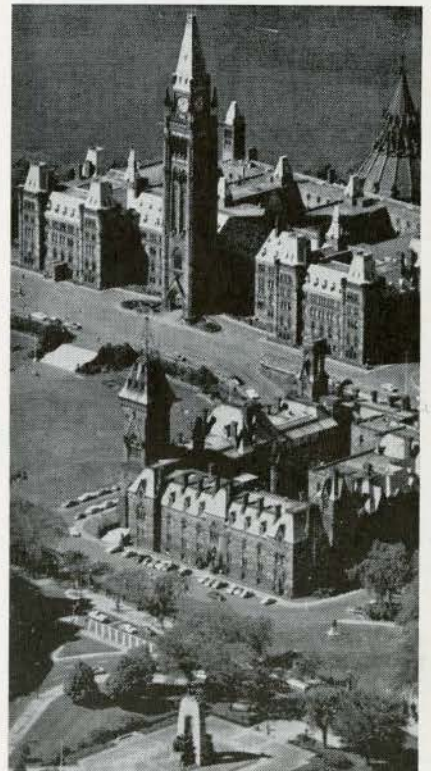
In company with Mr Blumenfeld's comments upon the plan as a whole, we present on page 36 such details as can at this time be made public, of the studies by John B. Parkin Associates for the National Capital Commission for the development of the heart of the Capital. The problems are the redevelop-

ment of the area east of the canal and the link between the two business and commercial districts east and west of the canal. Following this we present some details of a Ottawa-Hull area transportation study done in 1965 for the various authorities involved by engineering consultants DeLeuw, Cather & Co. and Beauchemin-Beaton-Lapointe. The estimated costs of the proposals for downtown distributor are now considered prohibitive, but the scheme is most interesting and worthy of report.

There are two other aspects of the National Capital Plan which deserve comment: In 1945 the Plan was dedicated by the government of the day to the memory of Canada's dead in the Second World War. This concept was correctly interpreted by the planners to mean that the Capital should be the symbol of the country's strength and unity, the spiritual home of its nationhood — a beautiful, well equipped and well ordered city which would be a source of pride to all Canadians. The example of these sentiments was there to the south in Washington, and for a country which 25 years ago did not even have a citizenship or a national flag, here was one kind of peg on which to hang the national hat.

We now have a flag and a Canadian Citizenship, but as a source of national pride, strength and unity, a well planned and well ordered city, Ottawa still has a long way to go. Rome wasn't built in a day and no one expected our Capital to be either, but after nearly a quarter of a century more evidence of progress towards the goal might have been expected. For some time there has been a growing feeling that the reason there has not been this progress, is because there are 63 separate governing bodies in the 1200 square mile National Capital region — 60 municipalities, two provincial governments and one federal; and in the 400,000 population Ottawa-Hull metropolitan region there are at least seven major municipal, two provincial and the federal, authorities, plus two cultures and two languages about evenly divided. The National Capital Commission, which is the federal agency for the implementation of the Capital plan, has labored diligently, conscientiously and with continuity of purpose to implement those parts of the master plan for which it has whole or part responsibility, but this federal authority and

freedom to execute applies only to federally owned property — not to the Capital as a city. And the city of Ottawa has no official plan. Federal and provincial-municipal working relationships in the Capital area, where projects involve joint responsibility and joint authority, often put the philosophy of democracy to severe test. The federal authorities have been forced into far more extensive land acquisitions than were originally contemplated to preserve the integrity of the Master Plan and to protect the heavy national investment in the capital. Some sort of adjustment seems necessary, and of late there seems to be much more talk of a centrally administered federal district, as Washington has, among half a dozen other federally administered Capitals. The achievement of a comprehensive plan and cohesive city for the Capital might thus be achieved. *W. B. B.*



*Aerial View of Parliament Hill
Vue aérienne de la Côte du Parlement*

National Capital Plan Glories and Miseries of a Master Plan

Hans Blumenfeld, FTPIC

Mr Blumenfeld is a lecturer at the School of Town and Regional Planning, University of Toronto, consultant to the Metropolitan Toronto Planning Board and the Montreal

Transport Commission. He has a wide consulting practice throughout Canada, the US and other countries.

The Concept of a Master Plan

The concept of the Master Plan as the main task of City Planning, generally accepted in the first half of this century, is presently being strongly challenged by professional planners. As a static concept it is considered to be incompatible with the dynamic nature of modern urban development. "Process planning", so it is said, is required, rather than an image of an ideal future state. Such an image says nothing about the steps by which it is to be achieved, their timing or their cost.

Granted that any image of a future state can only be a cross-section through the continuous stream of development and that ideally a whole series of such cross-sections should be developed, it is hardly possible to give coherent direction to day-to-day decisions without the guidance of a "Leitbild", a "guiding image", even though it is realized that this image is bound to change and develop over time. The planner of Amsterdam, C. van Eesteren, referring to the analogy of the gradual development of the Gothic Cathedral, speaks of the need of "a preconception which urges towards consciousness. A master plan is an attempt at a conscious formulation of a preconception.

All too many master plans have ended up as copiously illustrated weighty toms gathering dust in the Mayor's office. It is therefore of particular interest to follow the successes and failures of Gréber's Master Plan, which has been used consistently as a guide.

Basic Assumptions of the Gréber Plan

A Population

Gréber had assumed that the area's population would grow to 400,000-500,000 by the end of this century. Population projections made in the first post-war years were still strongly influenced by the experience of the thirties and have therefore generally underestimated future growth. However, Gréber was extremely optimistic about the future of Canada. Calling it "one of the greatest nations of the world", he anticipated a population of 40 million by the end of the century - fairly well in line with present estimates. Metropolitan regions, and, in particular, national capitals, tend to grow at a faster rate than the national population. In fact, the Capital Region's share of Canada's population had increased from 1.7% in 1931 to about 2.0% in 1947. The Master Plan's estimate implies a future drop to 1%. Presently, the Region's probable population at the end of the century is estimated at 1.0 to 1.2 million, or 2.5% to 3.0% of the Nation.

Gréber was, of course, aware of the uncertainty of population projections. He stated that growth beyond 600,000 should be

accommodated outside the proposed Greenbelt in "completely self-contained New Towns" of 20,000 to 25,000 inhabitants. However, this eventuality was considered so distant as not to merit consideration in the Master Plan.

B Employment

The population of the National Capital Region has always found employment primarily in government service, but also in the lumber and pulp industry, as well as in the local services required by these two "basic industries" and the households supported by them. The plan assumes that these sources of employment will continue to expand, without, however, attempting to quantify the share of each of these three major categories. Specifically, it is assumed that light industries will find suitable locations in residential areas, and heavy industries close to the railroad yards. The original reasons for the location of the lumber industry - proximity to sources of raw material and to falling water as a source of power and cheap transportation to markets by floating rafts down the Ottawa River - have lost much of their importance. The establishments of this industry remained tied to their location for two reasons: the existing investment and the possibility of using the water of the Ottawa River for processing and waste disposal. If heavy industry is to be relocated away from the river, these plants are not likely to continue to operate in the region.

C Transportation

For all transportation of goods and of people, public and private, within the urban area, the plan relies entirely on the motor vehicle, cars, buses, and trucks, and almost entirely so also in the balance of the region. No estimate of the future number of vehicles was attempted. In 1947 there were 40,000 motor vehicles in the region; by the end of the century there will probably be over 400,000.

Gréber was confident that movement would be greatly reduced by the planned decentralization of places of employment and the planned "nucleation" of communities and neighborhoods. He assumed that people would choose to live close to their place of



1
*Bank Bridge Driveway
Chaussée du Pont de la Banque*



2

work and to satisfy their other needs at small centers close to their place of residence — overlooking the fact that increased automobile greatly reduces the attraction of proximity.

The movement of vehicles was to be made easy by a combination of three means, traffic regulation, street widening, and new arteries, supplemented by provision of off-street parking. The arterial system was conceived as a system of surface roads, with only a few grade separations; interchanges are generally designed as traffic circles. No reserved rights of way were provided by public transit, assuming implicitly that transit would remain competitive with the private automobile despite great disadvantages in travelling time.

D Summary of Assumptions

Gréber visualized the future National Capital essentially as a conglomeration of relatively self-contained villages, embedded in and encircled by green, grouped around a center devoted to the representative functions of government and culture. He referred to "the old village from which inspiration can always be safely taken". In this, as well as in its under-estimate of the explosive growth of population and motor vehicles and of their impact, and its misunderstanding of the locational requirements of industry and commerce, the plan was typical of its time. In its imaginative grasp of the development of the urban and rural landscape it was well ahead of current North American practice.

Implementation of the Plan

The implementation of the Plan depended and depends on three agents: the Federal Government, the various municipal and provincial governments, and private enterprise. Gréber felt that an overriding administrative unit, such as a "Federal District" was not needed, but that the plan could be carried out "without deeply changing their (the municipalities) respective administrations". In fact, relations between the National Capital Commission and the municipalities, notably the City of Ottawa, have been rather strained. By and large the municipalities have disregarded the plan. Ottawa has never adopted an "Official Plan" incorporating its proposals. The municipalities in and beyond the Greenbelt, which were supposed to remain rural, have permitted and, indeed, frequently encouraged industrial, commercial, and residential developments on their territories.

By contrast, the Federal Government has followed the plan faithfully, using its powers as the major land owner, employer, and source of funds in the region. As a result, the most salient features of the plan have been or are being carried out: parks and greenbelt, location and siting of Federal buildings, relocation of railroads, and major road system. All other elements of urban development are governed, as in all other Canadian cities, mainly by the financial considerations of private enterprise and of municipalities.

The Greenbelt

The guiding concept of the Gréber plan was the containment of urban development by a greenbelt. The area outside the greenbelt was to retain permanently its "rural character, with the exception of limited and controlled minor developments". The means of control were not spelled out. Indeed, the plan stated that this outer area "requires no planning operations, but merely the application of protective regulations", which were, however, not specified. The idea of limiting urban growth by a greenbelt is not new. Elizabeth I decreed a greenbelt around London; so did Oliver Cromwell. In the 19th century many writers, both in England and on the Continent, advocated it; current British legislation has adopted it. In practice, greenbelts have been

no more able to contain urban growth than have their predecessors, the medieval city walls.

In the years immediately following adoption of the Master Plan, fifteen subdivisions were developed in the area designated as Greenbelt. In 1956 the Federal Government decided to step in and acquired, during the following five years, about 44,000 acres at a cost of some 20 million dollars. With minor exceptions, a greenbelt of a width of two to five miles is now public property.

As mentioned, the plan assumed that all urban development would occur within the about 70 square miles enclosed by this perimeter. As less than 20 square miles had been absorbed by urban development at the time the plan was developed, this appeared indeed to be ample: the anticipated population of 450,000 — which has been approximately reached at present — could live there at a density only half as high as had the occupants of the 20 square miles of 1947.

It could, but it does not. It is rather strange that Gréber, who was very realistically aware of the impact of land values on planning, appears to have ignored the reverse impact of planning on land values. Any planning measure shifts the "floating" development value from one piece of land to another. The development value, which has

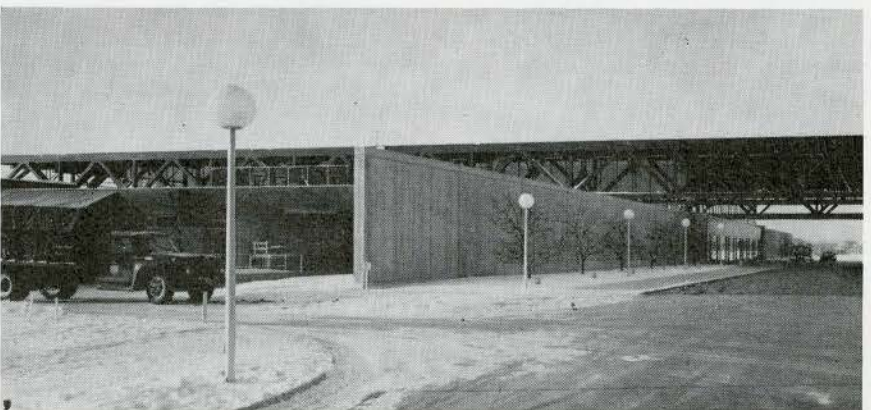


been shifted by government action out of the Greenbelt, floats into the enclosed area. The increase of land values within the enclosure exerts a strong pressure to develop there at higher densities than the very moderate ones envisaged in the plan. At the same time, the increased difference between values inside and outside the Greenbelt increases the attraction of the outside areas for residential developers and even more so for industries. Consequently, while large tracts of land inside the perimeter are still vacant, new industries establish themselves outside rather than in the planned zone near the railroad yards; and residences multiply there.

Ottawa has been fortunate in that residential development so far has occurred primarily in the well-planned "New Town" of Kanata, created by an imaginative private developer, but there is no guarantee against scattered development anywhere. It is evident that, contrary to Gréber's expectations, the main planning problem lies in the outside area.

Relocation of the Railroads

Probably the most unique achievement of the Gréber Plan is the complete relocation of the railroads, which has now been largely completed. For reasons discussed earlier, the related hoped-for relocation of heavy industry from the water front to the new yard area is not likely to occur.



While the elimination of freight trains from the urban area is an inestimable gain, the elimination of rail passenger access is a definite disadvantage. As evidenced by his treatment of the plaza and street approaches to the large new passenger station which he proposed to build more than 4 miles from the center, Gréber took it for granted that railroads would retain their dominant role in long-distance passenger transportation, despite the competition of the airplane, the bus, and the private automobile. In the light of subsequent developments, the grandiose plan for this section of Ottawa has been abandoned. Instead, a very small passenger station has been built at the inner end of the freight yard, only half as far from the center, but losing the operational advantage of through movement. It is evidently being considered as unimportant.

With the fast trains now coming into use, Ottawa could be reached from Montréal in less than two hours and from Toronto in less than four hours. But such trains are likely to attract the growing number of visitors only if they can reach their destinations on foot or by a short convenient transit ride as they can in Montréal and Toronto.

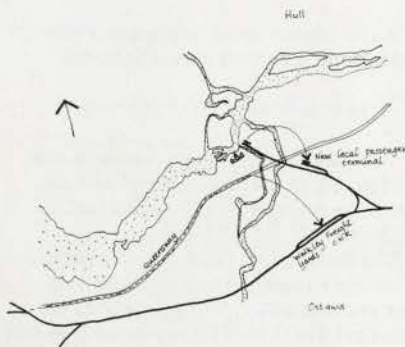
The elimination of the central railroad station and the tracks leading to it has also precluded the possibility of establishing rail rapid transit as the backbone of an efficient metropolitan transit system. While the relocation of

the freight railroad system is the most remarkable achievement of the Master Plan, the elimination of the central passenger station may be its greatest mistake.

The Decentralization of Federal Employment

In conformance with the plan, the Federal Government has systematically distributed new complexes for its various services throughout the area, at distances from Parliament Hill varying from two to eight miles. It had been expected that employees would establish their residences close to their place of employment, thereby bringing about a decrease of traffic movement. In fact, their residences are dispersed all over the metropolitan area, and, in many cases, the region. As only poor bus connections exist to the center and few to other areas, almost all employees travel to work by car. Personal contacts with Cabinet, Parliament, and their staffs and with the public, as well as with other government agencies, also require fairly long automobile trips.

The attraction to employees of pleasant green surroundings is offset by the absence of shopping facilities and restaurants. Some, fed up with queuing for cafeteria food, tend to roar off at lunch time to more fragrant, though not greener, pastures; no self-containment for them.



For all these reasons, many voices are now being raised against the continuation of the decentralization policy and for the creation of a strong, lively center. Commercial offices, hardly considered in the plan, are proliferating in the center of Ottawa, as in all major cities, but the shopping area, split between the Sparks-Bank Street section west of the Rideau Canal and Rideau Street east of it, is still strangely provincial for a capital of almost half a million population.

Neighborhoods and Communities

Gréber was well aware of the split between the wealthier Anglo-Saxon west and the poorer French east of Ottawa. However, he hoped to overcome this division not by a strong common city center, but by a mixture of ethnic and economic groups in every neighborhood. There is scant indication that this is happening.

The life of the neighborhood, as conceived by Clarence Perry, was to be centered around the school. But with the children divided between three different school systems, no such common center exists. Nor have neighborhood shopping centers developed. With moderate densities the number of households within easy walking distance is insufficient to sustain them, and car-shoppers prefer to drive to larger centers. Without a center, there is no periphery, and the plan's small greenbelts encircling neighborhoods and communities have generally not been established.

The concept of a hierarchy of neighborhoods and communities does not correspond to contemporary reality. Life in a modern metropolis proceeds not in relatively self-contained circles, but along a complex and widespread network.

The Road System

A physical correlate of this network is indeed being provided by the road network. The Master Plan had developed a complete road system for the area and a schedule of its gradual implementation. With some modifications this plan and schedule are being followed. In particular, the backbone of the system, the east-west artery on the former

railroad right-of-way, known as the Queensway, has been built. However, instead of the beautiful tree-lined parkway envisioned by Gréber, it is a roaring freeway, not too pleasant to *look at*, and in most sections not very pleasant to *look from*. Intersections are complex multi-level structures rather than the classic circles shown in the plan. Inevitably, engineering standards have determined design.

The road system also carries the buses, the only available means of transit. The dispersal of potential origins and destinations, a growing number of them separated from the planned urban area by two to five miles of greenbelt, combined with the absence of any rail or other grade-separated rights-of-way for public transportation, are bound to lead to the same degree of dependence on the private automobile as exists in Los Angeles — in a climate which at times makes driving difficult. The provision of transit looms as an increasingly difficult planning problem.

Parkways and Parks

An outstanding feature of the road system is the inclusion of a network of parkways, sensitively designed to provide the best views of the varied and beautiful landscape of the region and of the impressive silhouette of Parliament Hill. The park system, developed since the beginning of the century, has been carried to completion by the Master Plan. Most of it is already reality, in particular the Gatineau Hills, brought by a green wedge almost to the heart of the city.

The residents of the National Capital Region will have to do a lot of driving, but different from those in almost every other city they will be able to enjoy most of it, and when — and if — they get out of their cars, they can walk and rest (weather permitting) in beautiful surroundings.

