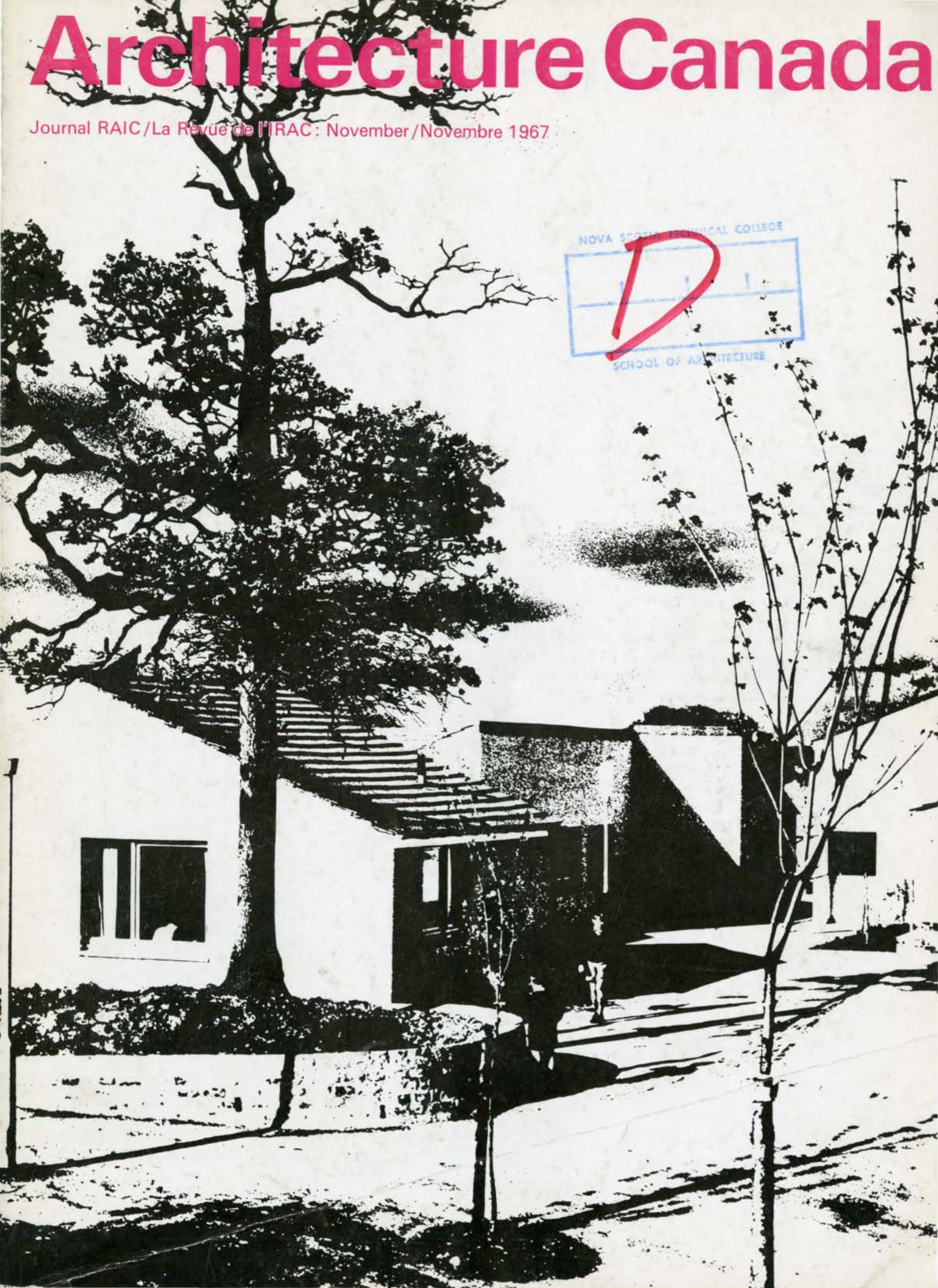
Architecture Canada

Journal RAIC/La Revue de l'IRAC: November/Novembre 1967



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But, if this fingertip source of reference material **is** of use to you, order your copy of Architectural Directory Annual (ADA) today. It is available from RAIC Publications Board, 160 Eglinton Avenue East, Suite 307, Toronto 12, 416-487-5591. Cost to non-members RAIC is $20 per copy, 2 at $18 each, 3 at $15 each.

This year we have added sectional tabs and telephone numbers for your convenience.

*Architectural Directory Annual 67/68

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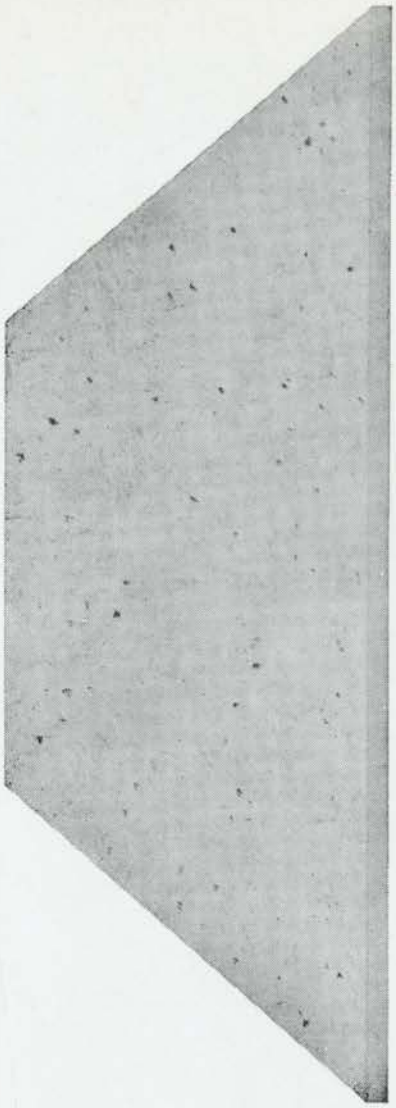

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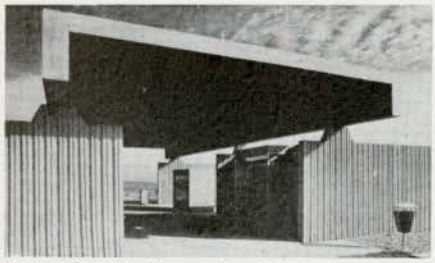

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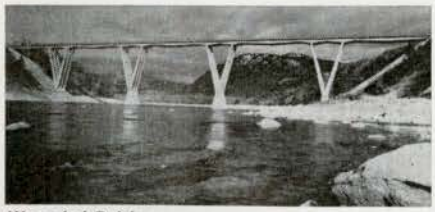


Kinnaird Bridge

Concrete Award of Excellence

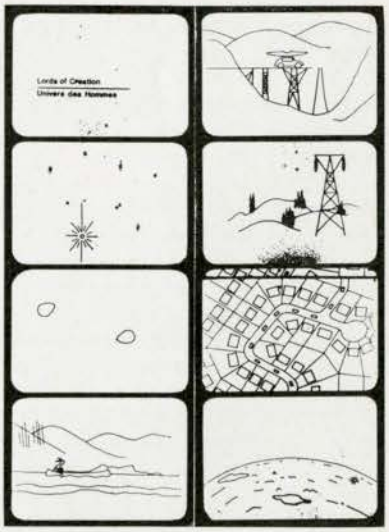
Design—Canada Concrete Awards

Three Awards of Excellence and 14 Merit Citations were given to architects, engineers and builders for their imaginative use of concrete in buildings and bridges in the first Design-Canada Concrete Awards program 1967, sponsored by the National Design Council and the Department of Industry in association with the Portland Cement Association.

Awards of Excellence were won by Greenspoon, Freedlander and Dunne, Architects, Luigi Moretti, Consultant, D'Allemagne and Barbacki, Consulting Structural Engineers, Pier Luigi Nervi, Engineering Consultant, for Place Victoria Stock Exchange Tower, Montreal; Clifford Wiens, Architect, for the Trans-Canada Camp Site Maple Creek, Saskatchewan; and Choukalos, Woodburn, McKenzie, Maranda Ltd, Engineers, for Kinnaird Bridge, Columbia River, Kinnaird, B.C.

Merit Citations were presented to Kerr Cullingworth Riches Associates, Architects, Reid Crowther and Partners Ltd, Engineers for the Pumphouse and Landing Dock, Wascana Centre; Lemay Leclerc and Trahan, Architects, Lalonde, Valois, Lamarre, Valois & Associates, Engineers, for Eglise St Jean Baptiste de la Salle, Montreal,P.Q.; Erickson/Massey Architects, Stefan Faliszewski, Structural Engineer, for Water Tower, Simon Fraser University, Burnaby, B.C.; McMillan Long & Associates, Architects, Ricketts Evers & Associates Ltd, Engineers, for St Mary's Elementary and Junior High School Addition, Calgary; Page & Steele and John Andrews, Architects, Ewbank Pillar & Associates Limited, W. A. Wyszkowski, Engineers, for Scarborough College; Papineau/Gerin-Lajoie/LeBlanc, Architects, Cartier, Cote, Piette, Boulva, Wermenlinger, Engineers, for Peel Subway Station, Montreal; Viljo Revell, John B. Parkin Associates, Architects and Engineers, for City Hall, Toronto; McMillan Long & Associates, Architects, T. Lamb McManus & Associates Ltd, Engineers, for Calgary Centennial Planetarium, Calgary; L. C. Johnson, P.Eng, K. H. Arnott, P.Eng, M. Havlasek, P.Eng; Bridge Engineer's Office, Department of Highways, B.C., for Pemberton Avenue Pedestrian Overpass, North Vancouver; Jean-Jacques Lipp, Engineer, for Viaduc OG-35 Boucheville, P.Q.; K. G. Bassi, P.Eng, B. R. Davis, P.Eng, C. S. Grebski, P.Eng, J. L. Keen, P.Eng, Department of Highways, Ontario, Engineers, for Black Creek Bridge, Highway 400, Toronto; McBride-Ragan, Consulting Engineers Ltd, for Ardrossan Grade Separation, Highway 16, Edmonton; John B. Parkin Associates Architects and Engineers, Consulting Architects, De Leuw Cather and Company of Canada Limited, Structural Engineers, for Rosedale Valley Bridge, Toronto; and B. S. Richardson, P.Eng, A. M. Toye, P.Eng, B. R. Davis, P.Eng, M. J. Gvildys P.Eng, Engineers, for Spadina Bridge No. 11, Spadina Expressway and Macdonald-Cartier Freeway, Toronto.

The Awards of Excellence trophies were specially created by Toronto sculptor Ted Bieler.



Lords of Creation

Above, frames from Gerald Robinson's film "Lords of Creation", first prize winner at the Festival of Canadian Films organized by the National Film Board. The film is a combination of animation and photography; the electronic sound track was composed by John Mills-Cockell, Toronto.

Canadian TV Film Wins Czechoslovak Award

The television film on Simon Fraser University, one of four films on Canadian architecture in the CBC series "A Sense of Place" telecast in the fall 1966, has won the Czechoslovak Television Prize at the Second International Festival of Architectural Films in Prague. The award was made for the production and direction by Vincent Tovell and the photography of Doug Mackay.

Second Design Centre

Canada's second Design Centre, similar to the one in Toronto, is now open at the Better Living Centre, Place Bonaventure, Montreal.

Lack of Interest in Church Architecture at Congress on Religion, Architecture and Arts

We asked Prof. Radoslav Zuk of the McGill School of Architecture to give us his impressions of the 1967 International Congress on Religion, Architecture and the Visual Arts held in New York August 27–September 1, and here is what he writes: "About the major lectures given, the discussions were very broad, concerned with fundamentals of religion and society. As a consequence, no definite valuable ideas on church architecture have been formulated and those stated were rather narrow and negative. The photographic exhibition included the usual popular modern church buildings. Most of them were strongly criticized.

"In general the theologians advocated anonymous buildings with an emphasis on service and multi-purpose: any assembly hall or large room would do. Therefore it was not surprising that a general lack of interest in architecture developed as the Congress progressed. This became most dramatically evident when the bus tour of significant new religious buildings in the New York area had to be cancelled because only eight out of some 1,200 participants registered for it. Most of the architects who spoke deplored this lack of concern for architecture, among them Percival Goodman, Philip Johnson, Justus Dahinden, Heimo Widtmann, and myself. However, the basic questioning atmosphere of the Congress was not without benefit. It forced us to search once again for fundamentals and this can lead only to better architecture.

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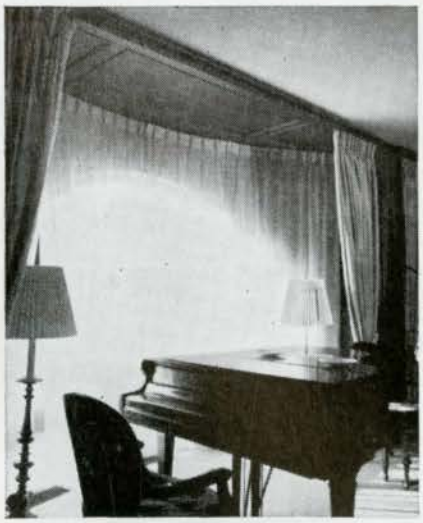

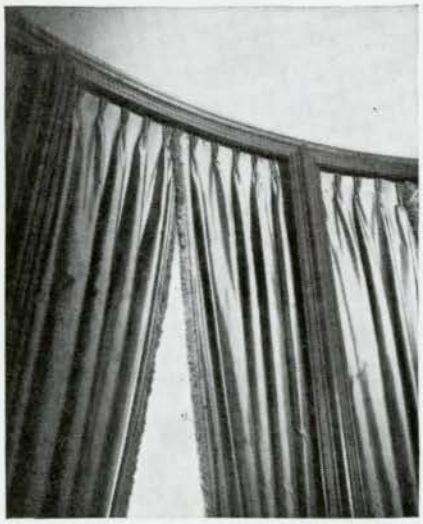

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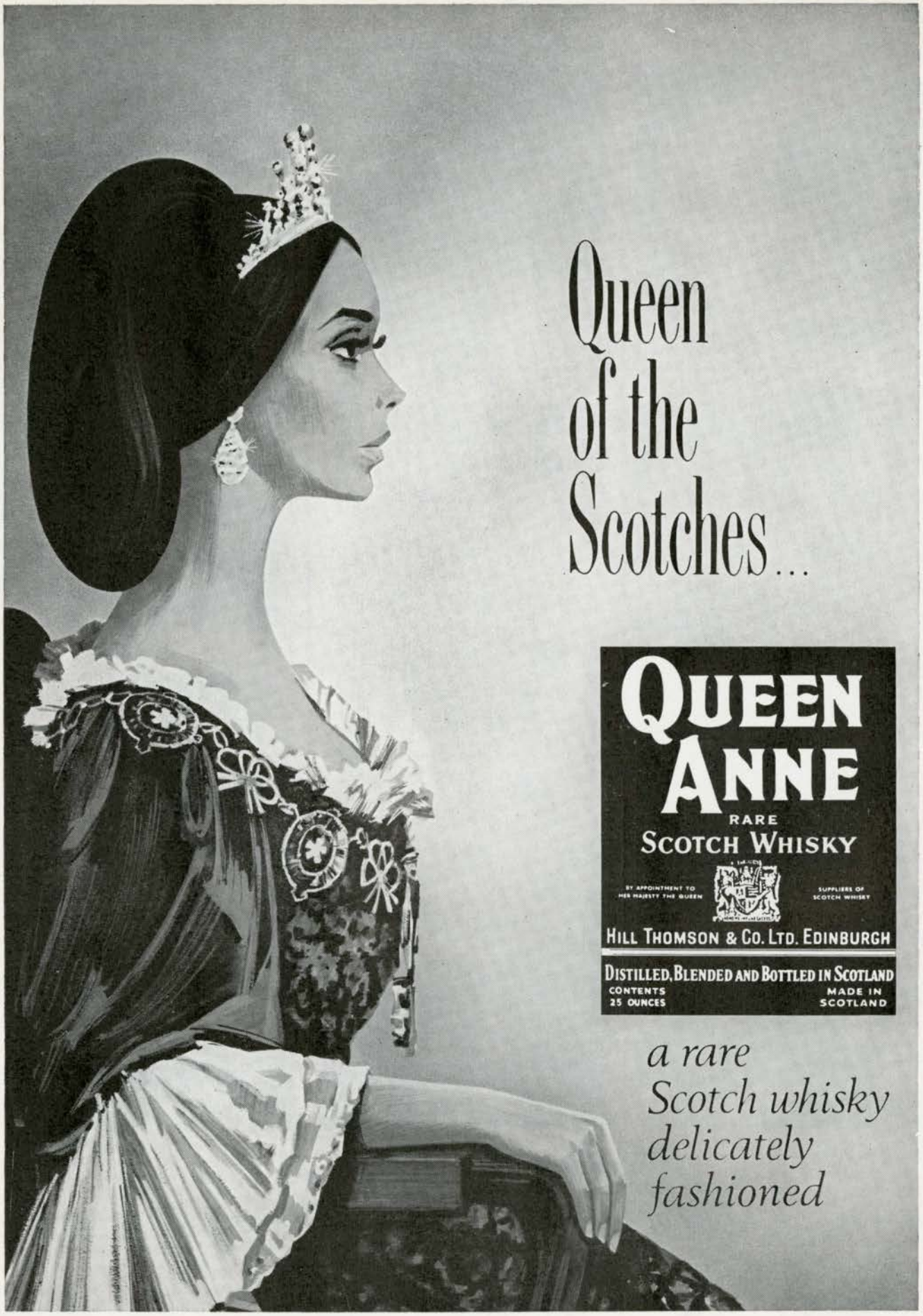
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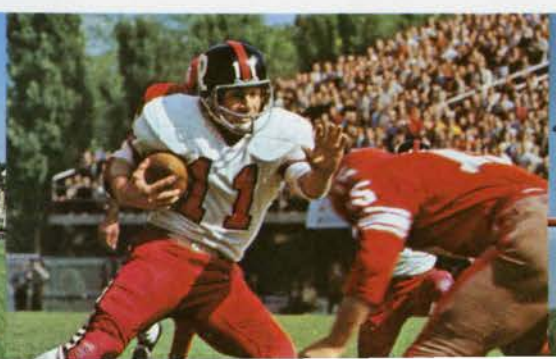

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RAIC, AIA Officers Meet

Problems of the architectural profession in Canada and the United States – education, professional practice, public and governmental relations, are common to both countries, officers of the RAIC learned during a two-day meeting with AIA officers and staff in Washington October 4–5, and the AIA experiences and studies of the problems and programs to deal with them would be of practical assistance to the RAIC.

The meeting was arranged to explore the possibilities of closer liaison between the two professional organizations, particularly in exchange of information on procedures and documents and surveys and studies, and to enable RAIC officers to evaluate the structure of the AIA and the services it provides to its members in comparison with the structure and practices of the RAIC. From the RAIC were President James E. Searle (*F*) Honorary Secretary W. G. Leithead (*F*), Honorary Treasurer Gordon Arnott and the Managing Editor of the RAIC Publications Board, Walter Bowker. The visitors were welcomed by AIA President Robert Durham, *FAIA*, and Executive Director William Scheick, *FAIA*, and the two-day program was guided by the AIA Administrator of Institute Services, J. Winfield Rankin, *Hon. AIA*. An introductory explanation of the AIA structure was followed by detailed explanation and discussion by the heads and senior staff of the four Headquarters departments, Institute Services, Professional Services, Business Management and Public Services.

It was an illuminating and very useful experience for the visitors, and one made doubly pleasant by the forethought of the hosts in planning the program and making staff available to explain and discuss details; and in the warmth of the hospitality extended throughout the entire visit.
Of the impressions left with the visitors, the most important are: As a professional organization, the AIA is outstanding, and the best evidence of this is in its support by the US architectural community. Between 1935 and 1966 the membership (which is voluntary and separate from registration) grew from 3,435 to 18,876, and its annual income from $63,680 to in excess of $2 million.

Membership confers status but with it is an acceptance of responsibility for service to the Institute and for the advancement of architecture. This chiefly takes the form of service on chapter, state and national committees, and the result is a comprehensive series of programs in fields benefiting the student, the practitioner and the profession generally, government and public at all levels. These programs, including "grass roots" activities in the architectural community, are expertly guided and vigorously pursued by committees and staff.

There is a strong sense of purpose, coupled with a willingness and ability to marshal manpower and resources to meet the short range needs of the profession and long range needs as their nature and relative importance emerge through experience and research.

The value of close liaison with the AIA, having without question been established, undoubtedly will continue to grow, and the AIA's generous offer to the RAIC to make the most of material developed that is as useful to American architects as to Canadians is greatly appreciated. □

Rencontre des officiers de l'AIA et de l'IRAC

Problèmes professionnels au Canada et aux Etats Unis – l'éducation, l'exercice de la profession, relations publiques et gouvernementales se ressemblent dans les deux pays; c'est ce que les officiers de l'IRAC ont constaté en rencontrant les cadres de l'AIA à Washington le 4 et 5 octobre. La conclusion tirée de l'étude de tous les problèmes serait d'une aide efficace à L'IRAC.

Le but de cette réunion fut de trouver les moyens d'une collaboration plus étroite entre les deux organismes et en particulier l'échange d'informations concernant les procédures, documents, comptes rendus et études, afin de permettre aux officiers de l'IRAC de connaître la structure de l'AIA et les services rendus à ses membres. James E. Searle (*F*) président, W. G. Leithead (*F*) secrétaire honoraire, Gordon Arnott, trésorier honoraire, et le rédacteur gérant de la Commission des Publications, Walter Bowker, représentaient l'IRAC. Robert Durham (FAIA) président et William Scheick, FAIA, directeur administratif de l'AIA, leur souhaitaient la bienvenue.

J. W. Rankin, administrateur des services de l'AIA, menait la discussion. Après quelques mots d'introduction sur la structure de l'AIA, suivait une discussion détaillée.

La prévision du programme, la disponibilité du personnel et l'hospitalité chaleureuse furent d'une grande aide pour les visiteurs. L'organisation de l'AIA est sans aucun doute remarquable et la meilleure preuve en est le soutien que toute la profession lui apporte. De 1935 à 1966 le nombre d'adhésions est passé de 3,425 à 18,876 et le revenue annuel de $63,680 à un excès de 2 millions de dollars.

La qualité de membre leur donne un statut spécial et la responsabilité de servir l'Institut pour le bien de l'architecture est grande, ceci sous formes de comités de tous genres. Il en résulte une étude d'ensemble de programmes dans des domaines qui profitent aux étudiants, architectes, au publique et au gouvernement à tous les échelons. Ces programmes comprennent des activités à l'intérieur de la communauté et sont dirigés par les cades. Il existe un sens du devoir bien arrêté, doublé d'une capacité de disposer de l'effectif et des ressources pour les besoins de la profession.

Ayant établi une collaboration étroite avec l'AIA, celle-ci ira en grandissant et l'offre généreuse de profiter du matériel existant fut très appréciée. □

Champlain College, Trent University, Peterborough, Ontario
Architect: Thompson, Berwick, Pratt and Partners, Toronto
Structural Engineer: M. S. Yolles Associates, Ltd., Toronto

Bishop Grandin Academic Vocational High School, Calgary, Alberta
Architect & Engineer: Cohos-Delesalle & Associates, Calgary

Concrete proves itself in the classroom. Five Canadian schools selected for their imaginative uses of concrete

From Vancouver to the Maritimes, Canadian architects are constantly devising new and attractive ways of using concrete in the construction of schools. The five schools shown here give some idea of the imaginative use of this material.

