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AIBC Annual Meeting

Concern that architects realize that their own continuing competence in all aspects of architectural practice is ultimately the key to professional success, was expressed by Ronald S. Nairne in his presidential address to the annual meeting of the Architectural Institute of British Columbia, held at the Airport Inn, Vancouver, on December 3rd.

The theme of Mr Nairne's address, and of the meeting's panel discussion, was the continuing education of the architect. Panel participants included architects Ray Affleck, Montreal; John Dayton, Vancouver; and Dr A. R. MacKinnon, Dean of Education, Simon Fraser University. Prof. Henry Elder, head of UBC School of Architecture, was moderator.

In his address Mr Nairne expressed the hope that the report of the AIBC Committee on Continuing Education, under the chairmanship of Bud Wood, would be a milestone in the progress of the AIBC. A degree in architecture gained 15 years ago could not, he felt, any longer be considered the end of formal professional training; nor could the individual afford to ignore the current rapid change in the way the architect conducted his business. Such things as office management, techniques and cost control, computer programming, and even design by computer were as inevitable as tomorrow.

"It is our responsibility as architects to assimilate and use these new techniques in our profession and yet not to lose the sensitivity and creativity that is the heart and core of good architecture.

"If we are agreed that competence is a worthy endeavour, we must decide precisely how such competence can be achieved. I feel that not only are specific practical courses of study necessary, but also that the architect must constantly evaluate his profession's place in the community. He deals in space and form and texture, but these things lack vitality and meaning unless they explain and relate to our society in terms of its social, economic and cultural aspirations.

"I trust that in the future our profession, as it enters more directly into the mainstream of social activity, will not hesitate to take the initiative in speaking out and assuming leadership in those areas in which we are best trained to comment.

"We must not spend all our time leaning over drawing boards, but must also attempt to influence for the better the physical environment of our communities. To do this successfully, we must work with others — researchers, sociologists, builders, financiers, planners, public bodies and the like. We must participate in community

affairs; we cannot comment usefully by remaining aloof and on the outside.

"Above all, we must encourage our society to value and demand good design and beauty in all its physical surroundings. The quality of architecture in a community must be as sure a sign of its civilized maturity as a symphony orchestra, or an art gallery. On our part we must not be satisfied until the best of our work can stand comparison not only on a national level, but also on an international one.

"Continuing competence will be achieved by care in maintaining high standards of entrance into the profession. Quality and quantity are both necessary if we are to meet the needs of our growing province. Your Council feels that both the University and Technical Institutes will provide recruits. At the present time we are investigating technologist's training and are donating a small award to the top graduate of the BC Institute of Technology.

"Finally, if rapid change is the order of the day, I feel that the inadequacies of the present Architects' Act to cope with new business and legal developments are a distinct hindrance to the ability of the profession to serve the public most effectively. In the past it has proven (and still is proving) difficult to amend our Act and By-laws. I hope that next year's Council will see fit to establish closer relations with the appropriate officials in the Government to prepare them for a series of changes to our Act and By-laws that will be of benefit to the public through improving the scope and quality of our service. I believe that these changes should be evolutionary, not revolutionary in character, so that at any time our Act might be modified to suit new conditions. Only in this way can our profession maintain a vital and respected position in the community. I would like to see the RAIC establish a comparative analysis of all provincial Acts so that we might all ultimately establish a series of separate but uniform Acts."

With 135 registrations, full attendance at the seminar and dinner dance, the 1965 Annual Meeting was considered one of the best in AIBC history. An honorary membership was conferred upon Mr Justice G. Gould; UBC students Charles Bowman and Lawrence Haave were presented with \$100 awards of merit; Alan S. Bell was presented with a \$250 last year scholarship; and the RAIC Medal was presented to Rainer Fassler.

The business session voted 97 to 12 in favor of a fees increase.

Council members elected for two-year terms were R. S. Nairne, J. Dayton and W. Rhone; Council members held over for 1966 were R. C. Hale, F. T. Hollingsworth and R. F. Harrison. Mr Nairne was re-elected president and Mr Dayton vice president.

From Institute Headquarters

"The Ontario Association of Architects states that not only is there a serious shortage of trained architects today, but that the number of young students taking up the profession is far short of the requirements for construction in the future. The current shortage in Ontario is estimated at 400."

This is an extract from the 1965-66 edition of the Federal Department of Labor publication, "Supply and Demand, University Graduates", available at offices of the National Employment Service.

Statistics now show a ratio of 18.8 registered architects per 100,000 urban population in Canada, as contrasted with a ratio of 13.9 in 1951. In 1950, the United States had a ratio of 21.5 per 100,000 urban population.

A recent issue of the Royal Bank Monthly Letter, on "Winter Work", lauds the efforts of the construction industry in reducing winter unemployment. It makes particular reference to the joint Architect-Engineer Advisory Committee of the Department of Labor, initiated by the RAIC some years ago.

A requirement for every architect in this bilingual Canada is the new "Dictionnaire du Bâtiment — Building Terms Dictionary", published jointly by CMHC and the Division of Building Research, NRC. Compiled over a period of 18 years by Marcel Lefebvre, chief of CMHC translation staff, the book contains more than 7,000 words in both French and English in use in the Canadian building industry today. It may be purchased from Les Editions Leméac, 369 Laurier St. W., Montreal, for \$9.50.

DBR/NRC has published an "Index of Report Files in the Building Research Library", which provides a survey of the subject material in the report collection of the Library. Copies available on request from the Librarian, DBR/NRC, Ottawa 2. The current edition of DBR "Building Research News" includes a description of the new CIB publication, "A Master List of Properties for Building Materials and

Products". This report provides important technical and economical information, required by architects and builders to permit choice between a number of possible materials or products. Available from CIB, P.O. Box 299, Rotterdam, Holland.

The first issue of *The Canadian Landscape Architect* has appeared, edited by Donald W. Graham for the Canadian Society of Landscape Architects.

This attractive magazine includes several brief articles of interest, including one by Richard Strong, entitled "Collaboration, the Key to Cohesion", concerning architects, planners and landscape architects. Of special interest, in view of our 1966 Annual Assembly at Jasper, is an article on the National Parks policy.

Canadian students will again be participating in the international architectural scholarship awards program of the Portland Cement Association. Herbert Schumann of the University of Manitoba gained one of these scholarships last year.

The Royal Institution of Chartered Surveyors are organizing a Symposium on Quantity Surveying at Cambridge University, England, from September 4 to 9, 1966. Canadian architects are invited to attend. The number of places is limited and requests should be made immediately to RAIC or directly to RICS, 12 Great George Street, London SW1.

The American Society of Architectural Historians is holding its annual summer tour on August 18 to 21 next, in Quebec City. Two Canadians are co-chairmen — Professor Alan Gowans, of the University of Delaware, and Jack Richardson, Department of Northern Affairs, Ottawa. This should guarantee a most interesting program. Local arrangements are in charge of André Robitaille, President of the Société des Architectes de Québec.

UIA have advised us of two international conferences for architects: "Recent

continued on overleaf

Du siège social de l'Institut

"Selon l'Association des architectes de l'Ontario, non seulement il y a actuellement pénurie grave d'architectes formés mais le nombre des jeunes se dirigeant vers la profession est nettement insuffisant pour les besoins futurs de la profession. En Ontario seulement, on estime qu'il en faudrait 400 de plus."

Ce passage est tiré de l'édition de 1965-1966 de la publication du ministère fédéral du Travail "Offre et demande de diplômés d'université", que l'on peut se procurer aux bureaux du Service national de placement.

D'après les statistiques, il y a actuellement au Canada 18.8 architectes reconnus par 100,000 habitants de régions urbaines, au regard de 13.9 en 1951. Aux Etats-Unis en 1950, le rapport était de 21.5 par 100,000 urbains.

Dans un de ses derniers bulletins mensuels, consacré aux "travaux d'hiver", la Banque Royale du Canada félicite l'industrie de la construction de ses efforts pour réduire le chômage au cours de la saison froide. Elle mentionne tout particulièrement le Comité mixte de architectes et ingénieurs du ministère du Travail, fondé il y a quelques années grâce à l'initiative de l'IRAC.

Un instrument nécessaire à tous les architectes dans notre Canada bilingue est le nouveau "Dictionnaire du Bâtiment — Building Terms Dictionary" publié de concert par la Société centrale d'hypothèques et de logement et la Division de recherches en bâtiment du Conseil national de recherches. Ce dictionnaire, préparé au cours de dix huit années de travail, par M. Marcel Lefebvre, chef du personnel de la traduction de la S.C.H.L., renferme plus de 7,000 mots en anglais et en français d'usage courant dans l'industrie canadienne du bâtiment. On peut se le procurer aux Editions Leméac, 369 ouest, rue Laurier, Montréal, aux prix de \$9.50.

La Division de la recherche en bâtiment du Conseil national de recherches a publié

Developments in Public Health Buildings", Athens, April 17-30, 1966; "Symposium on Problems of the Optimum Economic Exploitation of Power Supply for Heating and Air Conditioning of Large Housing Developments", Prague, September 1966. Details available from RAIC Headquarters.

Vancouver muralist Takao Tanabe has been commissioned to execute a mural 80 feet wide and 13 feet high to dominate the main floor foyer of the new Department of Agriculture Building in Ottawa. As winner of the competition, Mr Tanabe will be awarded a \$25,000 contract for execution of the work. The jury included James A. Langford, Chief Architect, Department of Public Works, and Hart Massey, architect of the building.

Mr Massey suggested the mural for inclusion in his design of the building. An important factor in its selection was the mural's suitability to the architectural surroundings.

The British Council announces an enticing course in "New University Building" arranged in association with the Institute of Advanced Architectural Studies, York, from June 26 to July 8, 1966. Canadian architects are invited, and details are available from RAIC or from the British Council, 80 Elgin St., Ottawa 4.

A course in "Coordinate Indexing and Indicative Abstracting" will be given in Ottawa during the week of April 18, under the sponsorship of the Engineers Joint Council and the Battelle Memorial Institute. Details are available from RAIC or from the Battelle Institute, 505 King Avenue, Columbus, Ohio, 43201.

The Weinreb catalogues continue to have considerable attractions for architects. Catalogues 12 and 13 are devoted to architecture-books of general reference, periodicals, dictionaries and encyclopedias. Available on request from B. Weinreb Limited, 39 Great Russell Street, London WC1, England.

Fred W. Price
Executive Director
Le directeur général

un "Index of Report Files in the Building Research Library", présentant un relevé des textes sur le sujet compris dans la collection de référence de la bibliothèque. On peut en obtenir des exemplaires sur demande au Bibliothécaire, Division de la recherche en bâtiment, Conseil national de recherches, Ottawa 2.

La dernière édition de "Building Research News" de la Division de la recherche en bâtiment présente une description de la nouvelle publication du CIB "A Master List of Properties for Building Materials and Products". Ce rapport fournit d'importants renseignements techniques et économiques dont les architectes et les constructeurs ont besoin pour faire un bon choix entre divers produits et matériaux disponibles. On peut se procurer ce document en s'adressant au CIB, Boîte postale 229, Rotterdam (Hollande).

Le premier numéro de "The Canadian Landscape Architect" vient de paraître. Le rédacteur en est M. Donald W. Graham de l'Association des architectes paysagistes du Canada.

Cette attrayante revue renferme plusieurs courts articles de grand intérêt dont un de Richard Strong intitulé "Collaboration, the Key to Cohesion" au sujet des architectes, des planificateurs et des architectes paysagistes. Un autre article, qui prend un intérêt spécial à l'occasion de notre assemblée annuelle de 1966 à Jasper, a trait à la politique visant les parcs nationaux.

Des étudiants canadiens participeront encore cette année au concours international de bourses d'études en architecture de la Portland Cement Association. L'an dernier, Herbert Schumann, de l'Université du Manitoba, a gagné une de ces bourses.

L'American Society of Architectural Historians tiendra l'été prochain à Québec, du 18 au 21 août, son assemblée annuelle. La réunion sera sous la co-présidence de deux Canadiens, le professeur Alan Gowans, de l'Université du Delaware, et M. Jack Richardson, du ministère des Affaires du Nord canadien, d'Ottawa. La participation

de ces deux personnes est suffisante pour assurer un programme intéressant. Les dispositions locales ont été confiées à M. André Robitaille, président de la Société des architectes de Québec.

L'UIA nous annonce la tenue de deux congrès internationaux à l'intention des architectes: "Les développements récents des établissements de la santé publique" à Athènes du 17 au 30 avril 1966, et "Symposium sur les problèmes d'exploitation économique optimum de l'énergie électrique pour le chauffage et la climatisation des grands projets d'habitation", à Prague en septembre 1966. Pour détails, s'adresser au siège de l'IRAC.

Le muraliste de Vancouver, Takao Tanabe, a obtenu une commande pour une pièce murale de 80 pieds de largeur sur 13 pieds de hauteur qui ornera le foyer au rez-de-chaussée du nouvel édifice du ministère de l'Agriculture à Ottawa. Comme vainqueur du concours, M. Tanabe a obtenu un contrat de \$25,000 pour la réalisation de cette oeuvre. Le jury comprenait M. James A. Langford, architecte en chef au ministère des Travaux publics, et M. Hart Massey, architecte de l'édifice.

M. Massey a recommandé de faire entrer cette pièce dans la construction du bâtiment. Un facteur qui a beaucoup compté dans le choix a été l'adaptation de la pièce au milieu architectural.

Un cours sera donné à Ottawa sous le titre "Coordinate Indexing and Indicative Abstracting" durant la semaine du 18 avril grâce au concours de Engineers Joint Council et du Batelle Memorial Institute. On peut obtenir des détails à ce sujet en s'adressant à l'IRAC ou au Batelle Institute, 505 King Avenue, Columbus (Ohio), 43201.

Les catalogues Weinreb continuent d'intéresser beaucoup les architectes. Les numéros 12 et 13 sont consacrés aux ouvrages généraux de référence sur l'architecture, aux périodiques, dictionnaires et encyclopédies. On peut les obtenir sur demande à B. Weinreb Limited, 39 Great Russell Street, Londres WC1 (Angleterre). □

Last but Not Least

Vancouver

In all fairness to Vancouver, the distractions of visiting Victoria and Simon Fraser University, as well as meetings and lectures, left little time to see art and architecture in this city by no means small but growing old and a trifle smug with probably the best climate and terrain in Canada. Vancouver provides the West with most of its most able painters and sculptors.

Simon Fraser (Erickson-Massey) is one of the most authoritative architectural statements of this or any other country.

So far the art work consists chiefly of two murals in mosaic by Gordon Smith on the exterior walls. Traditional in technique but contemporary in image, the scale is adequate but the mood is hardly strong enough to complement the powerful architecture of the edifice. I have no comment on the two stainless steel murals by Beula Mullins (gift of a generous donor) on an interior wall.

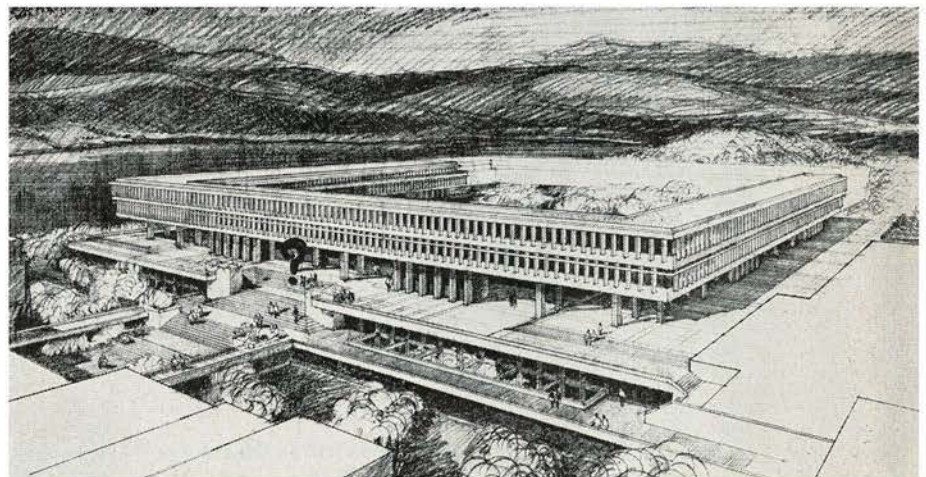
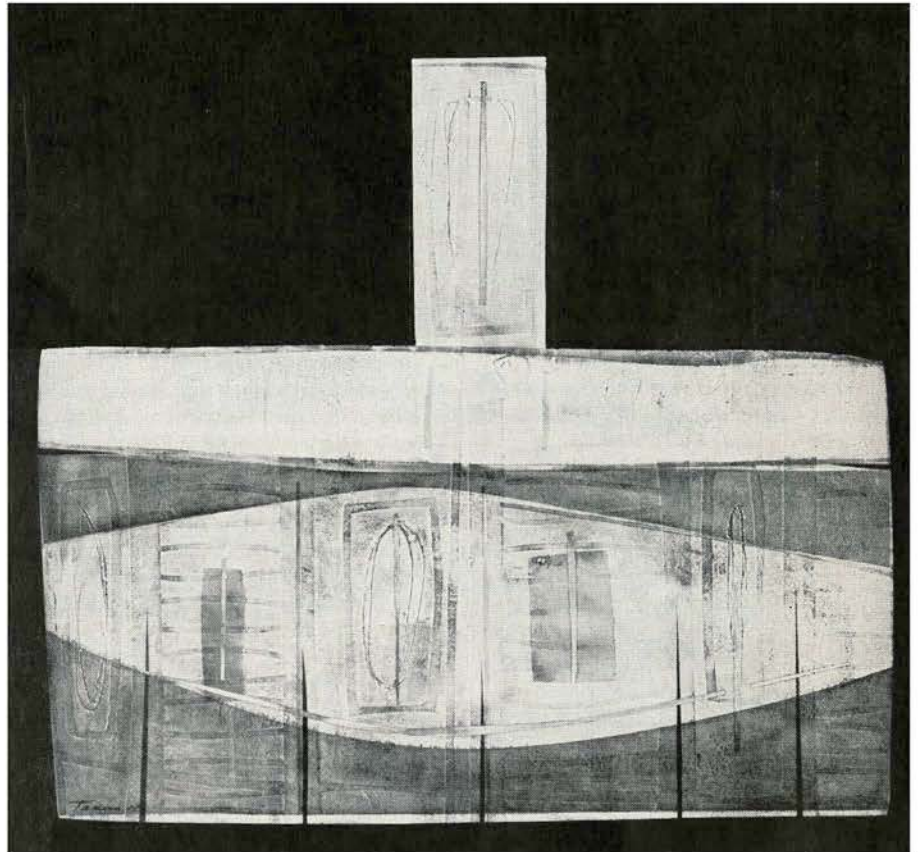
Simon Fraser University is an architectural setting to excite any artist and I hope, somehow, an opportunity is given to create a worthy totem, dominating the "arena" at the head of the ascending stairways. Perhaps the authorities will see their way clear to invite conceptual sculptors to attempt the task. Maybe another generous donor may offer (with no strings attached) the project.