Gréber rightly emphasized that the desire for beauty is not the preserve of upper-class snobs, but a basic and universal human need. As affluence and leisure time increase, the value of the esthetic qualities of the National Capital Region created by the Master Plan will rise from year to year. □

National Capital Plan Central Area Redevelopment

John B. Parkin Associates, Development Architects

Thompson, Berwick, Pratt and Partners, Architects for National Museum

Larry Smith & Co. Economic Consultants

Hart Massey, Architect for War Memorial Area

Affleck, Desbarats, Dimakopoulos, Lebensold & Sise, Architects for National Centre for the Arts

National Capital Commission, Chief Architect John Leaning, and the Advisory Committee on Design

Design, Traffic Parking & Engineering Committee

In February 1962 the National Capital Commission commissioned John B. Parkin Associates to make proposals for the development of Confederation Square and its approaches, and that land east of the Rideau Canal which would become available upon the removal of the Union Station to the Hurdman area. Included in the development was the area of the National Museum designed by Thompson, Berwick and Pratt.

In December 1962 the master program was completed and was presented to the National Capital Commission. It received approval as the development document for the project area.

In March 1964 John B. Parkin Associates were requested to re-examine the 1962 presentation and to prepare those revisions deemed necessary by the introduction of program and economic reanalysis.

These proposals are part of the continuing program of the National Capital Commission for the improvement of the Capital.

The renewal of the urban core of Ottawa is one of the current and dominant projects now engaging the attention of the National Capital Commission, a Crown Agency charged with "The improvement of the National Capital Region in order that the nature and character of the seat of the Government of

Canada may be in accordance with its national significance". These proposals are part of this continuing program of the National Capital Commission for the improvement of the Capital. The possibility of making an early start on this program has been brought about by the removal of the Union Station and railway yards which will be achieved in 1966-67.

The objectives are to form links between cultural, recreational, commercial, and political activities. It is intended to also link Upper Town and Lower Town and yet emphasize the canal as an invaluable ornamental and historic feature, linking the wooded slopes of Parliament Hill with the urban sophistication of the Driveway system. Further to this, although the visual impact of the car and roads is to be minimized, it must be remembered that this is the center of gravity for the traffic system. The impact of this area on an entering motorist will be considerable.

Within this comprehensive framework, however, there should be an adequate solution to the problem of road connections between this area, the downtown, the Queensway, Hull, and the remainder of the metropolitan area.

The nucleus of this project will be a National Convention Centre composed of the new auditorium and hotel. Shops will be dis-

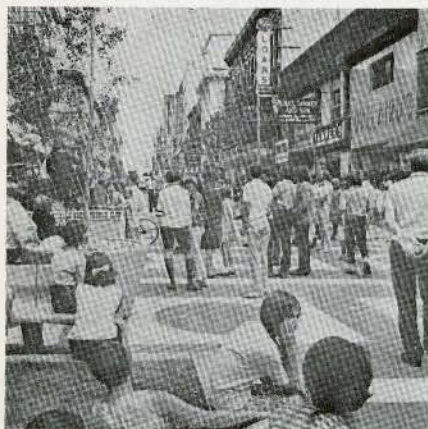
tributed around the lower levels of this project, giving vitality and diversity to the area and forming a commercial link between the two traditionally separated commercial sections of the city, namely Rideau Street and Sparks Street. These functions, together with the public and private office buildings within the project area, and residential areas adjacent to the project area, are intended to form an essentially intense urban setting and increase the economic viability of the downtown core.

The provision for pedestrian circulation is of paramount consideration in this area. Having left his car, the pedestrian should be able to walk freely and enjoyably throughout the whole area, whether he be on his way to his office, to the convention center, the hotel, the National Arts Centre, the museum, shops, canal, Confederation Park, or any of the surrounding amenities.

The scope of work for this study has been defined by the National Capital Commission in terms of program and economic reanalysis as well as the need for cooperation in the coordinated development of a total program with consultants commissioned to undertake the detailed design of specific areas within Confederation Square.

Program changes include:

- 1 The relocation of parking from underground facilities to above ground structures with a limitation of vehicle parking to 2500.
- 2 An increase in public office space from 0.7 million sq. ft net to 1.3 million sq. ft net.
- 3 A reassessment of the program for:
 - a The National Convention Centre to seat 3000 people in the main hall and with an exhibition space of 15,000 square feet.
 - b The tourist center functions to be expanded to include a reception area for air and rail lines and tour buses. This will provide an arrival point in Ottawa for private vehicles and buses for tourists.
- 4 The deletion of the transportation terminal from the National Convention Centre program.



1



2

1

Sparks Street Mall
Allée de la rue Sparks

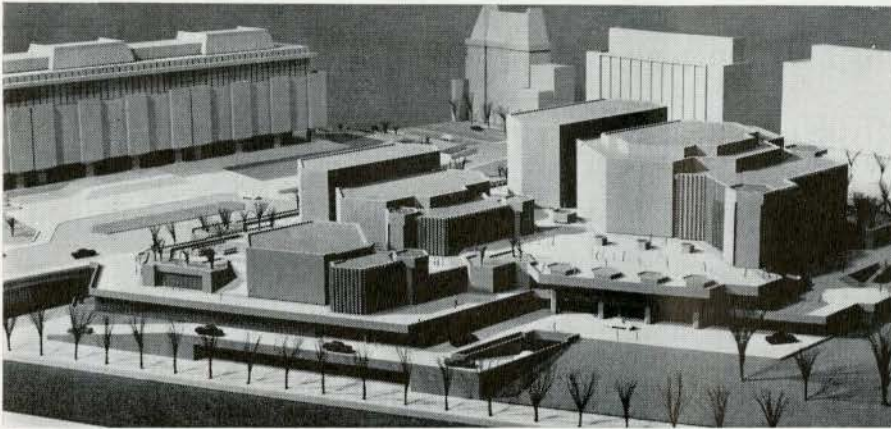
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Sussex Street restoration
Réfection de la rue Sussex

3

Model. Left rear is proposed new museum,
front is National Arts Centre.

Maquette. Au fond à gauche, le nouveau
musée ; en avant plan le Centre National
des Arts.



3

5 The recommendations for future traffic movement contained in the Ottawa-Hull Transportation study prepared by DeLeuw Cather and Co. have been incorporated into the scope of this study.

A "Development and Financial Analysis for Confederation Square" prepared by Larry Smith and Company, made certain proposals that would strengthen the economic viability of the Redevelopment Plan. Firstly, the acquisition of the block bounded by Rideau, Mosgrove, Besseler and Sussex Streets, as part of the Redevelopment Area would provide the following benefits:

- a Make possible the addition of a department store which will enhance the viability of downtown, benefiting the existing stores and allowing more retail space development in associated stores.
- b Make possible a closer integration of the Redevelopment project with Rideau Street to the benefit of the project and the downtown area.
- c Allow maximum integration of the proposed hotel, the convention facilities, and the Chateau Laurier, enhancing the development prospects of the new hotel and benefiting the existing facilities.
- d Improve development prospects of the remaining privately developed parcels of the project by providing a better environment, improving renting prospects at probably somewhat higher rates.

The report also recommended the adjustment of existing proposed land uses for reasons of increased economic viability.

- a Consideration should be given to a major project for private development of the land containing the hotel, department store, shops and associated office facilities.
- b The location of the new department store should be chosen so as to provide maximum pedestrian traffic flow for the Mosgrove Street frontage and interaction with the existing department stores.
- c The new hotel should be located on a north-south axis and located along the east side of the Colonel By Drive frontage so as to provide integration with the Chateau Laurier and the proposed convention center.
- d It was recommended that consideration be given to providing relatively dense use of the northern blocks of the project area with private office development to offset the acquisition costs of the Rideau Street frontage.

The firm of Hart Massey Architect has been commissioned to prepare a detailed design for the War Memorial area, and the scope of work has included liaison to achieve a visual, functional, and economic continuity between the War Memorial area and the East Bank Development. The firm of Affleck, Desbarats, Dimakopoulos, Lebensold, and Sise Architects has been commissioned to prepare a design for the National Arts Centre to be located on the west bank of the Rideau

Canal north of the Mackenzie King Bridge. The scope of work has included liaison with this project, to maintain the integrity of the 1962 Parkin Plan and its objective of a unified development program for all the lands of Confederation Square.

The firm of Thompson, Berwick and Pratt Architects has been commissioned to prepare a design for the National Museum to be located between Mackenzie King Bridge and Laurier Bridge on the west side of the Rideau Canal. The scope of work has included liaison with this project to pursue a continuity of pedestrian circulation throughout the project area and to integrate visually and functionally the Museum and its services with the rest of Confederation Square.

In 1915 the Federal Plan Commission, chaired by Sir Herbert Holt, recommended the monumental development of this area, including the retention of the railway at this point, and established this area as a major approach to Parliament Hill. The oblique approach thesis was furthered by Prime Minister Mackenzie King in 1927 when he advocated the establishment of a traffic circle around the War Memorial, thereby establishing a center for the city. The stated reason for his determination to establish a vista of the Parliament Buildings from the southeast was the lack of any available open space immediately to the south of the Parliament Buildings, although the value and beauty of the Canal as an approach to Parliament Hill had been appreciated and improved upon ever since 1890. Thus, an oblique approach to Parliament Hill, with Confederation Square as a center point for the city, is a long established principle. The then Federal District Commission also furthered this end by the acquisition of the Russell Hotel (just south of Confederation Square) and later in 1937, extended its driveway and park system to include the whole of the area north of Laurier and east of Elgin, with the exception of the buildings opposite the Lord Elgin Hotel.

In 1937, Mr Mackenzie King appointed Mr Jacques Gréber, a Parisian town planner and architect, of the French Beaux Arts tradition, to prepare plans for the further embellishment of the downtown area. Mr Gréber then suggested the removal of Union

3, 4

*Aerial photo and model, the Central Area
Vue aérienne et maquette de la Zone Centrale*

1 Parliament /Parlement

2 Langevin Block /Bloc Langevin

3 Hotel Chateau Laurier

4 Connaught Building /Edifice Connaught

5 Rideau Street /Rue Rideau

6 Sussex Drive /Rue Sussex

7 Court House group /Ensemble de
Palais de Justice

8 University of Ottawa /L'Université
d'Ottawa

9 Hôtel Lord Elgin

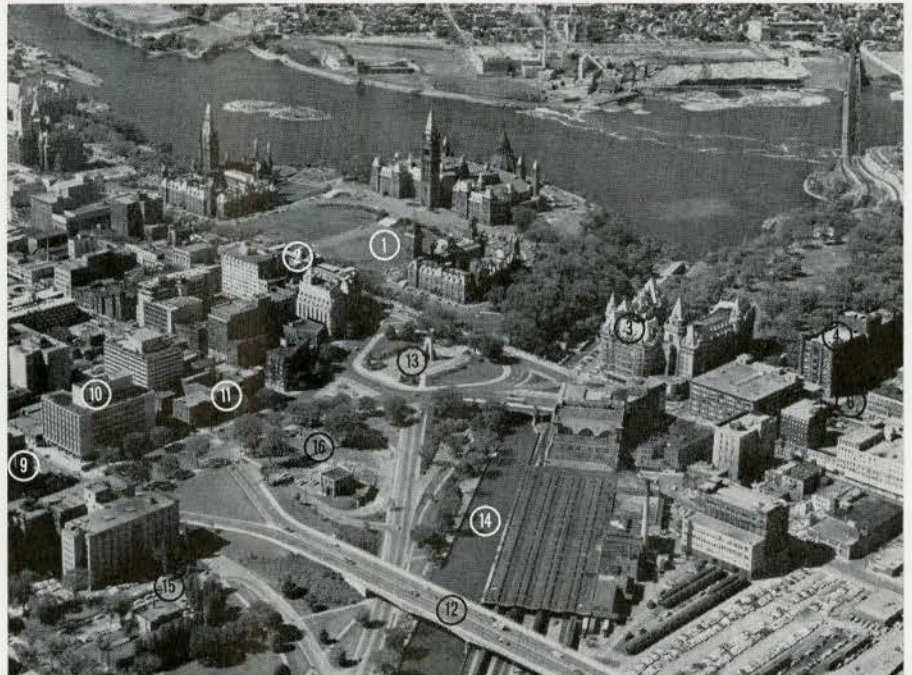
10 Lorne Building (National Gallery)
Edifice Lorne

Station to south of Laurier Street, and the creation of a monumental boulevard on Elgin Street, centered on Confederation Square. The Federal Government had already erected the War Memorial at the center of Confederation Square. The Memorial has since become very much a focal point in the city and national scene, and the Commission assumes that the War Memorial is a permanent feature which should have a fit setting.

The most recent of the planning reports, that of Mr Gréber in 1950, was specifically commissioned in 1945 by the Federal Government as a Second World War Memorial and has been used as a guide for the development of the National Capital. Many of the proposals contained therein have now been carried out, the latest of these being the removal of the Union Station and the railway tracks from the downtown area. Although the prime reasoning for the moving of the tracks has been to avoid the nuisance of numerous level crossings, noise, and smell, and the streamlining of railway activities around the capital, the biggest benefit to the central area has been the release of over 22 acres of land for the creation of much needed amenities. In combination with land already in possession of the Federal Government and with public open space in the ownership of the city, there is approximately 90 acres of land available in the foreseeable future in the heart of Ottawa for redevelopment. Few cities are blessed with such an opportunity and it is the wish of the Commission that the solution should be as great as the opportunity.

The Confederation Square area is the focal point of the Ottawa-Hull Metropolitan Region, equally accessible from east and west, north and south. In conjunction with Parliament Hill, it is also the symbolic focal point of the nation. The redevelopment of this area should strengthen and express its role as a focal point both functionally and visually. Like any redevelopment project this one should recognize and pursue the following goals:

- A The desirable elements to enhance are:
 - 1 Parliament Hill.
 - 2 The landscaped valley of the canal opening up a view towards the Ottawa River



3

and the Gatineau Hills beyond. The combination of these two elements has been developed into the unique diagonal approach to Parliament Hill.

3 A weaker but still important feature has been added by the monument and its axial approach from Elgin Street.

B The undesirable elements consist of difficulties of vehicular and pedestrian movements. This problem arises through a combination of operational and service deficiencies in street, public transit and parking facilities. The level of service provided by the arterial street systems in the central area is not satisfactory. Many heavily used streets and bridges are congested especially during peak periods, when numerous intersections are severely overloaded. Some of the worst conditions occur in the Confederation Square area. Intersection deficiencies such as those at the junctions of Elgin Street and Wellington Street, Sussex Street and Rideau Street, and at the approaches to the Mackenzie King and Laurier Bridges, occur because the intersections do not have enough capacity to discharge vehicles as

they approach from all directions in large volumes.

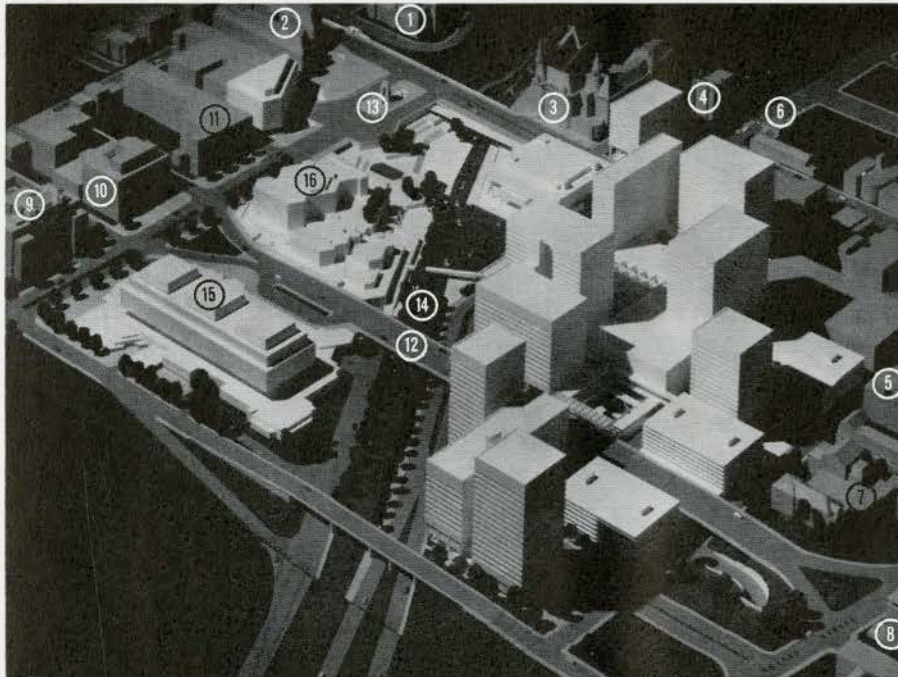
Due to the vehicular congestion at important junctions, pedestrian movements are severely impeded. Pedestrian movement across the square and pedestrian access to the monument are examples of this problem.

A further undesirable element is that pedestrians moving across the square are exposed to strong, cold north west winds, which are funnelled through the lower valley of the canal, for considerable periods of the year.

C An important element lacking in Ottawa is an area or space which could function as a meeting place for people in the center, related in scale to pedestrian activity and free of vehicular movement. Such a space should announce to the visitor his arrival in the center and for a citizen the area could become a focus to give identity to the area.

D The Larry Smith and Company Economic Report indicates that in view of the signifi-

- 11 UK High Commission Building / Edifice de la Haute Commission du Royaume-Uni.
- 12 Mackenzie King Bridge / Pont Mackenzie King
- 13 National War Memorial / Monument aux Morts
- 14 Rideau Canal / Canal Rideau
- 15 New National Museum / Nouveau Musée National
- 16 National Arts Centre / Nouveau Centre des Arts



4

cantly growing market within the Metropolitan area, considerable expansion of the present retail, office, hotel and other facilities will be required. A large proportion of this expansion could take place in downtown area provided the land could be made available. The success or failure of the development depends to a large extent on decisions made by the Federal and Local Governments. The report indicates that if the land for these facilities is not provided downtown, major suburban developments will probably be built around existing branch stores or new department stores entering the market with the result that the central business district will continue to lose its relative position.

While the reasons for advancing the concept of retail expansion are strong, they are further enhanced by a number of factors which will provide a wide basis of benefits to the areas adjacent to the site and to the community as a whole.

1 Limited areas of Rideau Street now scheduled for demolition will be replaced by

new retail facilities which will provide tax revenues equal to those within the development area

2 The expansion of Confederation Square will increase the density of use and thus provide tax revenues above those already anticipated for the area.

3 It is anticipated that the increased sales in areas adjacent to the project will have the effect of increasing land values.

4 It is anticipated that the increase in retail activity will bring about physical improvement in the areas adjacent to the project.

5 It is anticipated that increased activity in the Rideau Street area will bring about new development which will increase the density in the area through new construction.

There is little question that Confederation Square represents the center of Ottawa in the minds and hearts of its inhabitants and its visitors. It is one of the few open spaces in the central area of the city, and, as the space between the Upper and Lower towns, forms

the bridge between the English and French speaking commercial areas. In the very shadow of the Parliament of Canada, and flanked by the Rideau Canal, it is steeped in history and savored by tourists.