Exposed aggregate has been used at Trent University and sculptured concrete at Bishop Grandin High School to good effect. Textured concrete at Selkirk College provides a handsome contrast to the precast elements. Prestressed double tee floor and roof slabs went into the Regina School while Tracy's Centre d'Apprentissage makes extensive use of cast-in-place concrete.

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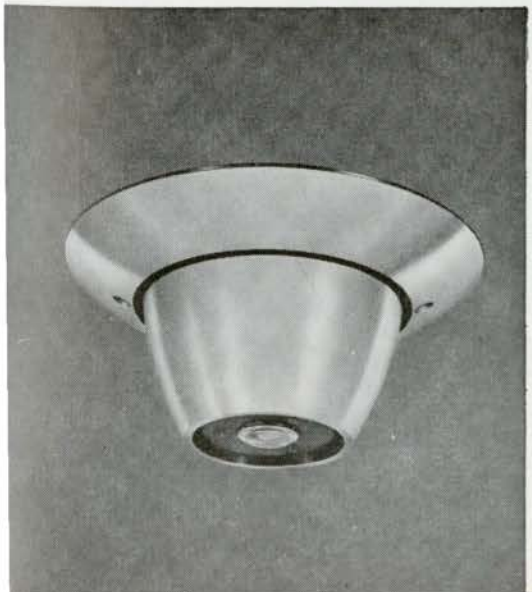

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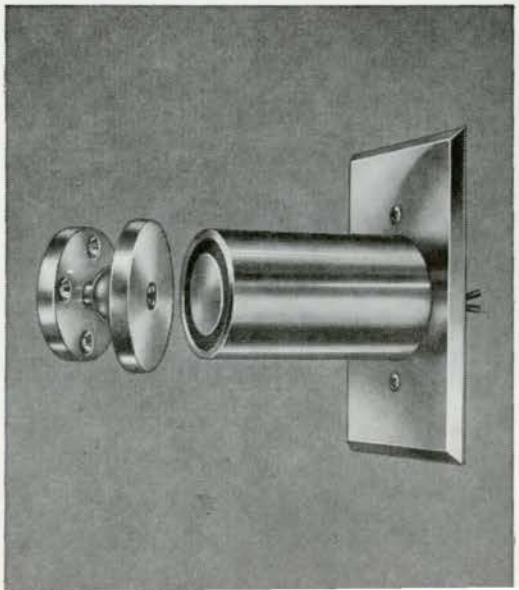

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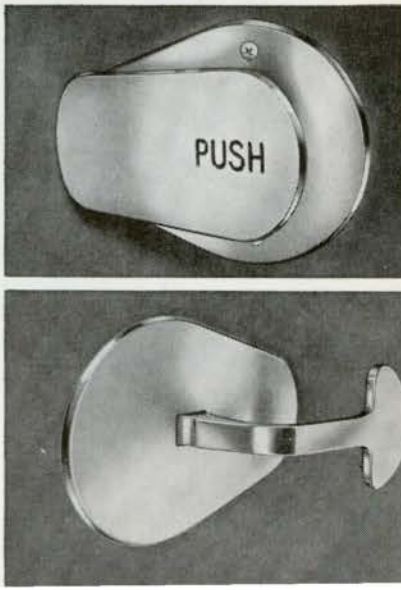

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Across Canada Round Up

Arts 3

Calling all Architects ! !

For the next three issues, these columns are open to you. Without comment or critical assessment this space will be devoted to photographs submitted of art work commissioned since 1965. Architects and artists are invited to send in photographs of murals, screens, stained glass, tapestries, special features, artifacts or what have you.

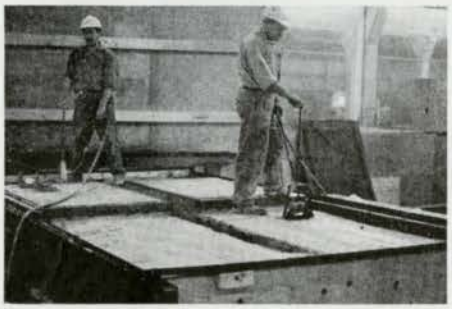
This issue is drawn from the files of the Allied Art Department, and further coverage is desirable.

West Coast please note . . . if you know of works please advise us. The intention is to open up liaison and see, in addition to the major commissions, some of perhaps more modest and minor work which is none the less important in the growth of allied art practice. Too often these small but important contributions of special features such as grilles and wall treatments, altars, tapestries, door handles, etc, where artists are employed, are overlooked. We are, as usual, seeking only a high standard of professional work. However, degree of excellence is not the point at issue. In this case we are seeking to see truthfully the picture of what is happening in an overall sense . . . outside the big metropolis as well as inside. Deadline for the December issue is November 27. Deadline for the January issue is December 15.

Over to you . . . pictures please, 8" by 10" glossy.

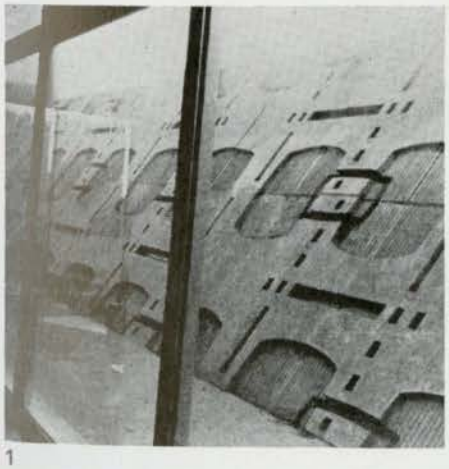
2

Mural en Béton Coulé Sur Place, Concrete Mural, Technical School, Verdun, P.Q.(**2**) Artist, Claude Théberge, Architects, Lemay, Leclerc, Trahan



3

Precast concrete panels (**3**)(**4**) New Medical Science Building, University of Toronto. Artists, Robert Downing in association with Ted Bieler, Architects, Govan, Kaminker, Langley, Melick, Devonshire, Wilson, and Somerville, McMurrich and Oxley



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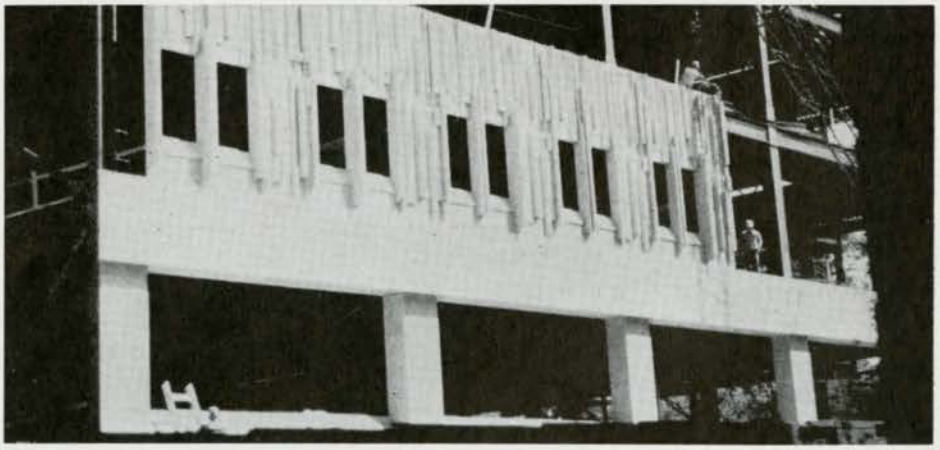
Precast light well slabs, Student Union Building, University of Victoria.(**1**) Artist Herbert Siebner, Architect, John Di Castri



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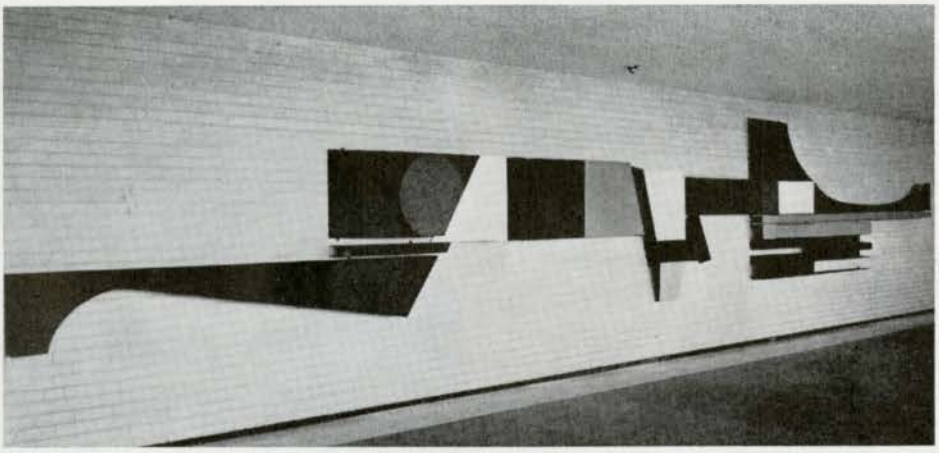


7

Door Pulls, Enamel and Copper, Waterloo Lutheran University Library, Waterloo, Ontario.(**5**) Artist, Margit Gatterbauer, Architects, Kruschen and Dailey

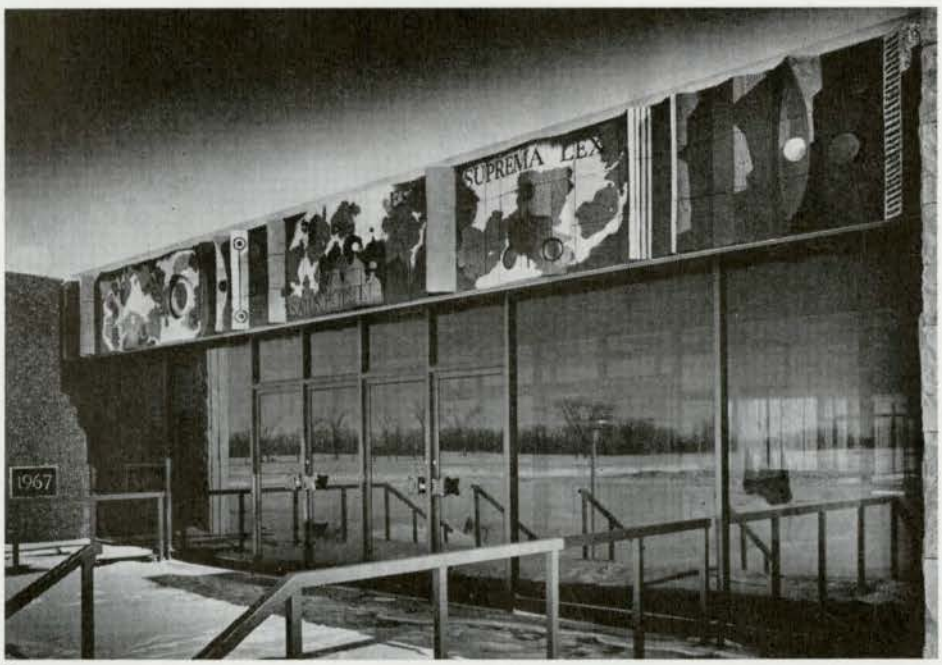
Door Pulls, Enamel and Copper, Atlas Steel Company Building, Etobicoke, Ontario.(**6**) Artist, Alan Perkins, Architects, Bregman and Hamann

Mural in Metal, Université de Montréal, Montréal.(**7**) Artist, Gerald Zahnd, Architects, Jodoin Lamarre Pratt

Ceramic Mural, Peel County Court House, Brampton, Ontario.(**8**) Artists, The Five Potters, Architect, R. P. G. Pennington

Mosaic Mural at Canadian Imperial Bank of Commerce, Main Office, Vancouver, B.C. (**9**) Artist, B. C. Binning, Architects, McCarter, Nairne & Associates

Anita Aarons



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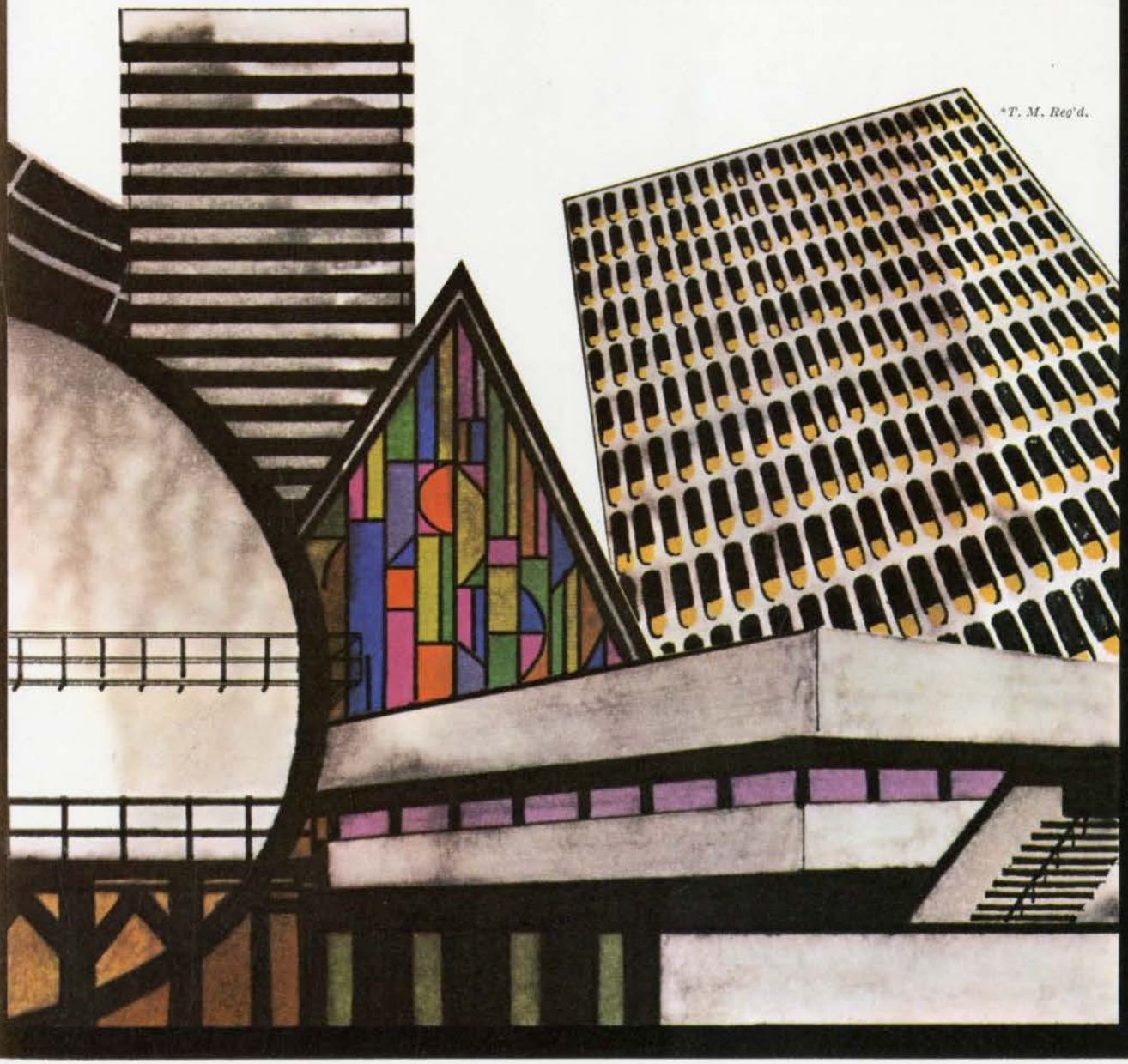

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The public school Rembrandts who turned out the above work likely couldn't tell you the name of the architect who specified electric heating for their school. But the Fort William Board of Education could. And they could tell you a thing or two about how well electric heating has worked out in their Redwood Public School.

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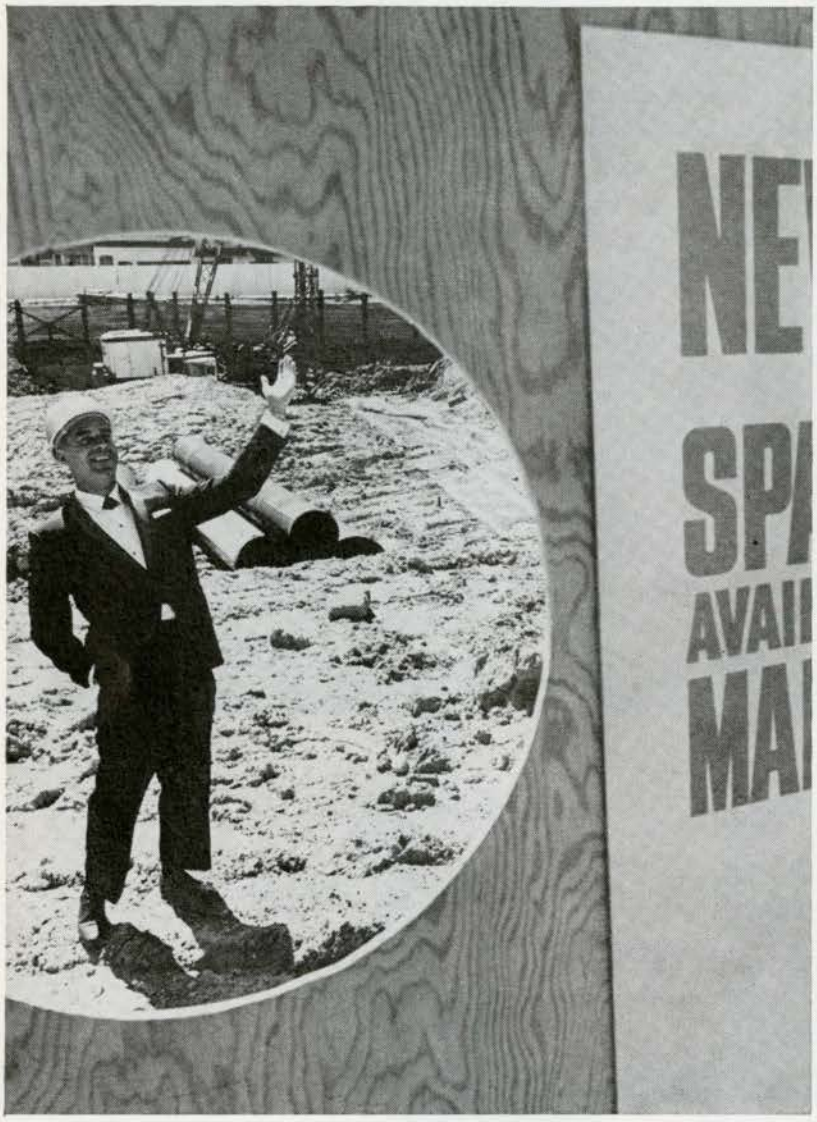

Consider the cost of equipment, material and labour for plumbing, heating and ventilation in the average suite in an apartment building.

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Review Revue 4

The Fourth Annual Review of the Economic Council of Canada is a remarkable document. It is a powerful, measured description of Canada until well into the 1970's – its population and labor force, its potential output and demand trends and its urban growth. It is also a warning that to ignore inevitability, now recorded for politician, professional, entrepreneur and ordinary citizen alike, would be worse than folly – it is a predictable error.

The alternatives are clear: We can either plan for such inevitability, in order to create a well-organized society, or we can reel from crisis to crisis as they come upon us, with the attendant disruptions and inefficiencies – economic, social and physical, that ensue from such crash programs. Further, the scope and complexity of the problems, and the potentials, let it be remembered, grow. Crash programs will become increasingly insufficient to meet needs. We stand to face the gravest domestic challenge since the depression – the challenge of rapid urban growth – if machinery is not *now* set in motion in order to meet and exploit this challenge.
If we fail it can not be said that we lacked the skills or the resources, only the will.

We, the profession, have a duty and pleasure in responding. The president of the RAIC, James E. Searle, has communicated this concern to the Prime Minister. He has pointed out our willingness to contribute our special expertise in order to assist the wider concerns that face urban Canada. The Survey of the Profession in its first recommendation, states "that the RAIC join with the Provincial Associations and Institutes in a review of the Code of Professional Conduct to clarify and update its provisions, having regard to the need for a wider participation of architects in society's building program". We believe it necessary for the Federal government of Canada to ensure that "there are legislative provisions to facilitate effective planning, and the execution of development plans once they have been formulated".

We include in this special review, two editorials from the *Globe & Mail*, and the conclusion to the Fourth Annual Review.

Problems into Opportunities

"What first impresses about the fourth annual review of the Economic Council of Canada is the sense of excitement about the Canadian potential which runs through even the problems it presents. One remarkable characteristic of Dr J. J. Deutsch, the retiring chairman of the Council, is his capacity to be critical but never cynical. His ability to see the problems facing this country but also to see beyond them – or even through and resulting from them – the possibility for growth, for an expanding people in a rich land creating the well-organized society that will serve them best.

"Growth is certainly the keynote. Twenty-five million Canadians by 1980, a 25 per cent increase. The fastest-growing labor force in any industrial nation. A boom in cars that will even beat the boom in people, 11 million on the road by 1980, an increase of 60 per cent.

"Dr Deutsch sees not only vast growth in the public sector, but a country with the capacity to handle it without going to wrack and ruin. He does not talk of an abdication of government involvement in building the bold kind of Canada we want. He sees government involvement in building the bold kind of Canada we want. He sees government spending more money and having greater influence. But he does not see government taking over the private sector. That, too, has its huge role to play.

"What he does suggest is that it is time Canada stopped being taken unawares by the inevitable. Government could have seen the approaching education crisis (the birth rate was there to signal it); government could have seen the approaching housing crisis (the peak years for family formation were on the graphs). It could have planned to meet these inevitabilities in a logical and orderly fashion; but instead it still stumbles from crisis to crisis, sometimes creating long-term problems with its short-term remedies.

"Dr Deutsch urges every level of government to extend its planning, to see the problems coming, in education and in housing, in the vast extension of roads all those new cars will need, in the enormous shift of people from the country to the cities (81 per cent of Canadians will live in cities by 1980), in the growth of pollution, in the new needs of a depleted countryside. Anticipate these things, he says; they are inescapably there. Develop programs to deal with these facets of a growing country; in that way they can be converted from problems to opportunities.

"But in looking ahead, do not forget to turn around and constantly reassess the programs of the past, especially those designed on an emergency basis. Some that were temporarily necessary have become devouring burdens; and he cites the millions poured into the Maritime coal industry in an effort to preserve a dying industry when what was needed (and is only now being attempted) was replacement industry.

"There is a continuity to the Deutsch story. The basics of the first three Council reports move steadily through the fourth. The emphasis is still on increasing productivity: Canada will not get anywhere while its productivity lags a third below that of the United States. The opportunity to grow is in the success of the Kennedy Round, but it must be grasped; and here Dr Deutsch turns on the private sector. The old methods of doing business that worked behind the tariff protections will not serve; there must be change to fewer specialties and longer runs. And he gives the back of his hand to those short-sighted nationalists who would exclude foreign capital. Canada must have foreign capital to achieve its potential, reaching for it in a world where capital will be scarce because it has so much work to do. The recapture of economic independence will come with economic maturity.

"He is insistent on a better relationship among the three levels of government, on a

more viable form of municipal government, on the need of all for more highly qualified staff, greater research, on the absolute necessity of establishing priorities. Canadians can afford the good life, but only if they do first things first.