Victoria

This small center of preserved Victorianism is making a strong bid for the tourist trade. Situated at the culmination of one of the most beautiful short sea voyages, this civic minded community is redesigning its center with contemporary buildings, city squares and fountains. I met well satisfied town councillors sitting in contemporary décor and proud of their new climate. The University of Victoria features work by Margaret Paterson, George Norris, John di Castri, Herbert Seibner and John Ritchell.

1
Mural Painting. Artist Tony Tascona
Peinture murale. Artiste Tony Tascona

2
? Marks the Spot for a ?
? Marque l'espace pour un ?



2

Saskatoon

Here is a small community which proves that one enlightened citizen can affect the whole psyche of a town. The Mendel Collection and the resulting delightful Mendel Art Gallery has lifted the parochial Saskatoon attitudes to a more sensitive awareness of the contemporary arts. It was at that gallery, under the intelligent direction of the director, John Climer, I saw the most intriguing setting yet of a piece of "pop art" sculpture. Through the window, a bronze child in a bronze rocking chair is eternally rocking in spirit; in dreamlike contemplation of the spreading landscape — as nice a piece of interior-



exterior framing as one could wish, and a sensitive highlighting of the validity of pop art, a most disturbing aspect of contemporary art. It is not what you do but the way that you do it.

A fairly abstract to non-objective sculpture in aluminum by Eli Bornstein, innocuous and pleasantly decorative when placed in front of the Teachers Federation Building by architect Tinos Kortes, aroused much abuse and comment. Why, is hard to see. It is, unfortunately, badly placed — too close to the wall and tied awkwardly to the façade to hold it vertical in the prairie winds. But it is there and in a fairly contemporary idiom. Likewise, the early work of Bob Murray, who is now in New York, is represented by a fountain in a contemporary manner. It is rather too small in scale and faulty in technique, but was an act of faith in the future. It is a pity that comedians Wayne and Shuster, while performing in Saskatoon, made it the "fall guy" for their humor.

There was much interesting work at Thomas Moore College at the University by artists Lionel Thomas, Peter Thorne, Rambusch and others.

The private work of sculptor Otto Rodgers convinced me of the gallantry of local talent in keeping a sensitive image going both in painting and sculpture under adverse conditions. Rodgers' work is tenuous and linear. It has a quiet, sensitive presence and will be indeed a terrific challenge to some architect who wants work of sensitivity and refinement. The problem for the mid-west is to see that the sensitive and sophisticated artist earns a decent living and is given encouragement worthy of talent. The artists show a determination to stay. John Nugent in his studio by Clifford Wiens which is a showpiece in itself, asserts a permanency on the local terrain. He needs stimulus and financial support by work.

Edmonton

Edmonton has, in the Provincial Department of Public Works, a sympathy and understanding of art and architectural liaison

manifest in the approach to the new centennial project, "The Provincial Museum and Archives of Alberta". Contrary to the general practice with other centennial projects I saw under way, the project management consulted artist Luke Lindoe and others from the inception, and a contract sympathetic to the artists' problems was drawn up. One notes also that the staff of the DPW architectural department feature an artist as a permanent member of the drafting and advisory staff. Success cannot be automatically ensured, but one looks forward to the growth of a thoroughly well integrated sculptural wall and a free-standing piece. We await the artists' response to the situation and we wish them well.

Architect H. A. Dunn has capitalized on the talent of young Viennese trained Ernestine Tahedl, already a most proficient worker in stained glass. The jewelled diadem crowning the dome of the Scholarship Novitiate of the Sisters of the Holy Cross is equally effective from inside the building or from outside, through interior illumination, to glow above the roof tops in rare beauty. Ernestine will now be resident in Montreal and it will be interesting to see what maturity and the influence of the eastern provinces will do to the "traditional" design of this young artist. Canada could well do with the injection of a really proficient stained glass worker in a contemporary idiom into the aesthetic world of architecture. What is more necessary is that there should be a greater recognition of the School of Art within the University and of the work it might do if as much financial support and equipment were made available as that offered to the Department of Adult Education for amateurs, through Extension Board activities. Stirring vitality is visible in the experiment of a "museum" and studio for the activity of the students under the quiet enthusiasm of Professor Norman Yates.

Lacking the fortunate stimulus of an enlightened citizen as in Saskatoon or the vital influence of Manitoba University in Winnipeg, the parochial history of Edmonton still lays a heavy hand on the work of the more enlightened and adventurous spirits. Certainly one sees the work of Oldrich and Professor

Harry Wolfarth in the Chapel of St Vincent's Convent and Jasper House, but not even the acquisition of a splendid Shadbolt at the attractive airport (Architects, Rensaa and Minsos) has dispelled the general feeling of backwardness. What Edmonton needs is a really exciting, far out and contemporary project, promoted locally rather than imposed. If this were carried out with vitality and competence, discussion and interest would lift the inheritance of the past to a state worthy of the development of the other western provinces.

At the Edmonton airport, those responsible for the acquisition and placing of the Shadbolt were not sensitive enough to the competition of a distracting "ballet corps" of grey telephone booths, flanked by pillars *en garde*, which impede vision in spite of the inviting prospect of the mural seen from the ascending stairway.

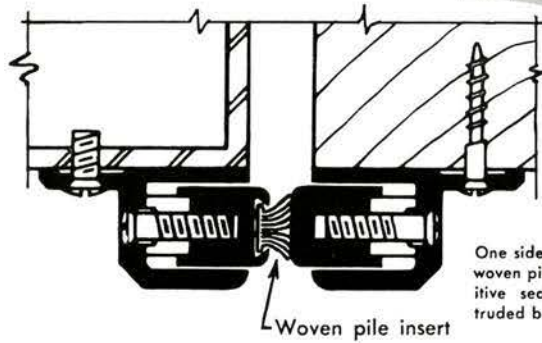
Binnings' mural of excellent technical quality is so much an architectural statement little imagery could be said to contribute to conceptual comment.

In conclusion, I hope that closer liaison and future visits to the West will allow for a less superficial survey and a more comprehensive collection of photographic records of the art work being carried out.

I can only repeat the request made to the many architects and artists I met who so generously and warmly gave of their time on a very enjoyable if exhausting tour — that is to keep the Allied Arts Department informed of any projects of interest and furnish photographs and data for the records of the *Journal RAIC* which will be used in future activities to effect better liaison between artists and architects.

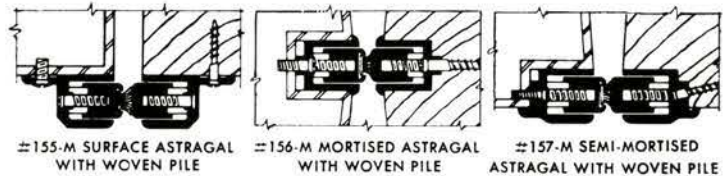
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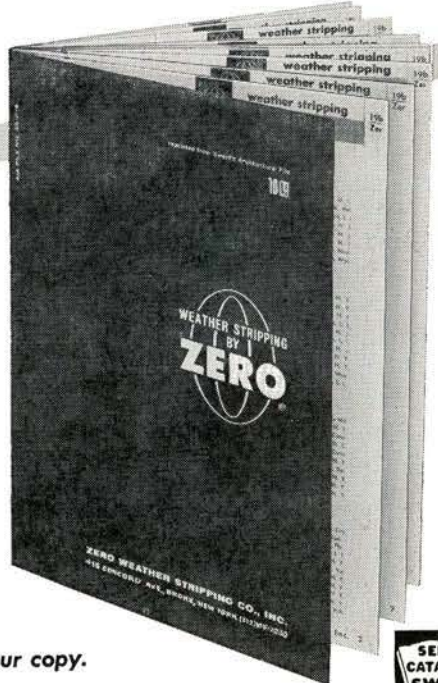
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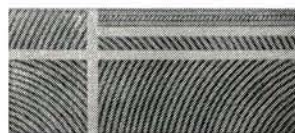
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WINNIPEG • VANCOUVER

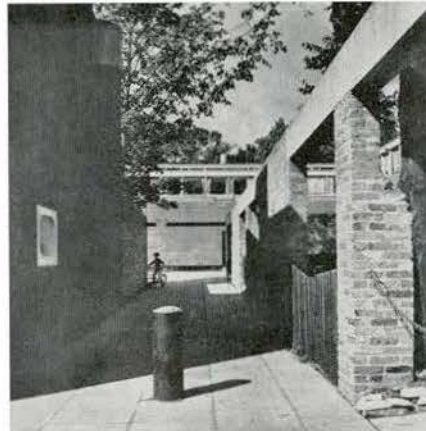


Under construction is this Hotel /garage complex in Edmonton which gives the best view of the North Saskatchewan valley to the cars (Fig 1). In an effort to compromise with the objection that the street end should not be blocked off, a one storey structure only is built across. This still blocks off the vista at the street end, which might, in any event, be an advantage. The consequent high rise tower of the hotel itself, it would seem, takes its form from the automobile ramps.



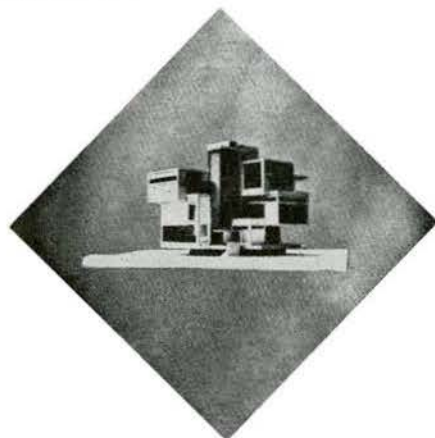
1

Housing, Blackheath
Architectural Review, November 1965
Architects Chamberlin Powell and Bon.
Two thirds of this interesting project (Fig 2) consists of low rise development. This provides the welcome lesson that high densities can be achieved without losing the amenities of light and space, without resorting to isolated tower blocks, which lose urbanity. On the contrary, both intimate and large scale spaces are now appropriately apportioned.



2

Architectural Design, December 1965
devotes its main feature to The Heroic Period of Modern Architecture, by Alison and Peter Smithson. (Fig 3) Assembled are many interesting photographs and drawings in a chronological sequence, but presented by the Smithsons with their usual bravura and "cleverness" in a search for slogan explanations.



3

The 20th century is primarily an urban culture – the most critical problems of our environment lie in this field. Fortunately man's propensity to make virtues from necessities is not failing us – *vide* the crop of professionals who are now devoted to this study, and the fashion of concern with cities. Evidence of this is in publications as diverse as *Life* (December 24, 1965), *Saturday Review* (January 8, 1966), *Scientific American* (September 65) and even *Domus* (November 65). There are also those which devote themselves to this topic, and they make a valuable contribution to the field – *Casabella* and *Ekistics*. The latter has



4



5

devoted the November 65 issue to the Harvard Design Conference.

A Scarborough Style ? or Regionalism at Last : (Fig 4) is a school, designed on a cluster system with constant North light via roof form to each classroom by John Andrews and a library project whose roof covers the entire library space, by Irving Grossman.

Kanalia Beach
Apixtekonikh (Gr) June 1965

Project for a village, by Costa Decavallas, situated on the Island of Mykonos. (Fig 6)

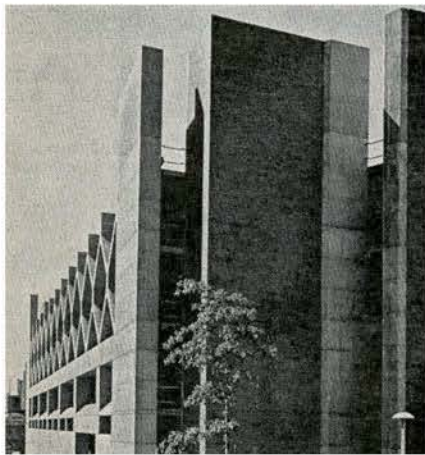


6

Concept based on village-club formula, and property is transferred in order of priority. No wonder there is already a waiting list – the developers of our Canadian waterfronts could well heed this example that achieves tight urbanity with privacy and an ordered use of the topography.

Ten Buildings that point the Future
Fortune, December 1965

Interestingly, the most come from University, research or museum clients, with such diverse types as the garage by Mitchell-Giurgola (Fig 7), for the University of Pennsylvania.

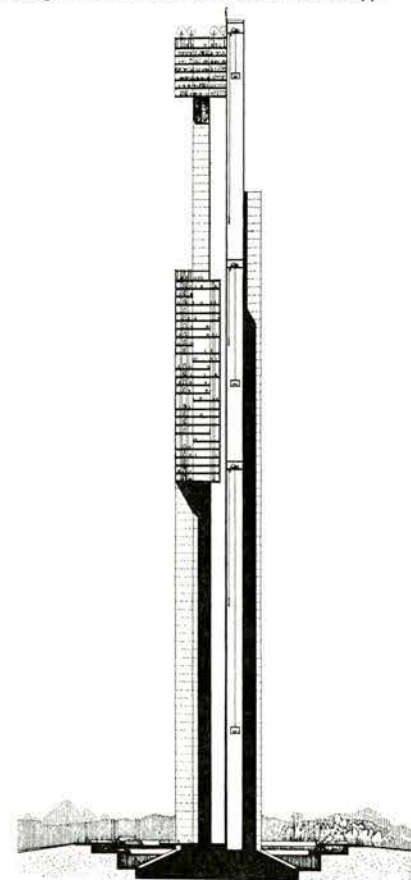


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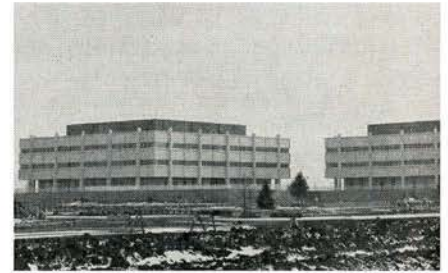
A Structure Four Hundred Meters High
Domus, October 1965

Presented in the usual mouthwatering slickness, characteristic of *Domus*, is this skyscraper (Fig 8) Quote, "A fundamental point in future structures will be the new relationship which can be created between functions at present quite distinct: technical, labour, and housing functions, inhabited structures may include the huge river-spanning bridges and viaducts, now reserved exclusively for vehicles". Perhaps one should not live in streets; it also, in the case of this high rise structure, ignores the centrifugal forces in city development. Decentralization does not require concentration.

Universities
Bringing Beauty to the Bald Prairie;
A Hairy Architecture
Fig 9 shows the first building for Wascana Centre Regina (Yamasaki architect) and (Fig 10) dormitory buildings for the University of Alberta, Edmonton. At least the latter have their function easily identified in contrast to the former.
Fig 11 is the University of Victoria; it is difficult to understand why, with a fresh start, without the impediment of an existing campus or other impressive factors, there is a lack of cohesion.
Surprisingly, these examples were built in the same century as the contrasting example of Simon Fraser, which uses the movement system as an organizing principle (architects design co-ordinators Erickson Massey).



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12

About the Journal Quant au Journal

The difficulties in producing a national, professional journal in a country of the size and diversity of Canada are considerable. Rather than shrink from the challenge we wish to exploit this potential richness. We have, therefore, in a continuing effort to improve the Journal, instituted a number of changes, both organizational and graphic. The new editorial organization across the country has come into being; the publication system within the Journal offices is in the process of refinement; and with this issue we begin our new graphic presentation.

The new Journal Board is comprised chiefly of representatives of the Councils of every Provincial Association (see page 4) and of the Institute's Council. The whole Board will now meet quarterly instead of, as previously, once a year at the Annual Assembly, with monthly meetings of, chiefly, the Toronto members in between.

Contributions may be channeled through, and will be solicited by, these representatives. This does not mean they are the exclusive source of material for the Journal –

Le Canada étant un pays vaste et biculturel, c'est une tâche considérable que d'y publier une revue professionnelle. Plutôt que de baisser pavillon devant le défi, nous espérons en tirer un enrichissement.

Dans un esprit d'amélioration continue, nous avons apporté de nombreux changements, à la fois sur le plan de l'organisation et sur le plan de la présentation graphique.

Un nouveau système de rédaction pan-canadien a été instauré; le système de publication du Journal a été réorganisé et est en voie d'amélioration; avec ce numéro, nous inaugurons notre nouvelle présentation graphique.

Le nouveau Comité du Journal est composé principalement de représentants des conseils de chacune des Associations Provinciales et du Conseil de l'Institut. Le Comité du

submissions may still be made directly. It is hoped, however, that the effect of this network of representatives will be to make the Journal more fully national in character.

The system and procedures set up within the Journal offices will simplify contacts and facilitate contributions. The profession will be notified each year in advance of the topics of the forthcoming issues, either as in the present case in this article or, in future, in the form of an annual pin-up poster. With this advance knowledge, contributors to the Journal need not at first submit finished presentation material, but amateur snapshots and prints of sections and plans to describe the projects, or draft manuscripts for literary work would be sufficient. This will have to reach us no later than three months before publication date, which will be the 10th of every month. Although we shall acknowledge the receipt of all such material, we cannot guarantee its return. If, however, the project proves to be of interest to the Journal, we shall notify the contributor and request presentation material. This will have to reach us two months before publication.

Journal plénier siègera tous les trois mois plutôt, comme auparavant, qu'une fois par année, à l'Assemblée Annuelle de l'Institut. Des assemblées des membres du Comité, principalement de la région de Toronto, auront lieu tous les mois.

Les sujets d'articles et contributions de projets peuvent être transmis aux membres provinciaux du Comité de Rédaction ou expédiés directement au Journal.

Nous espérons que ce réseau de représentants va développer le caractère national de notre revue. La nouvelle organisation interne du Journal va faciliter les contacts avec les membres de même que leurs contributions.

La programmation des numéros se fera un an à l'avance et les membres en seront avisés. La présentation de projets sera simplifiée

We guarantee the return of all such material, besides acknowledging its receipt. Where warranted, the Journal might undertake the presentation of rough material. The following is the list of the main topics of the Journal for 1966, and a list of the elements in the new technical section to appear each month on a twelve month cycle appears on page 53.