Highways leading to the city will bring the traveller inexorably to its heart, where he may stay in the main hotels overlooking the square. Here is the beginning and the end of his scenic drives, of his boat trips on the canal and of his excursions on foot to Parliament Hill, to the National Gallery and to the shopping districts.

Confederation Square is the hub of the city's transportation system, carrying some of the heaviest volumes in Ottawa on its bounding streets. While the traffic generally flows smoothly in the area, offering a pleasant relief from the confines of city streets, the strain begins to show at peak periods as masses of cars converge on the square.

Traffic in the area is the heaviest in Ottawa, which is natural since the area is the center of gravity of the central business district, but to this traffic has been added unwanted volumes of through traffic, much of it forced into the area because of lack of alternative routes or deficiencies in those that exist.

If the focus is shifted from the parts to the whole, the area may be seen as the space between two cities, the edge of Upper Town facing the edge of Lower Town.

The man-made canal appears as a river in a valley with high land, some 30 to 40 feet above water level, on the west or Upper Town site, posing problems of relating the water to the relatively steep slopes in a manner negotiable by pedestrians. On the east of Lower Town side, the area is relatively flat and close to water level, a factor which will be very apparent when the old station is removed. The only higher areas of land comparable to the Upper Town side exist at the north end in the region of the Chateau Laurier Hotel and Rideau Street, at this point. The sloping west bank, focussing to the low areas to the east, makes future treatment of the east side of paramount importance.

In addition to the development area, the area within which the proposed crosstown,

grade separated distributor runs, is indicated. The design of this distributor road and its connection to the central area road system is recognized as being important in the efficient working of the central area. Presently this downtown distributor is being re-studied by the City of Ottawa. The proposal permits alternative solutions in this area dependent on the conclusions reached by the City of Ottawa.

The existing buildings and features which are to be preserved are as follows: The Parliament Buildings (1), Langevin Block (2), and the Chateau Laurier (3) form an architectural group which will dominate and set the scale in their immediate area for any future development. The Connaught Building (4), northeast of the Chateau Laurier, will probably remain as part of this group but the Daly Building on Rideau Street and Mackenzie Avenue will be removed. It is assumed at this time that the private commercial structures along the south side of Rideau Street (5), east of Mosgrove and north of Besserer Street, will remain although the influence of the new commercial development may well precipitate the upgrading of existing properties by their owners.

The buildings along the east side of Sussex Drive (6), with the exception of the first block at Rideau Street, form one of the few remaining intact street facades in Ottawa, and study is being given to its preservation and rehabilitation by the Federal Government. The Besserer Street Post Office Terminal Building will cease to function as a central depot and will, as part of this scheme, be removed to provide space for more compatible uses. The Court House, Jail and Police Station (7) are a group of civic buildings of good traditional and modern design which will remain and whose surroundings should be enhanced by any proposed development.

The University of Ottawa's administration building (8) on Waller Street will remain, and the University itself will be redeveloping the area bounded on this side by Stewart Street, Waller Street, Laurier Avenue and Nicholas Street. It is important that the University development could be related to this city redevelopment, and vice-versa. To the south of Laurier Avenue, the present

temporary Department of National Defence buildings will be removed from what was formerly an open city square (Cartier Square).

The Lord Elgin Hotel (9) and the Lorne Building (10) at the western end of the Mackenzie King Bridge, together with the United Kingdom High Commissioner's office (11), the post office building and Langevin Block (2), will form the western side of the Redevelopment area. Proposals for the treatment of the site on Elgin Street between Sparks and Queen Streets should be made in relation to the Elgin Street facade and the development of Confederation Square. The Mackenzie King Bridge (12) will remain, although its columns, piers and abutments should be reconsidered so as to make the overall appearance of the bridge compatible with the surroundings.

The eastern side of Confederation Square is confined by the Rideau Canal and the Union Station. The decision to build a railway station in the Hurdman Street area, which is now built and in operation, offers the removal of the wall between Rideau Street and the Mackenzie King Bridge, opening to the square a view of the lands within and at the same time making available 22 acres of essentially flat land, close to the canal and in the heart of the city.

The National Monument and the west bank (13) should have a significant place in the redevelopment of Confederation Square, and to this end the continuing studies of the area by Hart Massey, Architect, have the following basic objectives:

- 1 To enhance the National significance of Confederation Square by creating a more fitting physical setting for the National War Memorial.
- 2 To create a vital urban center by reinforcing the commercial nature of the area and to provide a strong identity for this area by increasing amenities and the range of activities related to it.
- 3 To provide a strong circulatory and visual connection between the square and Parliament Hill, the National Arts Center, the East Bank Development, the Sparks Street Mall and the Rideau Canal.
- 4 To exploit the amenity of the Rideau Canal.

5 To provide separation of pedestrian and vehicular traffic in the proposed development.

The objectives of the 1962 proposal remain valid and are incorporated for the development of Confederation Square as a unified national symbol and local cultural, commercial, and recreational center.

These objectives briefly stated are:

A To unify the important physical features of the area, the Parliament Buildings, and environs, the War Memorial, the Rideau Canal.

B To effect a cultural and economic link of Upper Town and Lower Town.

C To develop a comprehensive pedestrian and vehicular traffic system which will minimize the visual impact of cars and roads and will:

- 1 Take through traffic around the center.
- 2 Take local traffic in and out of the center efficiently.
- 3 Provide separation for the pedestrian from vehicular traffic in a manner which affords shelter from inclement climate, but permits pedestrian freedom to enjoy the activities available in the center.
- 4 Provide efficient access to and from parking.

D To emphasize the Rideau Canal as an invaluable ornamental and historic feature.

E To develop commercial activities which will enhance the economic viability of Rideau Street and Sparks Street and create through a system of linkages a unified commercial section for the city.

F To maintain and enhance the traditional oblique approach along the Rideau Canal to Parliament Hill as the significant focus for the area.

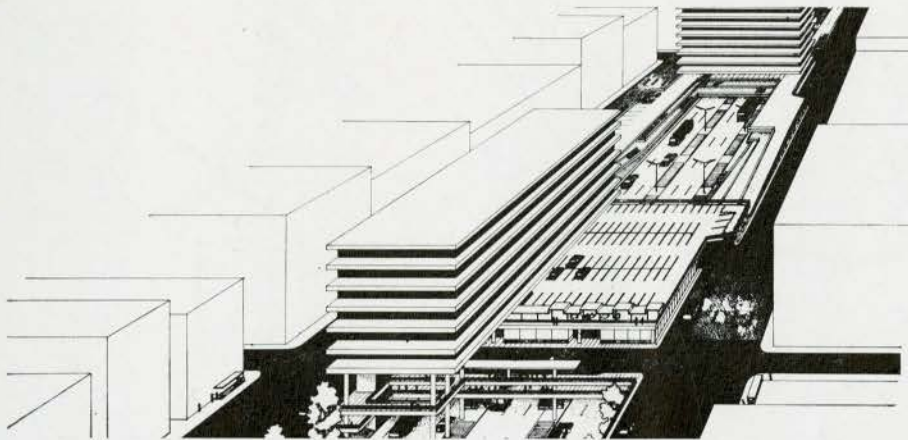
G To redevelop, in concert with Confederation Square, the lands made available upon the removal of Union Station and the rail tracks, with due consideration of aesthetic, economic, planning and sociological factors, as defined in this report. □

National Capital Plan Transportation Study

1
Perspective
2
Section
Coupe

DeLeuw, Cather & Co., Consulting
Engineers

Beauchemin-Beaton-Lapointe,
Ingénieurs Conseils



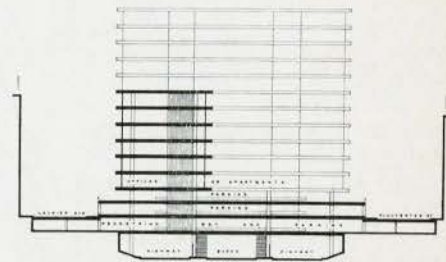
1

The Downtown Distributor would be situated at the southern limit of the Ottawa Central Business District, and the proposed King Edward Freeway is close to its eastern limit. These two freeways help to define the area and, together with the Lemieux Island Freeway, would make it accessible by automobile and public transit. From Bronson Avenue to the King Edward Freeway, the Distributor would be completely depressed. It would enter a tunnel section between Elgin and Waller in order to pass below the Rideau Canal and the redevelopment areas on its east and west banks. Between Bay and Elgin, it would be located in the blocks bounded by Laurier and Gloucester, which form a one-way couple and act as frontage streets. A series of on and off ramps connect the Distributor with Laurier and Gloucester and these streets, in turn, would take traffic into the long-term parking garages or to Uppertown by way of the north to south arteries.

Geometric design and right-of-way considerations require that the Distributor swing slightly northwards west of Bay in serving Lebreton Flats, and in interchanging with Booth Street and the Lemieux Island Freeway. An underground interchange would be located just east of the Rideau Canal allowing movements into the collector streets and parking garages in order to serve the redevelopment areas on the east bank. Finally, the interchange with the King Edward Freeway would permit movements north to the Macdonald-Cartier Bridge and south to the Queensway. At this same location, the King Edward Freeway would also be connected

with Stewart and Wilbrod, which would tie into Albert and Slater across the Canal. The only other interchange to the north is at York Street, which takes traffic northbound on the freeway to the King Edward Avenue intersection or into the Byward Market. Hence the principal parts of the Central Business District become a series of cells which are served individually by arteries interconnecting directly with the Distributor and the King Edward Freeway. As a result, the streets within any particular cell are protected from heavy through movements taking place between the freeways and other cells. While arterial streets are required for accommodating movements between Uppertown and Lowertown, the total effect of the plan is to emphasize the land service rather than the traffic service function of the streets in the Central Business District. It also permits the growth of an environment more suited to the needs of the pedestrian. The freeways are not that close in as to stifle land use development in the Central Business District, but their proximity to the main areas of attraction maintains a high level of accessibility for automobile and public transit trips from the rest of the Study Area. The close association of the long-term parking garages and the two freeways furthers the scheme to reserve the core parking areas for short-term trips, as it is convenient for many of the long-term parkers to walk to their destinations.

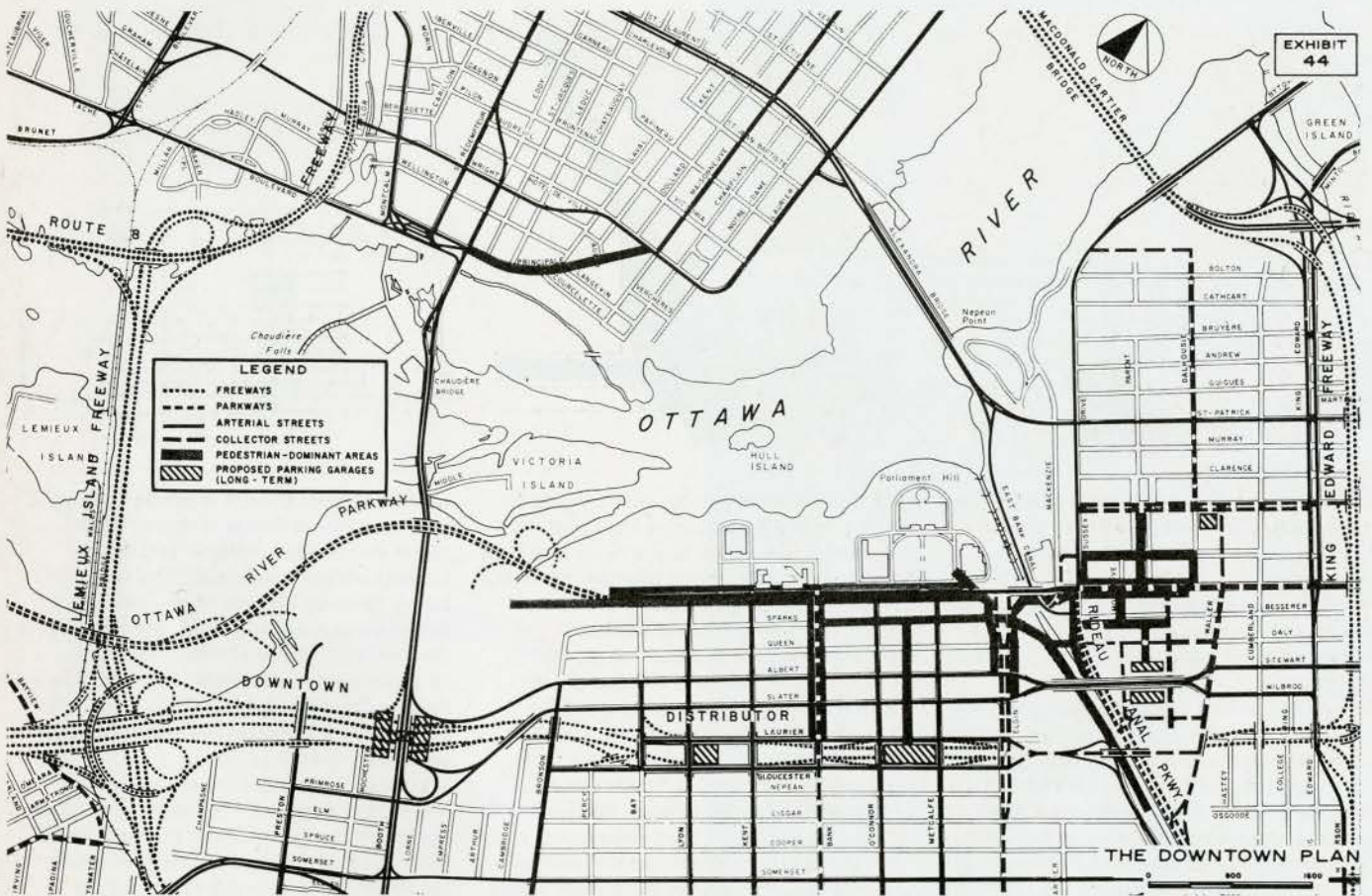
The Chaudière and Alexandra bridges are classed as arterials, but their main purpose is to provide a more local type of connection between the Island of Hull, Lebreton Flats



2

and the Ottawa Central Business District. In fact, their role is similar to that of Albert-Slater and Stewart-Wilbrod in linking Uppertown and Lowertown. The Lemieux Island Freeway and the Macdonald-Cartier Bridge serve area-wide movements across the Ottawa River, many of which have origin or destination in downtown Ottawa. Route 8 Freeway and Route 11 Freeway protect the Island of Hull from through traffic, but also serve trips generated there.

Illustrated on the plan are the areas considered to be the main centers of pedestrian activity. Not all of these can be made free of vehicular traffic, but several may have potential for treatment comparable to the Sparks Street Mall. Plans are now being made to extend the pedestrian environment on Sparks Street across Confederation Square into the East Bank, via separated walkways, malls and plazas. Further pedestrian ways might be developed, for example, in the Byward Market, possibly connected to the East Bank by some form of grade separation over Rideau Street. There might be similar opportunities for linking the buildings and parking garages over the Downtown Distributor to the office and shopping areas. Underground passageways or corridors through buildings could be provided for persons leaving buses at the Distributor and walking to the core. There also could be potential for the use of moving sidewalks or special rubber-tired vehicles in the pedestrian ways. Schemes of this nature would provide the means for pedestrians to move with complete freedom and safety in an attractive and interesting environment.



3

In developing the concept of a Distributor it was recognized that elevating the facility above the surrounding grade would be unacceptable on aesthetic grounds, and would also have the effect of screening the view of Parliament Hill. In addition, it would have removed valuable property from the Ottawa tax rolls and resulted in an irrecoverable loss of revenue. In order to conceal the facility and prevent it from intruding on the landscape it was decided that it should be depressed instead. While this equally requires the demolition of property along its alignment, the scheme possesses the unique advantage of permitting the erection of revenue-producing buildings over the right-of-way. Thus, by combining the Distributor and new buildings in the one right-of-way no land is put to waste, and the possibility is created for providing a truly dynamic and

stimulating environment incorporating all that is best in contemporary civic design. Diagram 1 is a rendering of how the ultimate development might appear in perspective. Running parallel to the Distributor are two frontage streets linked to it by a series of up and down ramps. These streets intersect with the crossing arteries leading downtown, and also serve as the means of access to the office and apartment buildings, parking garages and decks constructed over the right-of-way. Because of ventilation problems that could arise, the structures are not continuous over the Distributor. If it should become desirable to use more of the available land, arrangements could be made to install the necessary equipment to dissipate exhaust fumes. However, as the exhibit is designed for illustrative purposes only, it is quite probable that a closer spacing of buildings

could be achieved without causing difficulties in ventilation.

The bus-rapid transit reserve is located in the centre of the Distributor, with platforms situated underneath the crossing arteries. At these points passengers could transfer to local buses or use special pedestrian ways to continue their journey downtown, or walk into buildings situated over the facility and close by. Diagram 2 is a section taken close to a crossing artery, and illustrates the possibility for arranging various activities over the Distributor. It also shows an underground walkway connecting the two frontage streets to permit pedestrians to cross in safety. Plazas containing shops and display areas might be provided along these passages. Similar treatments could be introduced at other levels throughout the length of the Distributor. □

Session '67 Banff

Architectural Education

Keynote Speakers:

J. Passonneau, FAIA, St. Louis, USA

Shadrach Woods, Paris, France

A. J. Diamond, MRAIC, Toronto

Moderator, Peter Blake, MRAI, New York



Passonneau



Woods



Diamond



Blake

The Conference at first seemed to generate much heat and little light on the subject of architectural education. Many ideas and attitudes were thrown into the wide discussion brazier; small flames burned in isolation. The stoking did not seem to be directed toward getting a single flame burning which would light up the murky environment that surrounds the subject of architectural education. However, toward the end of the conference, the embers did coalesce somewhat into a general glow, with some bright spots emerging from the final ashes. Poor communication was a contributing factor to the absence of a consistent development of the theme: (not to be confused with an undesirable conformist development.) The conference was attended by practicing professionals, architectural teachers and students, distinctions that were perhaps mistakenly emphasized. But the disjointed discussion that represented these areas of activity in the profession only points out that the profession at large is as confused about the relevance of its work as the schools are to their own specific educational objectives. Dean Passonneau, a contributing member to the Graham Foundation Conference on Architectural Education and Practice in the USA, described in detail the recommendation of the report that issued from that conference. These recommendations are printed following this introduction. It was this document that formed the working basis of Session '67. Shadrach Woods, (page 44) of Candilis Josic and Woods, provided a laconic, and iconoclastic contrast. His opinion was that the profession of architecture began going downhill once it began to organize itself. His paper, and poem, we publish in full. Jack Diamond described how schools could bring relevance to their own work, and assist the general practice of architecture in its efforts to provide true alternatives to the inadequacies in our contrived, physical

environment, and not merely superficial differences. He felt many solutions to present problems were based on speculation, speculation itself based on an ideology frequently held dear only by architects. He expressed concern that the profession did not test the relevance of its work in order to improve its service.