"But the theme of the review is that certain things are inevitably going to happen, and we can meet them as if they weren't and live in perpetual crisis. Or we can anticipate them and build toward them and use them to create an attractive society. It is heartening that Mr Deutsch seems confident that we will." *Globe and Mail 19/9/67*

Housing an End, not Means

"Warnings about the perilous state of the long-range housing outlook in Canada are not new, but it may be that the Economic Council of Canada, by gathering them together and adding the special impact of its own disinterested assessment, can raise government concern to the necessary pitch of urgency.

"The Council itself has sounded the alarm before. Its third annual review, presented last November, painted a gloomy picture of a fast-growing population facing higher rents because of a decline in housing starts. It called for swift action to head off the growing housing shortage which, it said, was partly caused by tight credit.

"A few weeks later, H. W. Hignett, president of Central Mortgage and Housing Corp., said that if policies of constraint continued to be called for in operating the Canadian economy, they should be aimed at sectors other than housing. 'Housing has borne enough of the burden of moderation in investment demand,' he said.

"The Economic Council has returned to the theme with greater emphasis in its fourth annual report. By its calculations, we will need about 190,000 new housing units a year between now and 1970; by 1980 the population will have pushed beyond 25-million, and 81 per cent will be city dwellers (in Ontario, 86 per cent). The combined populations of Montreal and Toronto alone will be about 7 million.

"The forecasts seem to dispose fairly thoroughly of the old ideas about containing Toronto at the 2-million mark. The serious state of the housing situation in the Metro area even now illustrates the intensive effort that will be called for during the next 13 years.

"There has not been effective planning for those who live in the area now, let alone anticipation of future needs. When we should be grappling with tomorrow's problems, we are struggling with programs that would not have been adequate half a decade ago.

"No determined attack on the national housing shortage can hope to succeed as long as there are government attempts to use housing as one of the instruments of economic regulation. There are less harmful regulators than the tap the federal Government turns on and off to control the flow of mortgage money. Housing policies should also rise above such dismally short-sighted measures as the 11 per cent sales tax on building materials. The Economic Council has joined the chorus demanding the removal of this foolish levy.

"The Council report performs an immense service in defining the dimensions of the problems that loom as we move into an era of intense urban dislocation. Not just in housing but in transportation, pollution of air and water, and in regional organization – a host of initiatives are called for from the three levels of government, which will find it increasingly difficult to play the Three Monkeys game." *Globe and Mail, 21/9/67*

Cheap Residential Mortgage Financing Needed

"Of all the major sectors of the economy, none will have to grow more rapidly than housing – at least to 1970, and perhaps even throughout the 1970's. This is a matter of major national importance if a growing housing shortage is not to become a serious national problem. Greatly increased physical resources will therefore be required in this field, including a substantially enlarged working force with appropriate skills and considerably enlarged capital and residential construction capacity. A large and sustained volume of residential mortgage financing will also be required.

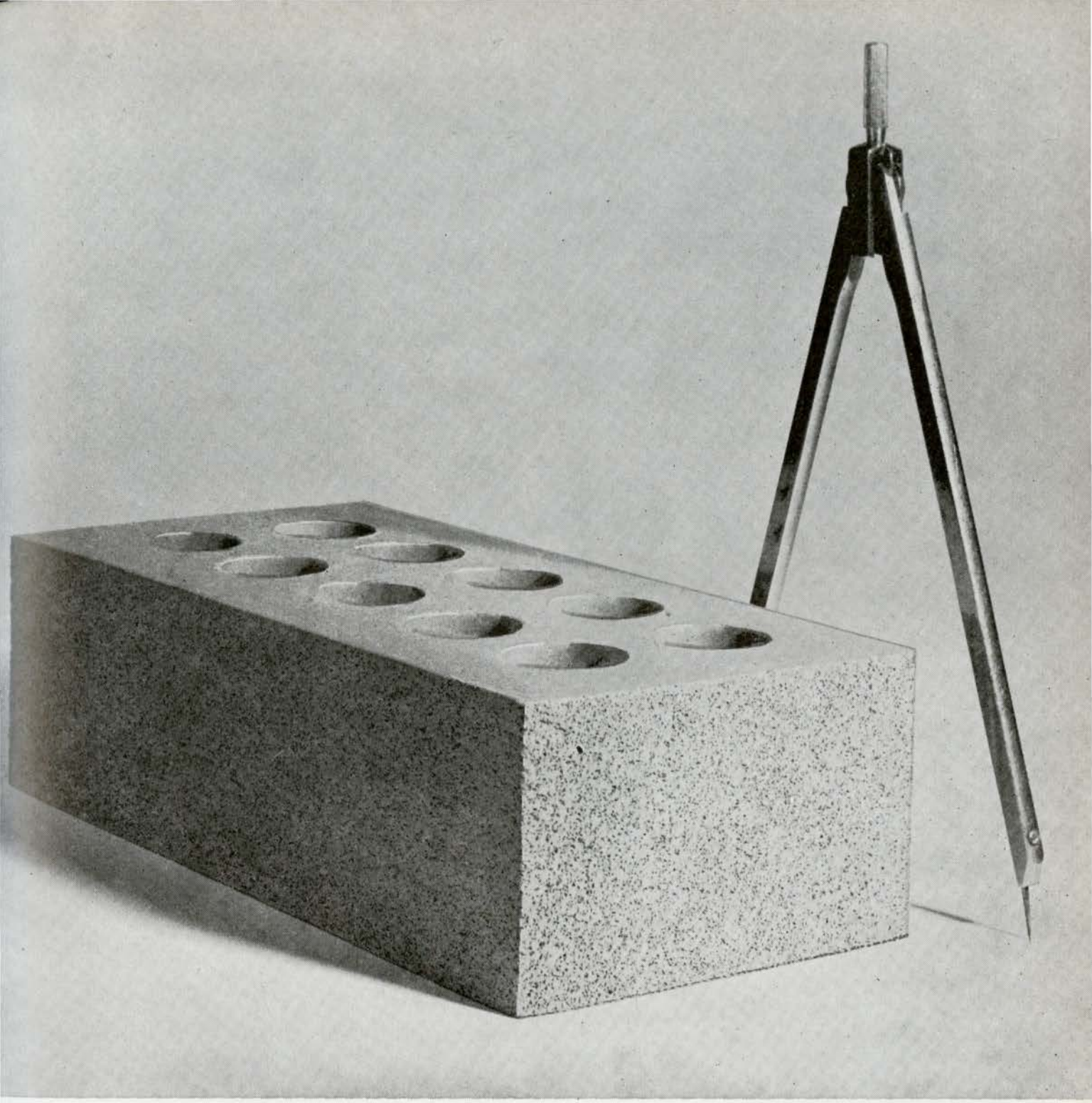
"In the past, monetary restraint has been one of the major policy instruments used to contain overheating the economy tending to generate excessive price and cost pressures. For institutional and other reasons, such restraint has tended to have particularly large effects on housing, both as a result of curtailing the availability of mortgage funds and of its impact on the capacity of the residential construction industry to build new housing. On the other hand, during periods of monetary ease, housing has tended to move ahead more strongly.

"The type of problem which tends to arise has been well illustrated in 1966-67. Monetary restraint in 1965-66 led directly to a substantial decline in new housing starts in 1966 (from 167,000 starts in 1965 to 135,000 in 1966). This, in turn, means that even though monetary conditions started to ease before the end of 1966, the volume of new housing completions will decline in 1967. With the rising numbers of new households, these developments have already resulted in very tight markets for housing in a number of urban areas, in a widespread reduction in vacancies, in a general increase in shelter costs, and in indirect upward pressure on wages (next to increases in food prices, increases in such costs appear to have the most direct and powerful effects of all consumer price changes exerting upward pressure on wages).

"Many European and other countries have suffered from severe and persistent housing shortages which have inhibited mobility of people and have produced other undesirable economic consequences. These are problems which Canada must strongly seek to avoid.

"In our view, housing has tended to bear too large a proportion of the burden of cyclical adjustments in the post-war period. The use of housing as an economic regulator should not be continued to such an extent in the future." *Fourth Annual Review*

A.J.D.



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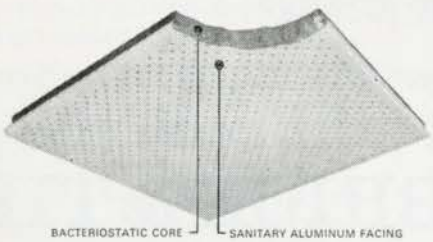

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Johns-Manville

Résumés

Page 35
L'environnement résidentiel dans la région urbaine. Résumé d'une étude en cours.
Wolfgang Gerson, FRAIC

Pour la plupart d'entre nous, l'environnement urbain détermine toute notre expérience. La région urbaine est devenue un nouveau système de contacts humains et de communication humaine ; la liberté et la facilité de faire ces contacts deviennent un déterminant majeur de la forme d'une ville. La vie exerce des contraintes de l'indépendance plus marquées sur l'individu. Un tiers seulement de l'environnement résidentiel est un milieu de familles et les séparations de la ville industrielle sont devenues surannées. Le désir d'exprimer leur vie et de la vivre selon leurs intérêts particuliers poussent les gens à se grouper en environnements différents dans une région urbaine hétérogène et afin de clarifier sa structure, il nous faut analyser les sortes de rapports déterminant les modes de vie. Cette étude propose qu'on analyse la région urbaine en tant que réseau de communications auquel est raccordé bon nombre est d'environnements. Nous avons donc étudié trois environnements sociaux de la région de Vancouver représentatifs des modes de vie typiques d'autres villes canadiennes. Chaque environnement possède ses propres facilités et un système d'espaces et de facilités déterminant son caractère basé sur l'étude et la description de son mode de vie. Pour déterminer le caractère d'un environnement il faut : 1) un modèle fondamental de circulation déterminant les rapports de l'environnement à toute la région urbaine. L'opération des voies de circulation peut faire d'une région soit un corps cohésif, soit empêcher les contacts sociaux dans la région. 2) Pour chaque environnement, un mélange approprié des activités déterminera les besoins spaciaux des habitations, institutions, services, espaces ouverts et des enclos pour tous. 3) Un système de rapports entre logements et institutions, besoins commerciaux et d'affaires. 4) Un système de contacts et de séparations dans la région, y compris les espaces ouverts et les enclos. 5) Une gamme de choix en types et en densités d'habitations. 6) Un système de contraintes et de libertés. d'exploitation immobilière.

A *Urbville* (développé par Dino Rapanos), vivent des gens des vieux pays récemment venus s'installer dans un milieu nord-américain, donc, leur adaptation au nouvel environnement les préoccupent. Leurs revenus sont modestes et leur sécurité dépend de leurs cultures, langues et expériences communes. Leur mobilité est restreinte et les hommes travaillent dans le même district où se trouvent leurs familles ; les femmes et enfants y passent leur temps. Il ressemble à un village où toutes les nécessités sont à portée de la main, mais dans le réseau urbain, ce village est modifié par d'autres moyens de communications, de transports et d'industries. Les conflits ainsi produits sont trop grands et doivent être ajustés sans nuire à la validité du village. Les familles avec enfants dominent, mais d'autres modes de vie doivent être accommodés. Puisque la vie dans la rue est importante, il faudrait éliminer l'automobile des rues. L'assistance sociale doit aider les difficultés d'adaptation, l'éducation manque. Alors, pour Urbville, nous avons choisi un plan structuré en artère dorsale et artères de côté exprimant le besoin de rapprocher tout le monde à la voie centrale, le coeur d'Urbville, et en même temps le raccordant étroitement à la région urbaine. Un tel environnement peut être adapté au système de rues existant sans conflit avec les régions avoisinantes. *Intropolis*, (développé par A. Watty), est lié géographiquement à une région administrative majeure, un quartier d'affaires concentré et un quartier d'amusements. C'est ici qu'on rencontre pour la première fois la région urbaine avec sa diversité de cultures, d'intérêts, de revenus et de gens. Intropolis attire deux types surtout, les jeunes adultes et les gens en retraite. La haute densité de population permet une liberté personnelle et une identité loin de la famille. Les familles avec enfants disparaissent (manque de facilités et de logements convenables, l'attitude des propriétaires).

Il existe donc une certaine nucléarisation dans les limites d'un dessin général. L'accessibilité mutuelle permettant le maximum d'interaction sociale et les différences en mobilité des divers groupes ont été combinées pour aider à définir les emplacements résidentiels (Voir diagramme). Les groupes les plus mobiles sont placés de façon à ce qu'ils passent par des groupes de moins en moins mobiles pour atteindre les nécessités au centre ville. Une grande variété et flexibilité d'habitations doivent être accomplies ; les plus grandes densités se trouvent à l'extérieur, les moins grandes au bord d'un système de parcs central.

Decentria (développé par R. D. Hassell) Les habitants de Decentria constituent un phénomène de notre société mobile. Les hommes ont peu de talents étudiés, donc changent souvent de travail et l'automobile est une nécessité en cherchant ce travail. Les femmes et enfants sont liés au milieu et les intérêts et amusements sont trouvés dans la vie des enfants ; l'influence de l'école est ressentie dans toute la communauté et son rôle dans l'avenir sera bien plus étendu, donc, le modèle institutionnel est la base des parcs, des systèmes pour piétons et voitures. L'aménagement de Decentria montre plusieurs points centraux et un dessin répété à l'infini. L'unité de base est un terrain public accessible ayant un jardin d'enfants et/ou d'autres facilités sociales, telles que requises. Les habitations sont rangées sur les bords. Les pâtés de maisons combinent pour former des groupements scolaires primaires qui sont à leur tour raccordés aux groupements scolaires intermédiaires. Les blocs de parcs combinent pour former de plus grands parcs à l'échelle du secteur.

Page 44
Les Nouvelles Villes des Etats-Unis et de l'Europe
Fran. P. Hosken

Un voyage à travers l'Europe cet été, en passant surtout par les villes du nord, m'a laissé une impression générale de ce qui a été construit depuis la guerre. J'ai été émerveillé, quelquefois étonné, par la quantité et la

qualité des nouveaux logements et des communautés périphériques. Aux Etats-Unis, nous n'avons pas fait ce progrès, notre attitude est inadéquate à l'égard d'un problème domestique sérieux. Surtout autour de Stockholm j'ai été impressioné par la richesse et la variété des logements qui sont à un prix abordable pour la plupart des citoyens. De tous points de vues les développements près de Helsinki dépassent de loin tous les autres. Tapiola, ville-jardin de 17,000 à cinq milles de Helsinki, commencée en 1951, construite par les initiatives privées, comprend des maisons en rangées, des appartements coopératifs, mais n'est pas un développement immobilier dans le sans américain. Le plan, le paysage, les quartiers individuels et les bâtiments semblent agir ensemble pour former un environnement joyeux et esthétique, et ce, à un prix que la majorité de jeunes familles peut s'offrir. Une communauté aussi attrayante, d'une telle qualité, offrant autant à ses habitants, n'existe pas aux Etats-Unis à n'importe quel prix.

A Stockholm et à Oslo, les prolongations du métro ont été construites entre les nouvelles banlieues principales et les villes par le gouvernement comme service à la population, pas pour profiter du besoin. Ceci est typique de l'attitude des pays Scandinaves envers le logement, tellement différent de notre attitude. A part la subvention des habitations, les gouvernements sont responsables du "medicare" gratuit, de l'éducation et des pensions réellement adéquates, toutes gratuites. Les taudis n'existent pas; j'en ai cherché en vain.

La seule nouvelle ville essayant d'atteindre un caractère urbain et non de "villejardin" comme Tapiola, est Cumbernauld en Esosse, quelques 15 milles de Glasgow. Construit pour reloger les résidents des bas quartiers de Glasgow, une population de 70,000 est attendue ainsi qu'un quartier industriel assez important. Les piétons et la circulation véhiculaire sont complètement séparés. Des boulevards extérieurs raccordent les différents quartiers; le centre ville est construit sur une crête et sert réellement de centre et de point de mire pour toute la ville. Bien des passages pour piétons sont couverts et chaque quartier abrite un centre d'achats. Cumbernauld offre une nouvelle approche à la construction des villes en termes d'une vie urbaine plus dense et plus compacte. Chaque quartier possède son caractère et dessin spécifiques, son école, ses parcs, ainsi offrant une diversité d'habitations et de modes de vie.

Des nouvelles villes autour de Londres, j'ai visité Basildon et Stevenage, chacune conçue pour plus de 70,000 personnes. L'intention est de fournir une vie saine, agréable et satisfaisante, des habitations confortables, écoles et recréation pour des gens de revenus très modestes. Voir ces villes, c'est la preuve qu'elles ont largement réussi, tout en offrant des loyers très bas et des services de santé, d'éducation et de recréations gratuits.

Les différences fondamentales entre toutes ces villes et celles qui se construisent aux Etats-Unis sont les suivantes. L'attitude des gouvernements; en Europe, chaque citoyen a droit à un travail et un logement appropriés, aux services médicaux, à l'éducation, la sécurité sociale et aux pensions, tous gratuits, mais payés par des taxes très élevées. Aux Etats-Unis, on construit des logements pour faire le maximum de profit et les services gratuits sont souvent considérés comme charité. En Europe, les logements varient des maisons particulières aux grands blocs d'appartements, de la maison à soi aux coopératives, aux habitations financées et louées par le gouvernement avec loyers ajustés aux salaires des résidents. Partout le gouvernement prend sa partie du financement et quelquefois de la construction et du maintien. Autres différences; Stockholm, Oslo et Helsinki sont les propriétaires des terrains qui les entourent, sans quoi il serait impossible de construire ces nouvelles villes et de planifier le développement rationnel. Aux Etats-Unis, les terrains appartiennent aux individus pour leur gain personnel. Les nouvelles communautés européenes fournissent des conditions de vie et des habitations bien meilleures, pendant que les bas quartiers des centres villes sont détruits et reconstruits; tous les services et aménités sont parties intégrales des nouvelles villes. Par contraste, aux Etats-Unis, le développement commércial relativement laid longe les voies vers le centre ville. L'absence de cette vulgarisation du commerce est remarquable en Europe.

En comparaison, nos efforts aux Etats-Unis sont lamentables, surtout pour les gens modestes (un tiers de la population). Nos nouvelles communautés n'abritent que les gens qui ont de l'argent. La communauté la plus attrayante est Reston, Virginie; d'autres sont Columbia, Maryland et Irvine Ranch près de Los Angeles. A Reston, au bord du Lac Anne, le centre ville est réservé au piéton et en termes d'habitations, recréation et un mode de vie agréable, Reston est le meilleur des trois. Mais ici, comme ailleurs, les prix sont si élevés qu'ils défendent aux deux-tiers de la population la possibilité d'y vivre. Nos méthodes de financement et de construction et le manque de subventions gouvernementales empêchent la construction de nouvelles villes à prix modéré. Et puisque des lois protègeant l'usage des terrains n'existent pas, même une nouvelle ville, conçue et construite suivant les meilleures règles, risque d'être changée et gâchée, une fois entre les mains des intérêts commerciaux. Le mythe américain dictant que les villes ne peuvent pas acquérir et posséder les terrains environnants parce que cela sera contraire aux concepts d'une démocratie libre, est absurde. Nous ne pouvons pas espérer avoir des logements, des villes et un mode de vie meilleurs tant que ce mythe dure et dans l'absence de législation nécessaire.

Page 54
Le Logement — Crise et Opportunité
Henry Sears, MRAIC

Les mots "logement" et "crise" vont ensemble ces jours-ci. Les logements convenables à prix abordable manquent, surtout dans les régions urbaines telles que Toronto. La demande de nouveaux logements présente une opportunité à trouver des solutions pouvant rehausser les qualités urbaines de nos villes. Le coût du terrain est un déterminant majeur. Afin de compenser ce coût toujours en hausse, il va falloir trouver des usages plus efficaces des terrains, dont le passage des lois sur le condominium, la combinasion des usages d'un site, le développement des techniques sophistiquées permettant que l'on puisse vivre presque n'importe où dans un complexe urbain et raisonnablement près des aménités et facilités. Le système courant de diviser une ville en quartiers à usage unique ne suffira plus. Il nous faut un usage plus libéral à plusieurs combinaisons surtout en centre ville, tout en maintenant la séparation adéquate des usages. Diverses formes de logements doivent être encouragées ainsi que la séparation de piéton et de véhicule. Les lois actuelles tendent à encourager les habitations en bloc à Toronto; il est impératif que d'autres formules soient trouvées. Les concentrations d'habitations familiales "low-rise" sont possibles soit seules, ou alliées à d'autres formes. Ceci, avec la combinaison de divers usages, ajoutera à la qualité de nos villes si le tout est accompli avec sensibilité et la reconnaissance des éléments de la ville qui méritent d'être préservés.

Au Canada, le dessin des maisons en rangée pour les classes moyennes est aussi sophistiqué qu'ailleurs, ainsi que des appartements, mais les nouvelles rues de maisons n'ont pas la qualité ou l'attrait des rues plus anciennes. Les besoins des célibataires, des étudiants et des vieillards méritent aussi des études spécifiques.

Le problème du logement est difficile, au mieux. Budgets limités, règlements innombrables, diversité du marché, déterminants non-scientifiques et fort subjectifs produisent des contraintes se contredisant qui contrôlent et ajustent les forces créatives. L'importance de préserver un sens d'identité pour l'individuel est majeure. La création de diversité et d'intérêt dans une entité visuellement cohésive reste une bataille constante. Des efforts créatifs significatifs sont obligatoires pour transformer cette crise en améliorations significatives.

Residential Environs in the Urban Area

Wolfgang Gerson, FRAIC

Wolfgang Gerson, Professor of Architecture at UBC, prepared one of Canada's early studies in Low Cost Housing (Winnipeg 1955) and Urban Renewal (Winnipeg 1956). This article is a summary of the ideas of a study now being undertaken with a CMHC grant.

An Arising Form

The great majority of all Canadians participate in the experience of urban areas of more than a quarter million inhabitants. For the coming generation who will be born and raised in urban ways of ever greater congregations, this environment will be "natural" while the small town or village or open land, cultured or wild, will be natural only to a few farmers; it will be the abode of the wealthy second estaters, the vacationers, those wishing to retreat, industrial explorers and adventurers. For most of us the urban environment determines all our experience today. Intellectual and sensual stimulation, joy, tragedy, relaxation and tension – the game of life is played in urban interaction between man and man, each representing many different roles in the family at work, at play and in community action. This happens in offices, factories and bars, on urban or suburban lawns and in parks; on asphalt or concrete, or in apartments on rug behind glass. The complex relationships between men who depend on each other in increasingly specialized ways are the essence of the urban environment.

In early days life was played hunting other animals in the open plain or forest. The hunting ground was an alternate life to that of man to man relationships. At another stage, the arable land became the resource producing the necessities of life. The style of life was influenced by an understanding of land and plants, the weather, the rhythm of the seasons, the domestication of animals, the plow. The hunter's and the farmer's life gave different cultures and different styles of life.

More ample production of food and clothing made town life possible. Specialization to craft production of objects, to trading these objects, to scholarship, or administrative leadership were alternatives of choice the town gave. In the town it became easier for each person to develop a gift he was able to perform better than others. The town increased the complexity of interaction between man in a setting created to make the new styles of life easier and more pleasurable. Paradoxically the town relies on even greater interdependance, while at the same time it gives the maximum of freedom of choices.