Editorial Program for 1966

January	–	Books
February	–	Libraries
March	–	City Hall (Part 2)
April	–	Churches
May	–	Noise Control
June	–	Urban Renewal
July	–	Expo '67
August	–	Transportation
September	–	Landscape Architecture
October	–	Graphics
November	–	Universities
December	–	Books – Annual Review

Beginning with this issue is the new graphic design and typography developed with our

par un envoi préliminaire de photos d'amateur accompagnées de copies de plans et coupes des projets.

Quand un projet sera accepté, nous avertirons son auteur et lui demanderons de nous fournir la documentation nécessaire.

En 1966, les numéros du Journal porteront principalement sur les sujets suivants :

Janvier	–	Livres de Documentation
Février	–	Bibliothèques
Mars	–	Hôtel de Ville de Toronto II
Avril	–	Eglises
Mai	–	Insonorisation
Juin	–	Rénovation Urbaine
Juillet	–	Expo '67
Août	–	Transports Publics
Septembre	–	Architecture Paysagiste

continué à la page 26, 3e colonne

graphics consultant, Anthony Mann of Design Collaborative, Limited, Toronto. All editorial content will now use this typeface, with consistent headings, decks and captions throughout on a modular grid. We have standardized the index, and the sections are clearly demarcated by the standard numbering. We have changed our paper to one with a non-glare surface for easier reading.

Advertising

The Journal depends upon advertising for revenue; without it this professional journal could only be published at considerable cost to members. However, advertising indiscriminately spread through a publication makes difficult reading. We have, therefore, to the benefit of both advertiser and reader, distributed the advertising between the sections of editorial content. We trust the new graphics will further order the presentation of the Journal, and warrant wider readership and hence justify further advertising. It is of interest to note that the Journal (except perhaps at the start of its 42 year history) operates at a profit, some of which now goes into various services the Journal performs for RAIC Headquarters, mainly of a publication nature; and some of which is devoted to our steadily expanding editorial programs and activities. Any surplus at the end of the year goes into RAIC General Fund.

New Editorial Features

We have added new regular features to appear in the Journal; the Review Section will publish current works and projects in Canada and abroad to be noted in brief, with perhaps critical comment; a section on applied Architectural Technology will deal with the elements of a building and will be published monthly on an annual cycle; a Schools of Architecture section, we hope, will bridge the too wide gap between schools of architecture and the profession. Research projects, faculty work and matters of educational policy will be published, as well as student work. A Classified Column, free to members, will publish advertisements for positions wanted or vacant, notices of

practices, appointments, changes of address, etc. These may be done anonymously by box number or by name and address. Although descriptions of positions may be given, no mention will be made of scale of remuneration. The Correspondence Section will, of course, continue, and we invite letters of comment on subjects of interest to the profession.

In addition to these editorial sections, a résumé of major features will be made in the other official language in which the feature is published.

The organization here outlined is the least difficult of our tasks. The most difficult, and the most important, is the editorial content. It is our intent not to have a bland publication of official statements.

What is wanted is a lively presentation of professional views which should, like the best law or medical journals, command attention outside the profession as well as within. Our job is not that of a commercial glossy. It is to examine our subject matter in as great a breadth and depth as our contributors and readership will allow. Instead of pictorialism, we would stress content; instead of novelty, profundity; instead of commercialism, economy; instead of isolated virtuosity, building in context. We wish to assist the establishment of high standards of architecture; we wish to seek out those principles that are a part of our environment and time, that lead to an architecture of service to the national community, and by example, contribute to universal architectural standards.

How well the Journal can assist in this endeavour will depend now upon all of us who have architecture's interests at heart. We cannot hope to please everybody, but trust that what we do will be of interest and value. However, we welcome criticism as a spur to further improvement. But criticism accompanied by contribution, would receive the warmest welcome.

*A. J. Diamond,
Associate Editor*

Octobre — Graphismes
Novembre — Universités
Décembre — Revue Annuelle des Livres
de Documentation

Sans publicité, le Journal ne pourrait pas être publié gratuitement pour les membres. Nous avons distribué la publicité entre les pages éditoriales pour faciliter la lecture de la revue. Nous espérons que la nouvelle présentation graphique contribuera également à augmenter le nombre de nos lecteurs et à nous apporter plus de publicité. Il est à noter que le Journal réalise annuellement des profits dont une partie est utilisée à divers services rendus au Bureau-Chef de l'Institut et à promouvoir l'expansion constante de nos activités. Les surplus annuels sont versés aux fonds généraux de l'Institut.

Nouvelles Rubriques

De nouvelles rubriques paraîtront régulièrement et comprendront :

- 1 La publication de projets canadiens et internationaux, quelquefois avec des commentaires critiques;
- 2 La Technique de la Construction;
- 3 Des travaux et projets de recherche des Ecoles d'Architecture;
- 4 Une section d'Annonces Classées gratuites pour les membres.

De plus, nous publierons des résumés français des principaux articles parus en anglais de même que des résumés anglais des articles français.

Notre désir est de contribuer à l'établissement de normes architecturales élevées, d'étudier les problèmes de notre profession en profondeur, par le texte plus que par l'image.

La réussite de cette entreprise est liée à l'appui de tous ceux qui tiennent l'architecture à coeur.

Nous invitons la critique, comme moyen de viser plus haut, mais la critique la plus constructive et la plus désirable est celle qui s'accompagne de la collaboration à notre revue.

Logan Square, Philadelphia
Architects Carroll, Grisdale &
Van Alen

Program

To design a new headquarters building for this national society. The ASTM charter of March 21, 1902 provides for the promotion of knowledge of the materials of engineering and the standardization of specifications and the methods of testing.

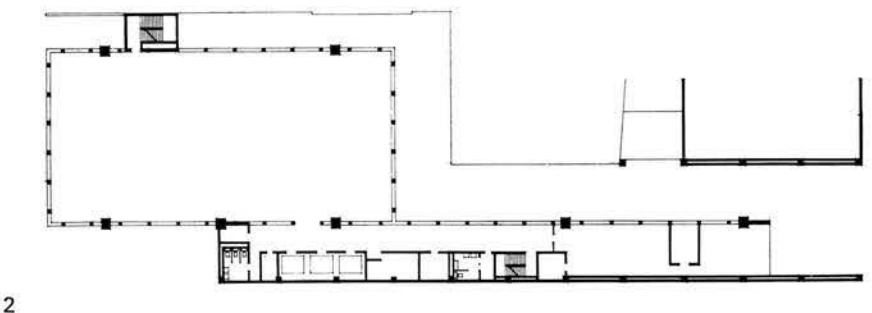
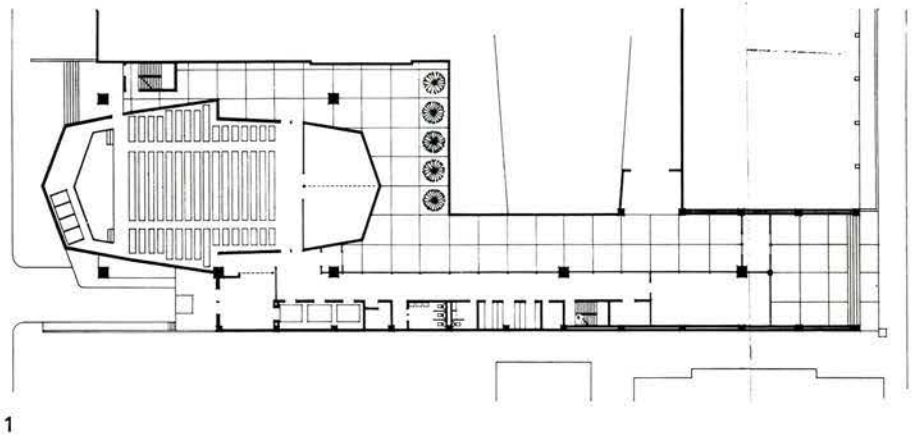
The main requirements of the Society are many, various sized meeting rooms for committees working on standards, and office space to conduct the ASTM business of distributing the standards to its members and the public. The ASTM is a non-profit organization.

Site

The site at 1916 Race Street is an "L" shaped plot extending 286 feet to Cherry Street with a 40 foot frontage on Race Street and 93 foot frontage on Cherry Street. Converted houses and storage buildings occupied by ASTM were in existence on the site. The plot is between the Moore School of Design and the Academy of Natural Sciences fronting on Logan Circle (of the Benjamin Franklin Parkway) and approximately on axis with the Philadelphia Public Library on the opposite side of the circle.

Solution

Carroll, Grisdale & Van Alen's solution for the program on this narrow lot is a rather unusual one. It was realized that to the east the Academy may not remain in its present building for more than five years. When a new building is built on this site, it will undoubtedly be built up to the party wall. Therefore, a party-wall has been erected on the east ASTM boundary. On the west the Moore School has just completed a building program and will probably remain stable for some long time. This permitted a solution that provides setbacks and windows along the west property line without fear of losing the present outlook. Several block studies were shown to the owner to illustrate the advantage of the setbacks versus building solid between property lines.



1
Ground Floor Plan
Plan du rez-de-chaussée
2
Second Floor Plan
Plan du deuxième étage

3
West Elevation of Rectangular Building
La façade d'ouest du bâtiment rectangulier
 4
Section
Coupe
 5
Elevation
Façade

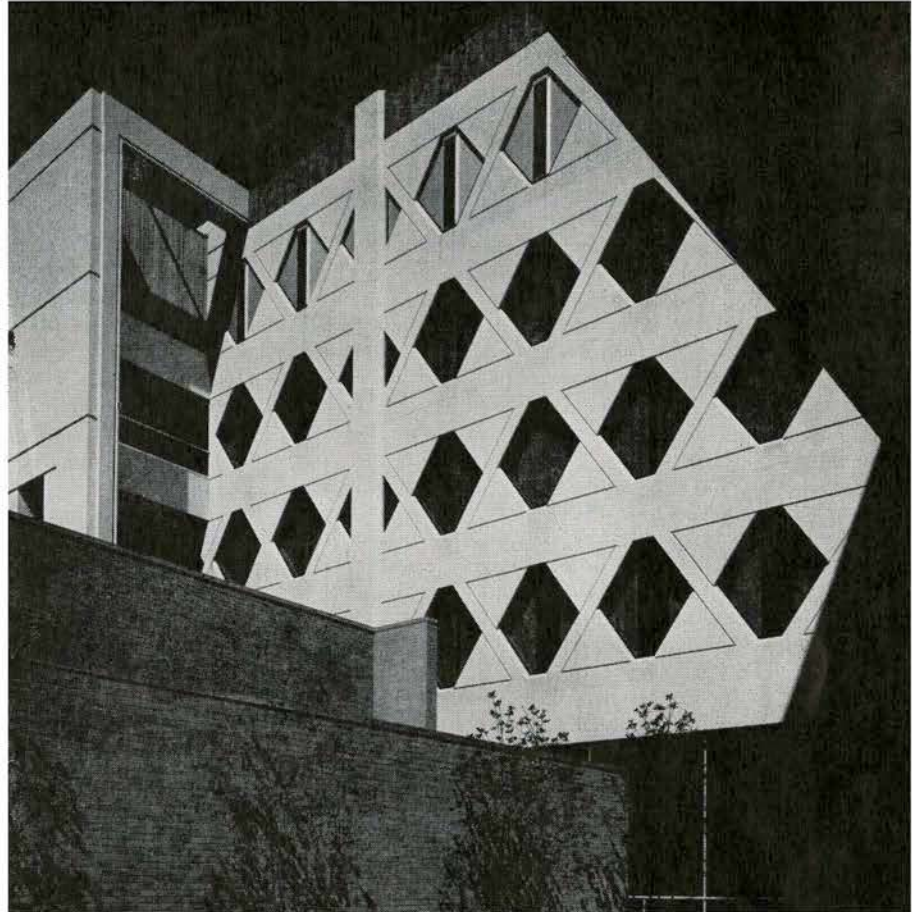
The building height is limited along the Parkway in this area and is under jurisdiction of the Philadelphia Art Commission as well as the Zoning Code. The zoning on the site was part residential and part commercial and required an appeal to make certain changes in setbacks which were granted.

The Art Commission requested that we keep the cornice line of the ASTM building in line with that of the Moore School, and this was done.

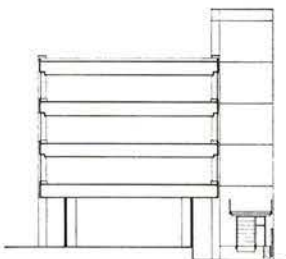
With this research into the environment and codes affecting the site completed the Architects developed the final plan layout which was approved by the owner with very minor changes.

Structure

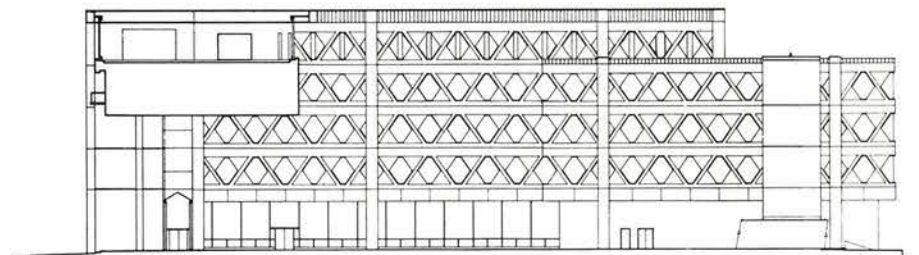
The large auditorium space on the first floor indicated the desirability of clear spans. The structure and resulting individuality of the design stems from this element in the plan. Exit requirements for auditorium space make it uneconomical to place it in any other location. The City Building Code limits its location to one floor above grade. Together with Severud Elstad and Krueger, the structural engineers, the Architects developed a series of steel trusses spanning 80' longitudinally with 20' cantilevers at either end and spanning 60 feet in the opposite direction with 33" deep beams 10'-0" on center. Corrugated steel deck spans the 10 feet between beams with 2½" concrete fill above. This steel deck serves as a flexible underfloor conduit system.



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Typical Office
Une bureau typique

7

Corner Detail – Office Building
Détail d'angle – Bâtiment de Bureaux

8

Entrance Detail – Looking into Garden
Détail de la cour d'entrée et vue sur le jardin

Concentrated loads resulting from these large spans in both directions necessitated using clusters of (16) 120 ton piles. Specifications called for 16" diameter steel pipe with 3/8" thick walls filled with 4000 lb. concrete driven to refusal into rock. Average length of piles is 20 feet.

The City Code does not permit the use of such high bearing valves without testing to twice the design load or 240 tons. The first test was placed on a pile driven with a 15000 lb. hammer and failed to meet the minimum settlement requirement. Two later tests using a 24000 lb. hammer produced satisfactory test results.

The soil conditions at the site are a mixture of gravel and decomposed rock which provides excellent drainage. The reinforced concrete slab and walls of the basement were damp-proofed only. The major portion of the building is faced with precast concrete panels, 4 1/2" in thickness. Glazing of the hexagonal shaped windows within these panels is by use of a 1 1/4" concrete lug and a neoprene gasket. The panels are hung on the steel frame by use of steel clips with 3 dimensional adjustment.

The steel is completely fireproofed with a sprayed asbestos which has also been applied to the inside face of the precast panels to serve as an insulation. The interior finish of the wall is plaster on metal lath and furring channels.

Cost

The cost of the building, \$2,100,000 for 65,000 square feet of gross area, amounts to \$32.30 per square foot. The 21 foot floor to floor height of the first floor and 14 foot story heights of the other floors amounts to a cubage of 1,008,225 or 2.08 per cubic foot.

These costs include the additional costs of the foundations and structure to accept an additional four floors as well as provisions for future mechanical equipment in the basement. The irregular shaped lot also has some effect on the square foot costs.

The Function of ASTM

ASTM is a unique society. With its headquarters in Philadelphia, Pa., and the majority of its members resident in the USA, it is international in character, having some members in 73 countries. Its publications are distributed throughout the world.

The Society is concerned with the development of standards and specifications for all types of materials, and with the vast amount of materials research that lies behind such standardization activity. Originally, ASTM standards served the engineering field only but in recent years the experience thus gained has been extended in other directions such as peat, and surgical implant materials.

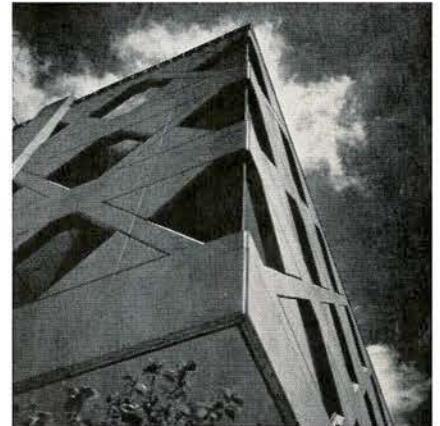
ASTM now publishes well over 3,000 standards. These appear in 34 well-printed bound volumes, with a total pagination of about 20,000. The complete set of volumes is issued afresh each year, since all the standards are under constant review and are revised and updated regularly.

The work of the Society centers around the preparation and revision of the standards, with due attention to current research work through the medium of special technical meetings. Almost 100 main technical committees, working through about 2,000 sub-committees and working groups, are responsible for all the standardization work, assisted by the expert ASTM headquarters staff. Annual meetings of the Society usually feature over 1100 committee meetings with an attendance of several thousand members.

ASTM Standards are, therefore, well known throughout the world. In Canada they form the technical basis for many of the standards issued by the Canadian Standards Association, as well as being widely used directly in more specialized fields. The RAIC Representative on the Technical Committee is James B. Craig, Ottawa. In the international sphere, many ASTM Standards have provided the basis for ISO "Recommendations".



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¹ A fuller list of books of this genre is given at the end of this article.

² Webber, in fact, wrote this nearly three years before Kaplan's talk.

³ See Vernon's remarks about the most nucleated North American Metropolis, *New York, Raymond, Vernon, Metropolis 1985* (Cambridge: Harvard University Press, 1960), p. 224.

⁴ John Friedmann and John Miller, "The Urban Field", *Journal of the American Institute of Planners*, 31 (November 1965), pp. 312-320.

The Shape of Things to Come in Urban Development — A Review

The Regional City

Harold Kaplan, *Canadian Broadcasting Corporation*; 1965, 52 pages, \$1.25

Cities and Space

Lowdon Wingo Jr., Editor, *Johns Hopkins Press for Resources for the Future*, Baltimore, in Canada Copp Clark, Toronto; 1963, 261 pages, \$5.50

Explorations into Urban Structure

Melvin M. Webber, et al, *University of Pennsylvania Press, in Canada Smithers & Bonellie Ltd.*, Toronto; 1963, 246 pages, \$6.50

Urban Growth Dynamics

F. Stuart Chapin Jr. and Shirley F. Weiss, Editors, *John Wiley and Sons, in Canada Renouf, Montreal*; 1962, 484 pages, \$8.95

I.