The coordination of factors in the area of physical sciences or technology in the design of space on the one hand and the inclusion of objectives that lie in the behavioral sciences on the other, seemed to him to be the core problem. He suggested that schools could both do this, and improve the quality of its teachers, by undertaking field work in a consulting capacity. This would turn learning and teaching into a participative activity, and not, as at present, the passive or receptive one of transmitting formal values. He also stressed the distinction, as did the Graham Foundation Seminar, between education and training, and between the tasks of architecture and its discipline: the student should first receive a general education in order to form clear thought processes, and then training in a substantive field, such training having the authority of tested values. He felt that the demands on allied disciplines should be specific, and not merely lip-service paid to inter-disciplinary coordination. In this way relevant criteria could be incorporated into the act of design, and elegant methodologies evolved that were architecture's and not inappropriately borrowed from other fields. □

Graham Foundation Recommendations

Recommendation Number One: that the AIA encourage all Schools of Architecture to require that their students qualify for the college degree of either Bachelor of Arts or Bachelor of Science.

Recommendation Number Two: that the

AIA work with the universities to develop studio courses as part of liberal education.

Recommendation Number Three: after the college degree of Bachelor of Arts or Bachelor of Science there should be two (and perhaps even three) generally recognized architectural degrees and these should have roughly equivalent meanings in all universities.

Recommendation Number Four: that several schools of architecture and associated schools of engineering be encouraged to prepare and test jointly technological curricula using both the most sophisticated graphic and model techniques to deal with the various kinds of information necessary for rapid, accurate, and sophisticated design.

Recommendation Number Five: that the AIA prepare a set of handsomely organized manuscripts as learning aids (for both school and office) in structures, materials of construction, mechanical equipment, lighting, landscape architecture, highways and traffic, construction practice, and office management, and other relevant subjects.

Recommendation Number Six: that, in cooperation with engineers and perhaps other environmentalists, we set up an operations research analysis of environmental practice and education.*

*An elaboration of this proposal by Joseph Passonneau can be obtained from the Graham Foundation.

Recommendation Number Seven: the AIA should set up six to twelve extremely honorific AIA fellowships.

Recommendation Number Eight: that the AIA encourage either the Ford Foundation or the Rockefeller Foundation to announce a program of institutional grants in the order of magnitude of \$100,000 to \$500,000 to architectural schools that could demonstrate ways of dramatically improving themselves.

Recommendation Number Nine: that the AIA sponsor experimental internship programs uniting interested schools and offices.

Strive for Uniformity?

Shadrach Woods

The problem of reform in architectural education as it emerges from the AIA special committee report and the Graham Foundation conference report seems to me to be a false problem. False first because the AIA special committee seems much more concerned with registration than with education. Then, false because overstated in both the AIA and the GF or CIA reports, which speak of "total environment" and of the design of the environment. It is unthinkable to attempt to educate men to design the total environment. It is also unnecessary. However, it is a peg on which to hang the mundane concerns of the professional societies as for instance over the increasing proportion of non-architect designed buildings.

The concern of the educators implies that somehow the "total environment" is going to be formed through conscious design decisions taken by learned men. I don't believe this to be the case. I don't believe it is remotely possible for such a situation to come to exist without such drastic changes in the society's means of action that it would amount to a fantastic and terrible revolution such as the world has never seen. I can't imagine such a state of affairs coming to pass and still less such a state enduring. I agree, of course, that monarchy or dictatorship could, by fiat, assume responsibility for some pretty awful decisions. But these would be insignificant compared to what would be required in order to concentrate

the forces which form the environment into the hands of one group of men. It is a pipe-dream.

For instance, one of the most important, deadly and degrading influences on the physical milieu today is the private car. Can anyone here seriously propose to do anything whatsoever about it? Another is air and water and soil pollution.

Our problem is handling information. — Crinion

My first point is that the problems of architectural education and of architectural practice are not of the magnitude implied in the reports and working papers which were circulated previously to this meeting. We should be thankful that they are probably much more simple, but they are probably also more difficult. If there *are* any problems we shan't solve them by talking about something else, like "total environment". Of course we are concerned by it but that is a far cry from designing it, or even doing anything about it. Buildings form part of the environment. As the scene hots up, with the 2nd law of thermodynamics I think the buildings should be kept as cool as possible. And, speaking practically, building is the *only* domain of the architect.

My second point is also a very simple one: there is no clearly defined frontier between architectural education and architectural practice. And there is no reason why there should be a frontier. The profession of architecture is essentially an apprenticeship. It is probable that the best architects never complete their education. It is certain that many good buildings are designed by men who have never had the benefit of formal architectural education (Ictinos, Brouvé). In my opinion architecture has been going steadily downhill ever since the profession first organized itself, and the more formal the organization becomes, the less chance we have of seeing good buildings.

To all suggestions about making apprenticeship more formal, and limiting it by calling it, for instance, "internship", I am resolutely hostile. I don't believe that a greater degree of organization in the apprenticeship process

would be entirely beneficial. In return for a speculative increase in efficiency (and who knows even if this is possible?) we would certainly chalk up a big loss of spontaneous development of the imagination. No, this proposal of internship seems to me to be part of the ancient conspiracy to inhibit spontaneity in order to achieve greater control. This is a further zoning of life, making us old by setting up artificial boundaries, as though the natural ages of man were not enough. The problem, if there is one, is to remain young. Anything that cuts across the continuous thread of life, cuts us off from youth and is therefore essentially antibiotic.

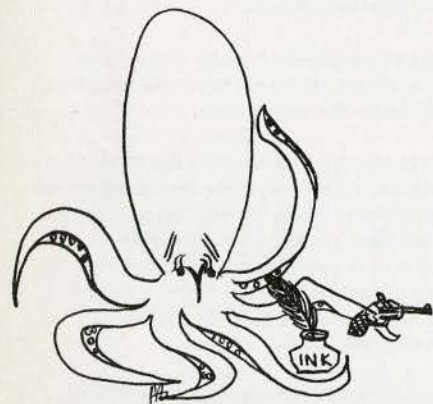
I would say then that architectural education is already too formal and that our efforts should be against, rather than for, any further stratification.

Architectural practice is architectural education. The only way you really learn about organizing a building is by doing it and each one teaches us something that will be useful later. It is not useful to try and borrow forms of education from other disciplines. In this respect, all analogies are false.

If what I say sounds dogmatic, it is because I am not sure. — Dean Hardy

I said that I wasn't sure what the problem is. I must admit to being thoroughly confused by a great deal of talk about new techniques in other fields and how these should affect architecture. It is clear that as sciences evolve and comparatively unsuspected facts come to light, theories are adjusted, attitudes change and these cultural changes are eventually reflected in the built world. All this means to us is that some discoveries can alter ways of thinking, generally. But it is extremely foolhardy to try to predict what these would be, or what effects they might have. It can be dangerous, leading to pseudo-scientific methods in the design process, often even to science-fiction imagery. (ex: airports, airplanes, confusion in purpose of)

Our principal concern is something the French call "habitat". The habitat of man in our culture is a built world. We are too preoccupied with making what we think can and should



Architects use words like squids use ink when they are frightened. — Desbarats



Architectural students are like caterpillars. They consume books and excrete them in neat piles of examination papers, envelop themselves in a cocoon of ideology, emerge as butterflies pinned to a board, or rather as grey moths, to be consumed in the flame of the first contractor-developer they meet.
— B. C. Binning

be the habitat of today to be able to waste our energies on speculation about what habitat might be tomorrow, or the next day.

I believe it is wise to be wary of too direct a relationship between theoretical science and architectural education. I don't, of course, mean that educators and students should not be aware of what is happening in those regions, but they should try to avoid falling over their feet in the attempt to incorporate every discovery or every new assumption.

I have the uneasy feeling that through too much insistence on the technological developments we are constantly complicating our problems of design by surrounding ourselves with false disciplines. Naturally we need to direct our energies by making a channel for them which is defined by our choice of limiting conditions. The choice can be various. The proof of the pudding will be in the eating. An incomplete understanding of theory might prove to be less useful than a little common sense.

In the long run it will be more interesting to students to see a design methodology at work than to pick up the most recent set of borrowed gimmicks and extraneous jargon.

The accent on technology in building (as in other fields) seems to me to be misplaced.

We are getting too close to technology for its own sake, whereas the problem is to grasp the simple techniques of putting materials together in a simple, economic and appropriate way. Most buildings are made in simple ways, with simple programs. We need to keep them simple, not to complicate them.

It seems to me that here again we may be on a false track dissipating energy on imaginary problems while avoiding the real issues, which are clearly: food, shelter, distribution of resources. The development of new technologies, in the space program, for instance, doesn't imply that these must be incorporated into our vocabulary at whatever cost. In our time when we are told that we must build so much, (whatever the most recent forecast is, it is frightening), we must agree that the cost of building, measured in terms of energy and resources, is becoming more and more critical. The more sophisticated techniques should also be examined in this light. They are beneficial to the extent that they are economical in the world context.

The problem of the architectural school is to assert certain basic conditions of design, against which architects can test technologies of building, if need be. Among these basic conditions is economy in the global sense. This, of course, is not measured only on a short-term financial basis. In a given situation it may be more economical to build in steel (build a steel mine, as Bucky Fuller says), in another the implantation of a different technology may be indicated (e.g. Alison and Peter Smithson's pre-stressed embassy for Brasilia.)

The word design is getting a beaux-arts connotation in English, but not in French, which is a relaxing thought. — Desbarats

I said at first that, if there is a problem of architectural education and architectural practice, I do not believe it is of the magnitude implied in the AIA report. I do not believe that we can compete with the engineering and contracting firms which provide package deals in turn-key operations, and this is not our business. What we can do, what we do and what we should train

ourselves to do, is to understand the design process and to apply it to the various projects which are entrusted to us. If we have a clear understanding of our design methodology we will continue to provide a necessary and valuable contribution to our changing society. If not, we are dead, and training architectural students to be docile, well-rounded members of an A-E design team isn't going to save architecture.

We are caught in the middle of the rationalism of Toronto and the Tinker-Toy curriculum of UBC and develop schizophrenia. —
Manitoba student.

I said that I thought that architectural schools are already providing enough, if not too much, formal education. I think it is probably difficult for educators to imagine what for them would be a step backwards into some sort of *deformalization*. However, what I would suggest, as an antidote and a mind-opener, is that in parallel with the regular schedule of studies, a creative seminar run by visitors from any and all other fields (a visiting poet or composer, cineaste, or playwright, etc.). I can imagine that a seminar with John Cage or Samuel Beckett, Jean-Luc Goddard, or Robert Filliou would do more to open the minds of students and educators and therefore improve the quality of their work, than any amount of cooperation with the engineering faculties. In fact I think the latter would be harmful without some exposure to creative imagination. That is why I spoke of this as an antidote.

The poetic function in architecture is at least as important as technological expertise. Since it will be more difficult to encourage this poetic function in schools, which are necessarily concerned more with ponderables, I think most of our efforts, if not all of them, should be devoted to this task. Technology will take care of itself, as indeed it always has done.

(Continued overleaf)

One dog said to the other, "Have you heard about this fellow Pavlov — every time he rings a bell he has a compulsion to feed us."
— Passoneau

Strive for uniformity?
able to change
nor is it intended to
Expected,
and ones
which will be examination,
become registered
as architects, and be
extended
having dual registration
could also
their membership
rules to accommodate
these new concepts.
Greatest aptitude.
Desired work
towards graduate architects,
trained as specialized areas.

Practice
Graduates
having a working
knowledge of design
disciplines
and to which
they are best suited.
They will proceed
to membership in the
American Institute of Architects.
Specialists
internship in practice
would provide
further development
of skills in practice
would be
prerequisite
for licensing Approach One

Education
The faculty
of a school
of architecture
would be common
aims and objectives
each profession would
have one
faculty or a joint
faculty to select
more intelligently
the specialty
for after
a prescribed
pre-professional
four-year program,
and this faculty
would (building)
engineering would be
reconstituted
either as these disciplines
would, after a few years
of practical experience,
be able to implement.
Attitudes
within the architectural
engineering and
planning professions:
environmental design.
Professional societies
would adjust
the design
team would be these
the foregoing approaches
will require
time to be modified.
The term
architectural design
would join

other professional societies.

Education:
each other's
professional societies.
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that either of a working knowledge of
all the design disciplines, there would be
an opportunity in revised,
and a wholly new school of extended
affiliate
membership in specialized areas.

Practice
With regard to organized internship
in either architects or engineers,
would be wholly
new school.
architects as generalists
but playing practice
would provide
opportunities
for further developing skills
in the Commission.
practice would be
prerequisite for licensing.
Because of degree
and organized
vitaly important
individual roles through develop
this specialty through selected
practice.
All members
of a special competence in
architectural design,
structural design,
mechanical design,
electrical design or
professional service
would be improved greatly.
Basically
environmental design
created.
To effect this
procedure within
grant
two professional degrees:
architecture and engineering
as related
to detailed
in the next phase of
development recommended
by this latter period to major
in the area of architecture
would need to be
changed drastically
their common educational base
these graduates when
registered as
the building field.
A joint faculty
formed
from a master's or second
professional degree and
organized
internship in the undergraduate
years
the professional
education would exist
a design team of broader scope
and sympathetic understanding of award
a bachelor's degree
a major
in one or more
of professional practice,
graduate architects educated
with more closely and cross departmental

lines.
It may be
urban planning.
The quality of this would be followed
by a professional degree granted in
architecture.
Following universities,
the faculties would need
to work
the faculty of a school
of architecture
and the faculty of a school
of practice
either as architects or engineers
according to the schools of award
a bachelor's degree
after a prescribed
pre-professional
four-year
program and indicated above,
would write the same
arts,
of architecture,
building
Approach One *Education*
The faculty
of a school of architecture
would be organized
to educated
as indicated above
would be eligible to these
these graduates
would all be engineering
And other schools
would develop
and operated a need
to be modified
The curricula
of schools of
a general knowledge
of all (course context
will have to be
completely
two or three
years).
With
take on a broader meaning
in architectural generalists who,
in addition
would possess
design disciplines.
Registration
A professional
degree(s) and a
professional degree(s)
and organized internship
in schools.
not all schools
will be a pre-
professional and
professional
degree,
and their specialty
Registration
These are indicative
of the numerous problems
to be
have both the mission
and the power to registration
laws may not
necessary to create entirely new
the curriculum followed
and
the degree received.
There would

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CANADA

Use of Wood in Construction

by H. B. Dickens

UDC 694.1

Earlier Digests (CBD 85, 86) have dealt with the relation of the basic properties of wood to its effective use as a construction material. Those who are not specialists in timber design but who, from time to time, work with wood as an engineering material will also find it useful to familiarize themselves with current practices in its design and specification. These practices, based on continuing developments in wood technology, are reflected in various codes, standards and design handbooks on timber listed at the end of this Digest.

One of the more important references is that of the Canadian Standards Association: CSA 086, "Code of Recommended Practice for Engineering Design in Timber"⁽¹⁾ on which the Wood Section⁽²⁾ of the *National Building Code of Canada* is based. These documents, together with reference manuals published by the Forest Products Laboratories of the Department of Forestry and Rural Development⁽³⁾ and by such organizations as the Canadian Institute of Timber Construction⁽⁴⁾, Canadian Wood Council and Plywood Manufacturers Association of British Columbia, provide a comprehensive set of wood design aids. It is the aim of this Digest to consider the implications of these design aids in the safe and efficient use of wood in construction.

Lumber Classification

If lumber is to be specified correctly a commonly accepted terminology must be used; CSA 0141, "Softwood Lumber"⁽⁵⁾ fills a valuable need in this regard. It covers the principal size and trade classifications of softwood lumber for yard, structural and shop use, and provides a common basis of understanding of softwood lumber terminology. It has done much to encourage and promote the adoption of uniform methods in the grading, measure-

ment and description of softwood lumber in Canada.

CSA 0141 classifies lumber according to end-use designations, which are further related to the size of the piece. The two main types of concern to the designer are 'Yard Lumber', which is intended for ordinary construction and general building purposes, and 'Structural Lumber', which is intended for use where working stresses are required. Lumber is classified by nominal size into boards (less than 2 inches thick and 2 or more inches wide); dimension lumber (at least 2 inches but less than 5 inches thick and 2 inches or more wide); and timbers (at least 5 inches or more in least dimension). Lumber used for structural purposes may be further designated on the basis of end use as 'joists and planks,' 'beams and stringers,' and 'posts and timbers.'

It is customary to specify lumber by nominal size, although the actual or dressed size may be as much as 1/2 inch less in both thickness and width. Minimum dressed sizes corresponding to accepted nominal sizes have been established by CSA 0141 and must be used in all design computations. One limitation of the present size standards for dressed lumber is the omission of any reference to moisture content at the time of dressing. This will be remedied if revisions currently under discussion in Canada and the United States are adopted. The revisions will establish new size standards at 19 per cent moisture content and provide shrinkage allowances for lumber dressed at other moisture contents.

The grading of lumber is difficult and complex, but essential if wood is to be used safely and economically in construction. Individual pieces of lumber as they come from the saw exhibit a wide range in quality and appearance with respect to knots, slope of grain, shakes and other natural characteristics, and hence vary considerably in strength, utility and

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CBD 88

value. The establishment of grades standardizes the quality of lumber at different levels and is an important prerequisite to the proper use of the material.

Factors affecting appearance and strength, as well as others determining suitability for specific end uses, must be considered in grading. The rules specify the minimum quality board permitted in each grade. The grading operation is inevitably subject to some variation because it is based on visual assessment and judgment. Grading rules, however, are intended to be explicit enough to establish a maximum of 5 per cent below grade as a reasonable variation.

Grade Marking

A significant development in the grading of lumber in Canada⁽⁶⁾ is the mandatory grade marking of lumber used in housing constructed under the National Housing Act. This has been in effect since 1962, following the inclusion of a requirement for grade-marked lumber in Supplement No. 5 to the National Building Code (i.e. *Residential Standards*); and it is now the practice of the major lumber manufacturers to grade mark all dimension lumber.

Grading is carried out by authorized agencies in accordance with grading rules prepared by major Canadian industry associations. The grade marks identify the species, the grade and the rules by which it is graded. The grade marking procedure is controlled by the Canadian Lumber Standards Administrative Board, a division of the Canadian Standards Association responsible for maintaining a satisfactory standard of grade marking in Canada. Through this Board grading agencies are controlled, grading rules approved, and grading licences granted. The board has also established a check grading service to verify the work of the graders periodically and ensure that the agencies are maintaining standards.