The coal city of mechanical tools added many new styles of life. With the factory system, concentration of work forces increased. With the further specialization of tasks and skills which could not be performed at home the need to provide places for special activities increased. Home tasks of rearing children separated from work in industry; work in industry from work in office and shop; recreation, education, all separated into clearly defined space and time sections in city life. At the end of this development stands a city with a center which is a swarming exchange during the day and empty at night; suburbs with houses for an increasingly broadening middle class which are devoid of older people, and men during the working day; schools and university campi as isolated places of learning; industrial estates which have connection to city, to areas for exchange of ideas or to home. The city had become a place of clearly defined sections where in repetitive rhythm everything has a time and every task has a special performance space at a special time.

In the last fifty years city setting and city life has produced another major change, the change to a growing urban region. A great influence on this development is the rise of the electronic devices of communication and the motor car as a predominant means of urban transportation. An increasingly open society on a global scale has resulted in many new styles of life within the urban regions. Many others can be expected in a reshifting of people. To the hunter's territory, the farmer's cultured lands, the townman's manufactured products and markets, the city's industrial mass-production and mass distribution, its zoned special purpose spaces, urban society has added social services and institutions as a predominant necessity to ease the ever increasing complexity and tensions of the man to man game. More than ever man to man relationships in their various forms have become the predominant game of living, and the urban area becomes a new system of human contacts and communications. Telecommunicators which allow one to stay in place have added to this pattern as well as the speedy means of transport. Freedom and ease of contacts is becoming a major determinant of city form.

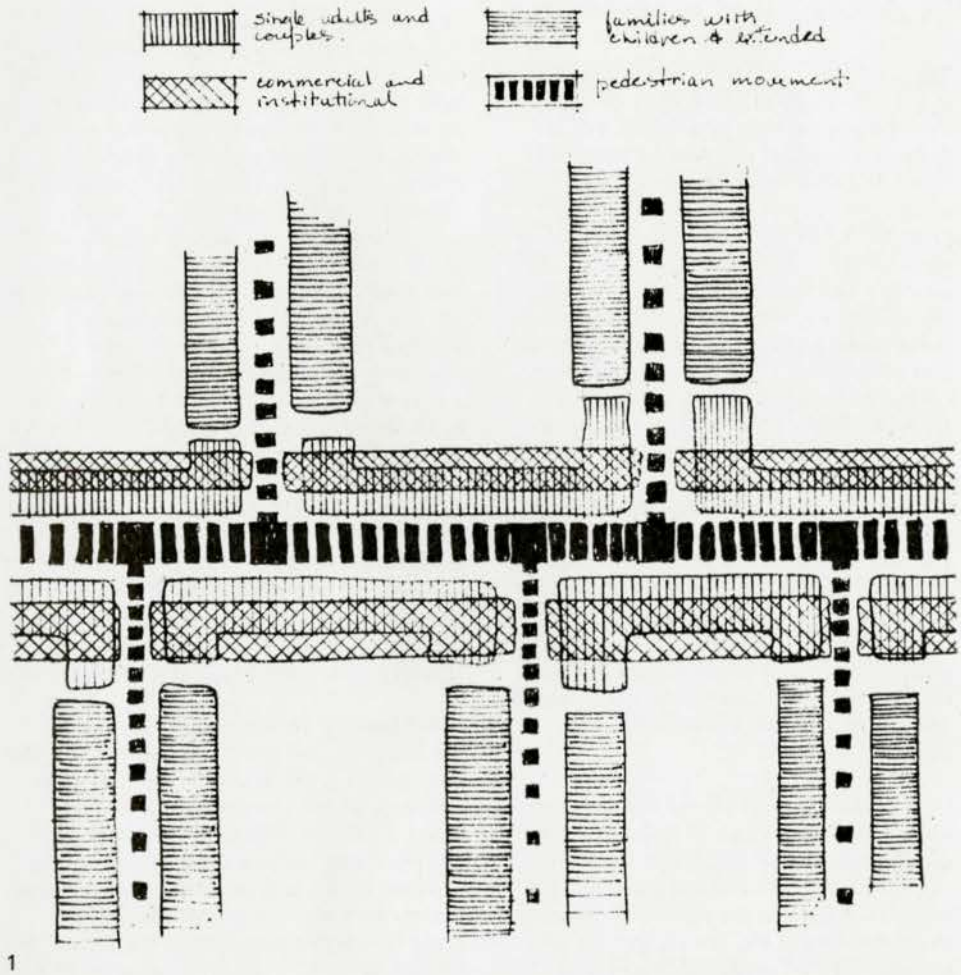
At the same time urban society is bringing about new family and kinship patterns. Mobile young people in search for the best education and for work away from home feeling strengthened by the social service state, give the two generation family a shorter life span, and create new forms of urban households. The two generation family fills perhaps only a third of the life span, and life therefore exerts greater strains of independence on the individual. In former days young men and women moved from the parental home to the marital home, to be looked after in later life by sons and daughters. Now they must fend for themselves to find their own friends and relations, business connections and intimates. Only about a third of the residential environment is an environment of families. The separations of the industrial city have become obsolete. The new urban area will provide space for new ways of integrating the constant human activities of raising children, educating them in the home and in institutions. It will provide meeting grounds for young with the young, and young with adults, and adults with adults. It will fuse with these places to play, places to create, places to think and places for adventures. It will need to reconsider the location for places to produce the necessary goods, and market them in different places in different ways.

Residential Groupings

In the desire to express life and live it according to their particular interests, people gather into environs of their own making within the heterogenous urban area. Within the urban area, therefore, we find many different environs each with their own character, each giving the possibility and setting the framework for a specific style of life, but being closely related to all other areas in a network of open communications. We believe that the urban area is in transition to such an organism, but to clarify its structure in our mind we must attempt to analyse the kinds of relationships which determine life styles in the urban area. This study proposes that we analyse the urban area as a network of communications, a major grid of roads to which are related a great number of living environs each determined by features of the site, by location of places of work, by major institutions and the

1
Schematic diagram, environ one — Urbville
Diagramme schématique, environnement 1 — Urbville

specific life styles of people. We have, therefore, studied three social settings in the Vancouver area which must be given more appropriate form so that the life style of the people can develop more richly in these areas. The information about these areas comes from studies made by the United Community Services of The Greater Vancouver Area, from the Municipality of Surrey and from census data and our own observations in the areas. We believe that each area represents a style of life which has counterparts in many other Canadian cities. While they are also representative of today's situation, each environ contains many broadly human features, thus allowing for change as well as permanency in concept and basic space arrangements. Each environ has its own facilities and a system of spaces and facilities which determine its character. These are based on the study and description of the life style. A new combination of skills and gifts will be demanded from the team of designers of environs in the urban area. They will need to gather the relevant social facts, understand the characteristics and interactions of groups, interpret information gathered from computer data banks and describe environs from these data. But in addition to gathering and understanding facts the designer must, like the novelist, illuminate, clarify and bring to focus the great wealth of life as it can express itself today.



1

The following are some of the parts determining the character of environs:

1 A basic movement pattern.

The movement system determines the relationship of the environ to the whole urban area. If ease of relationship is to be encouraged, major connectors may lead right through the area; if this is discouraged they may bypass the area. The internal system of roads, streets, pedestrian ways, etc. also is a major factor in determining the character of the environ. Movement patterns do not only facilitate getting from one place to another, they also have a life of their own. A pedestrian movement system is a generator of informal contacts as the street has always been a meeting place, a place to watch activity and feel one is participating in urban life. While car movement can become a barrier, the car stop can become an important place for public activities. Eventually there will be other slower smaller vehicles used in the residential environ, a motorized shopping buggy with seat. The workings of a movement pattern can make an area cohesive, allowing for casual social meeting or even encouraging it, or it can break down contact in the environ.

2 For each environ an appropriate activity mix will determine the space needs for housing, institutions, services, and open and enclosed space for all.

3 A system of relationships of housing to institutions such as schools, hospitals, churches, public and social services, and commercial and business needs. Environs serve special needs as well as being, in some cases, a resource for a larger part of the urban area or the whole of it. Only a careful study of the life style can determine space needs and relationships.

4 A system of contacts and separations within the area, including open and enclosed spaces.

The careful study of this complex subject is one of the keys to successful residential environs. Contact that is unwanted is as much of a strain as is privacy when it becomes loneliness. Both can take extreme forms in the crowd. In this regard our present cities have difficulties for every stage of life. Suburban children suffer from lack of easily accessible public open space where they can meet on equal footing. Young people not attending university lack social activity that leads to friendship making. Young urban housewives

2
Plan of Urbville showing the three zones of housing, their relations to institutions at nodes and the central pedestrian strips, center of many activities. It also indicates how the system can be used to merge to an existing district.
Plan d'Urbville montrant trois zones d'habitations, les relations entre établissements et centres d'activités et indiquant comment un système peut-être (intégré) adapté à une région.

feel isolated within their families, yet complain of lack of privacy when living in apartments, and the elderly have the sense of becoming useless outsiders.

5 A range of choice and a range of densities of housing types. Each environ will attract different kinds of families and households, different age groups, and different mixtures of income groups. Housing unit types and arrangements will vary accordingly.

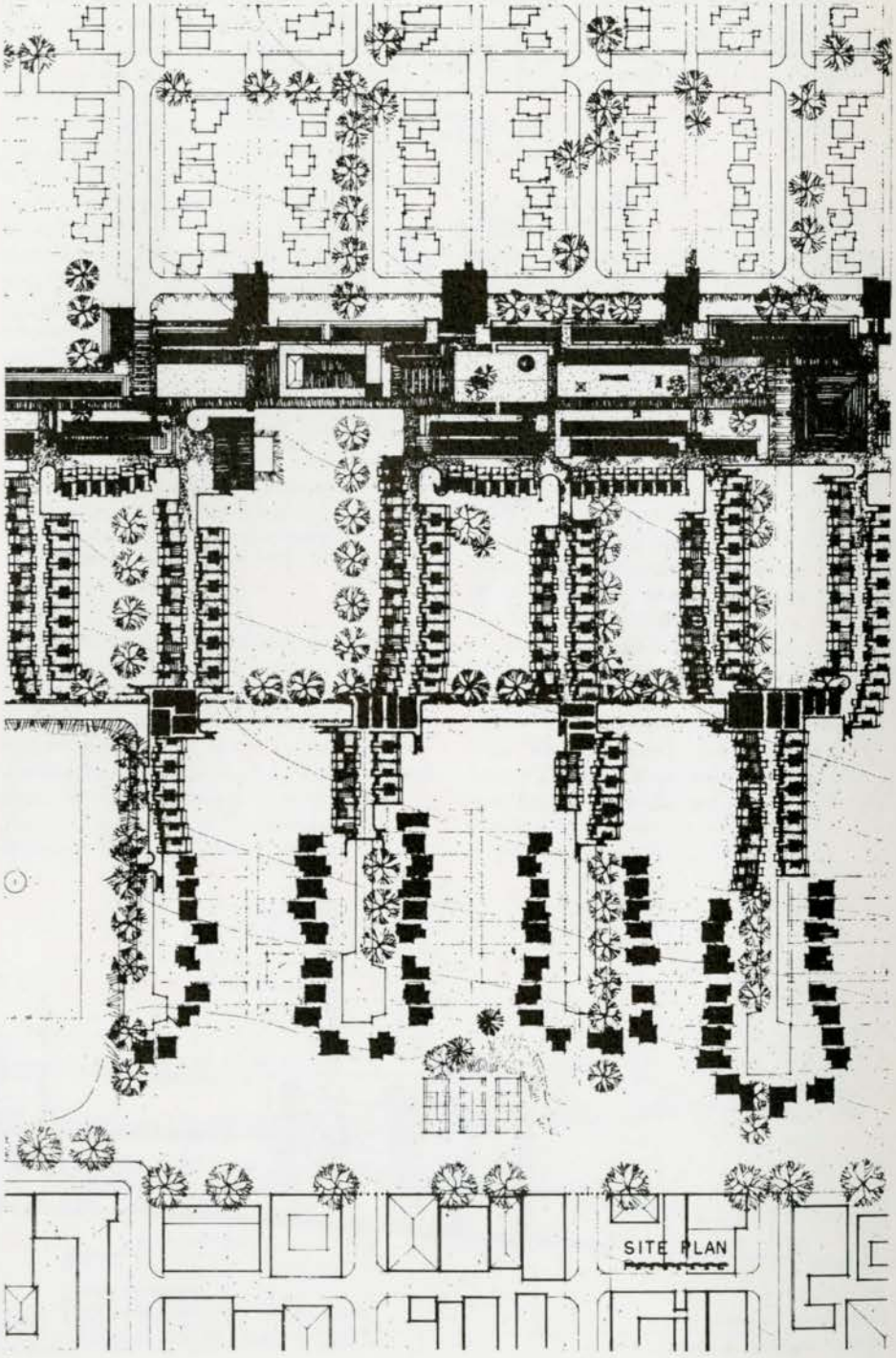
6 A system of development constraints and freedoms. An overly controlled environment planned to the last detail will take away from creative initiative, and the pleasure of the wealth of ever changing forms which is the sense of life. Each environ suggests its own balance of freedom and controls which are part of the life style itself. Land ownership arrangements and land values as well as the system of taxation will act as constraints on development. Over periods of time environs inevitably will change. The nature of change however can be greatly influenced by the systems of constraints which are devised.

Test Cases Described

Our three examples of environs represent three clearly defined styles of life related to specific areas in the urban region.

Environ 1. Urbville (developed by Dino Rapanos)

The life style description of Urbville is characterized by people from old cultures who have moved to a new North American setting. The theme is somewhat similar to that described by Herbert J. Gans in the "Urban Villagers", but as most people in Urbville are newcomers to this country, adaptation to the new environment, new surroundings and a different society, consumes a large amount of the energies of the population. Financial means are small in relation to those of other Canadians but a little better than they were in Italy, Greece or China. Social status however is felt to be lower. It is therefore more secure to stay close to those who speak the same mother tongue, who have a common culture, similar experiences and a similar fate. The income of families in 1961 was 4,034 against 5,366



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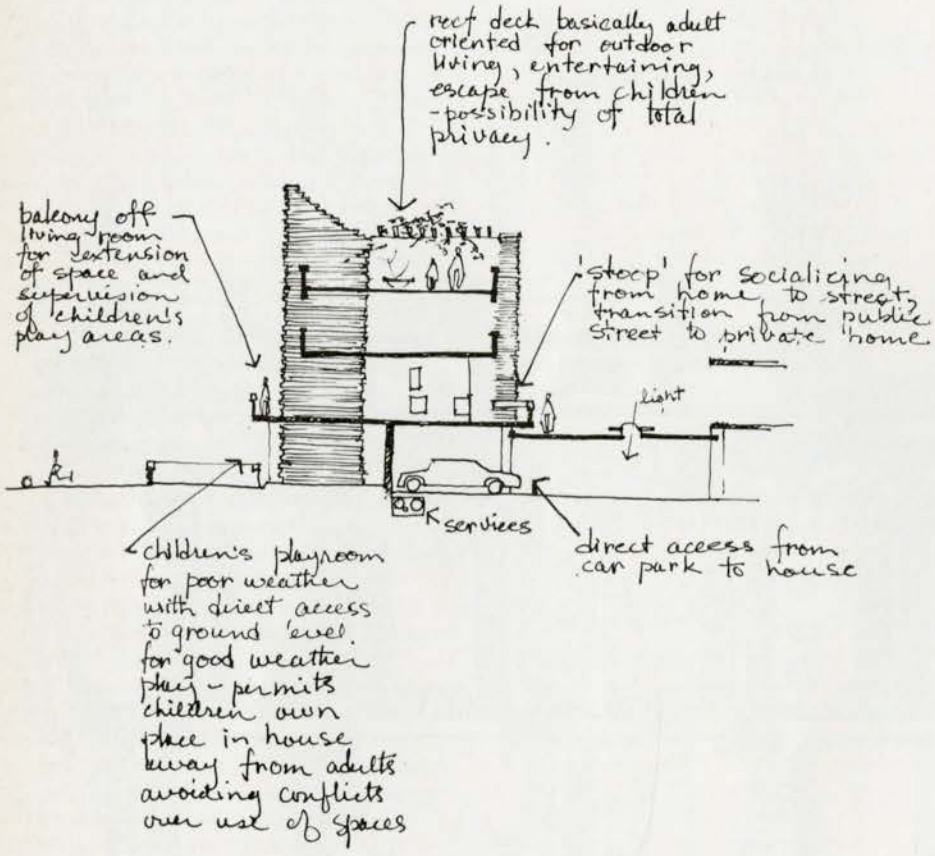
3
Diagram of middle sector house explaining relation of inner and outer space as expression of Urbville's style of life.
Schéma d'une partie de maison expliquant relations entre surface intérieure et extérieure. Indication de la manière de vivre à Urbville.
4
Section of Urbville. This section is the essence of Urbville in which all its major parts appear.
Coupe d'Urbville. Cette coupe est un extrait d'Urbville faisant apparaître ses majeures parties.



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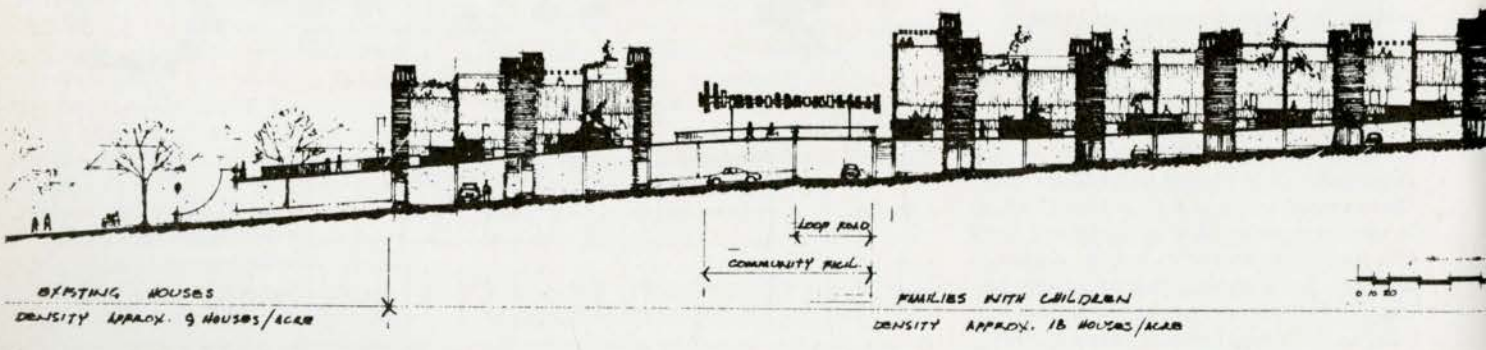
Metro average. Mobility of those living here is very low compared with others in the urban area. Only 40% of the families own a car while the average for the urban area is 63%. Many men work in the district in which they live with their families, and women and children spend most of their time in the same environment, close to home, the church, the school, the shopping of the area. The environ, in fact, is like the village in which all life and all public facilities are within walking distance. In the urban setting however the village is modified by other communication, transportation and industry. In our case its center is a street which is also a major traffic artery for trucks and cars leading from the center to other parts of the urban system. The arising conflicts are too great and must be adjusted, without interrupting the validity of a village center which may also attract others from the urban area because of what it offers in restaurants, specialty shopping and its specific character. While families with children dominate the residential pattern there are also many other households which must be accommodated in proper balance and to ease the close contacts which are in the nature of "village life". As street life is important cars must be removed from the streets. The paved area of the remaining street and the stoop for sitting make for easy informal contact for children and adults. There is some need for outdoor privacy, but



4

in an atmosphere of safety in this culture, that need is small. Because of binding emotional and cultural ties the community is closely knit, although not in an organizational sense. In fact there is a need for social assistance due to difficulties of adaptation. The present formal education in the area is less than average, and pleasure and recreation must be achieved with a minimum of funds, in the family, with friends and neighbours. Therefore there is the need to give the greatest wealth of experience within the environ. Home, street, shopping street, institution and greenspace for recreation are the ingredients of this environ.

Pattern description

For Urbville we chose a spine and rib structured plan. It seemed to express most clearly the need to bring everyone close to the central street which is the hub of Urbville and at the same time relates it closely to the urban area. It is an open ended slice of town which can start and stop along a traffic artery and build over the top of it. Urbville has a spinal center and a concentration of development towards this center but its outer edges are undefined. Within it there are three kinds of residential areas: Higher density apartments are directly linked to the main public street with its shops, institutions and social service areas. This area will most likely provide the housing for the older people, and families without children. The intermediate area along the more private pedestrian streets provides various kinds and forms of row housing with direct access to public green spaces for children's play and adult meeting. The third part relates back to a grid system of streets and individual lots. At the edge of it, some larger spaces of open land are provided for ball games, schools and playgrounds. Nobody is far away from the central spine and such an environ can be fitted into existing systems of streets and houses without conflict with the neighbouring areas. Urbville can also occur along any part of a major artery making multiple use of land normally spent for traffic and parking, and at the same time it will create the setting for a style of life which gives the inhabitants of Urbville, in a small area, the richness of contacts and the possibilities of quietude which are of the essence of their life style.

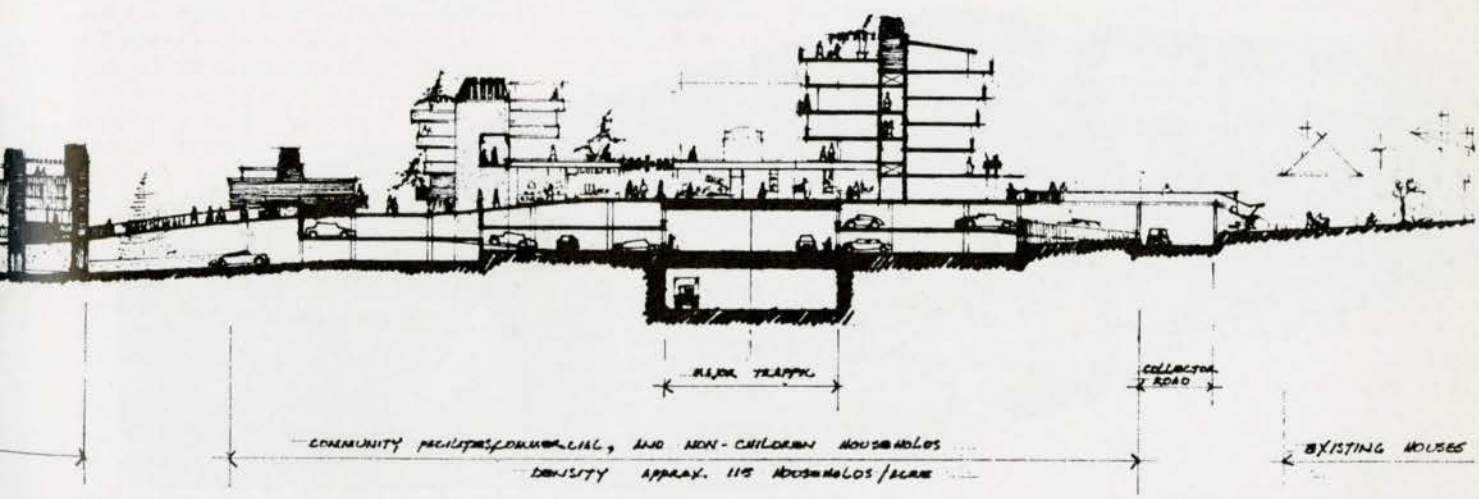
Summary

In Urbville we find the greatest identification of people with land and buildings. This makes for its unique quality in the urban environment. It also makes it an attractive place to visit. It is the last remnant of a life sustained by primary groups: the family, the neighbourhood, the children's play group. As such it will always attract some sections of society, although its present social form may be based on temporary conditions. Urbville is never likely to be large. Its own nature demands concentration. But an urban area may contain several environs of its kind.