Professor Kaplan of York University, in the little book that records his talks on politics and planning in metropolitan areas for the CBC, issues the following invitation:

Pick up any book on cities in North America today and you very likely will see . . . the author will talk about "hopeless metropolitan sprawl" and the "suburban attack on our cities". The emerging regional metropolis is seen as an ugly one, built around the car, the freeway, and the parking lot.

I was intrigued by this challenge and so I picked up, well, not just any book, but four of a recent crop of important books on cities in North America. None of these books, nor others one could cite, take the doctrinaire approach that Kaplan so rightly condemns.¹ Indeed, the authors in the books I chose concur in Professor Kaplan's view that our urban areas now reflect new life styles and that we need to view them by new dimensions.

Melvin Webber, in an essay from one of these books, appears to be echoing Kaplan when he writes, *we have mistaken for "urban chaos" what is more likely to be a newly emerging order whose signal qualities are complexity and diversity.*²

None of these books, then, spends its time either glorifying the central city or denouncing the suburbs. Each in its own way is an attempt to view the present realities of urban development and thereby derive the prospects for the shape of things to come in urban areas. Their perspectives on the future include the spatial patterns of activities in urban areas, the patterns of political decision-making, the social and economic facets of urban growth, and the legal basis for achieving urban development goals. It will be useful, before looking at the books in some detail, to view briefly the "urban ground" from which this new crop of books has bloomed.

II.

For nearly two decades, we have been engaged in a war on urban problems — in the realm of housing, traffic, downtown areas, recreation, etc. But often, in recent years, students of the urban scene as well as policy-makers have sensed that the tactics being used to deal with the problems were not completely appropriate to the situation. There is Lewis Mumford's classic observation that freeways were often conceived as rivers flowing only one way, *i.e.*, taking traffic away from congested urban centers, when, indeed, they gave increased accessibility to the center and encouraged still more traffic to pour in. As these inconsistencies between tactics and actual problem needs have come to be recognized there also has come the realization to some, at least, that we must now deal with a new concept of a city.

The late Catherine Bauer Wurster, in her incisive way, has said, *the traditional concept of "city" was something that any bright child could explain quite well (and) that image does not fit our present-day communities. . . . The traditional city was largely self-contained, generally concentric about some institu-*

tional or commercial node, and highly concentrated in terms of people, facilities, and activities. The medieval city was the prototype of the traditional city, but the small city of North America was a reasonable analogy. The increasing metropolitanization of our cities starting around the turn of this century led to another image of the city being adopted, the metropolis. This is the image of the "mother city" with its heartblood of commercial activities and job opportunities and its brood of dormitory towns surrounding it and physically linked to the core by transportation. It should be clear to most observers and participants in urban development that neither of these images fit today's cities in North America. For example, downtown areas in the central cities of our metropolitan areas are no longer the principal destinations of most workers and shoppers, and few suburbs any longer adhere to the idea of a pure dormitory situation.³ As to the former point, Toronto, with all its recent growth, has no more people working in its downtown area today that it had thirty years ago.

One of the most striking features of current urban growth is the increasing attractiveness of the periphery of urban areas to the new metropolitan populations. It has space, it has scenery, it usually contains communities that remain from an earlier period of settlement and preserve a measure of integrity, and it is easily accessible given the recent improvements in highways and increased leisure time from which some travel time may be allocated. These trends have been generated by increasing real income, increasing leisure time, and increasing mobility.⁴ There is little likelihood of any decline in these trends. If present consumption patterns of urban dwellers are any guide, we can expect the expanded incomes will be used to purchase space, privacy, travel, education, culture, and recreation. While the prospects for a 30-hour week mean the mass of people will have two-thirds of their waking hours unallocated. US authorities expect a tripling of outdoor recreation demands in the coming three decades. And crystallizing the effects of the trends in income and leisure time is the possibility of travelling farther

⁵ Melvin M. Webber, "The Roles of Intelligence Systems in Urban Systems Planning", *Journal of the American Institute of Planners*, 31 (November 1965), pp 289-297.

⁶ One of the most select and best known of this group, Catherine Bauer Wurster, has, unfortunately, died since this collection appeared.

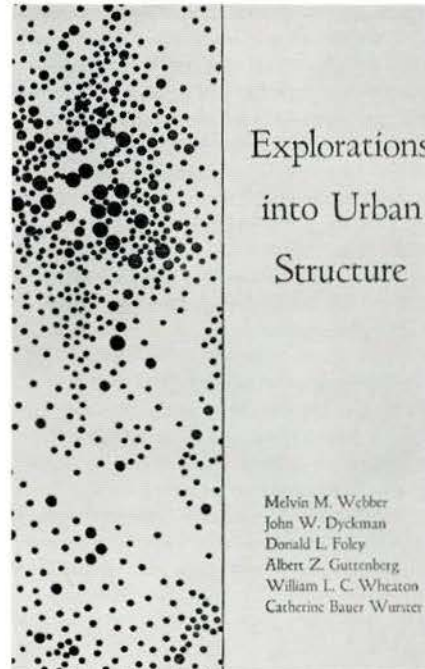
afield in less time, given imminent improvements in transportation, such as the automated highway. A counterpart of transportation is, of course, communications and the improvements in that realm are only too obvious.

These trends are thus leading to a new urban image. It is one that, in its spatial pattern, will be more dispersed with development scattered over large areas. It is one that, with regard to most urban activities, will not constrain activities to only one or a few locations. Firms and households will want to and will be able to choose from among a wide variety of locations. And, by virtue of the locational freedom, it will be an urban area which is, at once, both more complex and more diverse. One of the important consequences of the latter tendency will be an increased blurring of the lines of responsibility of the various "actors" in the urban development process — the engineers, the planners, the architects, the economists, the social workers, etc.⁵ The fact of being able to cite such a long list of participants is itself evidence of the increasing interdependence of actions taken in a wide variety of realms that affect the city. This growing interdependence is a point which cannot be over emphasized.

It is this emerging urban context which the writers of the books cited at the outset are attempting to delineate as to its physical shape and the shape of problems that future urban dwellers and urban problem-solvers must face.

III.

Explorations into Urban Structure, by Melvin Webber and others, is a collection of essays whose title is accurate. They are incisive forays into the nature of urban areas, how they are developing, who affects their development, and whether their development can be directed. All of the papers are written by planners, and all but one teach and research planning at the University of California.⁶ The collection begins with a scintillating introduction by Catherine Bauer Wurster which urges the bold hypotheses of the other writers be refined and tested by

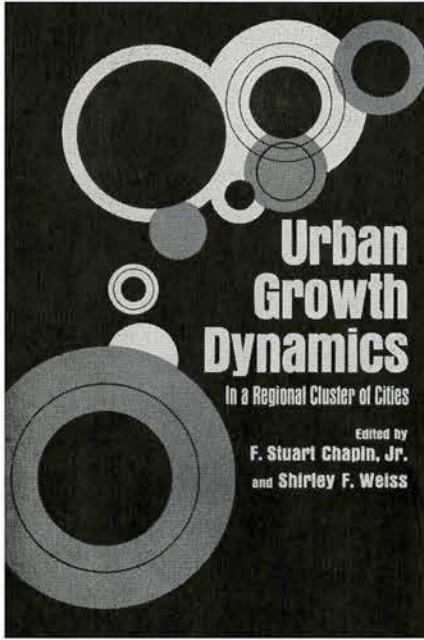


scientific research. From a well-known sceptic of the *science* of planning, this is a significant endorsement of the book. In fact, the various pieces in the book are stimulating and even risk some polemic in this regard.

Donald Foley's *Approach to Metropolitan Spatial Structure* does a commendable job of melding the "aspatial" elements of community life (values, norms, culture, functional relations) with the "spatial" elements (cultural groupings, patterns of establishments, distribution of physical objects) to show the range of complexity in an urban community. Melvin Webber's, *The Place and the Nonplace Urban Realm*, is the most important paper of the group. In this he takes the view that urban dwellers, more and more, participate in several realms. They interact with others within a metropolitan community (the *place* realm) and also interact with others in communities that extend to widely scattered parts of the earth (the *nonplace* realm). The importance of this to Webber is that it indicates the nature

and extent of "linkages" that relate individuals, groups, firms, etc. These aspatial linkages are manifest, according to Webber, into patterns of human interaction, a physical form of space adaptation to human activities and transportation and communications networks, and a pattern of activity locations wherein types of activities according to their economic function or social role are distributed. William Wheaton offers a thoughtful view on the agents of change in urban areas and concludes that the "direct exercise of public policy upon decisions to shape metropolitan growth appears unlikely to be effective. . . ." And he provides sufficient evidence to validate this conclusion, which he reckons can only be changed by providing comprehensive market data to both public and private decision-makers, by developing metropolitan plans, and by professional guidance in standards of practice and through research and education. Albert Guttenberg's *The Tactical Plan* completes the explorations with the notion that beyond the persuasion methods associated with trying to get urban decision-makers to respect the goals of a usual master plan will be needed "tactics" to shape the background conditions required by the plan. These might include, for example, methods of changing the market orientations of builders, and the locational preferences by house-buyers. John Dyckman sums up the contributions in a concluding essay and makes the point that the authors have been focusing on the *process* of urban development and not on a desired future *state* which so often characterizes physical plans.

Urban Growth Dynamics in a Regional Cluster of Cities, edited by F. Stuart Chapin, Jr and Shirley F. Weiss of the University of North Carolina, is a study of the factors affecting urban growth in the Piedmont Crescent of North and South Carolina. It is also a collection of essays, but these are all based on research carried out in this region containing 20 cities which range up to 200,000 population. This is an interesting study area because it has developed all of the trappings of a mid-twentieth century urban industrial economy without having gone through the same stages of growth as older,



more concentrated North American metropolitan areas, *i.e.*, centralization, decentralization accompanying the expansion of mass transit and electric power, suburbanization, and, more recently, scatterization. In this sense, the Piedmont Crescent cities may well be the counterpart of the cluster of cities in west-central Ontario such as London, Stratford, Kitchener, St Thomas and Chatham.

The book is divided into four sections, in which are gathered together the results of similar studies that were undertaken, each involving intensive statistical analysis. The four sections are concerned with, respectively, economic forces affecting urban development; the social and political variables that impinge on urban development, such as leadership, ethnic groupings, the role of the planner, etc.; the social "correlates" of urban growth, including attitudes toward living conditions, acculturation of newcomers to the city, career possibilities of urban residents; a systematic analysis of changing land development patterns. The latter section is perhaps the most stimulating, since it attempts to pin down the effects of the

actions which "prime" urban development and those which are "secondary", or triggered by the priming actions. Priming decisions are made in both the public sector (highway locations and utilities locations) and the private sector (large-scale investments in land for industry or shopping centers). They set the stage for secondary decisions — *e.g.*, park acquisitions, street widening, small-scale subdivision, mortgage-financing, home-building, and so on. The two together make up the set of decisions which fashion development as a whole.

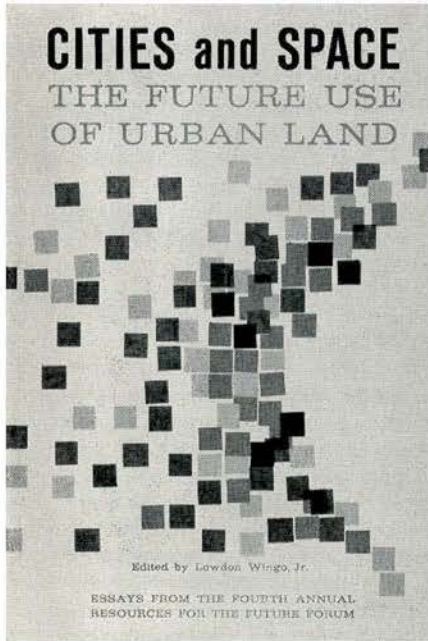
One final comment on the book is that it seeks explanations of urban development in terms of human *behavior*, that is, what choices people make and where. Behavior patterns are based on people's values or attitudes and, as a result of day-to-day needs and desires for interaction between households, between households and work places, between firms, etc., location choices are made. In other words, these authors see the decisions made by people, firms, and groups being the critical point in the sequence of events in a location being chosen to set down some activity. This is a quite different approach from much other urban research, where statistical aggregates of zones (such as in transportation studies) are judged to reflect a set of attitudes contained within the zone. It is conceded in many quarters that the behavioral approach is the correct direction to be taken in recognizing and trying to understand the complexity of decisions which affect growth in our urban areas.

Cities and Space, edited by Lowdon Wingo, Jr from a symposium sponsored by Resources for the Future on the factors affecting the use of urban space in the coming generation, focuses on the policy alternatives available to society in shaping its metropolitan development. This book thus differs from the first two in that it asks "given legal, political, cultural, and economic constraints, what is possible?" The various authors, of whom only Melvin Webber and Catherine Bauer Wurster contributed to the previous volumes, involved themselves in the issues which stem directly from the changing

organization of cities in space. They attempt to assess the real alternatives, their costs and benefits, "the gainers and losers", and to weave these considerations into a view of the future.

Wingo opens the collection of essays by putting urban *space* into a policy perspective. He says, quite correctly, that what we characteristically refer to as "the urban problem" is, in fact, a bundle of issues concerned with urban space as a resource and the structural dimensions of that space. That is, cities exist in space, the activities comprising the cities occupy space, and space is a friction to be overcome in the interaction of urban activities. The concept of urban space takes its meaning from the notion of a complex organization of nucleated activities, and this meaning changes over time as it has already through the town, city, and metropolis. The policy issues he sees as paramount for an emerging urban pattern which is much more dispersed than at present are threefold: one, the utilization of the capital investment that has been cumulatively built up in the downtown core; two, the nature of the transportation and communications systems we wish to sustain in metropolitan areas; and three, the management of open land in a quickly decentralizing region.

Melvin Webber again comes up with one of his interesting titles, *Order in Diversity: Community Without Propinquity*, and it again introduces a provocative essay. His view here is that the various forces that are breaking down the traditional urban pattern constitute a *liberation of human energies and a proliferation of opportunity for human interaction*. In other words, he sees nothing inherently evil in a Los Angeles-type of urban pattern, but rather that it reflects a new life style that has analogies in most large urban areas in Canada and the U.S. Within such a pattern, all of the things which go to make up an urban area could be organized by functional relations rather than by proximity (propinquity). Stanley Tankel opts out of this prospect and into one that would have a great deal of concentration in its urban activities, such as Manhattan where



he is, incidentally, Director of the Regional Plan Association. He argues for a contrast between city and countryside and also sets out the possible organization of open space to achieve his desired prospect. He prescribes open space criteria in an urban design sense ranging from the street, community, to the county. Catherine Bauer Wurster argues that neither Webber nor Tankel has posed the really critical problem in metropolitan spatial organization: the nature of urban development as related to the individual and his needs as a human being. She poses a series of alternatives based on a four-fold classification in which the axes range, respectively, from concentration to dispersion and from region-wide specialization to region-wide integration. The possibilities in her schema cover, at least, the super-city, general dispersion, present trends projected which fall somewhere between the first two, and a constellation of relatively diversified and integrated cities. She personally favors the latter alternative.

Frederick Gutheim picks up Tankel's theme of urban design and extends it to its logical conclusion by asserting that design be the

master framework in urban policy-making and development. One is struck by the over-simplified view of cities as expounded by Gutheim when set in the context of this volume. And Leonard Duhl takes up this argument in his essay by stating that *the fruits of urban design are not always synonymous with humanism nor always consistent with the social and psychic needs of urban humanity*. He serves up this message eloquently through a story about a young man from a disadvantaged part of a large city. Roland Artle in a lucid piece indicates how the complex decisions affecting urban development can be formalized into decision models in order to test the outcomes of public policy. Charles Haar, from his vantage point of the field of law, urges planners to be clear about their objectives in order that the legal institutions that often must adjudicate the worth of particular urban development can give fair judgments. Finally, Henry Fagin crystallizes these various viewpoints and opportunities for development into a policy synthesis in which he suggests the first order of metropolitan business is to transform governmental arrangements for the planning and development of metropolitan regions.

The Regional City, by Harold Kaplan, offers a broad view of the politics which affect the nature of urban development. He uses many Canadian examples and thereby provides a useful comparison with U.S. examples of metropolitan politics from which the bulk of his theoretical backing is derived. We now find out, for example, that the political response of the central city and the suburbs of Toronto, or Winnipeg, or Vancouver differ little from that recorded for Boston, Philadelphia and San Francisco. That is, that city governments, in general, do not have the power to make a comprehensive and vigorous attack on central city decay and that there are not effective leadership arrangements in Canadian local government to get things moving. In the suburbs, the lack of effective power and leadership constrains action on new development. Kaplan argues for metropolitan government as a way of overcoming the "fractionalization" of local power and, thus, making it possible

to deal with large-scale urban development. This he concedes is not in the offing in most Canadian provinces. In some ways it is too bad that Kaplan had not dealt with the possibilities that Wheaton and Guttenberg raise in "Explorations" about the use of better information systems and other tactics to serve in the interim until metropolitan government becomes both a reality and an effective instrument for directing urban development, the latter of which cannot be said to exist even in Toronto.

IV.

This choice of books, and the others listed below, was made to show that recent investigations reveal a complexity in urban systems not previously suspected. They show, I hope, that neatly compartmentalized arrangements of urban settlements must now be posed against findings of networks of highly interdependent activities performed by households, firms, social groups, government agencies, and so on. These writings are a reflection of asking how an urban system *works* in order to find out what it *is*. They also show clearly that we must deal with flows of money, goods, services, people, information, etc., as well as with the *stocks* of people, goods, buildings, and wealth which initiate the flows. Maybe most important from this planner's point of view is the obvious implication that this complexity of cities which we are coming to understand means a merging of the actors, the professionals, that put into practice the desires of the urban dwellers who are our clients. We are forced by the complexity to recognize the limits of our particular professional viewpoints and training and must, therefore, realize the necessity of closer working relationships rather than jealously guarded professional empires. In fact, it is doubtful whether the present trends in urban development will long endure the latter position to prevail.

*Gerald Hodge, Assistant Professor,
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University of Toronto*

The Aging City: Factors Related to the Gray Area Problem in Chicago

University of Illinois, Department of Urban Planning and Landscape Architecture, Advance Studio
University of Illinois, Urbana, Illinois, 1965, 101 pages

This mimeographed publication is essentially a compendium of papers by graduate students of the Department of Urban Planning and Landscape Architecture of the University of Illinois. As such it must be judged mainly in terms of function as an educational exercise and only secondarily as a contribution to an understanding of the problems of the aging areas of cities.