Lumber satisfying the provisions of CSA 0141 and graded under recognized rules by agencies approved by the Board is designated as CLS (Canadian Lumber Standards) lumber. This provides a basis for controlling lumber quality and when used in association with the table of Minimum Lumber Grades for Specific End Uses included in *Residential Standards 1965* can do much to ensure the safe and economical use of wood in construction.

Strength Groups

To simplify design procedures and thus facilitate the structural use of wood, Canadian wood species are divided into four main strength groups so that species having similar strength and stiffness properties are grouped together (Table I). Group I, which contains the stronger species commonly used for engi-

neering purposes, has been further subdivided to permit greater efficiency in wood utilization.

TABLE I
STRENGTH GROUPS

Group	Species
I (a)	Douglas Fir (dense)
(b)	Douglas Fir, Western Larch
(c)	Pacific Coast Hemlock
II	Pacific Coast Yellow Cedar Eastern Larch (Tamarack) Jack Pine
III	Fir (Amabilis and Grandis) Balsam Fir Eastern Hemlock Lodgepole Pine Ponderosa Pine Spruce (all species)
IV	Western Red Cedar Red Pine Pine (Western and Eastern White) Poplar (Aspen, Largetooth Aspen, and Balsam Poplar)

Structurally-Graded Lumber

In designing for sawn lumber it is important to note the difference between structurally-graded and non-structurally-graded material. The former grades are intended to meet engineering requirements and are therefore much more precise than non-structural grades in the control of knots, checks, splits, slope of grain and other strength-reducing characteristics. Requirements for these grades have been established by the CSA 043 "Specification for Structural Timber".⁽⁷⁾

The factors that affect lumber strengths differ according to the kind of stress involved; it is therefore important that stress-graded lumber be specified by intended use as well as by species and grade. All rectangular members such as joists, planks, beams and stringers are graded for strength in bending. Posts and timbers, being square or nearly square and intended for use as columns, are graded for strength in compression. If a rectangular timber is to be used as a column it is important that it be graded under post and timber grading rules to establish its strength in compression rather than in bending.

Allowable Unit Stresses

The allowable unit stresses for lumber used structurally are determined by strength values obtained from extensive tests of small clear specimens, making allowances for the natural variability of wood, the duration of load, and the effect of factors such as knots and other

strength reducing defects. Basic principles of structural grading have been established that permit the evaluation of any timber in terms of 'strength ratio,'⁽⁸⁾ which is the ratio of the strength of a structural timber to that established for clear timbers of the same species with no strength-reducing defects. Thus timber with a strength ratio of 75 per cent would have 75 per cent of the basic unit stress established for the clear timber. This is the basis on which the allowable unit stresses for structurally graded sawn lumber have been established.

These stresses are specified for the usual conditions of service, that is, normal duration of full design load and dry service conditions. Most codes require that these should be further adjusted to allow for a different duration of loading or moisture condition. Normal load application is one in which the structure is subjected to the full design load only occasionally, as generally occurs in assembly, residential, institutional and commercial occupancies. When the load is of longer duration, as in most storage occupancies, the allowable stresses are decreased by 10 per cent; for loadings of shorter duration, such as those due to wind, a 33 per cent increase in allowable stress is permitted. The unit stress may also be increased by 10 per cent when used in a load-sharing system in which three or more essentially parallel members spaced at not more than 24-inch centres are so arranged or connected that they mutually support the load.

Similarly, when the average moisture content of wood over a year is 15 per cent or less, as in most protected locations, the wood is considered to be in a dry service condition. If it is used in other than dry service condition, the working stresses must be reduced by specified amounts.

As structurally graded lumber is not always readily available, the National Building Code and CSA 086 also include provisions to permit assignment of working stresses to some types of non-structurally graded material. Control of strength-reducing defects such as knots and slope of grain is less exact in these non-structural grades and the working stresses are therefore reduced accordingly. In addition, working stresses may be assigned only to certain grades, and their application is limited to lumber used in a load-sharing system. In lumber used singly as post, beam or tension members, working stresses may be assigned to non-structural grades only when the lumber has been regraded, with certain limitations placed on slope of grain.

Lumber for Residential Construction

The assignment of working stresses to non-structural grades of lumber is of particular

importance in the residential field. Structural grades are more suited to buildings with heavy loads and wide spacing and it is seldom economical to use them as load bearing members in housing. In recognition of this, the Ottawa Forest Products Laboratory has prepared a set of tables showing the size and span relations for a wide range of yard grades of dimension lumber for use as joists and rafters in housing⁽⁹⁾. These tables give the maximum span as the smaller of the spans determined by stress or deflection limitations. In the lower grades the spans are usually governed by bending stress. There is a certain point, however, in the higher grades for each particular species where the spans are governed by deflection, and further improvements in grade do not justify an increase. In such grades, although appearance may be improved, factors unrelated to appearance control the span. These tables facilitate compliance with the *Residential Standards* and assist the house builder in selecting the most economical grade for a particular use.

The builder has been similarly aided in the use of wood roof trusses in residential buildings. Following a detailed research program on the strength of roofs, conducted jointly by DBR/NRC and the Ottawa Forest Products Laboratory, performance criteria acceptable to CMHC were developed for wood trusses and later incorporated in *Residential Standards*. These criteria require that "lumber roof trusses shall be capable of withstanding a load equal to the ceiling load plus 2 $\frac{2}{3}$ times the design roof snow load (but not less than 60 psf) for 24 hours. Such trusses shall not deflect more than 1/360 of the span after being loaded with the ceiling load plus 1 $\frac{1}{3}$ the design roof snow load (but not less than 30 psf) after one hour."

These criteria permit the suitability of wood trusses to be determined by test and provide the basis for acceptance of most of the wood trusses for residential construction currently in use in Canada. These include designs using nailed plywood gusset plate connectors embracing a wide range of slope, span and load conditions developed jointly by the Ottawa FPL and DBR and made available through the Builders Bulletin series of CMHC⁽¹⁰⁾.

Glued-Laminated Timber

Developments concerning the use of glued-laminated timber in construction deserve special mention.

The designer of such assemblies has a comprehensive materials specification available in the form of CSA 0122: "Specification for Glued-Laminated Softwood Structural Timber."⁽¹¹⁾ This gives detailed requirements for

adhesives, laminating grades and other items governing the proper manufacture of such products. In addition, the CSA has established a separate Administrative Board similar to the one concerned with lumber grading to implement its "Qualification Code for Manufacturers of Structural Glued-Laminated Timber" known as CSA 0177⁽¹²⁾. This standard was first developed by the Canadian Institute of Timber Construction and was operated by that association as a voluntary standard until its adoption by CSA in 1965.

The qualification code requires each laminating plant to have certain equipment and personnel and to carry out manufacturing and quality control procedures. Inspections are made initially and at selected intervals by an independent examiner. Providing the structural laminator remains qualified, he may attach a suitable label to his product and provide a certificate attesting that the product is manufactured in accordance with the material specification CSA 0122 and the quality requirements of CSA 0177. The National Building Code now requires that all fabricators of glued-laminated timber be qualified in accordance with this latter standard.

Conclusion

As should be evident from the foregoing discussion, developments in wood technology have greatly facilitated the use of wood as an engineering material in construction despite the varied nature of the product in its natural form. Current classification and grading practices permit the specification of lumber properties within certain desired limits and provide the designer with assurance that an acceptable product will be obtained.

This broad review of design and specification practices only introduces the subject; for more detailed information the reader is referred to the various design aids cited in this Digest. In addition to the references listed much other useful information is available in publications of organizations such as the Canadian Wood Council, the Canadian Institute of Timber Construction and the Plywood Manufacturers Association of British Columbia.

The Division of Building Research also has several papers available dealing with the appli-

cation of wood in various types of construction. These range from Housing Notes on conventional wall, floor and roof framing practices to more specialized studies of trusses, prefabricated systems, shop manufacturing processes and stressed skin panels. A list is available on request. In all of its work involving wood the Division maintains close liaison with the Forest Products Laboratories of the Department of Forestry and Rural Development, the organization responsible for preparing most of the available data on the properties of Canadian woods and for developing much of the information used in establishing criteria for timber design.

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12. Qualification Code for Manufacturers of Structural Glued-Laminated Timber. Canadian Standards Association, CSA 0177 - 1965, Ottawa, January 1965.

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The Division issues many publications describing the work carried out in the several fields of research for which it is responsible. A list of these publications and additional copies of Digests can be obtained by writing to the Publications Section, Division of Building Research, National Research Council, Ottawa, Canada.

88th Annual Exhibition Royal Canadian Academy of Arts

Founded by HRH Princess Louise
and the Marquess of Lorne, 1880

*Harold Beament, President; Clare Bice, LL.D.,
Vice-President; Alan C. Collier, Hon. Treas.,
Fred Finley, Sec. Treas.*

The Royal Canadian Academy of Arts
Eighty-eighth Annual Exhibition will be held
at the Montreal Museum of Fine Arts from
October 27 to November 22, 1967.

Architectural Committee: John C. Parkin,
FRAIC, chairman; Gordon S. Adamson,
FRAIC, R. T. Affleck, *MRAIC*, A. T. Galt
Durnford, *FRAIC*.

Jury

All architects practicing in Canada are invited
to submit work for consideration by the Jury
of Selection – Edouard Fiset, *FIRAC*, chair-
man; R. T. Affleck, *MRAIC*; Jean-Louis
Lalonde, *MIRAC*, and Richard Bolton, *FRAIC*.

Conditions

- 1 Buildings submitted shall be limited to two, representing work completed subsequent to December 31, 1963, and not previously exhibited in Montreal.
- 2 Photographs shall be 8" x 10" glossy, black and white or sepia. As many photographs as the architect feels are desirable may be submitted.
- 3 Submissions are to be accompanied by at least one interior view, and at least one sketch plan (which may be rough), to indicate internal arrangements.
- 4 If an architect feels that an existing model of a building submitted would add greatly to its interest, he is particularly invited to include a photograph of same, but should state the dimensions of the base of the model, which he would be prepared to make available for presentation.
- 5 If accepted by the Jury, the architects shall be required to provide at their own expense, photographs (mounted) of a size to be established by the Jury.
- 6 Submissions (8" x 10" photographs) and sketch plans must be received at the Royal Canadian Academy, 63 Warland Avenue, Toronto, on or before Wednesday, July 26, 1967.
- 7 The decision of the Jury shall be final.
- 8 Works of non-members must be delivered to the above address express prepaid. The Academy will pay express charges on Members' work only.
- 9 While the greatest care will be taken at



all times, works submitted for exhibition shall at all times be at the risk of the exhibitor. If the exhibitor requires insurance to cover the work for loss, theft, accident, damage by fire or water or negligence, or other peril, while on exhibit or in the custody of the Academy or Gallery or place of exhibition, or in transit to or from the place of jurying or the gallery where the exhibition is to be held, or in transit or on tour between galleries or places of exhibition, the exhibitor shall provide his or her own insurance and the exhibitor releases the Royal Canadian Academy of Arts and the art galleries concerned and any other place of exhibition or storage and their officers and servants respectively from any or all claims.

10 Architects who do not wish to have their work photographed and reproduced must notify the Secretary in writing, on the entry form.

Entry Form

Please fill in and sign the entry form on the reverse side and mail it to the Secretary, 63 Warland Avenue, Toronto 6, Ontario, not later than Wednesday, July 26, 1967.

88th Annual Exhibition Royal Canadian Academy of Arts

To be held in Montreal Museum of
Fine Arts from October 27 to
November 22, 1967

To the Secretary
Please receive for Exhibition the following
works, subject to the conditions of your
circular:

Entry Form

No.	No. of Photos and Plans Submitted	Titles of Works Please Print in Block Letters	Year Executed	Is Model Available	Size of Base
1					
2					

Two works only may be submitted. Please
fill in and sign this entry form and return it to
the Secretary, 63 Warland Avenue, Toronto 6,
on or before Wednesday, July 26, 1967.

Architect's Name
Please print in block letters

Architect's Signature
If a woman, state whether Miss or Mrs

Street Address

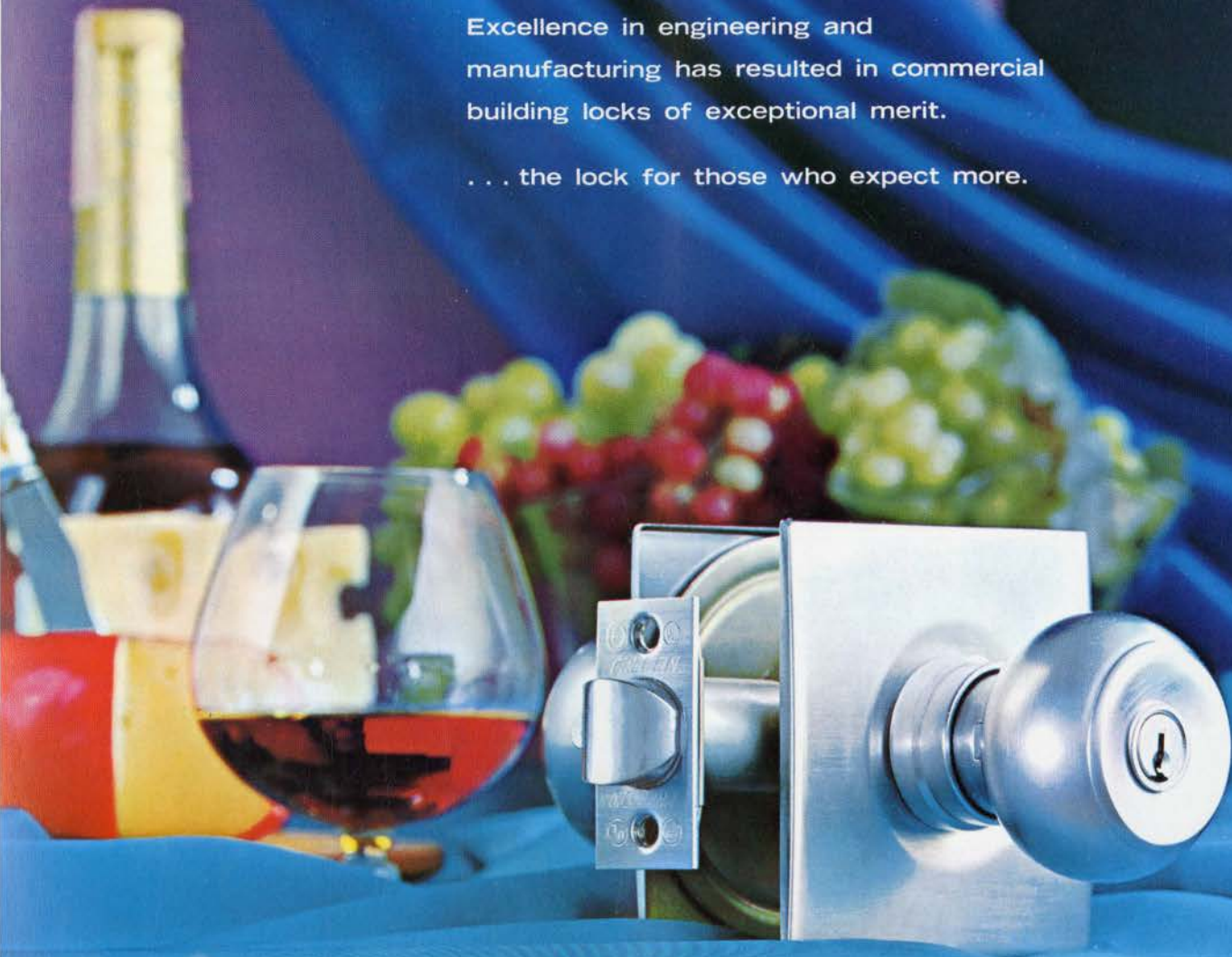
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Canadian Pacific/Cominco Pavilion – Expo 67

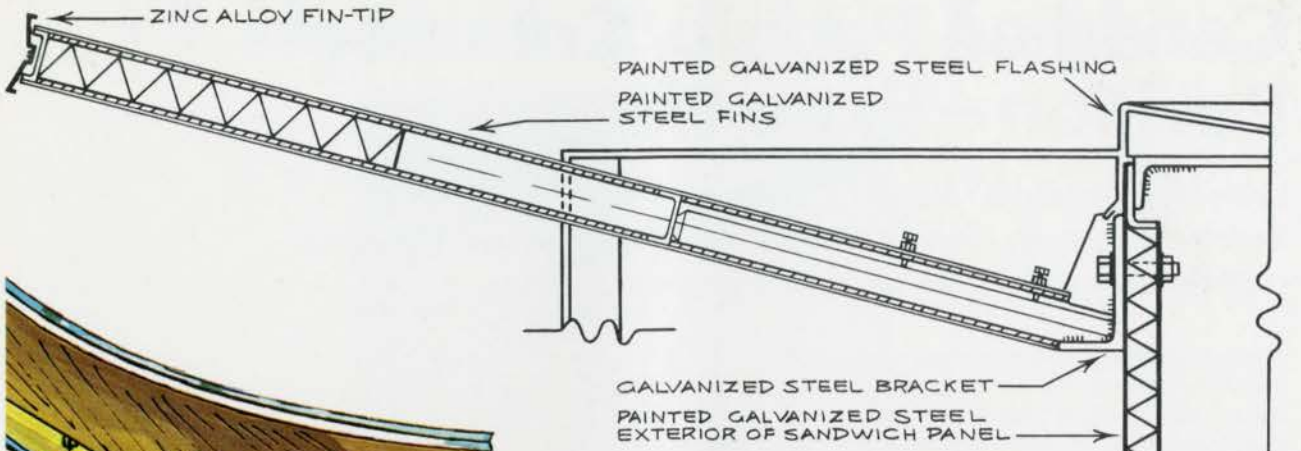
Designers: De Martin · Marona of Canada Limited