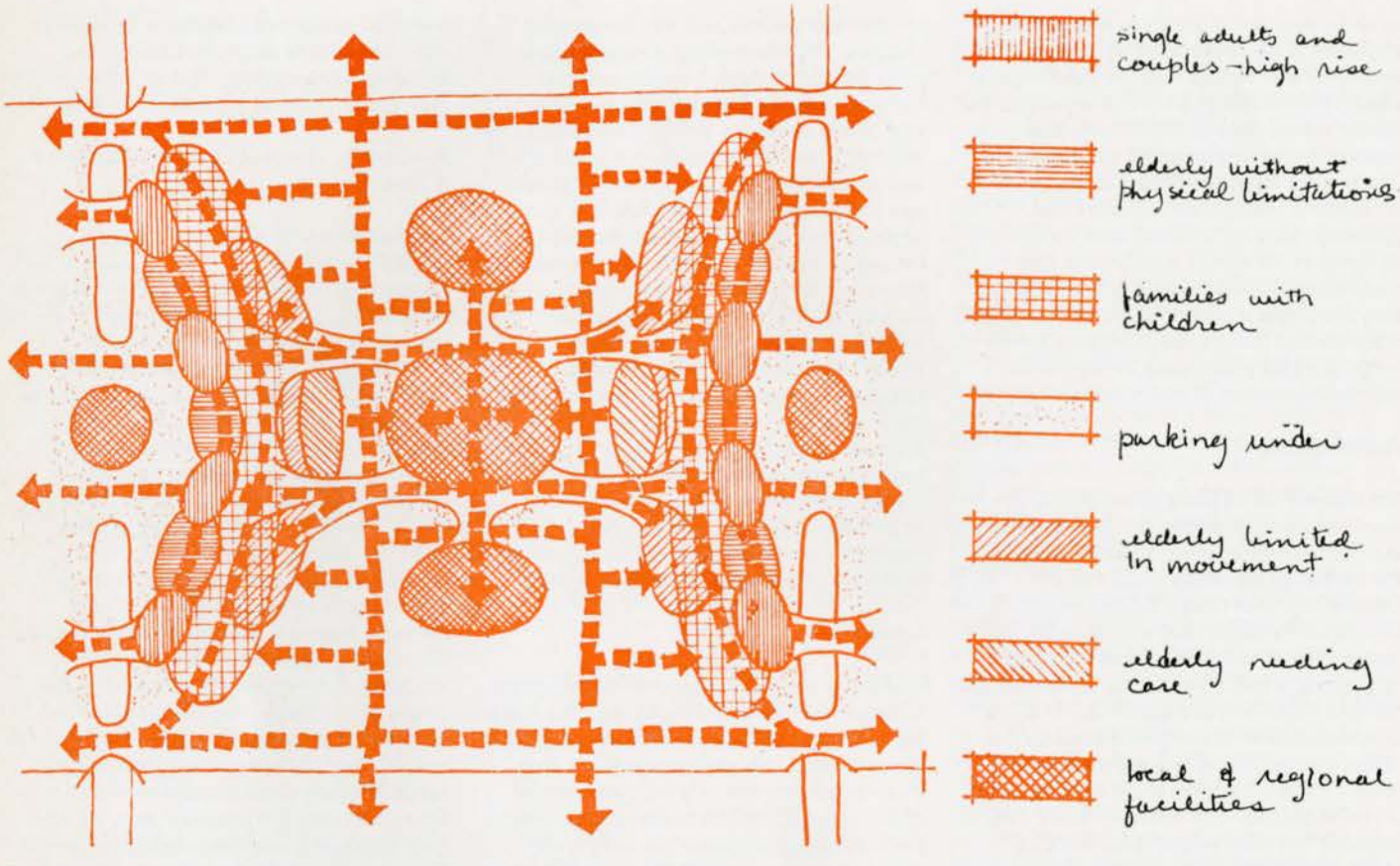
Environ 2. Intropolis (developed by A. Watty)

Description of life style

Intropolis is geographically tied to a major administrative work area, a business district of intense concentration, and an area of entertainment. An ever increasing part of the urban population is attracted to the high pitch of living created by crowded conditions, the chance of meeting a great variety of stimulations through people, products, competition in intellectual and physical crush. It is the part where strangers first meet the urban area, where it is of the essence to bring together people from a great variety of backgrounds, cultures, interests, incomes, it is the real melting pot of the urban environment. Two age groups are particularly attracted to Intropolis: the young adults just having freed themselves from family ties and the elderly that have left behind them their period of family raising. Large sections of the population are here for a short period in their life only, but this is an important, searching and active period. Young single adults are drawn to the area by employment opportunities, by the



5
Intropolis
Intropolis
6
System on model area — environ two —
Intropolis
Système appliqué sur une maquette de terrain
environnement 2 — Intropole



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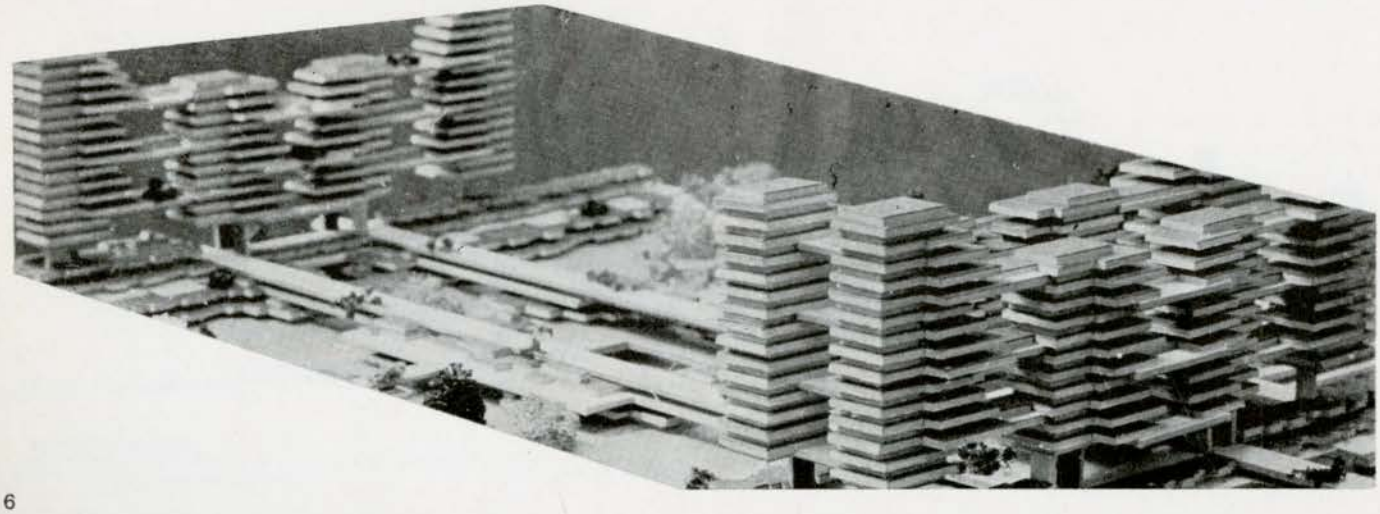

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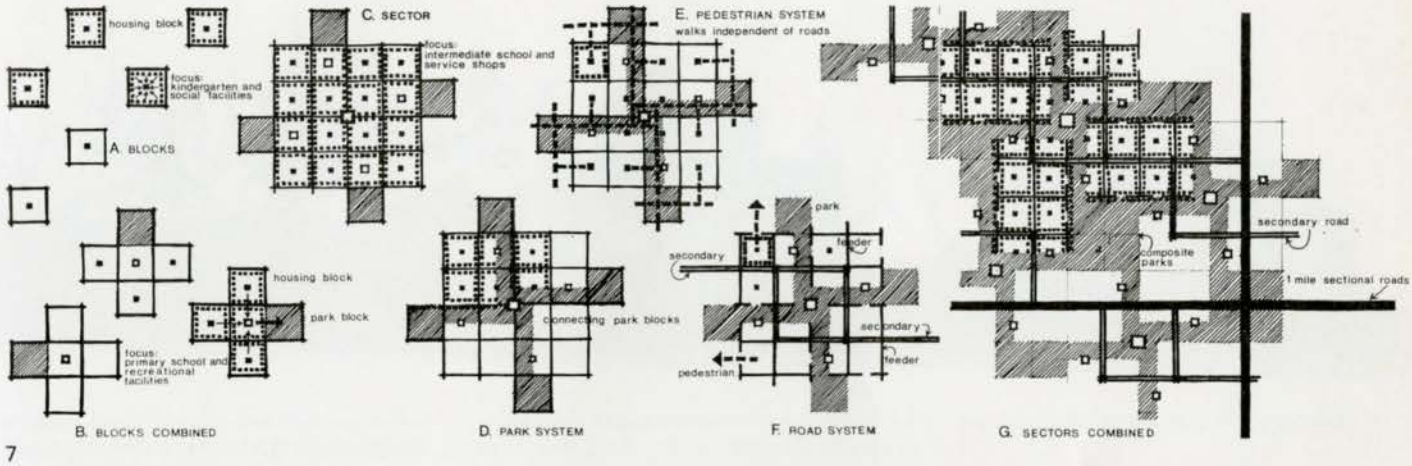
Decentria 1. Diagram showing organization
Decentria 1. Schéma montrant organisation



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Recreational amenities provided an increase in potential social contact promised by high density living. They are in search for personal freedom and identity away from parental and educational disciplines. Within a few years social contact may result in marriage and the doubling up of income of the working couple, probably still remaining in the area, pursuing together, rather than separately as before, the cultural and recreational activities generated in and around the area. When the couple has their first child the ramifications are serious, and under present conditions many are forced to discontinue a style of life which they have enjoyed. The number of child raising families in this area is still decreasing brought about, we believe, by lack of proper facilities, and proper housing accommodation, as well as landlord attitudes. Many young people whose life style is that of Intropolis are banned from it. Intropolis, therefore, must make allowance for these, although families may never dominate Intropolis as they do Urbville.

The elderly are drawn to Intropolis because of the amenities it has to offer. Approximately 27% of the population is over 55. The time they are most noticeably part of the environ is during the day when most of the young adults have left the area for work in the business section. Their lives are less active and their values different from those of the young, however, those participating in this style of life often actively seek visual participation in the events of those younger people as long as full participation is not forced on them. Like the younger group they also are in a certain sense seeking a new identity in society. Their activities too must change to a new kind of independence from family and they must find new outlets for long developed resources. The area must give them the amenities and social institutions, recreation parks and streets for walks which will fill their lives in keeping with their changing situation and give the sense of security important for this life style. In contrast to Urbville, Intropolis will have many variations and subcultures may form. It may deal with a much larger population. The larger the urban area, the greater may be the specialization of such groups wishing to follow their own way of being themselves. Thus within the general framework set by Intropolis there will be pockets with their own constraints and traits. This is the place for hippies, for the young intellectuals, for bohemia, for executives come into town for short periods.

Pattern description

The layout lends itself to a certain amount of nuclearization within a general overall pattern. The idea of mutual accessibility of both people and places making for maximum chance of desired social interaction and the differences of mobility shown by the various groups within the area, were combined to help define locations for residential usage (see diagram). The most mobile group are located so that to reach the day to day necessities they move past a decreasing hierarchy of less mobile persons. Great variety and flexibility of accommodation must be achieved within a framework allowing for maximum interaction. Densities are arranged in such a way that there is a gradual change from the highest at the edge of the area to the lowest leading to a central park system on which family homes and some elderly people's homes form the edge. The whole is based on an "Environmental Area" as defined by Collin Buchanan. Whether the area is already fully developed and in process of change, or entirely new, the principle of needs remains the same.

Environ 3. Decentria (developed by R. D. Hassell)

The inhabitants of Decentria are a peculiar phenomenon of today's mobile society. The men have little studied skills and therefore change jobs often in the beginning of their working life to where labor is required. The car is a most valuable tool required for acquiring work and keeping it. There are very few persons with high school or university education, and most are engaged in work that does not provide for promotion or the possibility of greatly increased earnings. There is no career orientation, although the children may be so influenced through the school. As is shown in areas of this kind, mother and father live here for a long time even after their families are grown up and have left, so that adaptability of the area, its institutions and its housing units to a changing age group becomes an important consideration. As there is only one car in the family, women and children are tied to the neighborhood of the home during the

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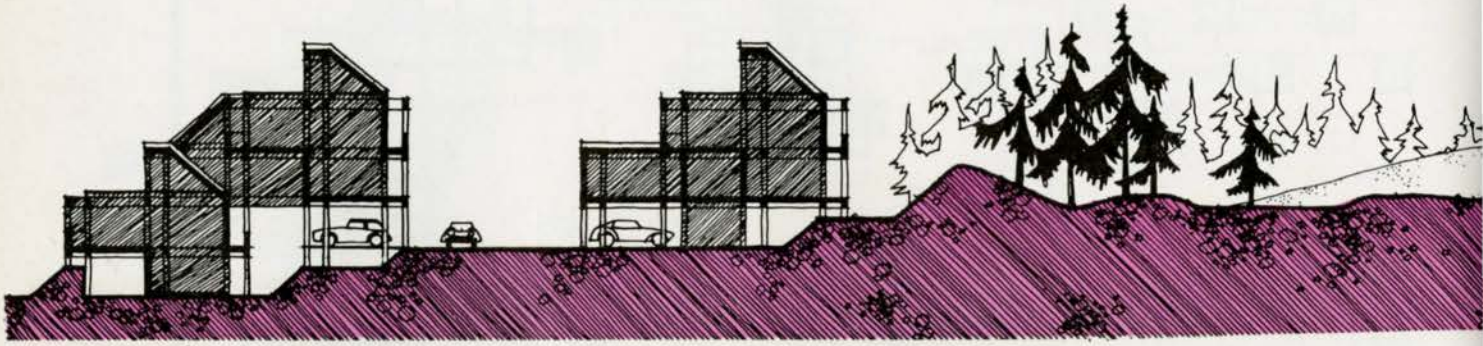
Decentria Section showing possibility of sculpturing flat land of central wilderness park
Decentria Coupe montrant l'arrangement d'un terrain plat au milieu d'une nature sauvage
9
Decentria 3
Decentria 3



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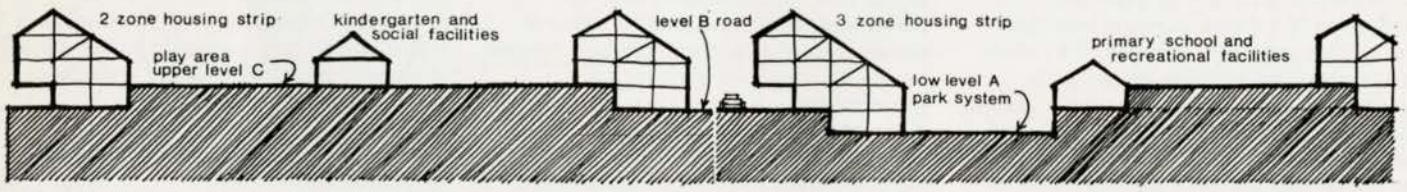
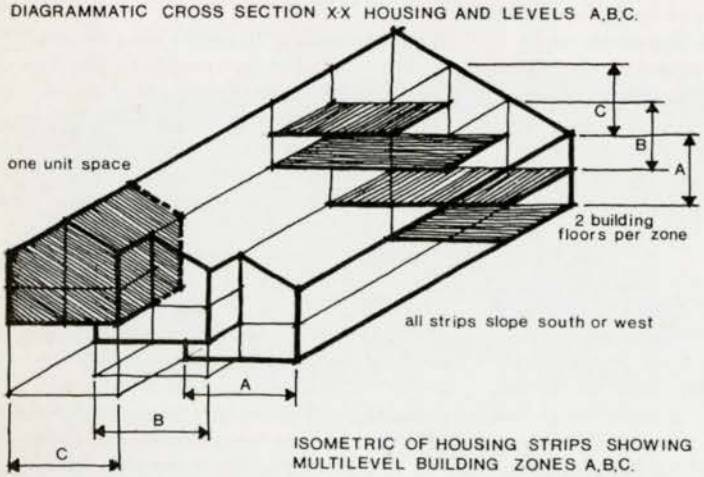
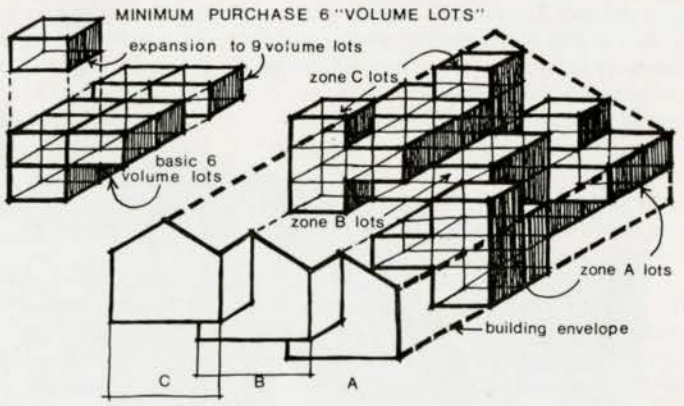


DIAGRAMMATIC CROSS SECTION X-X HOUSING AND LEVELS A,B,C.



ISOMETRIC OF HOUSING STRIPS SHOWING MULTILEVEL BUILDING ZONES A,B,C.

MINIMUM PURCHASE 6 "VOLUME LOTS"



POSSIBLE ARRANGEMENT OF VOLUME LOTS IN ZONES A,B,C.

9

working week. Interest and pleasure will be found through participation in the children's life, and the school becomes and important influence. The influence of the school extends well beyond the physical plant in a network of relationships encompassing the whole community. In the future it can be expected to expand its role as a social or recreational institution, an extension to the family to help free parents from continuous child care, or involve them in activity, to help overcome conflicts related to the rapidity of social change between generations, and to help supply support and solidarity once given only by kinship ties. The institutional pattern then becomes the matrix for the park, pedestrian and road system of the entire development.

Adults value greatly the ability to function as highly free individuals with relationships to friends, neighbors and even relatives determined by individual preferences. Direct sociability is considered mainly important at the children's level. This is one of the great failings of modern suburbs that do not provide public open ground near homes for families with small children. Habits of socialization are formed at this age, and the narrow range of influence and intellectual stimulation from mothers only, in a society based on more and more adult contact, may be a great barrier to adaptation in later life. Great emphasis has, therefore, been put on the close relation of houses to a public play space with its institutional focus.

Pattern description

Decentria's layout has many foci and a repetitious endless pattern. Its basic unit is an accessible piece of public open land focusing on a kindergarten and/or other social facilities as required. Housing is arranged in strips along the edges. Blocks are combined to form a primary school group, these in turn related to form an intermediate school group. Park blocks combine to form larger parks at the sector scale, and a system of streets, parks, schools, institutions and services is developed.

The family here operates as a separate unit, and great value is placed on living quarters away from other generations and from other families. The detached or semi-detached house is, during the child-raising years, the only fully approved form of housing. However child raising occupies only about a third of the life span. The area under study allows for a low density of 10 people to the acre. The quick growth, however, which is part of the style of such areas is envisioned and a system of volume lots has been developed which allows for volume growth between detached units, increasing density to a maximum of 50. This is combined with an industrialized housing framework which allows for the change of individual houses to multiple housing or combinations of these to be produced at the same time. Change is built into the housing of Decentria.

Summary

Decentria is a special kind of suburb. It is child and open space centered, still individual house minded, with schools and institutions tied very closely to homes. It represents a style of life which we believe may involve an increasing percentage of the population.

The Residential Environ a basic urban unit

Environs are the basic units of urban residential design. They are the system which forms the background for the everyday homelife of individuals, families and households with the institutions and services required nearby for a rich and pleasant urban life. Environs will vary in structure, in size, in facilities and institutions. They may have definable boundaries or merge. Some will grow more quickly than others or change internally at a quicker rate. Some will serve very specialized groups of people, others will show a broad cross-section. All indications are that the future will bring many distinct styles of life. History has gone through many stages of cultural separations, and has now landed us in a "global village". With increased communication and social mobility, barriers to association across class, racial and ethnic lines are being broken. The urban areas are the breeding ground for the new groupings of today and tomorrow. In their rich variety they may well eventually outdo the cultures that history has seen to the present. Residential environs will express this trend and our technology and economy is capable of producing a greater variety of solutions than the past was capable of. □

New Towns in U.S. and Europe

Fran P. Hosken

Mrs Hosken, an architect as well as a writer, has done articles for a number of American magazines and newspapers. She wrote on "The Urban University and the Urban Environment" for the October 1966 issue of Architecture Canada.

Perhaps "New Towns" is not the right definition because many of the urban developments we are concerned with here are not self-sufficient. Some are planned to eventually be on their own in terms of giving employment to most of their inhabitants in their own industrial parks. But others will always largely remain bedroom towns providing housing and a pleasant family life, education and recreation in a well planned environment; while jobs, at least for the head of the household, are sought in the city. We are not really concerned with definitions but with broad solutions to the universal problem of housing for the growing urban millions.

This summer on a trip across Europe and especially through the cities of Northern Europe, Stockholm, Oslo, Copenhagen, Helsinki, Amsterdam, Glasgow, and London, to mention the high points, I tried to get a general, if by necessity somewhat superficial, impression of what has been built in the last 20 years or since the end of the war.

If one could summarize – something that is not really practical due to the great variety of countries and political systems involved, also war destruction versus plain obsolescence – this could be said: In city after city I was amazed and at times overwhelmed with the quantity and also quality of the new housing and new communities that have been built on their periphery.

In the US by comparison we not only have been standing still, but our whole approach – indeed the physical results show it pitifully – is an inadequate, half-hearted attempt at superficially pretending to pay lip service to as serious a domestic problem as any growing nation must face. Because in the last 20 years, while the US market economy has had its way in our cities, many European countries have seriously and at great sacrifice to themselves (the taxes are very high indeed) successfully tackled the housing, living, education, and health problems for the majority of their populations.

From Oslo this quotation from Mr Erik Rolfson, the chief city planner of Oslo (a city of 500,000 in a country of four million): "After the war – and there was considerable destruction as we resisted the Germans before we were overrun and occupied – we considered many important alternatives how to spend our limited resources. We finally decided that housing should be given the first priority because it was fundamenatal to the welfare of our own people."

But Norway is not alone in this philosophy. Certainly the development of all kinds of satellite towns and housing – or whatever you wish to call it – around Stockholm is well known. The delightful town and shopping centers such as Vallingby and Farsta by now are meaningful to most planners and architects. Here a quotation by Mr Albert Aronson, the manager of the municipal housing company Svensky Bostäder, which has planned and built and now administers the Vällingby Community Centre: "But when will Vällingby be quite finished? Never! – if the underlying idea proves right and if Vällingby comes up to our greatest expectations. No living town will ever be finished. The richer the life at Vällingby, the greater the need of never-ceasing development, enlargement and expansion."