The purpose of the exercise was to explore the nature and functions of "gray areas" leading to formulation of appropriate programs of treatment. Starting from an effort to place these areas in a metropolitan perspective, the papers undertake a very brief review of "gray area" theory and the "testing" of these against Chicago planning and renewal programs. The last papers on the Housing Market residential rehabilitation which are followed by two essentially "area studies" on a residential neighbourhood and a commercial strip are perhaps relevant, but appear to be merely attached to the preceding materials.

The students engaged in this project were fortunate in that they were operating in one of the most heavily studied areas in the U.S., and a wealth of material was available. The value of this exposure to the participants was probably very great; however, there was little in the way of insight or techniques to hold the interest of the professional, and the uneven quality of the material and of the writing would not attract the layman.

If one has a special interest in the approach taken by one university in one of its courses for urban planners, this report may be worth a reading.

Samuel J. Cullers

Changing Ideals in Modern Architecture

Peter Collins
McGill University Press, Montreal, 1965, 309 pages, \$12.50

Professor Collins writes as an historian and an architect. His historical research commands respect, his use of it does not.

In the mid-eighteenth century a number of architectural events took place that showed the Renaissance was over. At the same time, conveniently for Marxist philosophers, the industrial revolution began to transform England though it was delayed in France by the *ancien régime*. Today we look back and grudgingly concede that we have more in common with the confusion that then took place than with the monolithic certainty of the preceding period. This is our span of modern architecture through whose changing ideals we are taken by the author.

His descriptions of the various revivals are excellent and his references constitute a comprehensive bibliography of English and French sources. These are not narrowly limited to architectural topics but shrewdly take in those that give analogical insight. Discussing the influence of historiography, Collins not only refers to the Gothic romance novels but has obviously read them. That this erudition has some disadvantages can

be seen in the chapter on the biological analogy where Linnaeus, Buffon, Bichat, Lamarck, Vicq-d'Azyr, Schleiden, Cuvier, Saint-Hilaire, Milne-Edwards, von Baer, von Humboldt, Bernard, Roux, and Darwin, as well as Winckelmann, Montesquieu, de Goguet, Goethe, Spencer, Young, Coleridge, Herder, Giedion, Descartes, Fergusson, Singer, Beaudelaire, Viollet-le-Duc, Perret, Ruskin, and Scott, are brought into a discussion of the relationship between form and function and what Wright meant by an organic architecture.

The author's ruthless intellectuality tends to disappear as the book progresses. In chapter thirteen he records the historical fact that inventing was a profession in the nineteenth century and that Edison took out over a thousand patents ranging from dictaphones to concrete houses. In chapter twenty-two he records his critical belief that there can be no such comprehensive skill as designing which would enable one to tackle anything from toothpaste tubes to ocean liners. This insertion of a highly personal commentary does not spoil the first part of the book as it is restricted to the opening and closing paragraphs of chapters. Later, good history is submerged by bad theory.

Before 1750, the author points out, there was no conflict between architectural theory and history since antiquity was a contemporary source. Nowadays, as there is a crucial difference between the way buildings *are* built and the way they *were* built, there is no justification for confounding the distinctive task of each. Collins does not practise what he preaches. He draws attention to the impracticability of eighteenth century Prix de Rome projects and says that he does so because this is characteristic of academic projects today. Other remarks such as "all young architects regard themselves as creative artists" and "It is no coincidence that Anglo-Saxon cooking is proverbially bad, for bad food and bad architecture both derive from the same philosophical disease" make one wonder whether these observations refer to the world at large, to Canada, or are in some way autobiographical.

The most interesting thread of the book for this reviewer shows how the demand for a new architecture arose in the first half of the nineteenth century and why it frustrated critics and humbled architects. The most amusing chapter in a book that mentions but does not discuss the ideal of architecture as a social influence in a century of reforming zeal is entitled the gastronomic analogy. But then Collins has wit and the book ends on a joke. *Giedion's terminology will probably persist, whatever interpretations we give it, because of the modern credulous appetite for pseudo-scientific mumbo-jumbo. . . . It is even to be found outside architectural writings, as for example in a recent socio-logical periodical where, in an article entitled "A Study of Free-Time Activities of 200 Aged Persons", their Space-Time activities are carefully described. Yet here, on close examination, it is apparent that "space-time activities" was simply a misprint for "spare-time activities", and one may perhaps be excused for wondering whether a similar typographical transposition has not occurred in one or two recent books on modern art.*

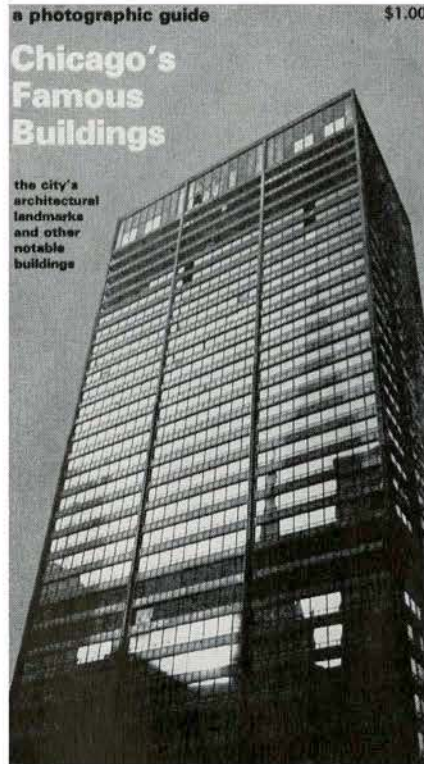
Get it?

Anthony Jackson

Chicago's Famous Buildings

*Edited by Arthur Siegel
The University of Chicago Press, in Canada
University of Toronto Press; 1965, 230 pages,
\$2.95—\$1.00 paperback*

In one stroke, as sometimes happened in Sigfried Gideon's lectures, the link between the Chicago School and modern architecture became clear to me when I heard him describe Mies van der Rohe with Louis Sullivan's phrase, "a man with a ten-fingered grasp of reality". In spite of Gideon's convincing comments in "Space, Time and Architecture", the early buildings of this most American of cities have been largely undervalued. While Europe was struggling with manifestoes and organizing schools such as the Bauhaus to destroy eclecticism, Chicago architects had already created a new clarity. This rationalism produced an



environment so clear-eyed that one might question whether Wright could have produced such strong work so early anywhere but in Chicago. For this reason alone, this inexpensive paperback is a delight. All cities should have guide books to direct the visitor and even the dweller to its historic architecture and in several ways this book is an exceptional example of the type.

First, I must congratulate the author for including many plans of buildings, most of which are not readily available elsewhere; as well as some interior photographs. Who has ever seen a plan of the Adler and Sullivan Auditorium Building, the Reliance Building, the Monadnock Building, the Charnley House, the Carson Pirie Scott Building, or the E-Z Polish Building (that early Wright work, so recently re-discovered by Grant Manson)? They are here. This reviewer can only applaud the happy inclusion of these drawings so often left out of more expensive and

supposedly more comprehensive books. Thank God! At last somebody has discovered that architecture is more than façadism; that architecture begins from the plan and it must be shown.

Another pleasure is the presenting of some buildings which have been largely unknown and are very exciting, like: Burnham's ("make no little plans") Fisher Building, Perkins' Carl Schurz High School and Purcell, Feick and Elmslie's Edison Shop.

On the other side, the inclusion of some of the other work, particularly later buildings, casts doubt on the consistency of the author's choices. And how could this guide book leave out some of the greatest work of America's greatest architect, Unity Church and the Winslow House for two? What other great and near great buildings have been left out, one wonders?

With all that said, let me add, somewhat shamefacedly, that I have never been to Chicago. This book, however, will be with me when I finally go, along with two others that I, for different reasons, value: Gideon's "Space, Time and Architecture", for first telling me of Chicago's greatness, and Grant Manson's "Frank Lloyd Wright, the First Golden Age", for first telling me of Wright's greatness and thus is able to fill in the gaps left by the newest book.

So with the exception of Mies's work and that of some few others, the more contemporary work included in "Chicago's Famous Buildings" is not in the same league with the earlier work by a more virile breed of cat. Only Mies, with his Germanic directness and simplicity, his "ten-fingered grasp of reality", can match that earlier era that flowered from 1880 to 1915 in Chicago, perhaps American architecture's finest moment.

Macy DuBois

* In my first year in architecture school, I heard Gropius say this on his return from a tour of Japan. It sums up the struggle of the artist with his work. It is the first potent phrase I remember from my architectural education and it becomes more clearly true as the years pass.

Ise: Prototype of Japanese Architecture

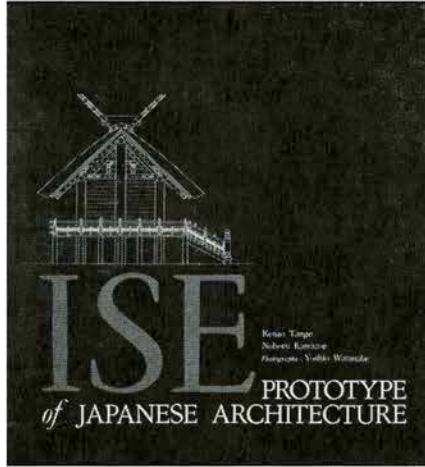
Tange Kenzo and Norboru Kawazoe
MIT Press, Cambridge, Massachusetts, in
Canada General Publishing Co., Don Mills,
Ontario; 1965, 212 pages, \$19.25

Contemporary Japanese architecture interests me in its struggle to free itself from its wood stylisms. Traditional Japanese architecture attracted me without revealing its secrets. I was ready for this book. Its intentions are modest, to explain the Ise shrines, but it is immensely successful in explaining the wood style in both its anachronisms and constructional honesty. It is among the best architectural books in years. It skinned my eyes.

John Burchard, in a short introduction, quotes Walter Gropius' Zen Dictum "Develop an infallible technique and then place yourself at the mercy of inspiration". * Caught in a web of superb technique, the Japanese are having difficulty adjusting to the materials and methods of our era. Paradoxically, Western architects could well use some of this sense of detail to warm their own overly methodical manner. So it is that in understanding the traditional style, we better understand contemporary architecture in that which it has and has not achieved.

This book talks beautifully about technique and gives some comments, guesses, and history of the reasons. It does this by discussing the serene and moving Ise shrines and then carries this wider to a beginning discussion of other Japanese shrine architecture.

With roots as old as that of Greek architecture, with the abundance of wood and the prevalence of severe earthquakes, the Japanese rarely used stone. While many of the other shrines used painted wood, the Ise shrines left it unpainted, preserving the visual "impact of new wood, with its characteristic fragrance". With the necessity to show reverence other than in the permanence of stone, they hit upon the idea of rebuilding the shrine every 20 years with the



very act of rebuilding woven into the sense of awe.

Long ago Western architecture, by contrast, had to all purposes left wood for stone in its important buildings; so much so that it has blunted their designer's sense of the powerful effect of natural pattern and texture in the surface itself. In addition, while Western architecture moved from Sigfried Gideon's first space concept (objects in space) to the second (hollowed out space) to the third (shaped exterior space), Japanese architecture had hovered on the threshold of the second with no solutions, comparable to the Roman vault, for example. Certainly these shrines, like Greek temples, are objects in space with only the priests allowed within the shrine itself. What we do see internally is much of what we see externally, natural surface and texture, not poetic space.

Some of what baffles us about these Ise shrines, and Japanese architecture in general, turns out to be stylistic non-functional anachronisms. For instance the *shigi* turn out to be ornamental vestiges of "the continuation of crossed gable-members forming V-shaped projections above the ridge" which in the past needed to be tied together but now, with iron, do not need to sail past. Or the *Katusuogi*, wood cylinders set cross-wise on the ridge as a mark of prestige which earlier served as ridge (so vulnerable

in a thatched roof) closure weights. This item became such a mark of distinction that one war lord forbade its use except on his own buildings and shrines. Not known to me before was that there are two Ise shrines very similar in plan and design with the slight stylistic differences in each revealing something of the nature of the style itself.

This is an unusual architectural photography book in that the text adds greatly to the understanding of the pictures. I am grateful that some of the puzzle of the Japanese style has been solved for me. I shall return to this book again and again.

Macy DuBois

Office Design: A Study of Environment

The Pilkington Research Unit, Edited by
Peter Manning
Department of Building Science, University
of Liverpool, 1965, 160 pages, 30s

As the title suggests, this small book is in fact a report on "a study of environment which was based on the design and performance of office buildings and office space, and people's attitudes towards the offices they use. It is not strictly a research report, in the sense that the term is normally used, nor is it a design guide. Instead it sets out to provide a picture of environment 'in the round', as it is seen from the present stage of development of the Pilkington Research Unit's studies of the total environment within buildings".

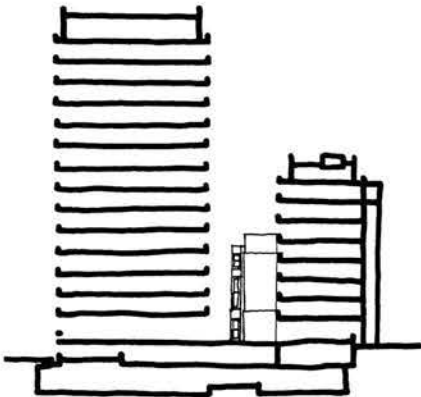
The book is broken into four parts. The first part is a one page foreword which outlines the aims of the report and the terms of reference intended and appropriate credits. Stage Two, Summary and Conclusions, is a short section which, in a general sense, probably provides the most rewarding part of the whole book. Stage Three, Part One, is broken into separate environmental studies relative to spatial, visual, thermal, aural and external environment. The second part of Stage Three is a case study of the Co-operative Insurance Society Limited Building in Manchester, Britain's tallest office building at that time.

This section is described as a study of "the total environment". The Fourth and last stage, and almost half of the book, is Appendices relating to the studies previously referred to. The last part of the Appendices outlines a study project determining "the influence of office size on the individual and on supervisory and managerial processes". This particular project is outlined in copious detail resulting in an impressive array of tables. This section includes examples of all of the questionnaires, graphs and model used in the studies.

Although in the foreword it is stated that "This report aims to provide a global picture of the environment in modern office buildings", it certainly does not.

This is very much a British book; it is almost only applicable to the British environment. While its scope in Britain is obviously very complete in some aspects, it could not by any stretch of the imagination be said to be representative of a "global" picture. The book does not examine U.S. or other examples although it acknowledges that "no other country seems to have exerted any major influence. . .". It is not therefore a study of the most extensive or best thinking in office building.

As a study, it does not attempt to draw conclusions or act as a critique or even suggest that the results of its surveys are good or bad, it simply publishes the results of the survey for what they are worth, making



observations along the way. It is not in any sense a working study in that it is only a presentation of the situation as it is now and although broken down into painstaking detail, is only the "average" opinion or condition. There is obviously a certain predictability in the results of the study. The conclusion, if any, is probably simply that environment does have an effect on personnel and that this effect can be measured or at least polled, a conclusion which hardly comes as a surprise. Unfortunately, almost no one in the field of office buildings, including the architect, is primarily or even strongly concerned about the effects of environment on the occupants.

The book is designed by Alan G. Swerdlow, NDD. Unfortunately the handsome cover and frontispiece are interesting photos of U.S. buildings leading one to look forward to better things to come; this is truly a case of not telling a book by its cover. The interior photos are not very good and I am afraid that unless the reader were British and specifically interested in this local survey, the book is somewhat dull.

John Gallop

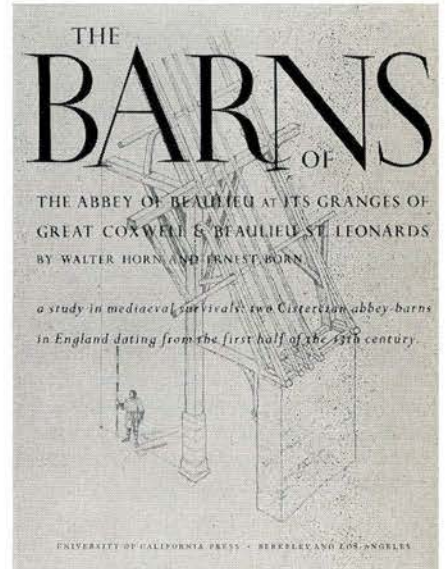
The Barns of The Abbey of Beaulieu at its Granges of Great Coxwell and Beaulieu St Leonards

*Walter Horn and Ernest Born
University of California Press, Berkeley and Los Angeles, 1965, 73 pages, \$10.00*

A slim but elegant volume, this monograph describing the construction of two surviving Cistercian abbey barns of the Middle Ages is a handsome example of the bookmaker's art. The colour plates and full page section drawings by Ernest Born are marvels of crisp and lucid architectural drawing which exactly describe the structure, the details and the interlocking of the great timber roofs. No rhetorical flourishes or fashionable tricks obscure the drawings which are intelligently related to the text and to the accompanying photographs. The sympathetic collaboration between a most accomplished graphic artist

and an imaginative scholar has produced a book which is at once aesthetically gratifying and challenging in its basic theme.

Since 1960 the authors have been working on a general survey of timbered medieval barns, churches and manor halls in Europe. For some fifteen years Professor Horn has been exploring the vernacular bases and sources of medieval building. This theme has proven immensely fruitful, as historians have turned from a tired recapitulation of the major monuments of the past to a more discerning emphasis upon the customary modes of building, the influence of climatic factors and a search for the underlying logic and practical good sense of builders in the



historic cultures. Where others have emphasized the impact and effect of the indigenous Mediterranean style upon the architecture of Byzantium, Islam and the Renaissance in the South, Horn has evolved an extremely ingenious theory linking the high pitched gabled barns and timber houses of the North Sea coast and Germany to the characteristic nave and aisle plan of the Romanesque abbey church.

Not since Strzygowski's seminal studies into the timber vernacular of the Middle Ages

has there been a comparable effort to establish a convincing link between the work of the master carpenters and master masons of Northern Europe. As this series of studies develops it will be most interesting to see how this theme will affect studies of the later Gothic where the marked parallel between the scale of perpendicular detailing and timber panelling often has been remarked upon.

The alternation of arched braced rafters in the barn at Great Coxwell Berkshire with trusses braced by three-way struts may be compared with the splay of tiercerons and diagonal ribs in a medieval vault which achieve rigidity by the three dimensional interlocking of linear elements into a rigid cage. Certainly the parallel between the raking struts of timber frames and the flying ribs of fourteenth century vaults as at St Mary Warwick is too marked to be overlooked. The confirmation of a date early in the thirteenth century for Great Coxwell adds a depth and continuity to our studies of timber building particularly helpful in the study of later timber roofs.