Architects: Dobush, Stewart, Bourke, Longpré, Marchand, Goudreau

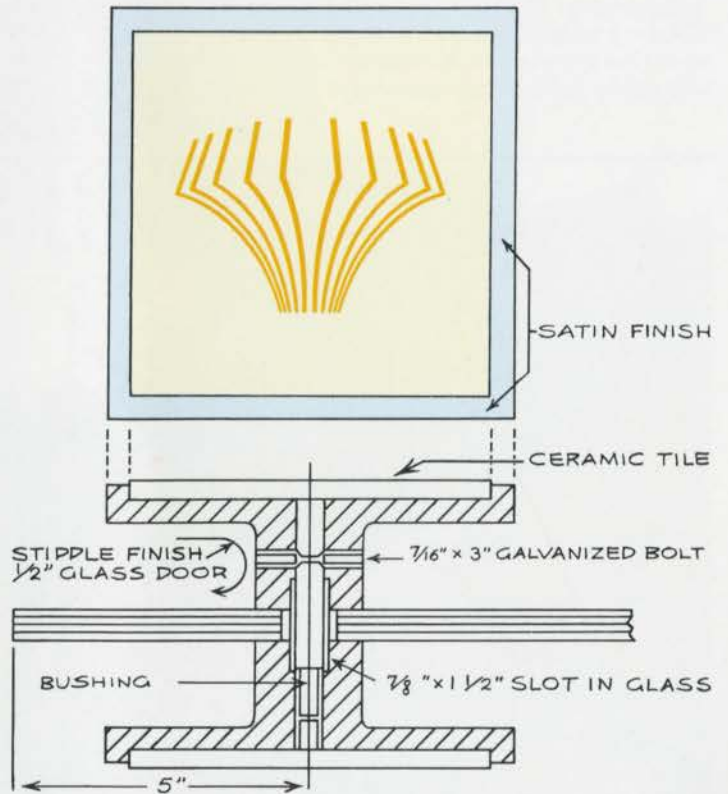
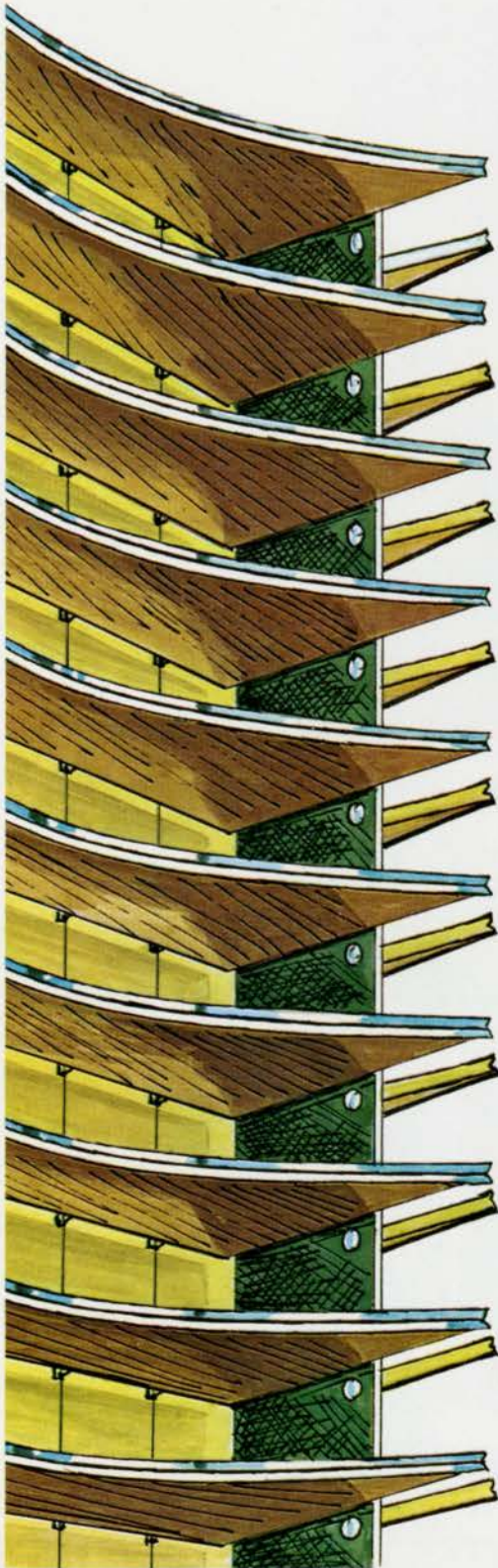
General Contractors: Hewson Construction Ltd.

This two-building pavilion, costing in excess of 4 million dollars, is one of the largest individual corporate projects at Expo 67, and one of the most interesting architectural statements of corporate activity in the entire exhibition. Designed essentially as volume-containing structures to house specific programmes and to provide a comfortable environment for visitors, the pavilion also implies movement and diversity, rhythm and expansion and utilizes many architecturally significant applications of lead and zinc products in its construction. The pavilion, which consists of a multiscreen motion picture theatre, an exhibits building, a landscaped plaza, and a dominant high rise element, should be of particular interest to members of the architectural profession visiting Expo this year. Some aspects of design are illustrated in the following pages, but only a personal visit can reveal the many exciting ideas and architecturally interesting features of the pavilion.

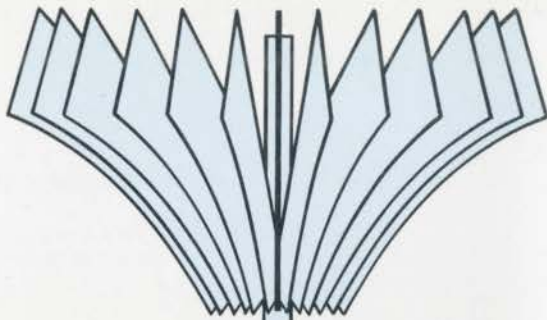




Galvanized sheet steel was used for the fins as well as for the sandwich wall-panels and roof flashing of both the theatre and exhibits buildings. The "horizontal" fins on the theatre building are anchored to hot-dip galvanized steel brackets. The decorative fin-tips, shown on the detail drawing above, are roll-formed from a highly polished zinc alloy — one of many such alloys widely used in architectural applications.



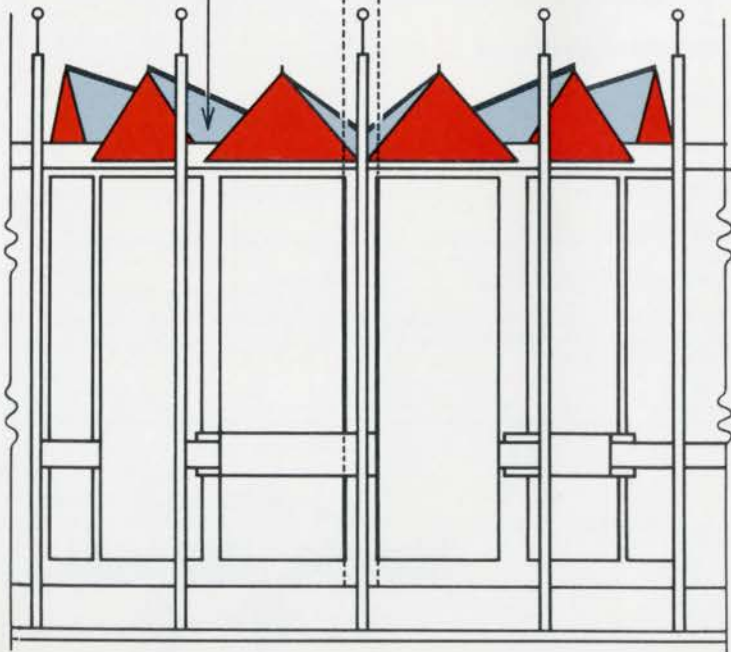
Cast zinc alloy door pulls with ceramic plaque inserts were specially designed for the glass doors of the pavilion; details are shown on the sectional drawing above. The plan view shows the plaque design which complements the fin motif of the vertical element.



Vertical element on the pavilion site is the striking 85-foot mast, many of whose components are protected from corrosion by zinc. Fins were fabricated from galvanized steel sheet; the 3-inch bar channels in the fins and the lower circular support member were hot-dip galvanized, and the top circular support member is zinc metallized. Effective, long-term protection with zinc can be achieved by galvanizing, metallizing or priming with zinc-rich paint. Design and specification advice regarding zinc coatings is available through Cominco's Marketing Services department.

Kiosk design features this multi-gabled canopy which surrounds the base of the 85-foot mast and complements the fin element that crowns it.

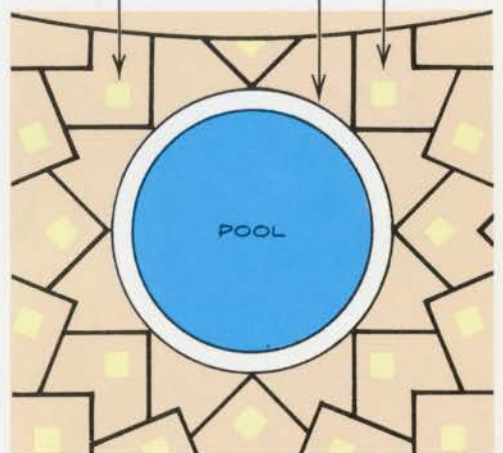
1LB. LEAD SHEET BONDED TO POLYURETHANE FOAM INSULATION



Lead-lined pool. Many architectural uses of lead and zinc are evident in these buildings: for example, the lead-lined pool shown above is surrounded by a terrazzo floor divided by zinc strips and graced by a hanging planter made of chrome-plated zinc sheet. Aside from conventional galvanized conduit, ductwork and roof-deck, other interesting uses of zinc are: in extruded form as handrails and carpet trim, and in cast form as furniture accessories, door handles, door stops and light fixtures for illuminating the exterior of the pavilion.

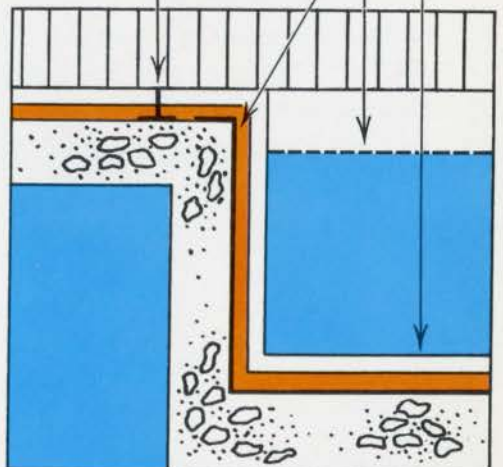
PLAN

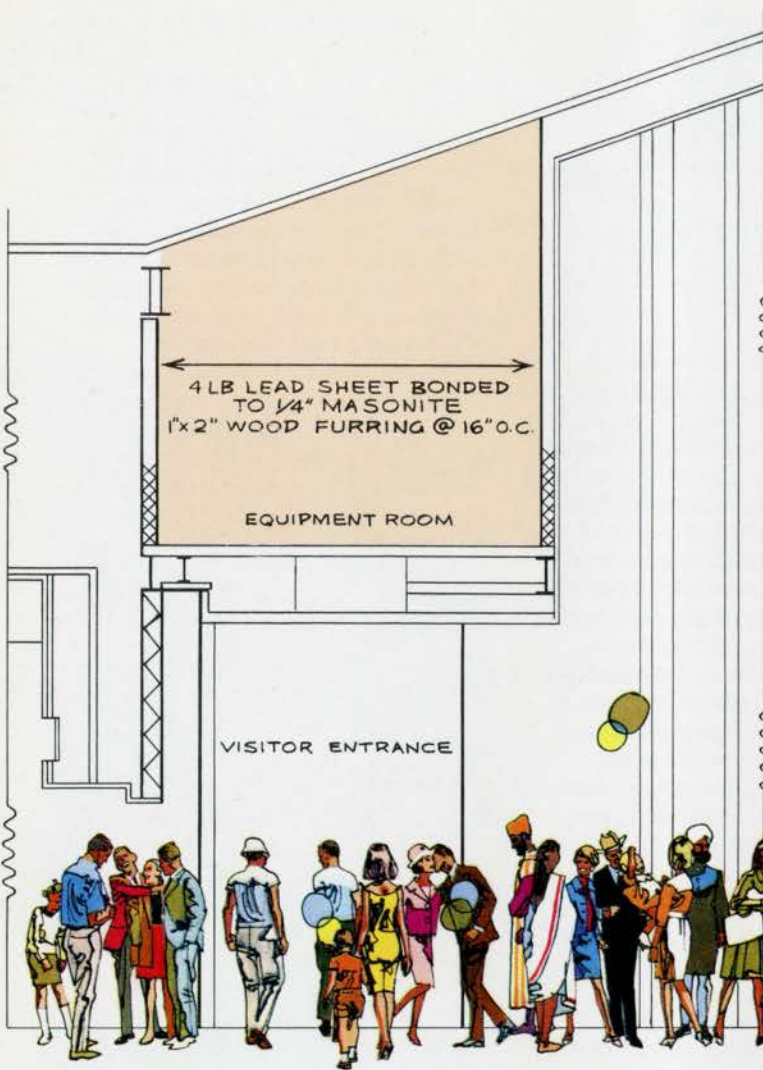
TERRAZZO FLOOR
 1/4" DIVIDER STRIPS, ZINC
 4" SQUARE MARBLE INSERTS



SECTION

1'6" DEEP POOL
 WATER LEVEL
 4 LB LEAD PAN
 ZINC TERRAZZO STRIP





Creating the sound barrier is one of the most recent additions to the many architectural uses of lead sheet. Preventing the transmission of sound from a mechanical service area into the theatre is one demonstration of this use (depicted in the section drawing on the left). Other areas where lead is used for sound insulation are in the doors to the lounge areas, the walls of the projection booth and as a plenum barrier in the exhibits building.

Reservations to attend film showings in the theatre may be made through Cominco. Simply fill in the coupon on this page or drop a note to Cominco Ltd./Marketing Services/630 Dorchester Boulevard West/Montreal 2 — for the attention of Arthur Ash.

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- Sheet Lead for Effective Noise Control
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by Derek Buck, MRAIC

Mr Buck is a partner in the Toronto firm of Page and Steele Architects

The previous article in this series on wall claddings reviewed current practices applicable to commercial buildings. This article is directed more towards the industrial type of building and the application of prefabricated panels or sidings in their wall construction.

The diversity of industry is reflected in the wide variety of buildings in this category ranging from the simple enclosed space of a warehouse to the more sophisticated type building with its controlled environment required for many of the modern industrial processes.

Performance

Manufacturers of prefabricated siding have produced a range of products to meet these varied requirements and the designers' problem of selecting an appropriate system is simplified by the detailed performance data and test results published by the manufacturers. Typical product literature provides full engineering data and other pertinent information relating to physical aspects such as humidity and condensation, location of vapour barrier and insulation, temperature and moisture data, with particular reference to freezing, thawing and dimensional stability, solar effects on wall temperature, thermal bridges, moisture migration and air leakage. These matters are certainly not "academic" when the design brief calls for the provision of controlled humidity and temperature in this rigorous Canadian climate.

Advantages claimed for prefabricated siding include:

- a Increased floor area resulting from thinner walls.
- b Lower structural costs due to light-weight construction.
- c Fast, economical field erection, regardless of weather.
- d Thermal efficiency.
- e Low maintenance cost.
- f Pre-engineered and tested to ensure a trouble-free installation.
- g Adaptability – easily removed and replaced as required for future extensions.

One might, in some cases, dispute a number

of these claims but the best of the systems on the market today certainly meet the basic design criteria suggested in the Princetown Report on Curtain Walling and may be used with confidence.

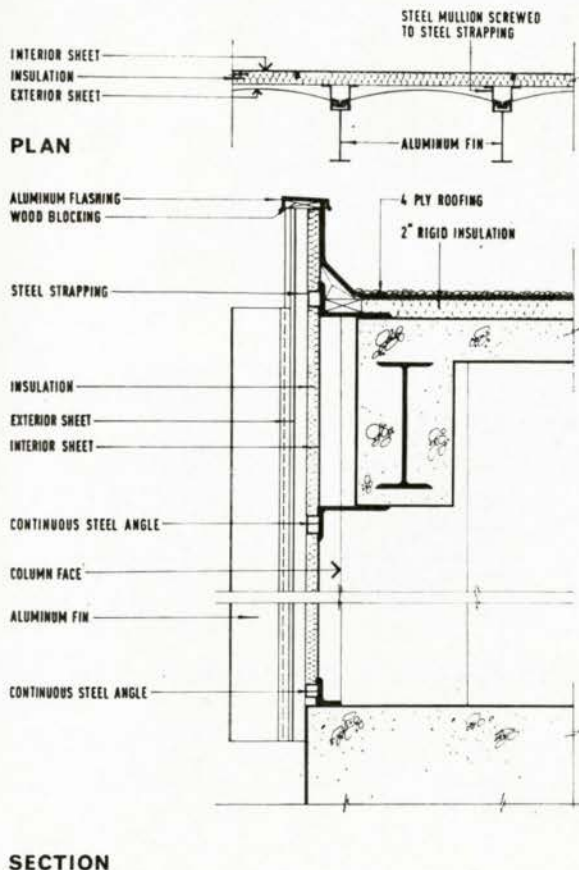
Composition

A typical siding panel comprises three main components; inner skin, insulating core and outer skin. These basic components are designed and assembled as balanced panels so that they function as a single skin with the core acting as a separator and as a bonding medium. They must have the ability to transfer internal loads so that

compressive and tensile stresses are carried to the skin materials.

Great attention is also paid to the elimination of through metal contact or thermal bridging between skins. In addition, the principle of parallel skins is adopted in order to produce a uniform heat transmission co-efficient over the whole panel.

The prime materials used in the skin assembly are aluminum, steel and asbestos cement. They are available in a large range of profiles and textures. Color is also introduced in many ways ranging from painting after erection to baked enamel and



acrylic polymer coatings heat fused to the surface. The asbestos cement products are usually fabricated in 4 ft wide panels with lengths varying from 6 ft to 12 ft. Those in aluminum and steel, both in roll and brake formed facings, can be obtained in lengths up to 36 ft.

The core materials most favored are glass fibre, wood fibre, asbestos fibre, perlite, polyurethane and polystyrene in both fused and expanded forms. Where corrugated skins are used, the air space offers additional insulating value. The primary function of the material is to reduce the heat flow and to increase the surface temperature of the inner skin at low exterior temperatures. It should also prohibit the migration of water vapour into its structure (which would immediately affect its thermal conductance properties) and be non-combustible. Where this cannot be achieved through the basic properties of the material then the edges of the core are sometimes treated with an acrylic coating which prevents water penetration but allows vapour to escape from the material and prevents internal pressure build-up.

So far as Fire Hazard Classifications are concerned, the indexes for "fuel contributed" and "smoke developed" are usually nil. The "flame spread" index varies from 0 to 25.

Pressure lamination is adopted in the fabrication of the insulated panels using waterproof adhesives. These are selected according to the properties of the core and skin materials. A high degree of quality control has been introduced into the fabrication processes along with tensile and shear testing to ensure complete lamination integrity.

Installation

The majority of cladding systems offer a complete sealing and interlocking of one panel with its neighbor. The methods adopted for fastening panels to the structural frame show a great deal of engineering ingenuity. These range from the simple exposed self-tapping screw or shear bolt to the more sophisticated interlocking and snap-in systems utilizing box channels with concealed spring pressured fixing bolts. Most systems show a high regard for the double sealed joint which prohibits air infiltration and exfiltration at the panel junction.