The great variety of all different kinds and types of housing and the quantity of differently designed centers, the many kinds of schools and educational facilities, indeed the many new experiments in ways of living, is seldom discussed. Especially around Stockholm, I was impressed with their great richness and variety; indeed it seems that every taste could be satisfied here – and all at prices that most people can afford, not just the upper half as in the US.

But of all the new developments I saw, those outside Helsinki are, especially from an architectural, quality, and visual point of view, better and more attractive than any others. Tapiola, only five miles outside Helsinki, was started in 1951 and has limited its population to about 17,000 people. By now much of the town is completed and functioning. While it was built by private initiative, and many people own their own homes (mainly row houses) or cooperative

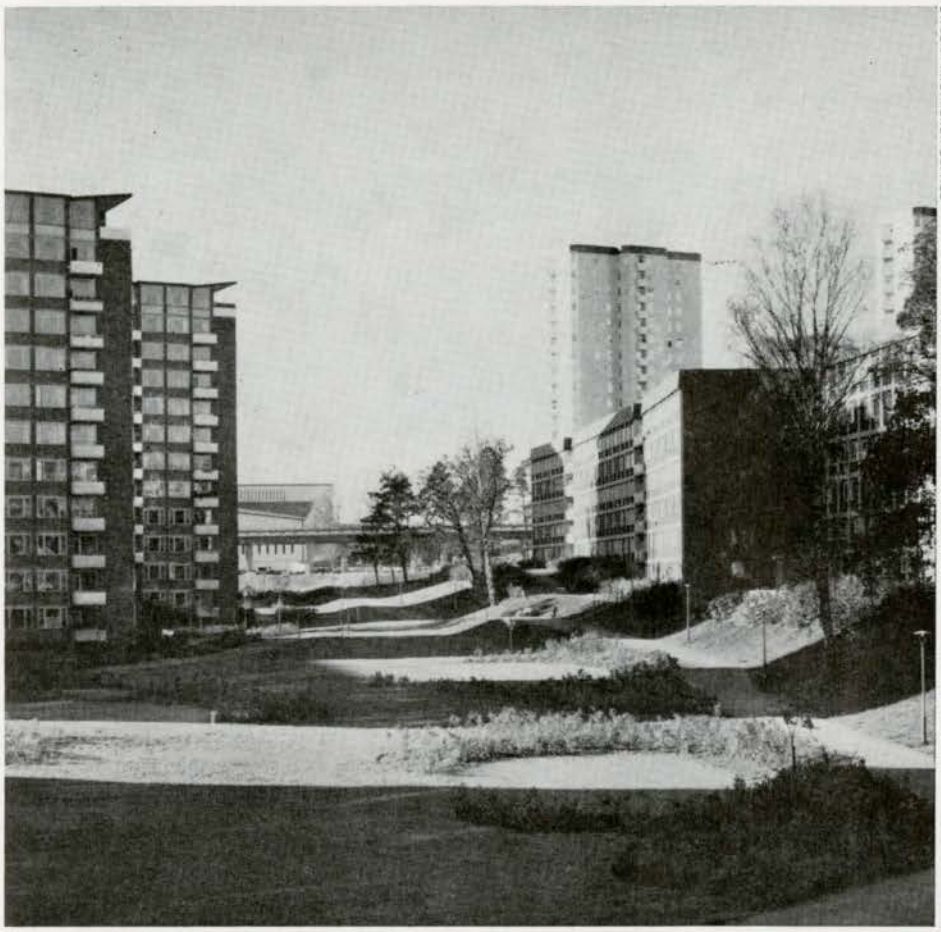
Swedish Information Service

1
Aerial view of Vällingby
Vue aérienne de Vällingby

Swedish Information Service

2
Vällingby Centrum
Centre de Vällingby

3
Residential area for 35,000 people of Farsta Center
Quartier résidentiel de 35,000 habitants à Farsta
4
Farsta, a satellite city of Stockholm
Farsta, ville satellite de Stockholm



Swedish Information Service

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Swedish Information Service

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apartments, certainly Tapiola is hardly a speculative real estate development in the US sense. Built at very low density (26 people per acre), it is really a garden city in the best sense of the word in a natural setting of great beauty, with many lakes amidst slightly rolling hills, beautiful birches, and tall pine trees.

In mid-August, with the sun still high and the days very long in this northern land, the flowers everywhere seemed to glow with color; the landscaping and planting of Tapiola is one of its outstanding attractions. The whole plan as well as the individually designed areas and buildings seemed to act together to form a thoroughly delightful and happy environment. And this at a price that the vast majority of young families can afford. Nowhere in the US have I seen – at any price – a more attractive community with such a variety of housing built to such high qualitative and design standards and offering to its inhabitants so much in terms of pleasant living (from all kinds of cultural and educational facilities, including a theater and concert hall to all kinds of sports facilities, indoor and outdoor recreation).

The equivalent to our public housing built as new residential communities outside Helsinki on city owned land is well designed and of excellent quality. Each community has its own shopping center and is planned complete with schools and transportation facilities into Helsinki. Pihlajamäki is one of these communities with not only a shopping and recreation center but also an industrial park.

In both Stockholm and Oslo new subway extensions have been built to connect the principal new housing areas with the central city. This new public transportation – which runs mainly above ground outside town – is clean, efficient and run by the government. It is intended and maintained as a service to the people, rather than trying to make a profit off their need.

In fact, the basic attitude towards housing in the Scandinavian countries vastly differs from ours in the US. To provide a decent place to live for every citizen is not an empty slogan (as that which introduces the US

5
Tapiola, view over whole area towards town center
Tapiola, vue sur le quartier vers le centre de la ville
6
Typical apartment building, Tapiola
Immeuble d'appartements typique, Tapiola
7
Pihlajamaki, outside Helsinki, government support housing
Pihlajamaki, banlieue de Helsinki, logements subventionnés par le gouvernement


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Fron P. Hosken
6


Fron P. Hosken
7

1949 Housing Bill) but in fact a serious responsibility by the government.

Besides supporting housing in all different ways, from financing to actual building, the government is also responsible for free health care for all and free education and really adequate pensions for the elderly. For all this special taxes are paid, but it also works. There are no slums nor any dilapidated housing; I searched for them. Or what is called a slum compares favorable to much US middle class housing.

The one new town which is aiming to achieve an urban character as opposed to Tapiola's "garden city" approach is Cumbernauld in Scotland, some 15 miles from the city limits of Glasgow. Built to draw people out of the slums of Glasgow (large areas in the city have been torn down by now and are being rebuilt), it aims for a population of 70,000 and also includes a good sized industrial area. The town is built with a complete separation of traffic between pedestrians and cars. Ring roads connect the different "neighborhoods". The new shopping and town center is built along a high ridge in the middle and really serves as center and visual focus for the whole town. The building is serviced from below – the main road goes under the town center. Its imaginative design in concrete has many different levels and offers a variety of spaces connected by stairs and ramps and elevators for shops, restaurants, and business and professional offices, a library, the town hall, a technical college, clubs, etc. Many of the walking areas are covered, which in the Scottish climate, is a blessing. There also is convenience shopping in each neighborhood.

Cumbernauld exemplifies a new approach to town building in terms of denser and more compact urban living. Each neighborhood in Cumbernauld has its own character and specific design quality, and thus the town offers a variety of housing accommodations and different kinds of living. There are children's playgrounds for each group of houses and elementary schools serving each neighborhood. A large high school is at the edge of town, and other sites are reserved for secondary education as new areas get built. In fact, the schools provided by the county are usually built first.

The shopping center by now is half built, and stores are rapidly moving into the completed spaces. The hotel was only opened this spring, and much remains to be done. The town center alone is expected to be doubled in size. Yet by now one can get a feeling for a new quality of life that has been planned and designed in these rather austere Scottish hills, mainly for families with young children. Somehow one cannot escape the notion that children brought up in this environment hopefully might turn out to be very different people with a positive and happy attitude towards life.

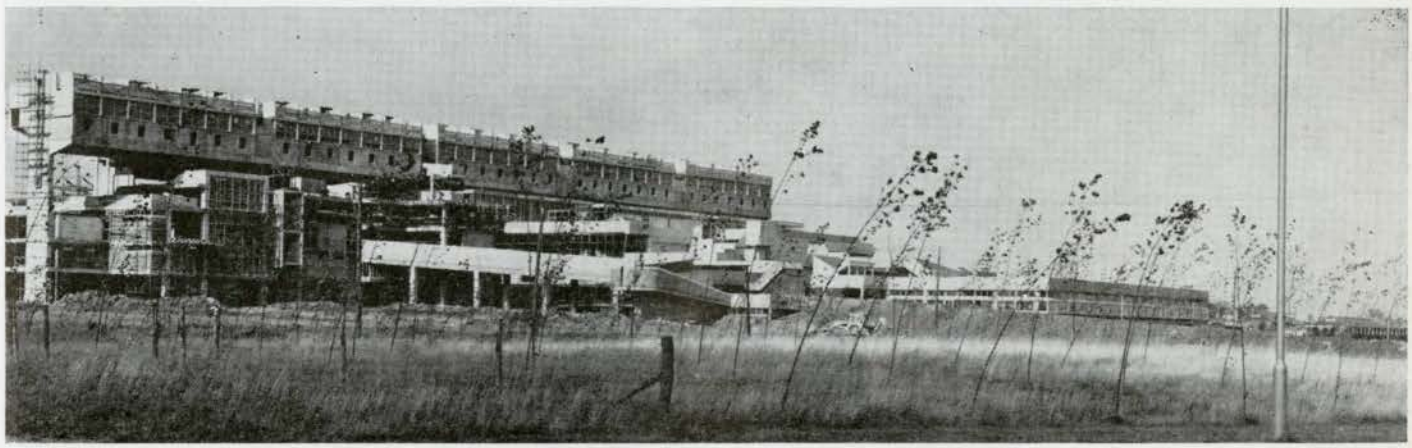
Of the new towns around London, I visited both Basildon and Stevenage, which have been discussed many times before. Both are designed for more than 70,000 people and are by now active thriving communities that have largely proven what they set out to do: to provide a sound, pleasant, and satisfying life and good housing, schools, and recreation for a majority of people of often very modest incomes, certainly very modest by our standards. But then they do not need to spend a quarter of this income on housing but much less, and health care for the whole family is entirely free and so are of course schools and much of the recreation.

Both Basildon and Stevenage have large pedestrian shopping centers surrounded by county and business offices and recreation facilities. There are also local shopping facilities in each "village", including the obligatory English pub; these earlier towns are designed much more dispersed than Cumbernauld. One interesting feature is that many of the industrial plants, in order to attract female labor, have found it necessary to provide additional nurseries and day care centers for pre-school children. This especially in the new towns since the average age of the inhabitants is relatively young, and they are planned for families with children.

What then are the basic differences between these towns and their housing discussed and what is being built in the US.

First of all there is a difference in attitude. It is agreed in most of these northern industrial democracies that every citizen has the right to a living job and to decent housing, the

8
Cumbernauld Town Center – View of first Phase – October 1966, to the North from Carbrain Spina Road
Centre ville Cumbernauld, – Vue sur première phase – octobre 1966, au nord de la route Carbrain Spina
9
Cumbernauld New Town, layout of Town Center showing all phases
Cumbernauld New Town, plan schématique du centre ville montrant toutes les phases
10
Cumbernauld. Group of the First Apartment Houses
Cumbernauld. Groupe d'immeubles
11
Cumbernauld New Town, Muirhead / Braehead Interchange. One of the twelve multi-level interchanges which will be provided to ensure a steady flow of traffic.
Un embranchement de douze lignes à niveaux multiples est prévu pour assurer le flot de la circulation.



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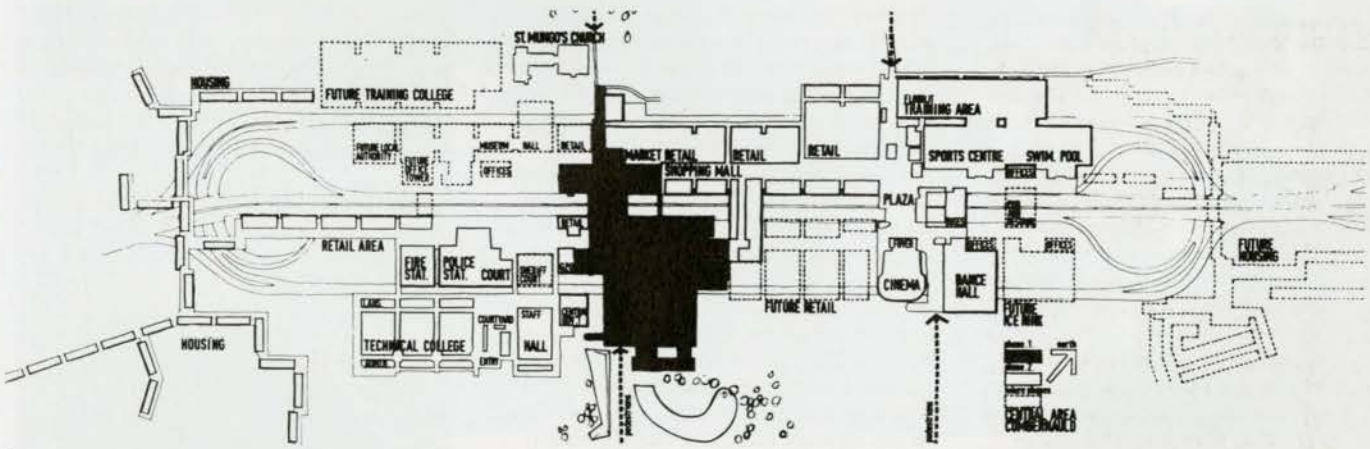

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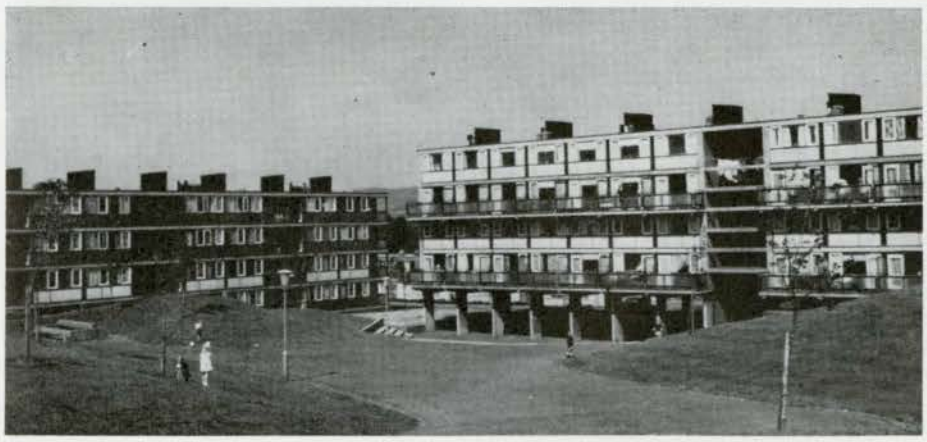

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12
Basildon near London. Town and Shopping Center
Basildon près de Londres. Ville et groupement de boutiques

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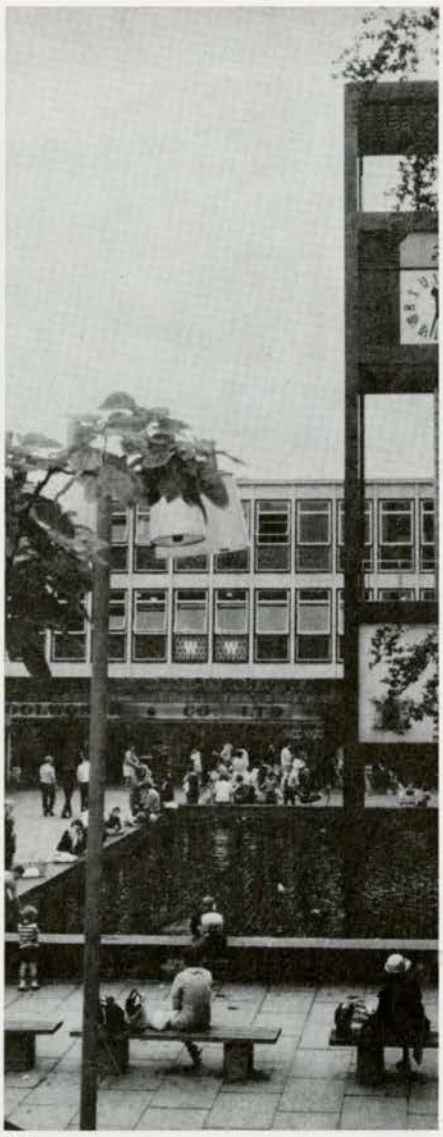
13
Stevenage Town Center
Stevenage, Centre de la ville



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right to free health care and free education, to social security and adequate support when old, as well as support between jobs. The basic difference between the US and these countries is that this is regarded as the right of each citizen – it would not occur to anyone to call this charity as it is often still done here. In fact, the people are supporting this legislation with their own money, and the taxes are very steep indeed. Nor is housing considered a consumer product on which to make a maximum profit – as in the US.

The actual building of the housing is organized in different ways, depending on the country, but everywhere there is a wide variety of choices, from single houses to large apartment blocks. There is private ownership, cooperatives, as well as government financed rental housing where rents are adjusted to the income of the inhabitants. But everywhere the government takes part in the financing and sometimes also construction and upkeep.

The other basic difference, which indeed is crucial and which the US cities lack: Stockholm, as well as Oslo and Helsinki, own the land surrounding them. The land development legislation in Great Britain is well known. Without this control it would be impossible to build these new towns or indeed to plan any rational development for the benefit and use of the majority of the people (rather than in the US for the speculative gain of a few). There are no suburbs which follow their own destiny ignoring the city.

The new communities planned by the cities on their own land provide new and better living conditions and housing, while some of the worst old sections in the cities are being torn down and rebuilt. Schools, shopping centers, health facilities, recreation and industrial parks are planned as integral parts of the new towns. Traffic is organized for maximum safety for children, and frequently pedestrians move entirely separated from cars.

By contrast, the one thing that is entirely absent from all the developments I saw near the cities is the cheap and ugly commercial development that accompanies all roads out of town in the US, from used car lots to gas stations, doughnut and ice cream parlors, motels of every kind, cheap stores and eateries, all festooned with umpteen signs outdoing each other by attention seeking, blaring vulgarity. This simply is not tolerated by planners or by the public, a fact which is no loss to the enterprises involved because no one engages in this kind of showoff sport. All development is planned, and commercial development is designated to certain areas. In England, green belts surround all new towns near London, and there are definite planned city limits. The commercial real estate speculator is not permitted for his own profit to ruin the view for the motorist or spoil the attractive environment for the use of people.

By comparison with these people and government supported efforts, we have done painfully little in the US for the average US citizen and nothing at all for the bottom

14
Aerial View, Reston, Virginia
Vue aérienne, Reston Virginie
15
Reston, Virginia, Lake Anne and Town Center with fountain
Reston, Virginie, Lac Anne et le centre de la ville avec fontaine

16
Photo of Columbia model view west toward downtown, 1980
Photographie du modèle de Columbia vue de l'ouest vers le centre de la ville, 1980

14

Fran P. Hosken

15

16

third of the country, some 40–50 million people, many more in fact than all the populations combined of all the Scandinavian countries. What we have built in terms of new communities is available only – due to cost – to the middle and mostly upper middle class.

The most attractive planned new development in the US that can be called a town is Reston in Virginia, some 30 miles outside of Washington and near the new Dulles Airport. The others that should be mentioned here are Columbia, Maryland (between Baltimore and Washington), and Irvine Ranch in Orange County, south of Los Angeles.

Reston's town center is just 18 miles from the White House. On the edge of Lake Anne (which is used for swimming and boating) and punctuated by a highrise apartment building, the town center is reserved for pedestrians. With shops, restaurants, and community facilities, it presents a gay and lively picture to the visitor. In terms of housing and recreation and just plain attractive living, Reston certainly is tops. But it is evident that at the prices this handsome, privately developed community must charge to those who want to live there, not even many employed in the shops of the town can afford to rent, let alone buy accommodations. Therefore in Reston – as obviously also with both the other communities mentioned, as well as all suburban developments everywhere in the US – price simply excludes more than half, if not two-thirds, of the population.

In Reston, which is well ahead in development of the other two towns mentioned, the visual as well as human results in terms of better living are quite evident. But it would simply confuse the issue to assume that communities catering to this kind of market could make the slightest difference to the problems which plague our cities. True, Columbia has been planned with the greatest of care and forethought. In the words of its idealistic and enthusiastic developer, James W. Rouse, "to grow better people, more creative, more productive, more inspired, and more loving people". But these new towns cannot possibly under prevailing financing and building methods and without massive government support provide housing for the people who need it most (or more than one-third of the US population).

Irvine Ranch, in turn, is being built around a new campus of the University of California, which provides a real focus and town center, far more interesting, challenging, and dynamic than the customary central shopping and administrative facilities. Yet Irvine Ranch in every other way is being developed by individual real estate entrepreneurs who buy different tracts of land on which they build most any kind of housing they can sell.

But one thing has never been mentioned: Even the most idealistic developer cannot control the community he may most carefully plan and build after he has sold the housing and after the shopping centers become largely the property of business undertakings. At the moment of the sale he loses control, and the new owner takes over to do as he pleases, which may include changing the original plans. Houses and land costs can be increased, and uses altered. There is no assurance that even open space will remain open under heavy business pressure (despite zoning regulations), as has been shown unfortunately in the past. The reason is that we lack all legislation to date to protect the land.
The notion still prevails that land and housing is a commodity to be bought and sold in the open market for private profit. Even city redevelopment agencies who are authorized to acquire land by eminent domain sell it back again at greatly reduced prices (the difference is paid by the government, ie, from taxes) to private real estate firms for development – to be sure with some stipulations for some years ahead. But to this critic this seems far too limited control. The US myth that cities cannot acquire and own land because this is contrary to the concepts of a free democratic society in the light of actual experience is patently absurd. However, as long as this myth prevails and in the absence of any real planning legislation, we cannot hope to make any progress towards better housing, better cities, and a more equitable way of life.

The housing and urban development here discussed, all in democratic countries, should serve as an example of what can be done even with limited resources given the right priorities. Under our present system of development, we have, mainly by neglect, created the urban problems which now are threatening the life of and in the cities. Our affluence means little if it cannot provide the basic necessities of life – food, clothing, and shelter for all our people. To this have been added in the European industrial democracies the right to a job and free medical care and education for all. Certainly the urban problems which beset our society today are past the stage of superficial remedies. To tackle those requires a fundamental change of attitudes and the will to really create in practice an environment for a way of life put down on paper by our forefathers as the ideal American way.

This quotation from the speech of the eminent economist and social scientist Gunnar Myrdal at the annual convention of the Americans for Democratic Action in Washington, DC, this past April:

"At this point it is my duty to put in a reminder that the American mansion is a heavily mortgaged piece of real estate. It has to invest trillions of dollars within the near future to rebuild completely its cities, and, equally important, to rehabilitate the human content of the slums. As we all must be aware, this is an urgent necessity. The situation is continually deteriorating. Not to embark upon these huge investments soon, entails dangers for the cohesion of the American society and the stability of democracy." □

Editor's Note:
Since Mrs Hosken has written the article "New Towns in US and Europe" the following appeared in Time magazine.
"This month misfortune of another kind hit Robert E. Simon, Jr., the mild-mannered millionaire developer of Reston, Virginia. In a corporate reshuffle, Gulf Oil Corporation took control of the financially ailing project, kicked Simon upstairs from President and chief executive officer to a consulting role as chairman of a newly formed subsidiary, Gulf-Reston Inc. As the new president, the oil company named Robert H. Ryan, a Pittsburgh realty consultant and former vice president of Boston-based Cabot, Cabot & Forbes."