Touching upon the barn at Ter Doest, Flanders, the authors in a closely reasoned argument reconstruct the fabric of Beaulieu St Leonards in Hampshire. A pretty piece of detective work here. By arguing back from the trace of the truss on the end gable wall and comparing it with similar examples a convincing reconstruction has been achieved. All in all a most worthwhile book.

James Acland

The Architecture of Fantasy

*Ulrich Conrads and Hans G. Sperlich
Frederick A. Praeger, New York, in Canada
Burns & MacEachern, Don Mills, Ontario;
1963, 187 pages, \$19.50*

There is a basic contradiction in the title which is never resolved in the book. Fantastic architecture is that which is the product of pure creation of form or space or evolution, which need not be useful, but without regard for those realities which architects

live with day to day such as economics, the existing structure of an environment, or such a basic thing as suitable local building materials. The architecture of Fantasy is not "Buck Rogers" for this would have to be based on suitability and function — however imaginary. On the other hand, a Utopian Architecture would be that total situation of Architectural freedom which might exist as a result of complete and real social fulfillment — the simple result of a completely satisfactory world. A Utopian Architecture might be fantastic in our eyes but only because the euphoric state of perfection in which it could be created is perhaps beyond our comprehension.



This book does present a carefully edited and arranged display of singularly unusual buildings, projects, and some urban planning ideas, some of which are Fantastic, and some which could be called Utopian only so far as they imply social aspirations which are far more significant than the manifestation of these ideas in buildings. The examples presented which are the result of pure fancy, however their authors tried to give them structural or social validity, are the most satisfying and exciting. The examples of Gaudi's work have a timeless quality of Fantasy which does not exist for Kiesler's "Endless House" or for the work of Bruce Goff.

A strong relationship between the Expressionist movement in Germany after World War I and the architectural ideas of the time is carefully and clearly presented. Even the most casual student of cinema understands the film "The Cabinet of Doctor Caligari" in the context of this movement in Germany, which had its influence not only in films, but in all the art forms, including Architecture. This book does properly present the important architectural realization of this movement and relates it to the remainder of the period.

Several serious omissions occur in what is otherwise a complete and carefully prepared text. An important part of such a book could be a psychological examination which considered the nature of the individual designer as well as the time and location in which the designs were created. This should be examined both for works which came out of a strong national or artistic environment as well as those works of "individual" fancy such as is found in the Towers of Watts constructed by Simone Rodilla near Los Angeles from 1921 to 1954. More examples of architecture without Architects could have been presented, particularly Eastern examples. Palace architecture of the last half of the 19th century in India would surely qualify as Fantastic. Finally a more complete presentation of Fantastic/Utopian planning, both historical and contemporary, should have been included in this presentation.

Despite the obvious omissions, the book does accomplish what its authors intended — "to pay tribute to human imagination". In doing this, the authors have carefully organized the visual material and supported it with appropriate if often equally fantastic written documents where these were available, and with a comprehensive and accurate set of notes to the text and illustrations.

Jack Klein

Les Visionnaires de l'Architecture

Présenté par Michel Ragon
Laffont Press, Paris, 1965, \$5.00

Voici un nouveau livre qui ne manquera certainement pas de susciter l'intérêt des architectes qui ont eu l'avantage d'entendre la magistrale conférence de Monsieur André Bloc, lors de l'assemblée annuelle de l'IRAC, à Montréal, en juin dernier, sur l'architecture fantastique. Cet ouvrage est le troisième de la collection "Construire le Monde" dont nous faisons une appréciation des deux premiers volumes dans le numéro de juin du *Journal*.

Ce volume est présenté par Michel Ragon, auteur de plusieurs ouvrages consacrés à promouvoir une architecture et un urbanisme à la mesure des besoins de notre époque, et à faire connaître du public les visionnaires de l'architecture de demain qui s'élabore dans la recherche d'aujourd'hui. Pour ces hommes de vision, le XXI^e siècle est déjà commencé, mais il est trop lent à démarrer pour des raisons d'ordre économique sans doute, mais aussi par manque d'audace et de politiques urbaines inadéquates qui retardent la mise en oeuvre de plans plus cohérents.

A la lecture de ce volume, abondamment illustré, on se rend compte une fois de plus, que bien des utopies d'hier sont devenues les réalités d'aujourd'hui et que bien des conceptions d'aujourd'hui paraissant utopiques ne le sont sans doute que partiellement. Ces idées audacieuses, fantastiques, présentées par les visionnaires de l'architecture, ne doivent donc pas être considérées tout simplement comme des fantasmagories de l'imagination en délire, puisque l'avenir se forge presque toujours par les visions prémonitoires de quelques hommes de génie, qui voient plus loin que leurs contemporains.

L'ouvrage contient des textes et projets de Jean Balladur, Yona Freidman, Walter Jonas, Paul Maymont et Nicolas Schoffer, tous architectes engagés dans la pratique professionnelle, mais trouvant du temps à consacrer à la recherche prospective. Pour ces architectes visionnaires, la ville du XXI^e siècle sera

bien différente de celle d'aujourd'hui, dont l'architecture est plus souvent rétrospective que prospective. La ville de l'avenir proposée par les visionnaires de l'architecture libérera le sol pour la circulation et la verdure et utilisera l'espace vertical.

Les prochaines générations vivront-elles dans des villes-tours, des villes-ponts, des villes flottantes, des villes-cônes ouvertes sur la lumière et l'espace comme le préconisent les visionnaires de l'architecture? Où vivrons-nous demain? Accrochés à des structures arachnéennes, comme le propose Paul Maymont, juchés sur des villes-ponts, ou même sous terre? De toute façon la face de nos villes sera changée pour le mieux ou pour le pire, et nous pouvons déjà nous en faire une idée par la lecture de ce volume.

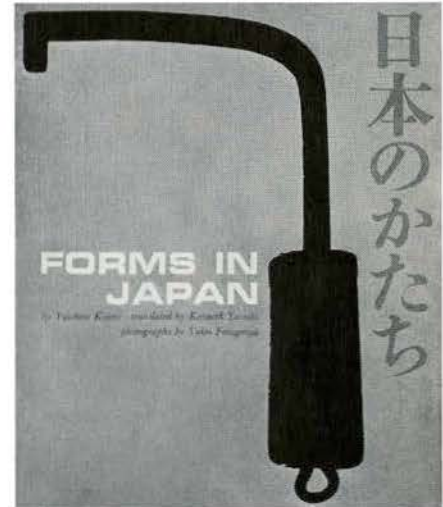
Denis Tremblay

Forms in Japan

Yuichiro Kojiro
East-West Centre Press, Honolulu, 1965,
184 pages, \$15.00

This is an attractive book by Yuichiro Kojiro in which he attempts a systematic analysis of Japanese forms, organized into four basic categories. The result is not a scholastic account, but rather a formal expression of the Japanese spirit.

The author points out the interaction of raw material, technical skill, purpose and idea, and their effect on the resultant form. These four fundamentals, Kojiro feels, give rise respectively to forms of adaptation, change, unity and force. Each of these he further divides; for example, forms of unity are illustrated by forms of continuation, union, collection, arrangement and enclosure; each of these in turn is further subdivided — for example, forms of union are illustrated by forms of tying, binding, weaving, joining, bracing, matching and stopping. Within the book as a whole there is a great range of items, practical or symbolic in origin, here appreciated in abstract and in isolation, and this easily evokes a sympathetic response



from those familiar with today's western abstract art. In the same way that one's attention is focused on a flower vase placed in the tokonama of a bare Japanese interior, so in this volume superb photographs isolate each particular form. Many of these photographs, like a Haiku poem, are a small gem — a light powdering of snow on a pantiled roof, the inner structure of bamboo revealed by a diagonal cut, or the shadow cast by a pantiled overhang across a line of rocks scattered in a garden of raked sand. Usually not only the objects themselves but their placing is seen to be of great significance — a precept which we in the west might well study with advantage. To relate these forms to Japanese attitudes, the photographs are accompanied by a few words often sympathetically chosen and evocative.

The Katsura Detached Palace was constructed continuously in a diagonal direction, with the old study hall, the middle study hall, the music room, and the new palace connected at the corners. In this form called the "geese formation" there is not the overpowering feeling one gets from a large roof. — from the description accompanying Forms of Continuation.

Contemplating the photograph of a superbly articulated wood joint, one easily appreciates the determination of form by a sense of rightness of proportion, rather than by ease of production. Gropius once commented that whereas the western approach to a problem consists of finding the most practical, rational, hygienic and comfortable solution, of most concern to the Japanese were past associations, historically meaningful symbols, beauty and propriety.

Simplification and the open plan, the use of structure and screens, the use of natural materials and the power of white, and the relationship of interior and exterior, are aspects of Japanese architecture and form that have greatly affected modern architecture in the west. To the Japanese, however, all this is just a reflection of their aesthetic conception of life, their asceticism and meditative concentration, their reverence for the natural world, and from that, their respect for natural materials. In this book we perceive that each form is a statement concentrating on one essential aspect, perfected through time, explored to the limits of its aesthetic, technical and functional logic, with an approach that is intuitive and poetic, based on a greatly refined artistic sensibility rather than on the intellect.

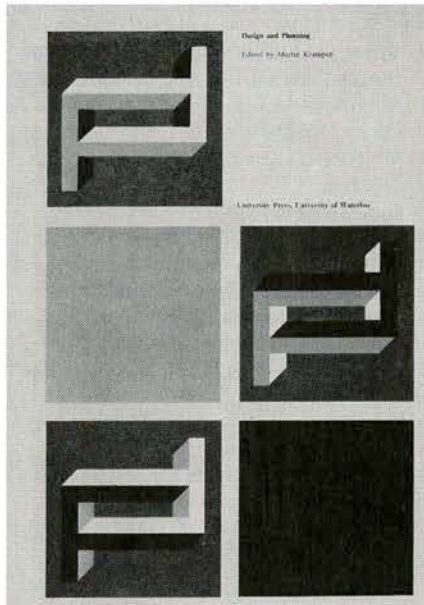
The principles here illustrated in this finely bound and well produced volume are absolute. As Antonin Raymond remarked in 1920, these principles "are always, were and always will be the same, immutable, unchangeable, and which must guide us in trying to attain true beauty in architectural design".

Jonas Lehrman

Design and Planning

*Edited by Martin Krampen
University Press, University of Waterloo,
Waterloo, Ontario, Canada, \$6.95*

In his preface to *Design and Planning* the editor, Dr Martin Krampen, states his belief that design "is in the process of becoming an applied interdisciplinary science".



This concept of design as a rational problem-solving activity rather than as an intuitively applied art is slowly gaining acceptance among designers and obviously influenced Dr Krampen in planning the first design seminar at the University of Waterloo in 1964.

The book is based on papers delivered at the 1964 Seminar, but many of them have been specially rewritten for publication by the twenty or so contributors.

Most design seminars seem to be planned around famous names and, as a result, lack both continuity and content. Although the famous names are here, the emphasis is on facts rather than personal opinions, and it comes as a refreshing change to find a design seminar resulting in a book that provides solid information. The book itself is well designed and produced, with over 200 illustrations. Subjects covered range from Human Factors and Experimental Aesthetics to Corporate Design and Urban Design. The contribution on Urban Design, given by David Lewis and Peter Stead from the Carnegie Institute of Technology, was originally planned for an architectural program which was to have formed part of the seminar,

but which was later cancelled owing to lack of response. Perhaps the publication of this book will stimulate interest among architects for seminars of this type. If problem-solving is a true function of environmental designers, as much information as possible is needed regarding related disciplines. There is plenty of food for thought in this book for anyone interested in design or planning.

Anthony Mann

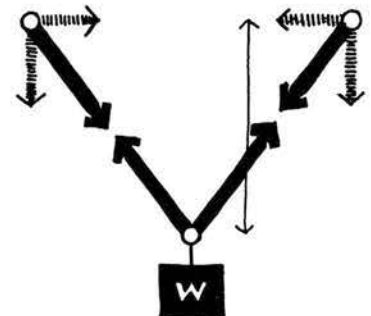
Essentials of Structural Design

*Anthony Hoadley
John Wiley and Sons Inc., New York, in
Canada, General Publishing Co., Don Mills,
Ontario; 1964, 609 pages, \$11.50*

The standard structural design books are devoted to the design processes of individual components of structures of one material. Some of them have a brief introductory discussion of loads.

The author of this book has deviated from such a presentation. He has discussed the general concepts of analysis and deflection of structures and the characteristics of loads in the first three chapters. The loads given are in accordance with the accepted standards in the United States, which in some respects differ from those used in Canada.

In the remaining seventeen chapters the design processes of individual members, such as tension and compression members,



beams and joists, plate girders, trusses, connections and joints, slabs, etc. of four different materials, steel, aluminum, timber and reinforced concrete, are presented.

In all instances a discussion of the characteristics and properties of these materials precedes the presentation of the design. The design procedures are based on the latest American specifications.

1. steel — American Institute of Steel Construction (AISC) 1963.
2. timber — National Lumber Manufacturers' Association (NLMA) National Design Specifications (NDS) 1962.
3. reinforced concrete — American Concrete Institute (ACI) Bldg. Code 1963.

The elastic and the plastic design procedures are developed for metal structures and the elastic and the ultimate design concepts are shown for reinforced concrete structures.

On the grounds of the large scope of this book the writer feels that the author has left out some important design considerations, such as the effect of openings in webs of steel and aluminum beams, low and high temperature effects on the strength of reinforced concrete, discussion of properties of light weight concrete, pre-stressed concrete, built-up members in timber including HB beams and plywood web beams, glue laminated timber and some other minor items.

It should be noted that in many instances the allowable stresses as stipulated by the American specifications are slightly different from those in the National Building Code (NBC) 1965 and the Canadian Standard Association (CSA) specifications.

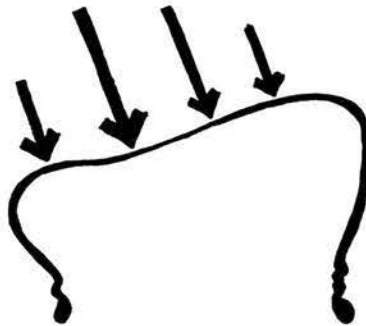
This book is well written and should be a valuable addition to the technical library of architects who do not get involved in detailed design of structures.

E. Karuks

Reliability of Shell Buckling Predictions

William A. Little
MIT Press, Cambridge, Massachusetts;
in Canada General Publishing Co., Don Mills,
Ontario; 1964, 178 pages, \$10.00

The theory of shell buckling is hampered by an enormous complexity of mathematics. Consequently only very few geometrically simple shapes have been described satisfactorily and up until quite recently even the spherical cap had no mathematical solution which was in reasonable agreement with experiments. This situation necessarily leads to the development of model programs for the



design of structures which do not permit the analytical approach as yet.

The publication examines the reliability of small scale plastic models in the determination of elastic buckling pressures of thin shell structures. A very clear introduction into the problem of shell buckling and the history of analytical and experimental studies is given.

The main content of the book is a report on an extensive testing program in which twenty-four plastic models of a spherical cap were investigated at MIT. The object of these tests was to study how and to what extent statistics and probability theory can be applied to model programs and, furthermore, to develop a reliable experimental

design process, but not to aid in the development of mathematical theory.

The book is of value mainly to the structural engineer and to the model analyst.

Norbert Seethaler

Principles of Hospital Design

Hugh Gainsborough and John Gainsborough
Architectural Press, London, in Canada
General Publishing Co., Don Mills, Ontario;
1964, 275 pages, \$9.95

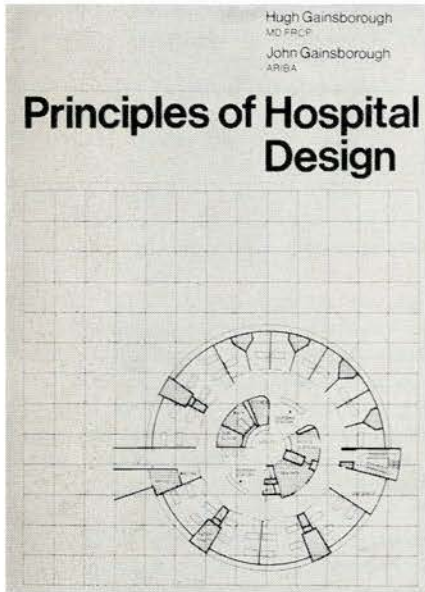
To read this book with understanding, it is necessary to take off one's North American lenses and put on English glasses.

One must realize that in the last half century, England has had very little hospital construction and so presumably it stands today on the verge of an expansion program. The authors (physician and architect) are not happy with the little new construction the country has had; "the contrast between new hospitals in this country and elsewhere is only too striking and we will see that few of the new hospitals built or in course of construction here can be described as really modern or show any development of note as compared with the best hospitals in some other countries".

For this reason, they believe that it has become an urgent matter to take another look at the problems of hospital design and this they do in a refreshing and stimulating way.

While they are critical of their own hospitals, they are also quick to point out that "the Americans cannot solve our problems for us, even though they lead both in experiment and experience".

Almost three-quarters of the book is devoted to the nursing unit; the result is that this part of the hospital plan is treated exhaustively, and the balance, except for one good chapter on the operating theatre, is treated very summarily or not at all.



Their approach to the design of a nursing unit differs strikingly from common practice in this country. Observability, both from nurse to patient and patient to nurse, is stressed even at the expense of privacy.

For example, a lavatory in a patient's room along a corridor wall interferes with observability; the lavatory must therefore be moved, either to the outside wall or to a central or an in-between room location. One is rather startled on opening the book to find a whole chapter devoted to the open ward (legislated out of existence in this country 20 years ago) until one realizes that the chief purpose of this chapter is to destroy the myth of observability claimed by those still fighting a rear-guard action for this type of unit. The authors must also be given full marks for consistency in condemning the open ward for the intensive care unit as well — where, strangely, it has proved quite popular on this continent.

Another recommendation of considerable merit, which departs from common practice in this country, is the almost complete elimination of the two-bed ward — the popularity of which, here, can be traced directly to Blue Cross and Government insurance schemes.

There is an excellent piece on the Delivery and Disposal problem, and one priceless sentence "it has been said that this problem is so important that the hospital should be planned around the delivery and disposal system, and provided that the system used is very compact, this illusion is unlikely to do much harm".