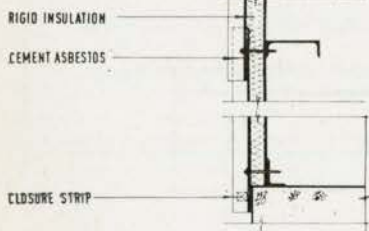
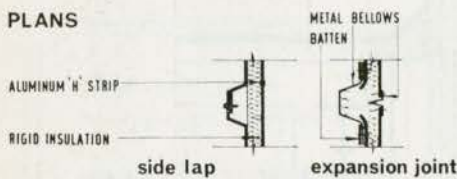
Derek Buck

Estimating

The prices of prefabricated siding discussed in the preceding article cover a fairly wide range. Apart from the obvious variations due to different facing materials, insulating cores and profiles there are a number of other factors which have to be considered before an intelligent price can be applied. One of the most important is the quantity of siding required. Large quantities can, of course, be supplied at a lower unit price than small quantities and this should be taken into account when applying or obtaining unit prices. Another factor is the length of the panels, short panels requiring more flashings and closures than long panels and a higher unit cost for their erection. The size and quantity of openings for windows and doors will affect the price as will the height above ground at which the siding is to be installed, and the location of the project, both as regards its distance from a main urban center and whether it is on a confined downtown site with problems of access.

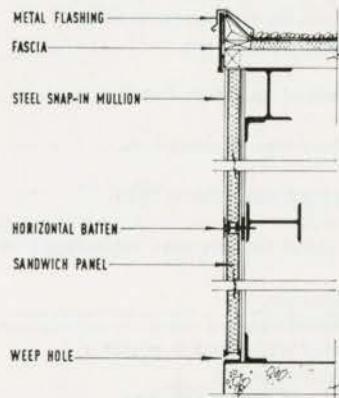
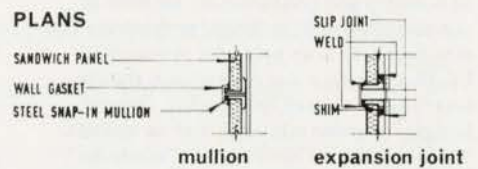
The following are general unit prices which might be used for insulated siding. They are based on an area of 10,000 square feet: Sandwich panel with galvanized steel exterior and interior exposed fasteners
Faces for industrial use and 1½" fibreglass

PLANS



SECTION

PLANS



SECTION

insulating core – unpainted 1.35 per SF, pre-painted 1.55 per SF.
 The same panel with an aluminum exterior face – unpainted 1.45 per SF, pre-painted 1.60 per SF.
 Sandwich panel with galvanized steel exterior and interior faces, concealed fasteners, and 1½" fibreglass insulating core for architectural application – unpainted 1.50 per SF, pre-painted 1.70 per SF.
 The same panel with aluminum exterior face – unpainted 1.65 per SF, pre-painted 1.80 per SF.
 Aluminum sandwich panel with aluminum fins shown in the illustration approx. 5.00 per SF.

These prices are for the panels above and do not include the cost of flashings, closures or structural supports. Flashings and closures will add from 20c.–60c. per square foot to the unit cost of the panels depending on the panel sizes used, and the structural girts will add from .20–\$1.00 per square foot to the unit cost depending on the spans required and whether the panels are the standard type with their structural strength in the outer skin only or the composite type with the structural strength incorporated throughout the panel. The composite type is a more recent innovation and requires less structural framing to support it.

Wood fibre and polystyrene insulating cores are cheaper than fibreglass but are usually not acceptable to the fire marshal. Polyurethane cores have superior insulating qualities but the cost is two to three times higher than fibreglass. The pre-painted prices given assure acrylic or vinyl finish. Such finishes as fluorocarbons, organosols and plastisols are more expensive.

Last year I gave unit prices of \$16.00–18.00 per square foot for granite facing. It has been pointed out that, although these figures may be correct for Scandinavian, Balmoral, Emerald Pearl, and Blue Pearl granites in 4" to 6" thicknesses, there are now available Canadian granites such as St. John's Gray, Chicoutimi Brown and National Canadian Black which are more modest in price. In addition, the cost of polishing has been reduced by technological advances and other cheaper finishes such as flame texturing and modern honing techniques have helped reduce the cost. The figures given this year reflect this reduction in price and are based on stone sizes of from four to six feet by three to four feet in a 2" thickness. The prices given are in all cases composite prices including back-up material where applicable.

The following unit prices are for preliminary estimates only:

- 1 Roof Finish
 - a Felt and gravel to flat roofs including insulation and flashings .85–1.25 per SF

- b Asphalt singles to pitched roofs .20–.25 per SF
- c Wood shingles to pitched roofs .60–.75 per SF
- d Asbestos shingles to pitched roofs .40–.50 per SF

- 2 Walls Below Ground
 - a Concrete 2.50–3.50 per SF
 - b Block 1.00–1.50 per SF

- 3 Walls Above Ground
 - a Brick facing 2.75–3.50 per SF
 - b Poured architectural concrete 3.75–5.50 per SF
 - c Limestone facing 9.00–10.00 per SF
 - d Granite facing
 - polished 9.10 per SF
 - flame textured 7.90 per SF
 - honed 6.40 per SF

- e Precast units
 - exposed aggregate finish 3.50–8.00 per SF
 - veneered finish 6.00 and up

- f Curtain wall
 - aluminum 5.00 and up per SF
 - steel 3.50 and up per SF
- 4 Windows
 - a Single glazed
 - wood 3.00–5.00 per SF
 - steel 2.50–6.00 per SF
 - aluminum 5.00–8.50 per SF
 - b Double glazed
 - wood } depending upon type of
 - steel } glazing add .75–3.00 per
 - aluminum } SF to single glazed prices
- 5 Exterior Doors
 - a Wood 3.50–5.00 per SF
 - b Hollow metal 6.00–8.50 per SF
- 6 Entrances and Screens
 - a Wood 4.00–6.00 per SF
 - b Hollow metal 4.50–7.00 per SF
 - c Aluminum 8.00 and up per SF

F. W. Helyar

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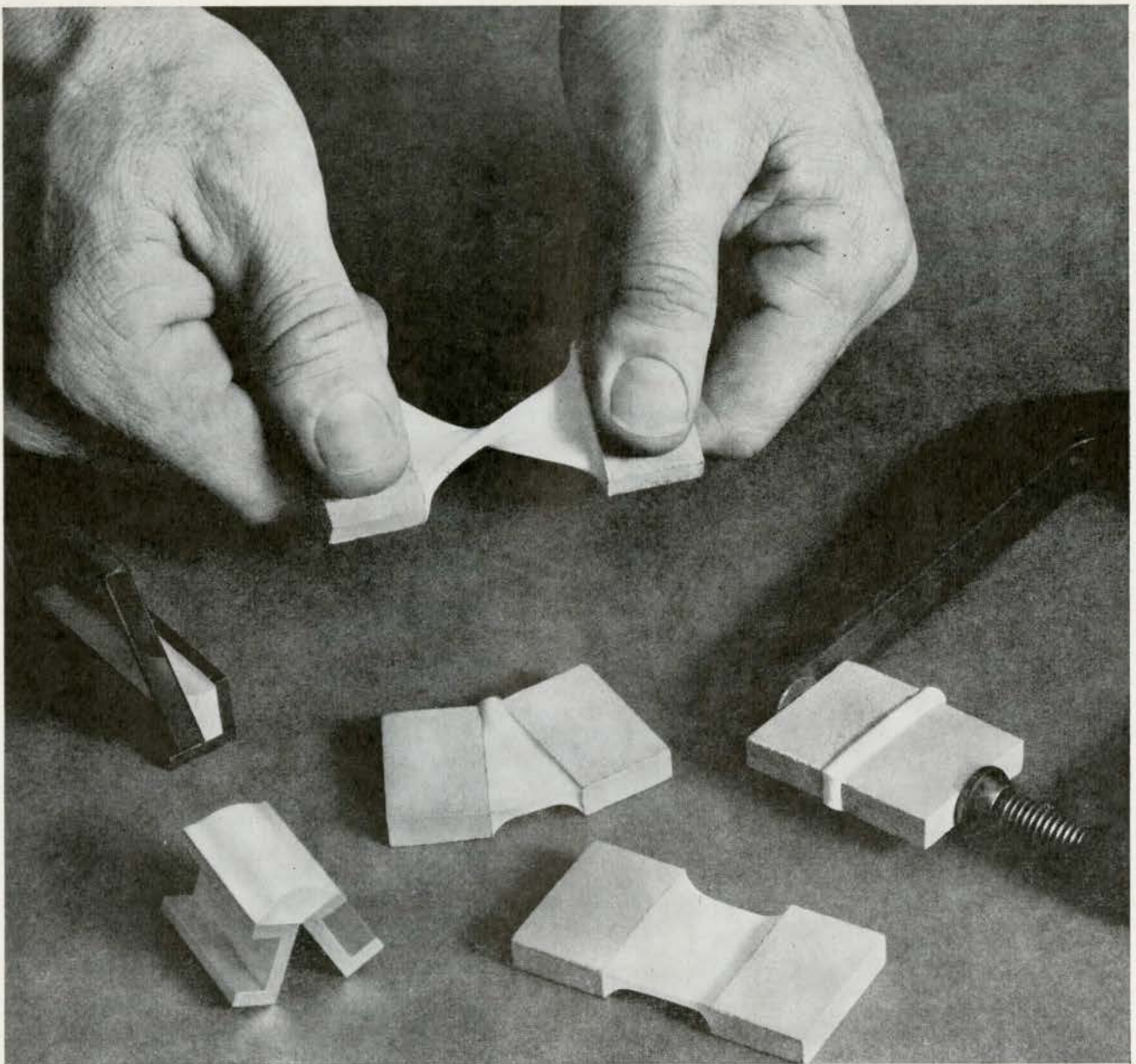
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Address by Dr John E. Page, S.J.,
to the Graduating Seniors of the
University of Manitoba Faculty of
Architecture

*Father Page is an Associate Professor of
City Planning at the University of Manitoba*

When Abe Suderman asked me to speak to you tonight I was honored indeed and I thank all the Graduands now for this kindness. It's the first "grads' farewell" I have attended since my own some years ago. On that occasion I felt like Carol Jones and George Kneider because it meant the end of my term of office as senior stick of engineering; it meant I could get down to some serious study for the last six weeks of the course. When I graduated we were still one faculty, engineering and architecture and interior design, so you see I feel at home with you for a number of reasons.

Because it becomes such a commonplace for us we don't always realize how different undergraduate life is for architecture and interior design students compared to that of other undergraduates on the campus. Over the months and years you end up literally living in your building and your life is fully a students' life in a way which is not possible for most of the students at Manitoba because it is not a resident university to any degree. The result of so much time together and so many days spent on projects and juries and open houses is that a tremendous spirit of comradeship grows up. Graduating is like leaving home again. As you go forth I wish you well, I congratulate you for your persevering efforts, the arduous hours of work you have poured out, for the growth you have attained through this effort as human persons.

In particular I would like to speak of two aspects of this year's graduating class:

1 You came to John Russell's School of Architecture and had the privilege of knowing him during the last five years of his life with us; 2 You have spent the last year of your course in Hut J.

1 *What does it mean to have come to John Russell's School of Architecture?*

This is not easy to answer. I appreciated the man more than these few moments would allow me to tell because I have known him since my own first days as an undergraduate at this university. But I think I can capsule a basic point about being in "his" school

which is important to think about. Last year as I used to wander in and out and around the Architecture building I used to notice certain of the Dean's signs. A distinct impression which I was left with from some of these signs was the sincere and profound trust that he placed in each of his students. He took it for granted that when you came here to study architecture and interior design you were willing to accept the general ground rules which everyone had agreed to follow – "ground rules", quite literally because they referred to how we were expected to be using the building and generally to be acting as students in this faculty.

After reading some of these signs on different occasions I gained the strong impression that Dean Russell felt a deep personal sorrow when an individual or a group betrayed the trust that he had placed in them. He seemed to be disappointed that you had not shown a sense of responsibility about your student activities in your building. *Do you realize how much John Russell did trust you during your years as undergraduates?* This is both a great tribute to him and to you. He respected you as people training to be professionals and thought it right that you should now begin to appreciate what this meant. It was indeed a great test of your maturity. And the failures which turned up Dean Russell handled in kindly fashion because his ardent wish was that you would learn from the failure and come to understand your responsibilities more clearly.

The effort which each class in architecture and interior design has made for *Architecture Open House* is another of John Russell's contributions to your life. In the all-out effort to produce *Open House* and welcome thousands of guests into your "work-home" we have a symbol of the all-out dedication of John Russell to his students in this faculty, and this in turn was a model of the dedication to authentic human living and to your life work which he hoped you would learn from the experience. I can still remember very clearly the graciousness of Dean Russell on a Sunday afternoon in October some ten years ago welcoming the thousands

who came to see one of your first open house exhibitions when it was held in the Dafoe Library Building. Here indeed was a man giving a splendid testimony of his dedication as a university professor and faculty dean as he stood at the building entrance and welcomed each person who came to the open house exhibits.

2 Now what did I mean when I said that there was something special about the architecture graduands spending their last year on campus in Hut J? As all of you here tonight may or may not know we moved into Hut J somewhat after the beginning of the first term! The 5th year students were getting a bit jumpy and anxious about what was happening to their course. One day I was checking on the progress of reconstruction work (and the building had to be radically reconstructed to hold such a group!) – and there before me were great splashes of bright red, blue and yellow over the walls on the east side of the hut!!! What was happening I wondered – had the 5th year students held a "house-warming party" – with paint pots instead of bottles? Well, we didn't know for certain. We waited and sure enough further changes followed. Little by little a "village" grew up inside of the east end of Hut J!!! I don't know if the Interior Design Graduands acted as consultants or not for this "interior village" but there it was growing up before our eyes, day by day.

I call it a village inside the building because this is where the 5th year students live and work – over the months all the signs of village life have shown up, I think – both a dog and a cat have wandered into my office at different times when they strayed down the wrong alleyway! – For the alleyways have all the intricacy of a loop-street suburb!

But what did you really do when you built this "village" in Hut J? To me it seemed that, wittingly or not, you identified the two basic needs of human living, the need for private space and the need for common space in which to live and work. As the separating walls were going up you were simply saying that humans need an enclosure in

which to gather themselves together when trying to work seriously or think through a problem or simply to find oneself in order to be able to express oneself as a human. And yet "no man is an island" and so you spent many experimental hours trying to arrange a common space as well where you could socialize. In building your interior village in this way you have given expression to the two basic needs of human beings; the need for socializing with our fellow humans and the need for being alone. Human life, even for the religious contemplative, can never be one of solitude only. The moments alone are for the sake of the moments to be spent with other selves like me. The moments with others are also for the sake of my moments alone; by a happy combination of both contemplation and activity we grow as humans. When we think of those people who live in what we call slums, perhaps this is a situation in which we would discover that they lack one or other of these basic human needs; they lack privacy or they lack an adequate common space to share their moments of joy and sorrow.

When we recall John Russell we can clearly identify these two aspects of human living in his life. He may not have spoken of it in these terms but he did have this combination of contemplation and action in his life. As he went about his dedicated days on your behalf he was knowingly living his life in God's presence. Over the span of years among his fellow humans in so many different activities on this campus, in the city and across the country he achieved a happy balance of contemplation and action. If he was able for so many years to trust his students to lead responsible lives as students it was because he had learned the lesson about his own relationship to God, that he as a human person was being trusted by God to live a responsible human life on this planet.

To the Class of 1967, to the Graduates of Interior Design and Architecture, I sincerely hope that you will go forth from this University grateful for all the opportunities which have been given to you. I hope that you will thrill with the awareness of the privilege that is yours now to make some worthwhile contribution to the upbuilding of our world so that it may be a place of enrichment for human living, that you will go out with a willingness to work *with* others in generous cooperation even when the stress is on keen competition. And above all as you leave the University try to realize that your education has only begun. The pursuit of wisdom is a lifetime task. To what you have gained here you will now add working experience and a wider range of life experience in order to deepen the beginnings of knowledge thus far acquired. God be with you as you go on! Thank you for the privilege of being with you this evening. □