Married Student Housing Accommodation University of Alberta

1, 2
Perspectives

Dennis and Freda O'Connor and Maltby Architects and Planning Consultants

Statement from the Architects

Several factors distinguish this project from other multiple housing projects:

The tenure of occupants will be brief and all occupants will be students whose rent assessment will be similar. All will have the common purpose shared by students of a university.

Social, economic and age barriers which tend to isolate families of conventional estates will not be common ingredients of this one. Religious and ethnic differences will tend to add a further aspect of learning.

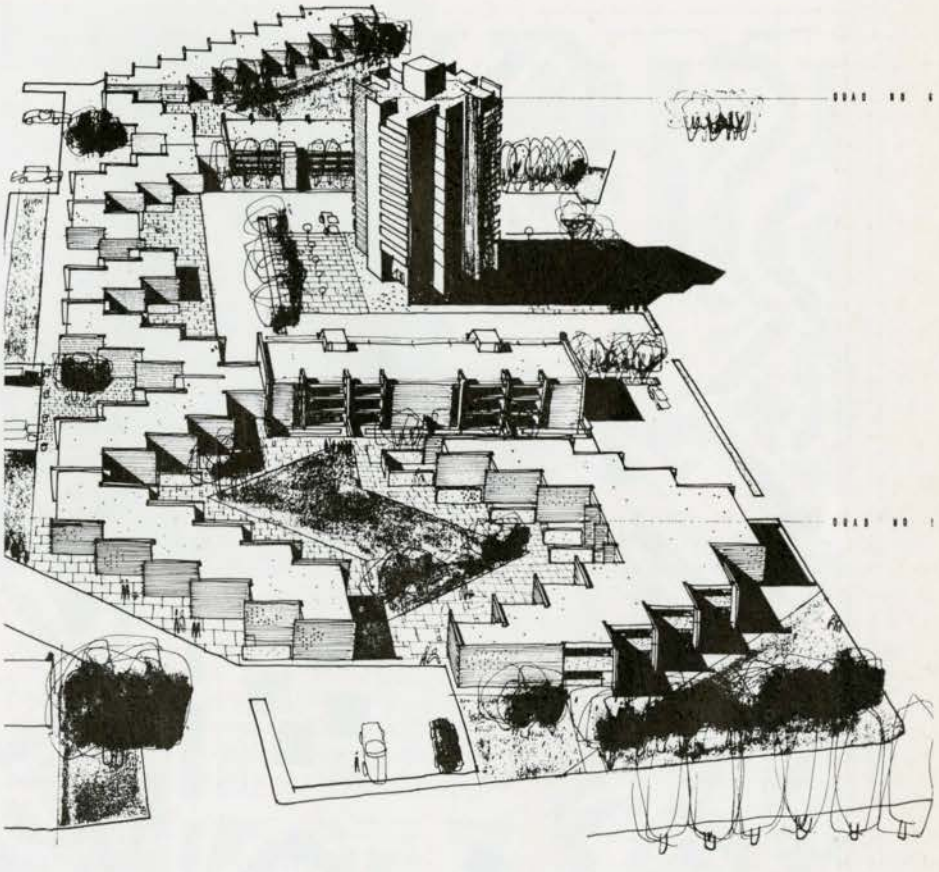
All these considerations combine to produce a unique problem where social intercourse, extension and enrichment of University life, the interchange of knowledge and the sharing of experiences should be facilitated and fostered. At the same time the necessity of withdrawal to the privacy of one's domain is recognized.

The schedules indicate that we are to consider a population of 2,500 persons. The first considerations were how best to group this population into comprehensible physical and sociological entities. How to give each entity an identification of its own which would distinguish it from others, having in mind the economic factors which tend to dictate the repetition of similar units of accommodation.

What was needed, we decided, was a basic unit of accommodation capable of juxta-position by a variety of means to form physical entities of infinite scope and variety.

At this point in our assessment it became obvious that these entities or groupings of small dwellings must have some relief of physical scale – and some means of uniting the whole community. The interplay of voids and volume on so vast a scale needs points of relief and unifying elements if devastating monotony is to be avoided.

To relieve the scale we introduced three high rise apartment buildings containing community facilities and common rooms to add powerful focuses in strategic locations with the seven acre school and community site



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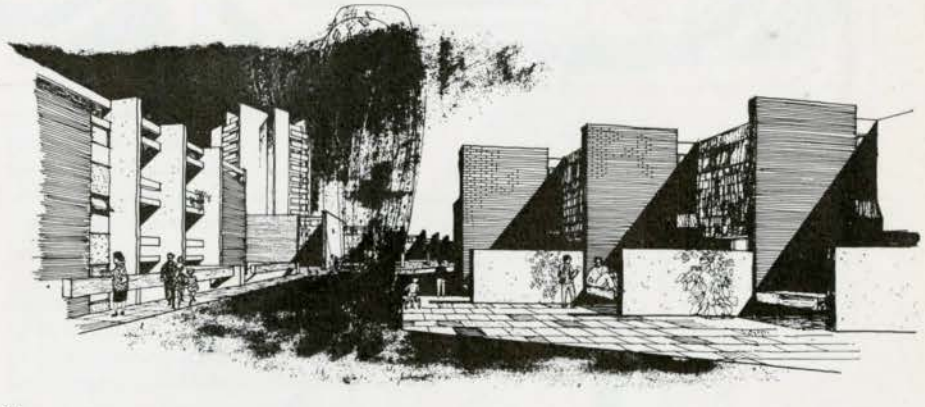

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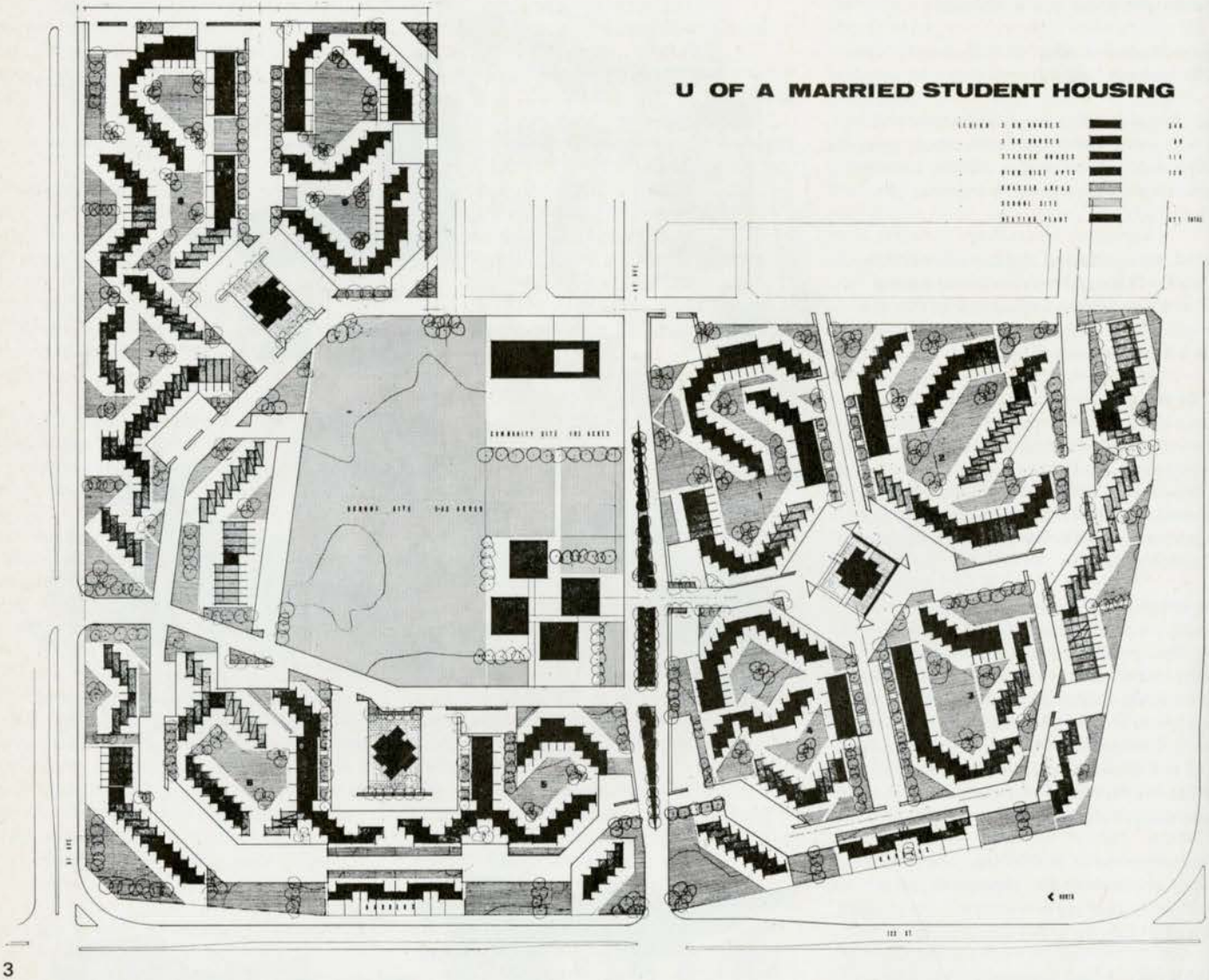
Site Plan
Plan d'emplacement
4
Elevation
Elévation



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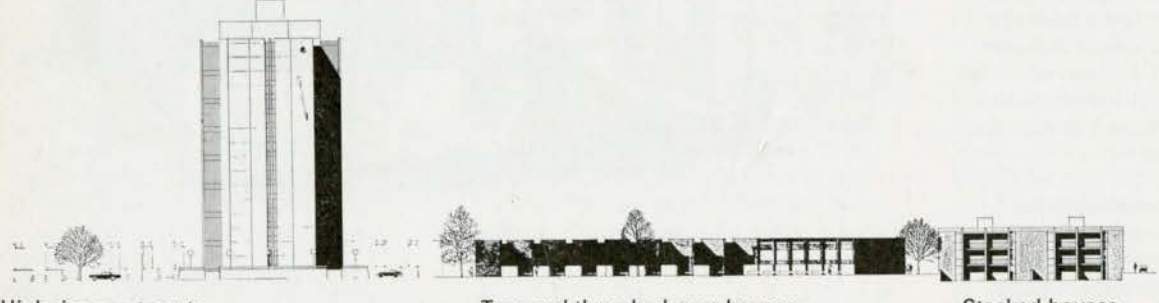

High rise apartments
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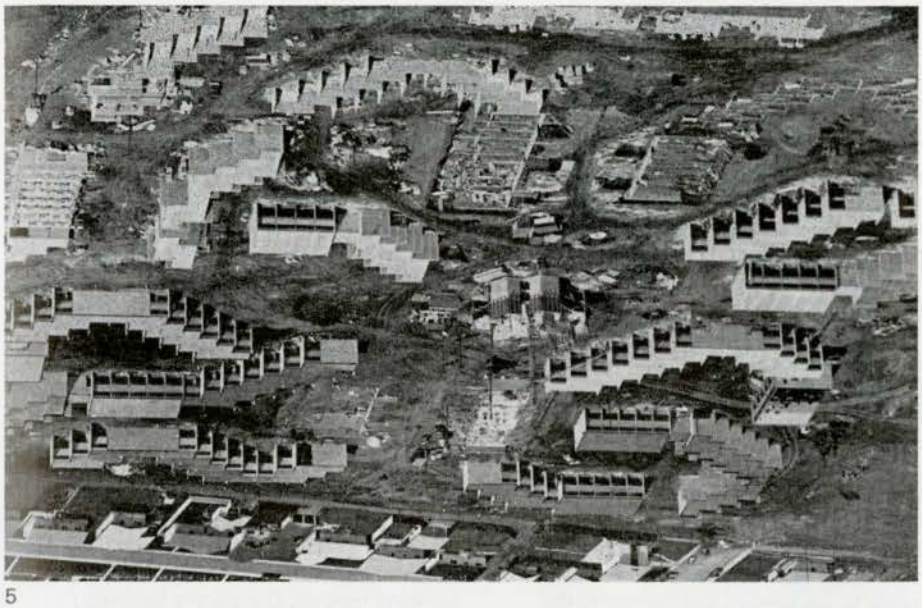
Two and three bedroom houses

Stacked houses

5
Construction photograph
Photographie d'une construction

6
High rise apartments and common rooms
Immeubles d'appartements de grande hauteur et salles de séjour
7
Two and three bedroom houses
Habitation à deux et trois chambres
8
Stacked house
Maisons superposées



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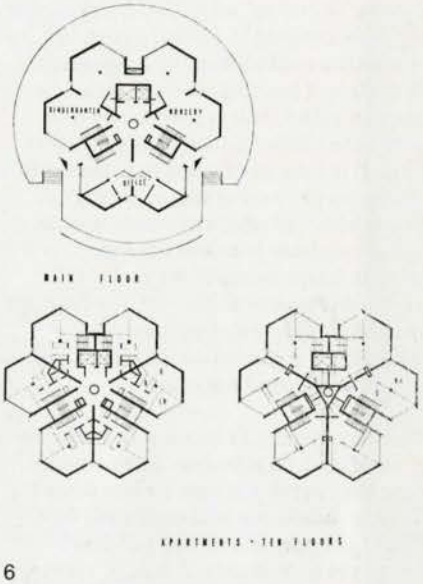

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disposed between them at the centre of the development.

The introduction of high rise buildings followed very careful consideration since their use was neither advocated nor encouraged in meetings or in the program. We could not reconcile ourselves with a married student housing program which neglected to provide for *all* married families, with or without children.

If the need to provide alternative forms of accommodation is not evident now it is suggested that the dynamic growth of the University of Alberta will sooner or later prove this need when the high rise sites will become land bonuses providing for an additional 120 families.

The scheme for single family housing is based upon a simple 12'8" module which provides a clear floor area of 12'0" x 37'4" at two levels. The two and three bedroom units occupy the same ground area and are therefore freely interchangeable.

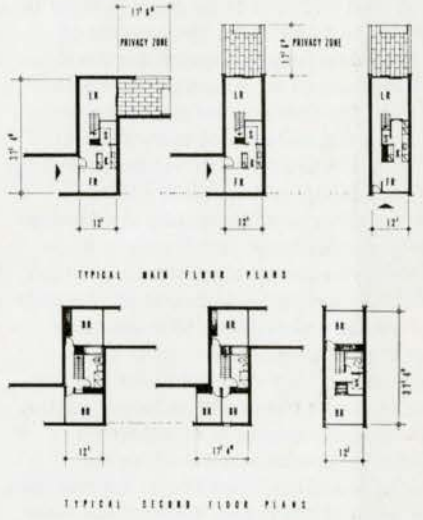
For this scheme we have assumed a ratio of one three bedroom to four two bedroom houses. Only the second storey of the three bedroom unit differs from that of the two bedroom and the rent differential would be negligible.

The extreme economy of the basic unit deliberately facilitates the provision of laundry equipment for each occupant as this was deemed a necessity for young children.

For reasons of variety, scale and choice of accommodation, a stacked, through row house was provided with shared laundry facilities in a basement. In all cases these are disposed to add impact to the major high rise neighborhood focuses.

Secondary neighborhood focuses were provided in the forms of landscaped greens uniting smaller groupings of family houses. It is our feeling that these greens (which we have called quads on our plan) with their sense of enclosure, restricted access, landscaping and paving should create collegiate environments of considerable variety.

The lively rhythm of the staggered housing units will present an ever-changing prospect to traffic passing by and amongst them. Bold detailing of building elements and the use of various combinations of color and texture will eliminate the possibility of monotony through repetition so commonly associated with multiple housing projects. □



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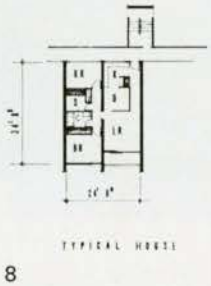

8

Housing Crisis and Opportunity

1, 2
Some new patterns . . . .
Modèles de conception nouvelle . . . .
3
. . . . in the suburbs
. . . . en banlieue

Henry Sears, MRAIC

Mr. Sears is a principal in the Toronto architectural firm Klein and Sears

The words "Housing" and "Crisis" are almost instinctively coupled in current usage. We are constantly reminded of the inadequate stock of decent housing available at a cost people can afford. This is particularly true in some urban regions such as Metropolitan Toronto. It is time to examine in some detail the problems of housing today, for the collective effect of where and how people are accommodated is one of the most significant determinants of the form, character, and quality of the city. The pressure of demand for new housing presents the opportunity for solutions which will enhance the urban qualities of our cities.

A major determinant in housing has become the cost of land. In suburban areas around Toronto the cost of a simple lot has soared to the level where the land comprises 40% to 50% of the cost of a typical builders house. In the central areas it has, of course, risen at an even higher rate. More efficient use of land will have to be made in order to offset these rising costs. The passage of condominium laws will permit the development and sale of more complex forms of housing. The combination of uses on an individual site will provide more efficient use of land while at the same time providing a special quality which would not be obtained otherwise. We require the development of sophisticated techniques to allow people to live almost anywhere in an urban complex in a reasonable degree of proximity to amenities and facilities, with adequate separation of incompatible elements.
The current system of dividing the city into areas of simple usage will no longer suffice. The successful examples of residential commercial combinations such as the Colonnade and the Town Mall in Toronto have been proof of this thesis. We require a more liberal use of combinations of uses particularly in the central areas. The techniques exist for adequate separation of uses to enable a wide variety of combinations within a structure, residential with shopping, schools, offices, and in appropriate cases industry. A by product of a sensitive and appropriate mixture of uses within a structure, complex, area, and even neighbourhood is the elimination of the vast single purpose areas such as the downtown office areas with the dreary after-five emptiness. A walk through London with people living almost in every portion of the city is a reminder of the vitality that is provided by the juxtaposition of residential usage upon the traditional commercial areas of our city.

We require the encouragement of varied forms of housing within our city. These forms can and should alter and enhance the fabric of the city. We are aware of the change in the pattern and rhythm of the surburban areas created by the provision of row housing schemes compatible in scale with the adjacent areas of single family houses but providing a change in density and quality. The separation of pedestrian and vehicle also added a new experience to these areas. The combination of row housing and apartment has added another scale, and the combination of apartment, row housing and commercial another measure of urbanity. The encouragement of these and newer forms within the cities is essential to enhance and build on the qualities that exist. Present regulations in Toronto, for example, tend to encourage the point block as the only form of housing other than the existing single family stock. It is imperative that a wider variety of housing be encouraged.

Dense low rise family accommodation is possible in combination with other forms or on its own. The development of new housing complexes with separations of vehicles and pedestrian and combination of uses will add to the quality of our city if it is done sensitively with full recognition of those elements in the city which deserve conservation and preservation. Toronto, typical of many Canadian cities has a flourishing commercial center, pleasant residential areas, combined with a good park system. The new developments must be compatible but at the same time can add a new dimension in visual interest and change in intensity of use.

There are a wide variety of people to be housed, rich and poor, young and old. Unique solutions are required for particular groupings of people. Young single people obviously need housing and amenities much different from young people with growing families. Old people similarly should be housed differently than newly marrieds. The clear expressions of these varied needs will add another texture to the visual complexity of the city.
Certain segments of our housing demands have been inadequately understood and unsatisfactorily provided, while great progress has been made in other areas. Row Housing in Canada, particularly in the middle income suburban examples, has developed a sophistication which is the equal of that anywhere in the world. Apartments have similarly reached a good standard although a propensity for frou-frou without the delight of Victoriana has tended to clothe many otherwise reasonable structures with a facade of ugliness just beyond the realm of humor. New streets of single family houses do not have the charm, quality, or urban appeal of our older city


1


2


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CANADIAN
BUILDING DIGEST

DIVISION OF BUILDING RESEARCH • NATIONAL RESEARCH COUNCIL CANADA

ROOFING MEMBRANE DESIGN

by M. C. Baker

UDC 69.024.158

Traditional sloping roofs are easily covered with discontinuous overlapping units of impervious materials to shed water. Even materials that are not waterproof may sometimes give reasonable service when used in this manner. Flat or nearly flat roofs of relatively recent use require a jointless waterproof covering to hold water while it drains slowly to outlets. Such a continuous waterproof covering for roofs has come to be called a roofing membrane. For something over one hundred years it has been the practice to make this membrane of bitumen and felts in alternate layers.

This has been easy to do, but the waterproof condition has sometimes been difficult to maintain. Moisture in building materials, humidity arising from the use of buildings, and changes of temperature all have effects that are more difficult to deal with when the covering must be absolutely watertight.

Architects, in the past, have not always been concerned with the design of roofing membranes, and it has been usual to accept the recommendations of manufacturers of roofing felts or of roofers. A successful roof was not always assured by this procedure, although when guarantee bonds were issued a reasonable standard existed for membrane specification and construction. Other considerations in the design of a roofing system were often ignored, however.

Previous Digests have dealt with bituminous materials and the fundamentals of roof design related to structural, thermal and moisture considerations. This Digest deals with the choice of bitumen and felts and the methods of laying felts.

Bitumens

Bitumens are used for roofing mainly because of their high resistance to moisture penetration, good adhesive and cohesive properties, and their ability to deform slowly and continuously when subjected to shearing forces. Other desirable properties are weather resistance, chemical and physical stability, low sensitivity to temperature, high flash-point, low vapour formation, and compatibility with other materials used in roofing.

Weather Resistance. The properties of the bitumen and the slope of the roof are both involved. Lower softening point asphalts generally have better resistance to water absorption and penetration, but they cannot be used on higher slopes because they soften and flow off. Water absorption and penetration, however, are a function of time, and it is desirable to slope roofs to carry water away. On steeper slopes air-oxidized, higher-softening-point bitumen must be used as a compromise.

Stability and Temperature Sensitivity. It would appear that successful use of bitumen for roofing could be assured if the limits of temperature defined by the softening point and its brittle condition were not exceeded in service. A brittle condition for asphalt exists from about 0 to 20°F, and for coal tar pitch is as high as 50°F. Softening points for asphalt are from 140 to 200°F and for coal tar pitch about 140°F. This indicates that sucessful use of bitumen in most parts of Canada is difficult without modification or protection, or without placing it in a more suitable environment. Gravel protection has been a standard practice, and this accounts to some extent for its reasonably successful use.

Vapour Formation and Flash-Point. When heated to working temperatures bitumen should have the least possible volatile content, be free of any tendency to coke or any tendency for oily components to separate during

TABLE I

PROPERTIES OF ROOFING BITUMENS

Type of Bitumen	Use Related To Incline	Softening Point, °F	Penetration: 1/10 MM, 77°F, 100G, 5 Sec	Flash-Point, °F	Ductility, CM
Asphalt Type 1 (CSA)	Flat to 1 in. to 1 ft	140–150	25–40	450	10
Asphalt Type 2 (CSA)	1 to 3 in. to 1 ft	165–175	20–30	450	3
Asphalt Type 3 (CSA)	Over 3 in. to 1 ft	190–205	15–25	450	Not Specified
Coal Tar Pitch (CSA)	Flat to 1 in. to 1 ft	140–155	15	248	50
Asphalt Emulsion	No limit — roof coating	100–130	50–125	500	100
Asphalt Cutback	No limit — cold process cement	150–175	30–50	100	Not Specified

application or subsequent weathering. A high flash-point is necessary to diminish the risk of fire during application and on the completed roof.