Throughout the book, there is one dominant theme. Hospitals are built for patients and patients are human, and all planning must be subservient to this one consideration. Perhaps the "feel" of the book is best expressed by the sensitive poem in the frontispiece by Elizabeth Jennings, first published in *The Listener*.

*Like children now, bed close to bed,
With flowers set up where toys would be
In real childhoods, secretly
We cherish each our own disease,
And when we talk we talk to please
Ourselves that still we are not dead.*

*All is kept safe — the healthy world
Held at a distance, on a rope,
Where human things like hate and hope
Persist. The world we know is full
Of things we need, unbeautiful
And yet desired — a glass to hold*

*A sip, a cube of ice, a pill
To help us sleep. Yet in this warm
And sealed-off nest, the least alarm
Speaks clear of death. Our fears grow wide;
There are no places left to hide
And no more peace in lying still.*

B. Kaminker

The Open-Air Churches of Sixteenth Century Mexico

*John McAndrew
Harvard University Press, Cambridge,
Massachusetts, in Canada Saunders of
Toronto Ltd.; 1965, 755 pages, \$15.00*

Any lover of Mexican Architecture will find in this incredible book a facet of that nation's architectural history that has probably been only of subsidiary interest to him.

The author concerns himself with a much broader scale of ideas than that suggested by the title. To properly place his subject, we are brought through the history of Mexican Architecture up to and including the principal subject in minute and penetrating detail, but it is only possible here to give a rough outline of the scope of the book, and an idea of the central theme.

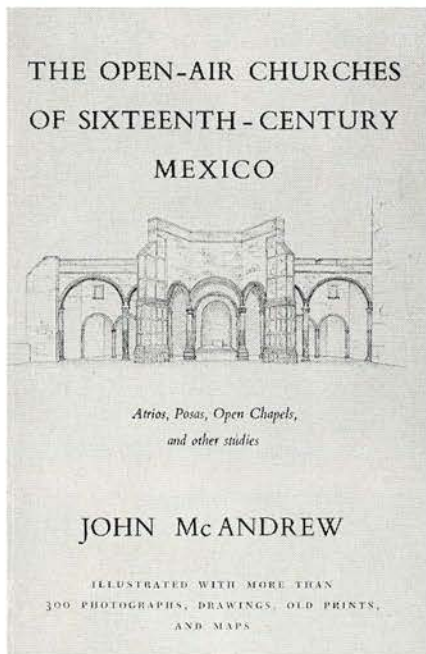
Early Indian culture and architecture is first discussed. There are many who believe, as I do, that Pre-Columbian Urban Planning to be at least the equal to that of the highly celebrated Greek. An understanding of this early architecture is important to the author's subject and this period is examined and described because this highly sophisticated but pagan influence is felt in the later work.

Their religion was essentially a political agency for preserving the community, not involved with personal destiny and individual salvation. Hope and idea of rewards for good conduct and good works must have appeared as attractive novelties preferred by friars.

The character of the lay Spaniards, as well as the seculars and the regulars of the Church, the Great Conversion including its extent and nature, old and new religions, methods of teaching, as well as special problems related to administering the Sacraments are examined.

We are led to understand that the early friars, particularly those of the Franciscan order, were the only persons with any feeling for the Indians. These friars cared for the Indians, educated and protected them from the consistently cruel and greedy Spaniards who exploited the Indian unmercifully. Since Indians were used exclusively to build these structures, their influence is strongly seen in many examples, especially in their decorative qualities. The new town plan and new monasteries are described, and their relation to the old and new styles of architecture in Mexico.

The development of the atrium or immense walled-in courts surrounding the church



evolved from the need to deal with great numbers of Indians, many more than it would be possible to administer to inside the church. In the early days the church building itself was often used exclusively for the use of the Spaniards and the friars, while the Indians, considered mere savages who needed to be saved, remained outdoors. Posas and open chapels evolved from this need and the remainder of the chapters is given up to this subject. These were used as outdoor covered chapels in which the friars and their assistants would teach and preach. Numerous examples, many in inaccessible parts of Mexico, are discussed both historically and in physical fact. Plentiful photos and sketches, sometimes of an undistinguished character and often seemingly disorganized, are used to illustrate the examples.

A glossary, bibliography, notes to the text, index and maps make up the remainder of the 755 pages.

I am amazed when reading a textbook of this nature, which is rare, at the incredible fact

that a man has given up several decades of his life to pursue his driving and scientific obsession with a subject.

It is possible that such devotion to a cause enables him to state that *This book is concerned with what may be the most dramatic American Architectural innovation before the skyscraper: the outdoor church of the Indians of Mexico.*

The reviewer, a slow reader, devoted a month of heavy reading to delve into this studious work, but statements such as *On a hill at Tizatlan across the river, amid the ruins of the Palace of Old Xicotencatl* ("a man with a bee at his lips"), *successor to Xayacamachantla oazcallitecuhtli who was successor to Atzhuatlacascallitecuhtli*, *there is another former open chapel, now closed in by later walls and little used*, help to give the book a great deal of charm.

The essence of Mr McAndrew's book and his approach to the subject is summed up at the beginning of his tremendously long bibliography (1000 books, references and articles). "If some important works are missing, it is because I have not read them."

Jerome Markson

Office Buildings

Jurgen Joedicke
Frederick A. Praeger, New York, in Canada Burns and MacEachern, Don Mills, Ontario; 1962, 215 pages, \$18.75

This handsome, hard-cover book is printed in English in the Contemporary European format.

The book is divided into four chapters (five if you consider the large list of illustrated buildings as a separate unit). The chapters: The Plan, The Structure, External Wall Construction, Heating, Air Conditioning and Lighting each attempt to show through text, photos and very clear drawings the fundamentals of the heading under discussion. In such a short space, the chapters can hardly

cover all there is to say, nor can they pretend to be a primer for the architect or engineer; however they do become surprisingly specific.

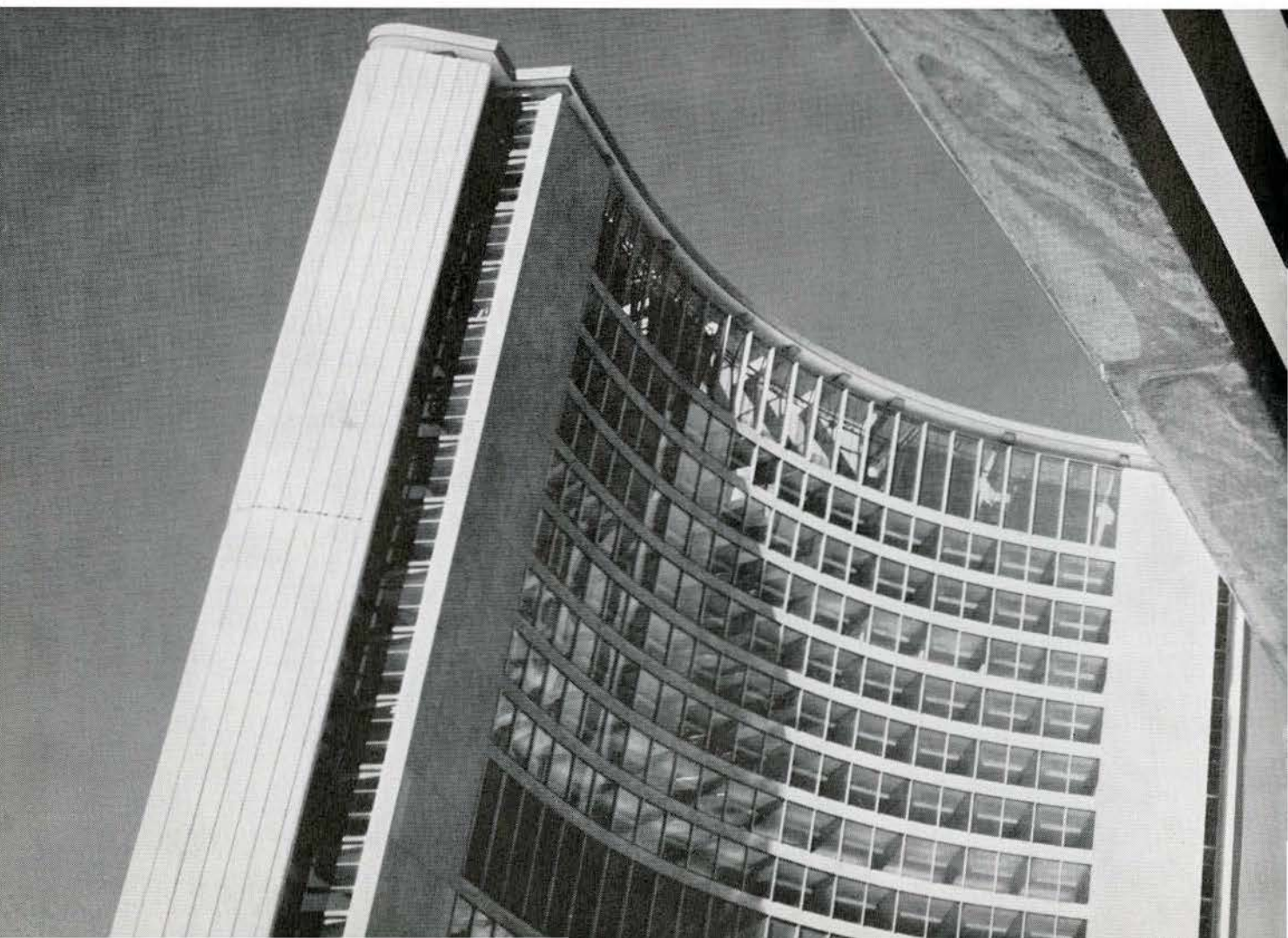
In each area points are discussed and international examples illustrated. The examples in most cases are good typical examples of contemporary practise rather than exotic, one of a kind, examples (Milan's Pirelli Building may be the exception). It is often a little surprising to find that office buildings, which one assumes have reached a zenith in the U.S., have been solved in possibly even more unique and interesting ways in other countries. One example which came as a surprise to this writer is the extensive use of exterior venetian blind sun control in Europe, solving a problem which never seems soluble in North American examples. These examples illustrate their points in concise text, simple drawings and graphs, and a small number of photos and working drawings.

In the more technical sections, discussing mechanical problems, the book briefly but clearly describes three basic air-conditioning systems, the advantages and disadvantages of each, and the details and problems involved in their implementations.

To the architect with a scant knowledge of these systems which have a strong bearing on a building, these summaries are excellent.

The last 70 pages are handsomely illustrated with a number of office buildings. Each building is treated with photos, plans, sections and a brief text which refers back to the discussions in the earlier part of the book. Most of the newer U.S. examples are shown along with some very striking European and one very pleasant Japanese building which to the writer's knowledge have not been extensively published previously.

John Gallop



Mr Helyar is a practising quantity surveyor with the Toronto firm of Helyar, Rae & Vermeulen. He is now the consultant for this section.

The following are the elements of the building that will be dealt with on an annual cycle:

January	<i>Estimating and Cost Control</i>
February	<i>Sub-Structure</i>
March	<i>Horizontal & Structural Elements</i>
April	<i>Exterior Cladding</i>
May	<i>Interior Vertical Elements</i>
June	<i>Multi-Storey Elements</i>
July	<i>Interior Finishes</i>
August	<i>Fittings, Fixtures and Special Equipment</i>
September	<i>Electrical</i>
October	<i>Plumbing and Drains</i>
November	<i>Heating – Ventilation</i>
December	<i>External Works</i>

A major concern of all practising architects, and their clients, is the problem of providing reasonably accurate preliminary estimates. Most architects probably have some cost information in their offices, but unless it can be converted into a usable form it is not much help for preparing estimates.

At least two estimates are usually required on any building project, the first to give the client some idea of what his financial commitments are likely to be, and the second to provide a check when the working drawings are being prepared to see whether the first estimate is being adhered to. In between these two extremes there may be several comparative cost studies made to compare the effect on the cost of different materials or planning solutions.

The trouble with this process is that the first estimate is the one on which the client makes all his major decisions, and it is the one which is prepared from the minimum amount of information in the form of drawings or specifications. The profession has, however, overcome this difficulty by devising methods of preparing the first estimate which can, in fact, give the client quite a good idea of what his financial commitments could be. These are the square foot or cubic foot methods. It is quite a logical process of reasoning that if one building costs \$16 per square foot, another one of a similar type

should cost a similar amount per square foot plus or minus any adjustments for difference in location and time of construction. Here we run into another difficulty in that there is not always another building available with which to make a cost comparison and a certain amount of mental juggling is required to make the interpolation. In other words it requires skill and experience to arrive at the correct cost per square foot to apply to a building.

Assuming however that the budget has been set, the next problem is to ensure that the design as it proceeds towards working drawings is not edging the cost up over the budget. This would not be difficult if the architect estimates the building at \$16 per square foot and reports the cost to his client as \$21 per square foot, giving himself \$5 leeway. Most clients, however, find this hard to swallow, and most architects would find it hard to justify.

The greatest drawback with this method is that it is difficult to define a cost per square foot in terms of design. What is the effect of a change from structural steel to reinforced concrete? Will the cost per square foot be increased or decreased and by how much if the shape of the building is changed or if an additional storey is added? The answer to all these questions must be guesswork unless a detailed analysis is made.

It appears therefore that by using square foot or cubic foot methods the architect has overcome one hurdle, the setting of the budget, only to be faced with another bigger one, the adherence to that budget.

The application of a square foot or a cubic foot price is a simple operation, requiring little time but a lot of skill and experience. At the other end of the scale is the contractor who spends a lot of time in the preparation of detailed quantities and unit prices to arrive at an accurate total cost. What is needed by the architect is a method which can be done quickly, with a reasonable amount of accuracy, and, most important, which is in sufficient detail to guide him through the design and working drawing stages.

The new format of the technical section of the *Journal* enables us to present costs which can be applied to a system of estimating which has been in use for some time and which goes a long way towards solving the problem of speed, accuracy and information during the design period. This will also solve another problem which plagues most architects, the problem of obtaining cost information.

The theory behind the new system is simple. Accepting the fact that the square foot method is an acknowledged way of doing preliminary estimates, but that it requires skill to apply it and that it is difficult to make adjustments from the base price, the obvious solution is to break the building down into convenient components and apply a cost to each component to arrive at a total.

It is always much easier to build up a price from a number of components than it is to pull a total out of the air. Although this may be an obvious solution, it does present the difficulty of deciding what a convenient component is and where the cost breakdown to apply to these components comes from.

The immediate answer to this difficulty is that the contractor, in his estimate, has the cost broken down into components and he presents this breakdown to the architect for certificate purposes. The contractors' trade breakdown, however, has two drawbacks. Firstly there is the authenticity of the breakdown since it is not unusual for the early trades to be padded, and each contractor has his own way of including his overhead and profit in the breakdown. Secondly, and much more important, is the fact that a trade breakdown gives little more information in the design stages than does a total cost per square foot. It is still a matter of guesswork to determine the effect on the cost if a change is made from a brick faced wall to a precast concrete wall.

Since a trade breakdown does not seem to be the answer, an alternative must be found. The alternative is to break the cost down into the functional elements of the building. It is reasoned that the architect considers

the function rather than the material when he is doing his design, and as one of the requirements of a preliminary estimate is to help in the design stage, the breakdown should reflect this.

An added advantage of this method is that these elements lend themselves very conveniently to a quick method of measurement. All the major elements can be divided into those which are primarily horizontal and those which are primarily vertical. Suspended floors and roofs for example are the main horizontal components of a building, and exterior walls and interior partitions are the main vertical components. A few basic measurements combined with the appropriate unit prices will quickly give the total cost of these elements. Other elements such as cabinetwork, demolitions and external works which bear no relation to either the horizontal or the vertical areas will have to be allowed for by means of lump sum allowances, or measured and priced in detail.

The big advantage of this method is that it can be used to help the architect as he develops the design of his building. The estimate takes a little longer than square or cubic foot methods, but this is worthwhile if it helps to answer awkward questions like how much is included for terrazzo floors and how much would be saved if vinyl asbestos floor tile were substituted for it. It is also worthwhile if the architect is enabled to make a quick assessment of the effect on the total cost if one type of cladding is substituted for another.

In practice, the preparation of this type of estimate involves the measurement of the gross floor area, the area of the roof, the cube of the basement, the area of the walls below grade and the walls above grade, and the area of the interior partitions. With these areas and the unit prices which will be given each month a total price can be arrived at which can be used for a preliminary estimate. It should be emphasized that the information given can only be applied to preliminary estimates because it is not possible in the scope of these articles to provide information for detailed estimates. The purpose is to

enable the architect, and particularly the young architect who does not have access to a cost library, to produce reasoned preliminary estimates to replace unrealistic and unfortunate estimates based on the square or cubic foot methods which return later to haunt him. An explanation of how each element is measured, a definition of what is included in the element, and appropriate unit prices will be given each month as each element is dealt with.

Turning now from estimating to cost planning, I mentioned early in this article that one of the problems the architect has is to ensure that as the design proceeds towards working drawings the costs do not start edging up over the budget. This is one of the functions of cost planning. The other is to ensure that the client is getting the best value for his money.

When estimating, the area of the element is used in combination with the appropriate unit price to give the total cost of the element, and the sum of the elements gives the total cost of the job. At the same time the cost of an element can be expressed as a cost per square foot of the gross floor area. For example, the total cost of a school may be \$19.00 per square foot and of this the exterior cladding may represent \$2.50. The sum of all the square foot prices of the elements will total \$19.00.

When several buildings have been analyzed on this basis a pattern begins to emerge. The architect can begin to see how each of the elements should fit into his overall budget and he is able to plan the cost. When he has prepared his preliminary estimate and calculated the cost per square foot of the gross floor area of each of the elements he can compare these with other projects of a similar nature. He may find that in comparison with other jobs he is spending a disproportionate amount on floor finishes, or roof finishes. He can then check to see why this is so and see whether something should be done about it. In other words he has been provided with a tool to enable him to give his client the best value for his money, and to ensure that he is not spending more on any

element than its relation to the total project normally warrants.

Having set the total budget, and set a cost per square foot of the gross floor area for each of the elements, this now constitutes the cost plan. As the design proceeds, checks can be made at intervals to ensure that each of the elements is being kept within the budget. If it is subsequently found that one element has to be increased in cost, unless the client is prepared to accept this as an increase to his total budget, the money will have to come out of another element. In this it is like any other budgeting system, you have a certain income and you determine how the money will be spent. If you can't really afford one item of expenditure but find you can't do without it, another item of expenditure has to be reduced to help you pay for it.