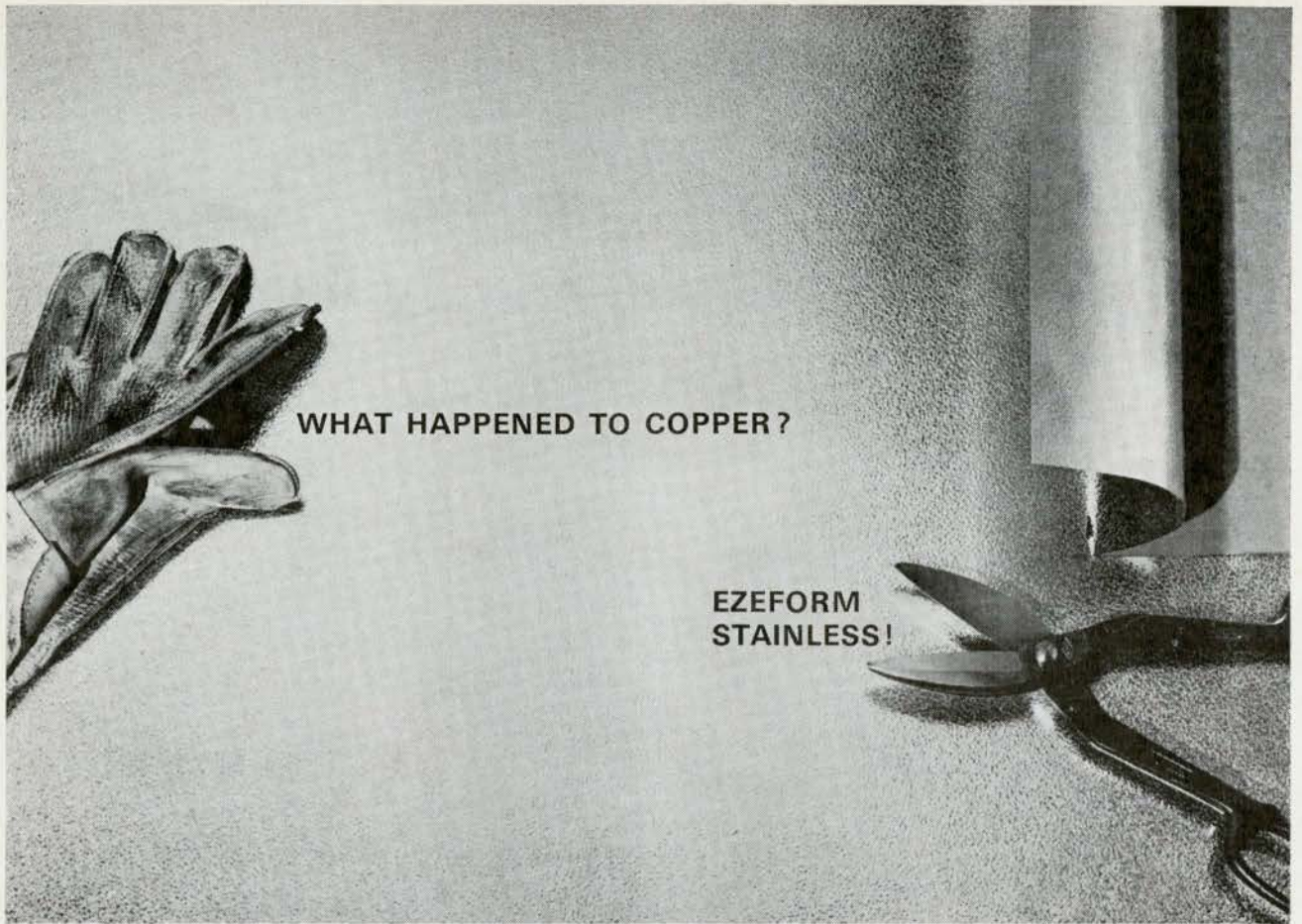
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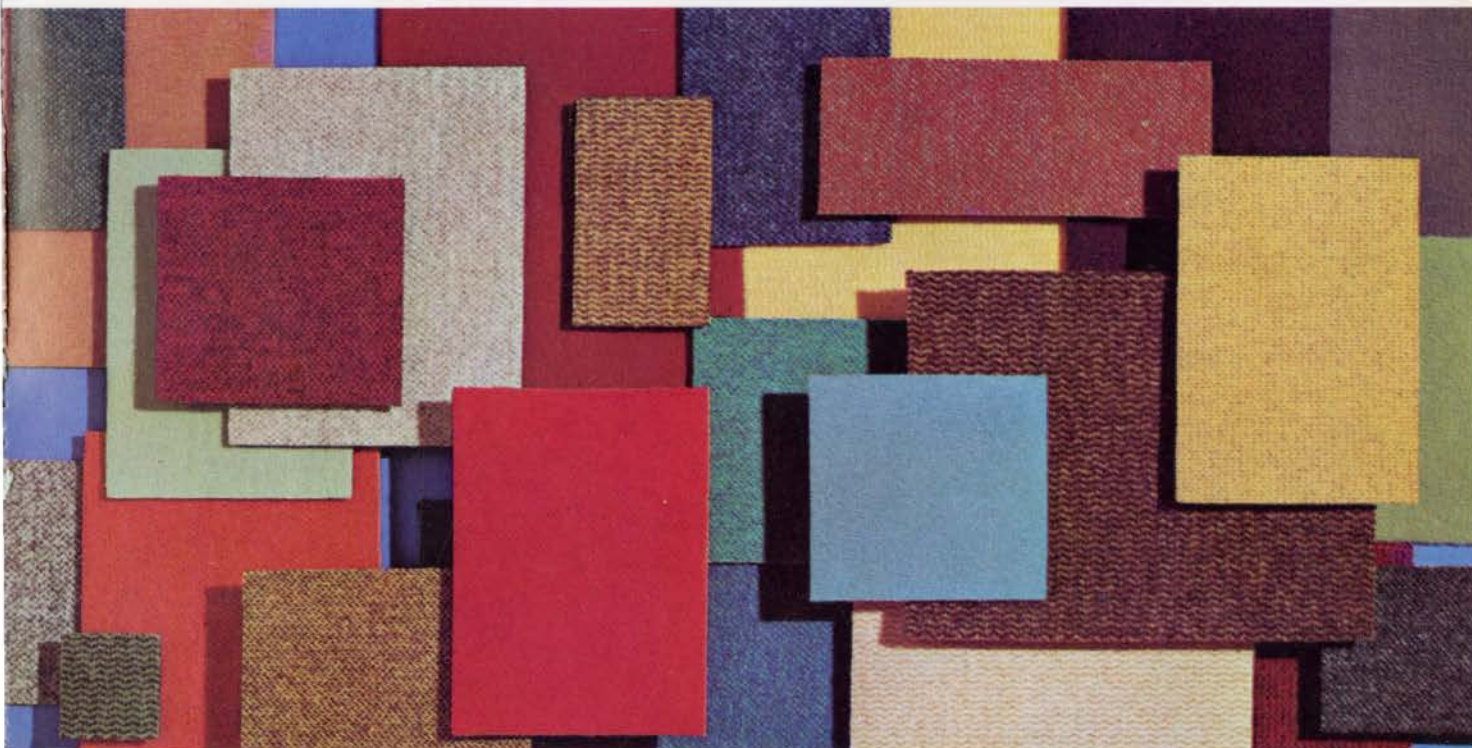
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On Banff '67

The Editors:

Underlying much of the discussion at *Banff 67* was the implication that if only the profession's role in society could be defined then "architectural education" would also be defined. Identify the architect and his work and you identify the student and his work. As the conference did not successfully define the architect's role it is not surprising it failed also to define "Architectural Education".

The Graham Foundation Report of February 1965 did not help the Banff Conference in any way. Not only is the USA situation inapplicable to the Canadian scene, it is doubtful whether it is applicable to any scene. Its nine point plan does little more than go through the *education — university discipline — training* routine, with some heavy-handed overtones of uniformity and exclusiveness.

The notion that architecture is a product, and that more people will buy if only the product can be improved, is an argument based on false premises. It assumes that architecture is an artifact such as the automobile or the transistor radio.

Architecture deals primarily, not with artifacts, but with the *will to form*. This *will to form* is the basis of all design (of automobiles as well as buildings) and is the *raison d'être* of all design schools. Now the design of architecture is more complex than the design of any other thing. The complexity does not lie in the technology but in the fact that value judgments are involved. Indeed, the selection of any particular technology is itself, in the first instance, a value judgment. And it is precisely in this area of value judgment that the individual *must operate as* an individual, and where student and teacher can most powerfully interact.

Since the capacity to make value judgments may be formed by any influence ranging from philosophy to a study of architecture's formal and spatial qualities, and probably more than any other factor by the influence of another individual, it follows that the student of architecture should have the richest possible array of exposures. It also follows that he must operate in a situation which not only allows but encourages egocentricity

in the sense of being conscious of the self rather than self-conscious.

Architecture is not an applied science or an applied art, nor a hybrid mixture of the two, it is an activity involving the most complex combination of the human intellect, senses, and psychological states. Architecture comes from the deep cultural currents of a people. Its creators are people sensitive to those currents and who have, moreover, an inborn ability to create. The problems of "architectural education" are no different now from what they have always been. To pretend otherwise is to substitute false values for true.

What are these problems? Put simply, they are the problems of nurturing the genius of any individual who shows two principal characteristics — an instinctive understanding of architecture, and an intuitive creativity. The process of nurturing will vary with the individual student and the individual teacher. Certainly it will consist of providing for both of them a situation where creative spirit is free to operate, free to explore, free to experiment, free to find its own methods and mode of expression.

This has nothing to do with institutionalized learning, nothing to do with university discipline, nothing to do with social problems, nothing to do with professionalism, and nothing whatever to do with degrees or licences.

"Architectural Education", I suggest, does not exist. All that does and can exist is the nurturing of individuals. This nurturing can take place anywhere, and it is not the prerogative of institutions, of professions, or of the education industry.

My thesis, briefly, is to place the individual person in the center instead of the periphery of activities. Put back the human being and take out curricular, degree-mongering, and university staffs' self-interests and academic empire building.

Impossible? No, not impossible. Not only not impossible, but essential. Indeed, if this is not done, the doom forecast by many Jeremiahs at *Banff 67* will indeed overtake architects and architecture. And the doom will occur for reasons quite contrary to those

expressed in the Graham Foundation Report and at *Banff 67*.

The Graham Report and its 9 recommendations to the AIA are out of date by something like ten years. They are so much out of date as to be totally irrelevant.

In principle the AIA is merely proposing to substitute one kind of establishment for another. And this in an age when establishment of any sort is unacceptable to the generation born after World War II.

If the AIA accepts the Graham Report recommendations the real problem will have been avoided. A system will have been substituted for a solution, and moreover, a system fundamentally out of phase with the attitudes of today's student.

It is a bitter irony that the student of architecture is subjugated to a loss of identity and is processed through an educational industry, just at the time when grade-school education is moving toward individual-oriented methods of education.

While much the architect needs to know is factual, most of his work involves value judgment. This is, and always has been, the vital area for an architect. And this is the area where the student, as an individual, needs to interact on a person-to-person basis with his teacher.

It can be done. It can be done now, if the curricula, is offered to the person, rather than the person fed anonymously into the educational production-line.

A beginning could be made by making a clear distinction between those activities involving factual material and those involving value judgments. The former needs little or no attention from teachers since it can be learnt from tape and film. The latter needs the closest involvement of student and teacher. In those areas of value judgment, of problem identification, of choice and decision and of form-making for physical structure, in short, in that area of the *will to form*, energies can be released which at the moment, if my impressions of *Banff 67* are correct, are stifled by university and professional systems and exclusiveness.

George Balcombe, Professor of Architecture, Nova Scotia Technical College

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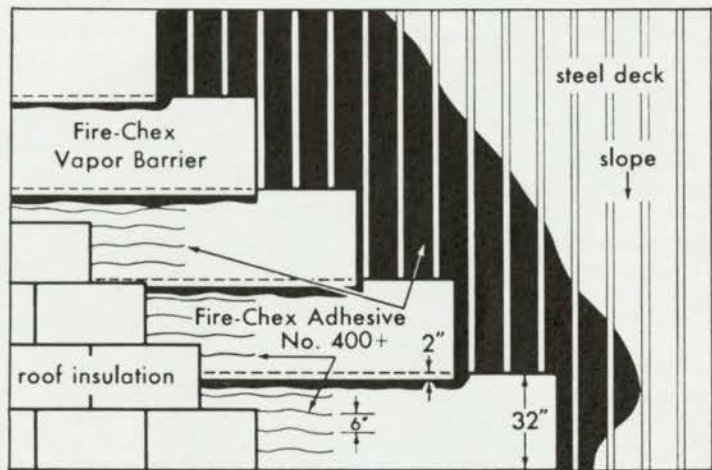
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Practice Notes

John Robert Davenall Turner, MRAIC, has opened an office for the practice of architecture and environmental design at 23-221 McDermot Avenue, Winnipeg (942-1303).

The former practice of Moffat & Moffat, Architects, Engineers and Planners, now has the new firm name of Moffat Moffat & Kinoshita, Architects, Engineers and Planners, 55 Eglinton Avenue East, Toronto 12, Ont. 483-4360. Partners are: Donald O. Moffat, B.Arch., MRAIC, Ormond G. Moffat, P.Eng., MEIC, Gene Kinoshita, M.Arch., MRAIC.

Effective March 1 the architectural and engineering practice of Duffus, Romans, Single & Kundzins became Duffus, Romans, Kundzins & Rounsefell, 1525 Birmingham Street, Halifax, N.S. Telephone 429-6860.

Positions Wanted

Graduate of M.S.U. Baroda School of Architecture, India, with four years experience in housing and civic buildings, presently working in London, England, wishes a position with a Canadian architectural firm. Contact A. M. Kapse, 13 May Ford Road, London, S.W. 12, England.

Senior Architect, 41 years of age, graduate of Budapest University in 1953, with three years post graduate work at the Royal Academy of Art, London, England, RIBA, desires to return to Canada to position offering responsibility and initiative. Experience in universities, hospitals, schools, housing, offices, factories and large development schemes. Write I. Kiss, 45 Broadhurst Gardens, London, N.W.6., England.

31-year-old architect, registered in the Philippines, four years experience in building supervision and cost estimating, wishes employment in Canada with view to immigration. Contact Quirino B. Arzadon, P.O. Box 1536, Manila, Philippines.

Indian Architect, 28 years old, Associate of the Indian Institute of Architects, B.Arch. (Hon) in 1962, four years experience in India and the U.K., seeks a job with a Canadian architectural firm. V. K. M. Menon, 85 Queens Gate, London, S.W.7, England.

Indian Architect, B.Arch., AIIA, three years experience wants a job in Canada with view to immigration. Reply R. S. Advani, 2304, IV Cross, Malleswaram, Bangalore 3, India.

Young Indian Architect, presently in Montreal, with two years experience, seeks employment anywhere in Canada. Satish Dhar, 1280 Pine Avenue West, Montreal, P.Q.

Greek married couple, both architects, and graduates of Greek Universities (1962, 1966), members of the Technical Chamber of Greece and the Greek Architects Association, wish employment in the same firm, or in different architectural offices. They both speak English and French. Write Alexander Cotisiopulos, G. Fragoudi Street 27, Athens 404, Greece.

Indian architect, AIIA, four years office experience in India, presently employed in England wishes to immigrate to Canada to a job with an architectural firm. Reply A. Mukhopadhyay, 88 Priory Road, London, N.W.6., England.

Dipl. Arch. (Edin.), ARIBA 30, presently in Ottawa, requires responsible position with progressive private firm in Alberta or British Columbia. Reply Box No. 138 c/o *Architecture Canada*.

Young Belgian architect/civil engineer, graduate of the University of Louvain, 25 years old, speaks fluently English and French, wishes a job as of August 1967 with view to immigration. Contact Auguste Stessens, Cité Universitaire 2/212, Blvd. de Tervuren, Louvain, Belgium.

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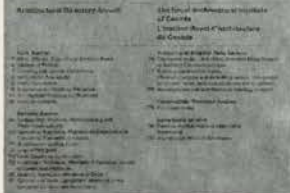
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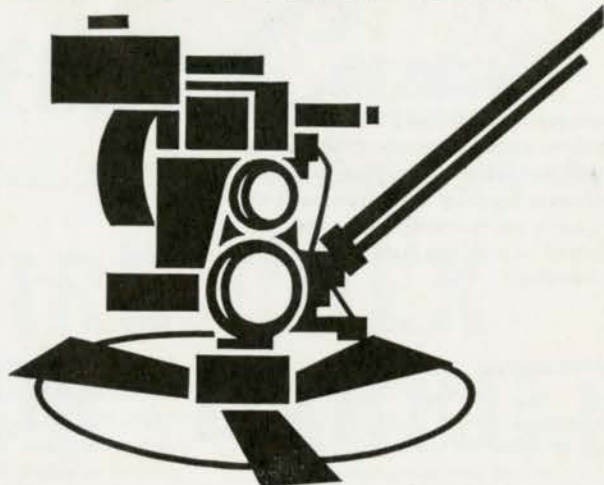
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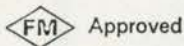
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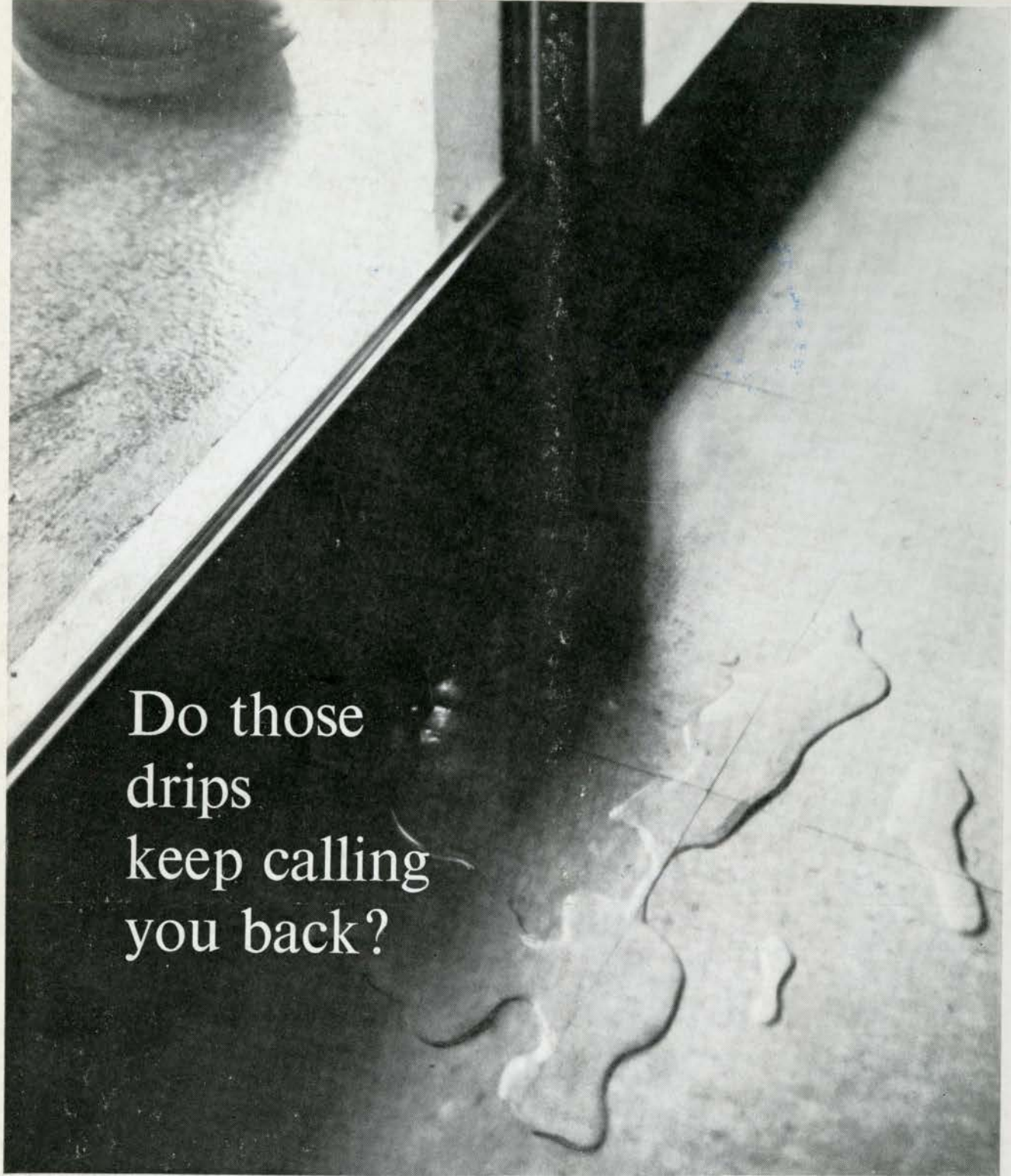
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