This, then, is a necessarily simplified description of a particular method of estimating and cost planning. It is an attempt to give the practicing architect the general ground rules without going into all the complications and ramifications which are inherent in any sophisticated estimating system. It is as well to bear in mind however that if really efficient estimates are required this takes time and can become a full time occupation, both in the preparation of the estimates themselves and, particularly, in the research which is required to base them on. Much of what I have said, particularly with regard to cost planning, is probably now done by most architects, perhaps only intuitively. I hope that with the forthcoming articles in the technical section a more reasoned approach towards estimating and cost control will become the generally accepted practice.

Frank Helyar

Georges Candilis à Montréal

L'École d'architecture de l'Université de Montréal accueillait le mardi 16 novembre une conférence de Georges Candilis, invité aux journées d'urbanisme de Trois-Rivières. La presse québécoise a amplement parlé du séjour parmi nous de Monsieur Candilis, et de la qualité de ses causeries et de ses exposés.

A l'école d'architecture, après avoir été présenté par le Professeur Junius, Georges Candilis a choisi de parler "plus avec le cœur qu'avec la tête" et son improvisation auto-biographique a été fort appréciée des auditeurs (très nombreux).

Avec des mots très simples, Candilis a raconté son entrée à l'école d'architecture d'Athènes, et la difficulté à comprendre le langage de certains de ses professeurs, férus de classicisme. Puis l'arrivée à Athènes, au cours d'un congrès des CIAM, d'un groupe d'étrangers parlant très fort d'architecture, et parmi lesquels se trouvait le Corbusier. Le soir, celui-ci clôturait le congrès CIAM par une conférence, et Georges Candilis a évoqué la simplicité, la clarté de ce langage nouveau pour lui : celui de l'homme, celui de l'architecture.

Après la guerre, Candilis s'en fut à Paris, frapper à la porte de Le Corbusier, où il resta longtemps, travaillant et regrettant la façon dont se construisait alors l'Europe. Trois critères dominaient la construction : le nombre élevé de logements à construire, le temps de construction (que l'on voulait très court), le prix (que l'on voulait très faible). Ces critères quantitatifs ne permettaient pas d'obtenir la qualité.

Les techniciens, durant cette époque de reconstruction de l'Europe, n'étaient pas formés pour répondre aux questions posées par le monde moderne, et la formidable demande de la société industrielle. Par quelques exemples des programmes auxquels il eût à faire face, Georges Candilis a clairement exposé cette complexité du problème. Bagnols, avec un programme de 4,500 logements, Toulouse-Mirail, avec 100,000 personnes à loger, une Université

entière à construire à Bochum, dans la Ruhr, une autre à Berlin . . .

Tous ces projets, dont certains sont en voie de réalisation, dépassent naturellement les possibilités de l'homme seul, et le travail d'équipe s'avère nécessaire. Georges Candilis a insisté sur cette nécessité d'une équipe, qui ne doit pas être, selon lui, une "suite de personnes de même discipline, mais une réunion de plusieurs disciplines". Ceci suppose que nous parlions tous un même langage, celui de la sensibilité, celui de l'époque et de l'avenir à construire.

La conférence de Georges Candilis, et les documents qu'il a présentés, ont été l'une des meilleures soirées que l'École d'architecture de l'Université nous ait offertes depuis longtemps. L'assistance était nombreuse et fervente, il y avait des gens debout jusque dans les couloirs d'une école qui n'est plus à l'échelle des besoins physiques.

J. Folch-Ribas

Les Heros Sont Fatigues

J'évite de faire de la critique destructive. Je voudrais cependant faire une entorse (courte) à ce principe, pour signaler la lamentable exhibition, à l'École d'architecture, de Monsieur Richard Neutra, architecte américain. Monsieur Neutra a fait perdre une soirée à une foule d'étudiants et d'architectes qui n'avaient pas hésité, sur la foi de l'oeuvre (passée) de Neutra, à se déranger.

J. Folch-Ribas

Two New Schools of Landscape Architecture at Toronto and Guelph Universities

Canada now has two schools awarding Bachelor of Landscape Architecture (BLA) degrees.

The new School of Landscape Architecture at the University of Guelph and the Division of Landscape Architecture at the University of Toronto opened their doors to first year land-

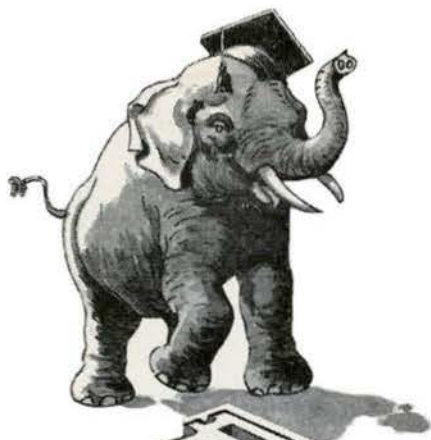
scape architecture students last September. Both will be four-year undergraduate courses.

The course at the School at Guelph, under the direction of Professor Victor Chanasyk, MLA, CSLA, includes urban planning as well as landscape design and the natural and social sciences. The School will be under The Ontario Agricultural College, whose Dean, Dr N. R. Richards, emphasized the need for planning of urban renewal and expansion, and industry and traffic systems in announcing the curriculum.

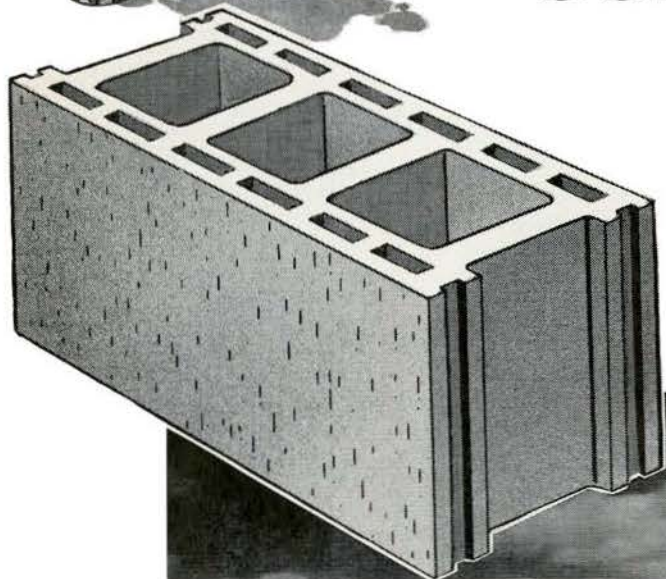
The Guelph University course outline, describing landscape architecture as the social art of designing land for optimum use and enjoyment, divides the work into four basic phases. The outline states : "The first four semesters of the BLA degree program are devoted largely to basic study : design, the natural sciences, architecture and urban planning. The final four semesters are devoted to professional courses : landscape design, planning and construction but with the addition of the social sciences and humanities to give soundness of direction to the practice of design and planning."

The new Division of Landscape Architecture at the University of Toronto, like the Division of Town & Regional Planning, is an integral part of the School of Architecture. Landscape students thus have the valuable and stimulating experience of working with and learning from students and staff engaged in closely related professional disciplines. In the first year the architectural and landscape programs are practically identical with several common lecture courses and design projects. Thereafter landscape students become more involved with problems related, for example, to urban design, green-belt planning, highways, local, regional and national park systems etc. During the summer field study courses will be arranged.

Throughout the course emphasis will be placed upon team work with architects and others concerned with shaping the human environment. Enquiries and applications for the 1966-67 session should be made to Dr T. Howarth, Director of the School of Architecture.



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Positions Wanted

British architect, graduate Leeds School of Architecture 1950, ARIBA, experienced in schools, technical colleges, hospitals, seeks position in Canada, arriving in Toronto in February 1966. Box 126, Journal RAIC / L'IRAC.

Two architects, husband and wife, of Politecnico, Milan, Italy, seek employment in Canada. He, age 36, fluent knowledge of Italian, Spanish and English, has experience in town and regional planning, construction and reinforced concrete. Colombian (South America) citizenship. She, age 30, fluent knowledge of Italian and Spanish, has experience in interior architecture, furniture and industrial design. Italian citizenship. Please write Box 127, Journal RAIC/L'IRAC.

British architectural assistant, 33 years old, Associate of the Manchester College of Technology, experienced in factories, hospitals, schools, universities and residential blocks, wishes employment in Canada. Reply D. V. Ewart, 158 Caldly Road, The Parsonage, Handforth, Cheshire, England.

Filipino architect, 26 years old, graduate from M.L.Q. University in 1962 (BSc), four years office experience, wishes employment in Canada. Write Rodolfo A. Victorio, 1908 Obisis St. Pandacan, Manila, Philippines.

Graduate of Sir J.J. College of Architecture, Bombay, Government Diploma in Architecture, AIIA, five years' practical experience, 25 years old, seeks position in Canada. Reply R. H. Kapadia, 43 Fergusson Road, Bombay 13, India.

Chinese architect, 28 years old, graduate from Cheng Kung University (BSc), four years experience, wishes employment in Canada, preferably in Toronto. Please write Hung-Kwan Sit, 18 Homantin Street, Kowloon, Hong Kong.

Filipino architect, 34 years old, graduate from M.L.Q. University, Manila (BSc), 12 years office experience in cost estimates,

supervision and inspection of constructions interior decoration and landscaping, wants employment in Canada. Reply to Florante J. Talampas, Banalo, Bacoor, Cavite, Philippines.

Filipino architect, 22 years old, graduate from University of Sto Tomas (BSc), three years undergraduate experience, seeks position in Canada. Reply Robert D. Lopez, 1171 Belen Street, Paco, Manila, Philippines.

Filipino architect, 33 years old, graduate from University of Sto Tomas (BSc), 11 years office experience as Designer and Project Engineer. Write Rodolfo M. Lagdameo, 151-A de Jesus, 11th Avenue, Grace Park, Caloocan City, Philippines.

Indian architect, 26 years old, graduate from Madras University, (BArch), with three years office experience, seeks position in Canada. Write T. S. Gurumurthy, 4 Bakthavathsalam Street, Madras-33, India.

Filipino architect, 29 years old, graduate from Mapua Institute of Technology (BSc), nine years experience, wishes position in Canada. Write Florencio S. Zaballero, 30 Cadig Street, La Loma, Quezon City, Philippines.

Registered Filipino architect, 29 years old, graduate from Mapua Institute of Technology, nine years experience, wishes position in Canada. Write Benjamin M. Ramos, 2524-F Taft Avenue, Pasay City, Philippines.

29-year-old Chinese Engineer, graduate from the Chu Hai College (Engineering Diploma), experienced in timber structures and steel structures for houses, schools, factories and theatres. Reply Chan Kam Hung, 1001 Lotus House, So Uk Estate, Kowloon, Hong Kong.

Indian architect, 32 years old, national diploma in architecture April 1964, associate of Indian Institute of Architects, undergraduate experience as a draftsman and four years office experience as an architect. Write Ram Karam, N.D.Arch., AIIA, 51/38 Rajendra Nagar, New Delhi-5, India.

Chinese Architect, 25 years old, graduate from the Hong Kong Technical College, 5 years experience wishes a position in Canada. Write: Wong Bing Chuin, Flat "C" - 12th Floor, 694 King's Road, G.P.O. Box 14605, Hong Kong.

Filipino Architect, 27 years old, graduate from the Far Eastern University, School of Engineering and Architecture, seven years office experience as architectural draftsman, artist illustrator, sketchman and delineator, seeks employment with a Canadian firm. Reply Roberto P. Mercader, 3210-B F. Roxas Street, Sta. Ana, Manila, Philippines.

Filipino Architect, 30 years old, graduate from Sto. Tomas, seven years office experience wishes to immigrate to Canada. Reply Benjamin D. Lopez, 123-A Labo Street, La Loma, Quezon City, Philippines.

Chinese Architect, 28 years old, graduate from Cheng-Kung University in Hong Kong (BSc), three years experience as an assistant architect, seeks position in Canada. Reply Wm. P. C. Dunn, 302C Prince Edward Road, G/F Kowloon, Hong Kong.

Position Vacant

American architectural and engineering firm has openings for an experienced architect and one or two architectural draftsmen. Possible openings for a structural draftsman, site planner, and heating-air conditioning engineer. Applicants are invited to submit their particulars to Box 128, Journal RAIC/L'IRAC.

AA School, London, Wants Principal

The Architectural Association School in London, England, founded in 1847, is looking for a new Principal. The appointee should be an architect, but this is not mandatory and the term is not less than five years.

Write the Director, The Architectural Association, 36 Bedford Square, London WC1. Applications close 28th February.

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Authors and Contributors

Aarons, A., Jan 55, Feb 13, Mar 22, Apr 38, May 16, Jul 46, Aug 14, Sep 15, Oct 24, Nov 16, Dec 23; *Anderson, B.*, Mar 74; *Andrews, J.*, Sep 38; *Angrave, J.*, Apr 47; *Arnott, G.*, Nov 35.

Baker J., Sep 38; *Batchelor, P.*, Feb 22; *Bernholtz, A.*, Jan 15; *Berry, T. D.*, Mar 92; *Biddell, J. L.*, Mar 28, Apr 56; *Bland, J.*, Jan 14; *Bloc, A.*, Jul 34; *Blood, T. F.*, Feb 10, May 48; *Blouin, A.*, Feb 43; *Brown, F. B.*, Apr 8; *Brown, P. S.*, Dec 56.

Chambers, M., Jun 26; *Cullers, S.*, Sep 38.

Davidson, E. M., Nov 35; *Davis, Hon W. G.*, Apr 50; *Diamond, A. J.*, Sep 38, Oct 30; *Dumont, René*, Nov 51; *Dupuy, H. E. Pierre*, Jul 32.

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Jenkins, J. H., Dec 52.

Kahn, L. I., Nov 26; *Kaminker, B.*, Mar 65; *Keenleyside, P. M.*, Jan 8, May 79; *Kennedy, D. E.*, Dec 55; *Kovach, R.*, Aug 29.

Lalonde, J.-L., Jan 35, May 43, Sep 38; *Lamarre, D.*, Nov 35; *Langford, J. A.*, Sep 74; *Layng, J.*, Nov 20; *Leithead, W.*, Aug 29; *Leonard, A.*, Nov 61; *Long, J. W.*, Feb 10; *Lukeman, E.*, Apr 42.

Marani, F., Jun 10; *Mayerovitch, H.*, Jul 40; *Mikluchin, P. T.*, Oct 83; *Munro, E.*, Jun 73; *Moulds, H. A.*, Jul 58.

Nicol, F. J., Jan 25, Nov 35.

Oman, A. E., Dec 50; *Oxley, Loren A.*, Nov 35.

Parkin, J. C., Jun 57; *Pettick, J.*, Oct 79; *Platts, R. E.*, Dec 49; *Prack, A.*, Mar 91; *Price, F. W.*, Mar 14, Apr 10, May 9, Jun 14, Jul 49, Sep 9, Oct 9 & 14, Dec 11.

Reid, J. L., Mar 69; *Richardson, J. K. D.*, Feb 53.

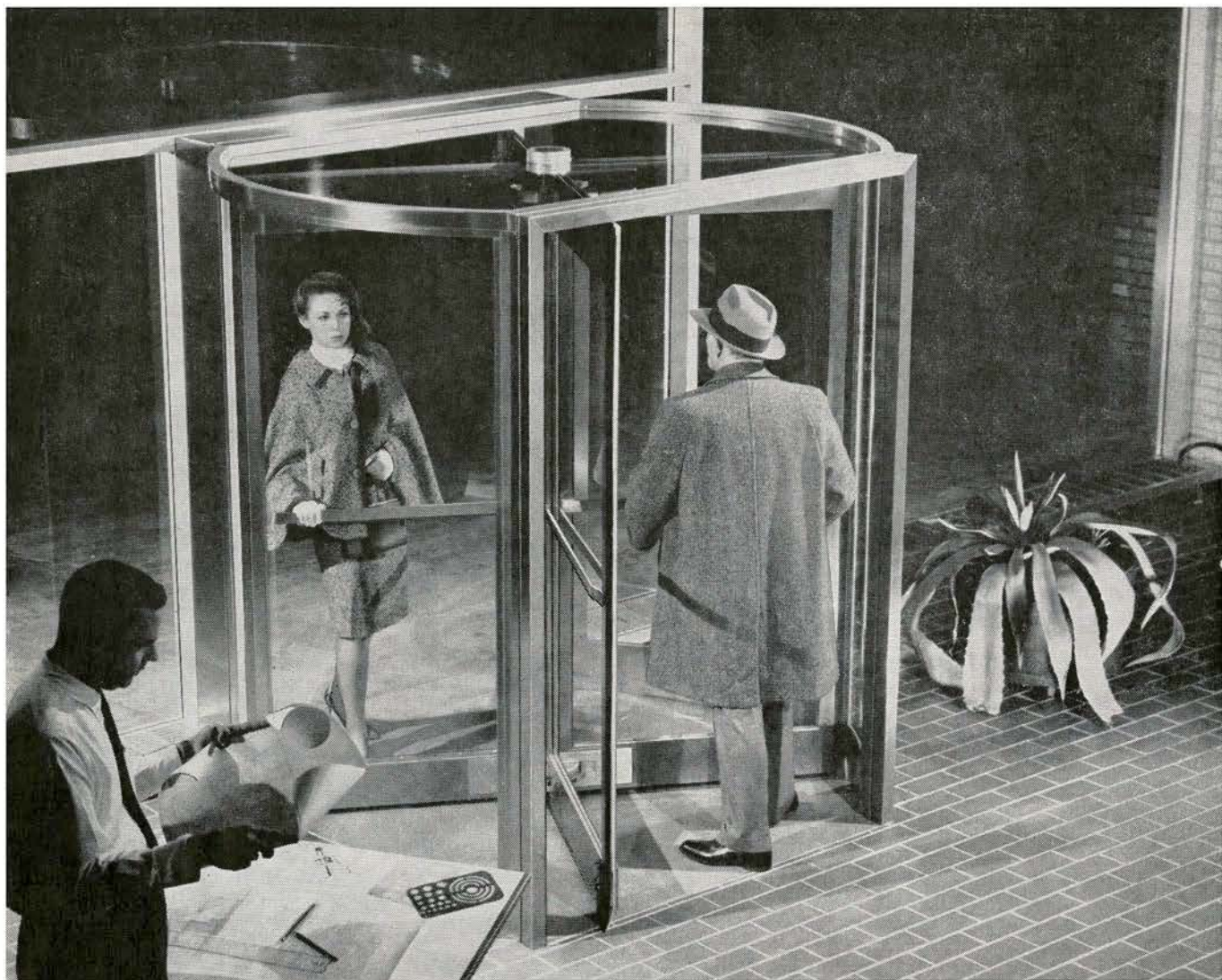
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