Compatibility. Felt saturants must be compatible with felt coatings, and both must be compatible with felt interply adhesives. Incompatibility can cause the breakdown of the desirable properties of one or both of the bitumens involved and result in loss of cohesion, adhesion and watertightness.

Bitumens Available. Building designers do not generally have a choice regarding the saturant or coating used in the manufacture of felts, but they will normally have some choice as to the type of bitumen and felt used in the construction of built-up roofing. The Canadian Standards Association has set requirements on three types of asphalt and coal-tar pitch for use in construction of built-up roofing membranes. Some of the properties are shown in Table I.

Clay-stabilized asphalt emulsion and cutback asphalt for cold application have been included in Table I for comparison. Because of the stability of asphalt emulsion, even on steep slopes, it is possible to use a very soft asphalt, which has considerable advantage in water resistance.

Felts

Types of felt available to the designer, as specified by the Canadian Standards Association, are shown in Table II.

Strength. CSA does not specify the strength of felt, except for glass fibre felt. This will vary with temperature and all felts are stronger at lower temperatures. At room temperature the average tensional breaking strength of a 1-inch wide strip of 15-pound type, asphalt-saturated, dry organic fibre felt is about 30 pounds longitudinally and 15 pounds transversely. For asbestos fibre felt the strength is about 20 longitudinally and 10 transversely; and for glass fibre felt, about 25 longitudinally and 20 transversely.

Dimensional Stability. The water absorption and dimensional stability of felts are of some

TABLE II

PROPERTIES OF ROOFING FELTS

Designation	Canadian Standards Association Specification	Type	Min. Weight Per 100 Sq Ft Finished Felt, lb	Min. Weight Per 100 Sq Ft Of Dry Felt, lb	Min. Weight Of Saturant % Of Dry Felt (or lb)	Weight of Coating And Surfacing lb/100 Sq Ft
Asphalt-Saturated (Organic)	A123.6	15-lb	12.2	5.1	140	—
Asphalt-Saturated (Asbestos)	A123.9	15-lb	13.0	9.0	40	—
Asphalt-Saturated (Glass Fibre)	A123.17	Ply Sheet	7.5	0.85	(4.5)	—
Coal-Tar Pitch Sat. (Organic)	A123.8	15-lb	12.2	5.1	140	—
Asphalt-Saturated And Coated (Organic)	A123.3	55-lb	46	9.1	150	16.7
		45-lb	37	5.6	140	16.7
Asphalt-Saturated And Coated (Asbestos)	A123.11	55-lb	50	17.5	50	18.0
		20-lb	16.9	8.5	40	6.5

importance. Asphalt-saturated organic felt will pick up 50 per cent by weight of water when immersed, and coal-tar saturated organic felt about 80 per cent. These changes in moisture content cause relatively large dimensional movements of about 0.2 per cent parallel to, and 1.5 per cent perpendicular to, the fibre or machine direction. As moisture can cause rotting of organic fibres as well, it is very necessary that roofing felts do not become wet during storage or application.

Asbestos felts consisting predominantly of asbestos fibres, but including a small percentage of organic fibres necessary to facilitate manufacture, are also not entirely free from moisture movement and decay. Glass fibre felts are only very slightly affected by moisture.

Coated Felts. Some current thinking favours the use of coated organic roofing felts instead of saturated felts for the construction of built-up roofing membranes. In this case, the bitumen required for waterproofing has already been applied in a uniform coating at the manufacturing plant, and application is essentially the sticking together of sufficient layers to give the strength required. The heavier grades of coated felt have been used for many years in this and other countries as a single-layer roofing material on simply pitched roofs of barns and sheds. In more sophisticated roofing systems, several layers of coated felt are used with hot or cold adhesives and a surface protection of gravel or weathering coat of clay-stabilized asphalt emulsion.

The use of coated felts largely eliminates the hazards of storage and construction, but may introduce other problems. The weights of available coated felts make them difficult to lay in cold weather without wrinkles or fishmouths. A heated roller can be used to advantage with the cold system, but the heat of the bitumen has to be relied on for the hot application. There appears to be a need for more flexible felts such as those produced in some other countries.

Bitumen Thickness

The waterproofing function of the membrane is provided by the bitumen. For bitumen to perform as a water barrier there must be a continuous layer free of any voids, pin holes or cracks. Although a uniform thickness of less than 1/64 inch can achieve this, it is impractical to try to obtain it because of surface roughness and the methods of application, and considerably greater thickness is used in practice.

The thickness is usually specified by the number of pounds of bitumen to be used per 100 square feet, and varies somewhat depending on whether it is the supporting structure

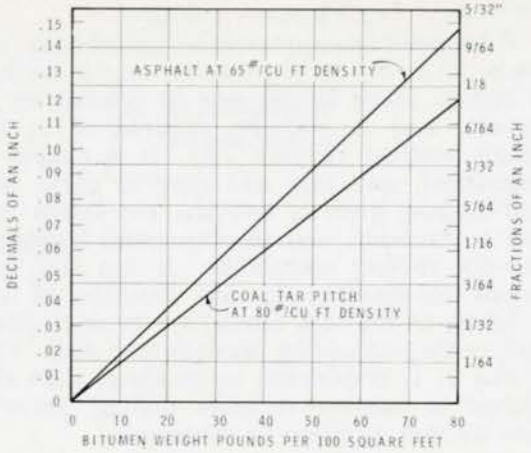


Figure 1 Uniform Coatings of Bitumen

adhering layer, the between-plies layer, or the top-surfacing layer. Figure 1 gives the thickness of bitumen layer that can be obtained with uniform coatings. Twenty pounds of asphalt as normally specified between plies, if uniformly spread, represents a thickness of a little over 1/32 inch, and 60 pounds as normally specified for a top pour gives a thickness slightly less than ⅛ inch. Part of the top pour thickness is utilized in holding the protective layer of mineral aggregate normally used over this application.

Whether the thicknesses specified are achieved will depend on workmanship. The advantage of coated felts is that they already have a factory-applied layer of bitumen. This provides protection to the felt fibres against moisture pick-up no matter how poor the workmanship. Since moisture pick-up usually causes expansion and wrinkling of felts, it is of particular significance when felts are laid on a supporting deck or insulation with open joints. It is improbable, in such cases, that the adhesive bitumen will provide a complete coating for the felt.

Felts are used as a reinforcement to stabilize the bitumen layers, to provide the strength required to span irregularities in the supporting surface, and to distribute strains over a greater dimension. The relatively low cost of the materials makes it economical to use several layers to give greater strength, and in the hope that several layers of bitumen will increase the factor of safety. The top layers of felt must be coated with bitumen for protection against water from snow or rain. This top layer of bitumen is obviously of prime importance, for once it is breached and water gets into even the topmost layers the felts will rapidly deteriorate.

Methods of Laying

The performance of the membrane depends, to a very large measure, on the method of laying. There is only one in general use in Canada, and it may be referred to as the shingle method (Figure 2A). It is simple to understand, and fast and easy to carry out. Half-lapping gives a two-ply, two-thirds lapping a three-ply, and three-quarters lapping a four-ply roofing membrane. It has the very serious disadvantage that any wrinkling of felts or lifting at the laps tends to provide a direct path to the supporting insulation or deck. This is why it is considered so essential with this method to achieve intimate contact between plies without wrinkles or fishmouths.

This disadvantage of the shingle method of laying can be overcome by separate layer application with a narrow lap at the edges and with subsequent layers laid so that the edge and end laps are staggered. This avoids unevenness in the membrane and imperfectly sealed edges corresponding to similar defects in the other layers. With this method (Figure 2B) fewer laps are exposed to the weather, and if there is any lifting at a lap the leakage path leads only to the next layer.

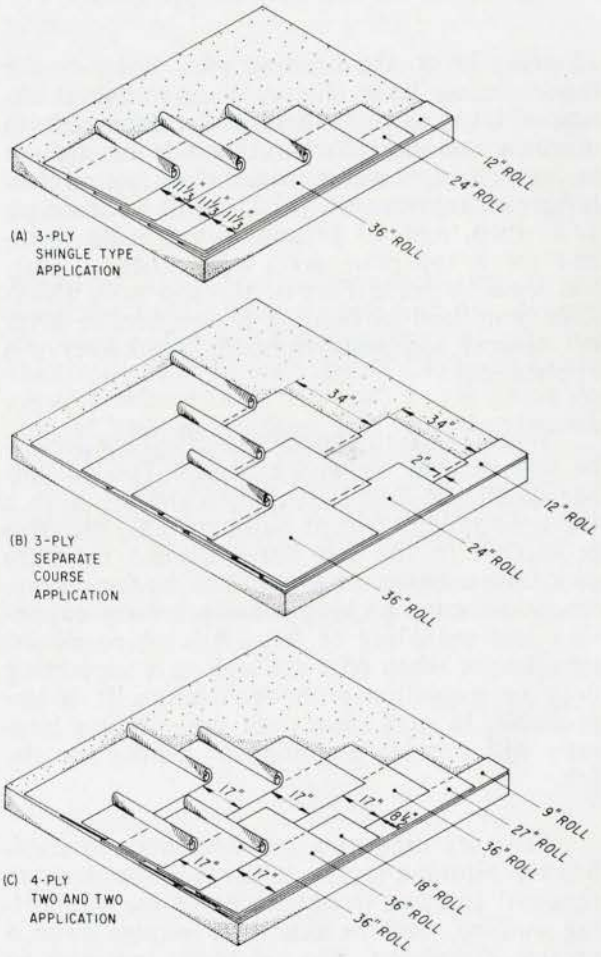


Figure 2 Felt Application

An alternative to separate layer construction is the use of two and one for a three-ply, and two and two for a four-ply roof membrane. It has some of the advantage of separate layers, and is illustrated in Figure 2C for a four-ply membrane.

For either of the two separate layer type applications the work must be planned for continuous coverage, with all layers laid at the same time. The practice of laying one or two plies, with additional plies added at a later time, may be hazardous. There is danger of trapping construction dirt and moisture between the layers, resulting in poor adhesion and blistering later.

It may sometimes be an advantage, however, to put down one layer of felt to cover the deck or insulation quickly. Coated felt should be used in this case, since it is not so susceptible to damage from moisture as is saturated felt. Whether this protective layer of felt can be incorporated in the final roofing membrane depends on its condition, and can only be decided by the competent designer on the job site. For any of the application methods, a start should be made, if possible, at the lowest point so that lapped edges do not obstruct the flow of draining water.

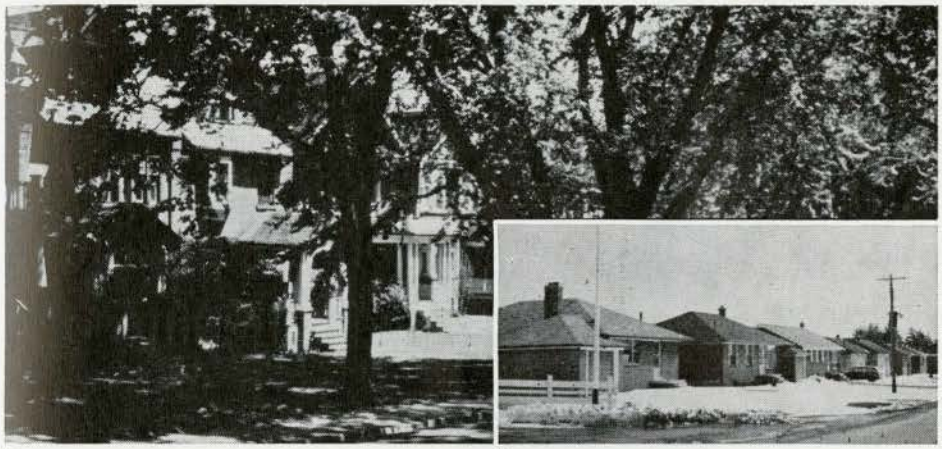
Conclusion

This Digest has considered only the roof covering and some of the factors in its design and application. Analysis of all the factors indicates that in many instances the placement of the membrane below the insulation may be the only way in which a built-up bituminous membrane can survive in contemporary buildings. This will be the subject for a further Digest. Whether the built-up membrane forms the covering for the whole system or acts as the water drainage layer within the system, the principles of design and application for the membrane are the same and the factors explained above apply.

4
We have lost the urbanity . . . .
Disparition de l'urbanité . . . .

5
. . . . of the street in the new suburbs
. . . . des rues de la banlieue

6
The combination of compatible uses
Combinaison d'usages compatibles
7
The beginning of more complex forms
Début de formes plus complexes
8
Some sensitivity to the existing environment
Formes s'adaptant à l'environnement existant



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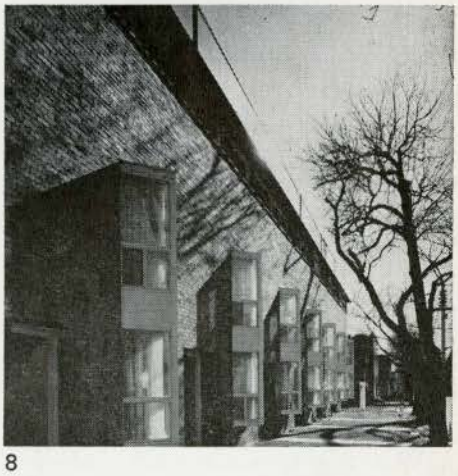

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streets, and a concerted effort to recapture the street would be a useful contribution to the home-ownership mystique which is prevalent in our communities. The special needs of young single people require specific and detailed investigation. The provision of adequate accommodation for students and others who are no longer living at home is a growing problem. The old rooming houses no longer provide an adequate stock either quantitatively or qualitatively for these people in large urban centers. The needs of this segment of society require analysis and accommodation appropriate to their needs must be provided in sufficient supply.

Housing at best is a difficult problem. The combination of limited budget, inumerable regulatory bodies, variability of the housing market, non-scientific and highly subjective determinants results in contrary pressures which control and adjust the creative impulses. The attempt to preserve a sense of identity for the individual in the increasingly large scale projects becomes of paramount importance. The creation of variety and interest spacially and texturally within a cohesive visually unified entity remains a constant battle. The insertion of these new elements into the living organism of the city requires increasing awareness of the impact on the city as a whole. The provision of a decent place where each individual can maintain his family in a satisfactory manner is a good measure of society. We have been falling behind and although agencies such as OHC have made spectacular gains in public housing the overall housing picture will require significant creative efforts to transform this crisis into a meaningful improvement. The leadership of governmental officials, the creativity of the architects, the perceptivity of the housing agencies and private entrepreneurs, the encouragement of lending agencies are all needed to accomplish housing appropriate to our current needs.

Housing, particularly public housing has been traditionally a significant tool in urban renewal; today its application can be increasingly subtle and sophisticated when combined with programs of rehabilitation and renovation. The use of a new housing complex to replace a depressing element in a neighbourhood is most effective when the new element enhances the area rather than overwhelms it. Public housing projects such as the Alexandra Park replace only a portion of a neighbourhood and are intended to uplift the remainder of the area. A thorough examination of the central areas of our cities will seldom reveal the necessity, or indeed desirability for wholesale destruction and replacement. Instead it usually will indicate the necessity for new and often more intensive and complex forms of housing which are compatible with and contribute to the areas in which they will exist. We seldom build new cities and it is usually more sensible to enrich the old ones rather than replace them. This is much more difficult and requires greater sophistication and sensitivity but in the long run it is much more satisfying. □

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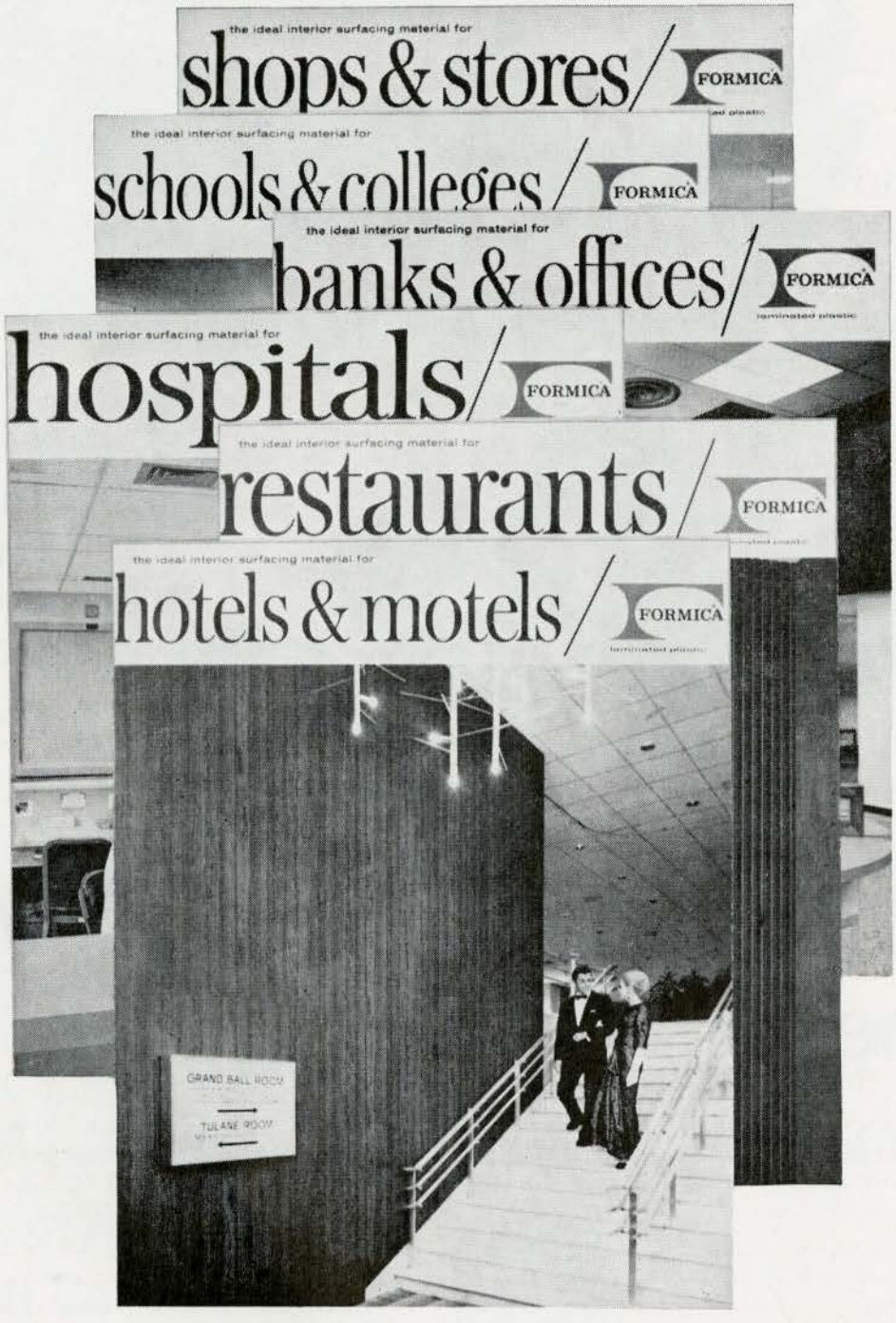

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Plumbing Developments

Technical Technique 6

J. N. Keen, B.A.Sc., P.Eng., MEIC, ASHRAE, ASME

Mr Keen is a principal of Keen Engineering Ltd, Consulting Professional Engineers, West Vancouver.

During the past twenty years plumbing installations, requirements, inspection services, materials and etc. have all changed drastically.
In days gone past the working drawings would indicate the type and location of plumbing fixtures but no piping and no connections. The plumbing trades would design and install the system to suit job construction and the inspection department's wishes. These conditions no longer exist since the floor to floor heights have been reduced to a minimum and the unlimited ceiling spaces, pipe shafts and tunnels no longer exist. The high cost of construction and the consequent utilization of every available square foot for rental areas has resulted in very minimal space allocations for all mechanical systems including plumbing. The complete plumbing systems now need to be co-ordinated with the architectural during the design stages so that the sanitary system space requirements are kept to a minimum.

The industries' and health department's continual efforts to reduce bacterial growth areas and other generally hygienic conditions have led to increased plumbing code standards which require detailed analysis and studies prior to design. Modern washrooms for instance employ all wallhung fixtures in order to keep the floor areas unobstructed for cleaning purposes. Hospitals especially have been acutely aware of hygienic conditions and many now insist on special fixtures, special floor treatments etc.

It is not the intent of this article to completely describe and/or analyze a particular phase of plumbing or its development but rather to provide some information on new and interesting materials and equipment available.

Distilled Water Systems

It has been difficult during the past decades to maintain pure distilled water when distributed through a piping system. This problem has been overcome by the use of hot tin-lined red brass piping or unpigmented Polypropylene piping. Of these two types, the tin-lined red brass system is the best to maintain the distilled water purity levels. Second to the tin-lined brass would be Polypropylene which is manufactured as rigid pipe. A third material which could be used for distilled water is Polyethelene piping which is very pliable and would therefore require continuous support which Polypropylene does not.

Drainage Systems

Numerous articles have been written regarding PVC, cast iron, asbestos cement, copper and DWV piping for drainage systems. The local plumbing codes will normally dictate the usage of these materials but in laboratories, hospitals and research buildings it is necessary now to determine the exact type of waste prior to the design of a waste system. In general, plastics are unaffected by most inorganic acids, alkalies and aqueous solutions which normally corrode metals very rapidly. Some concentrated and oxidizing agents could cause damage to PVC piping at higher temperatures. Generally speaking an analysis of the waste should be made complete with the dilution effect of other wastes and the drainage materials should then be selected in co-ordination with the code requirements. Polyethelene materials have also been used successfully for counter-tops, sinks, fume hoods, etc. in laboratories for high schools, universities and industry.

Hospital Equipment

Hospital standards are becoming more exacting and require specialized plumbing fixtures in scrub-up rooms, special treatment rooms, clinics, bathrooms, diet kitchens, nursing stations, wards, laboratories, etc. All materials used in hospitals have to offer maximum resistance to absorption of bacteria and materials, be readily cleanable with good serviceability and durability. The majority of hospital fixtures are constructed of genuine Vitreous china. Special requirements such as laboratories can be fitted with stainless steel or polyethelene countertops and sinks to combat acid attack and discoloration. The varieties of trim available for the fixtures consist of shampoo fittings, knee operated valves, automatic cold and warm water mixing valves, elbow valves, hair traps, grease traps, foot valves, deep seal chemical traps and so on.
During the initial planning stages a variety of conditions must be determined. Among these are laboratory requirements and the extent of research which is being planned, special treatments contemplated, location of isolation wards, location of observation wards, location of the central sterilizing areas etc. All these conditions must be known so that the drainage system can be designed to take advantage of the maximum amount of dilution available. In conjunction with the drainage systems, the utmost care should be taken in the selection of the various plumbing fixtures so that proper wall thicknesses, piping and safety factors can be incorporated in the initial design. Items such as dietary kitchens, laundries, central sterilizing areas and cart washing have a major influence on the hot water generation equipment and exact loading and capacity information should therefore be available prior to the design of the power plants.

Electrical Plumbing

One of the most recent developments has been the all-electric restroom facilities for men. These facilities contain sanitation units which ordinarily require water sewage methods etc. Each of the units whether it be a urinal or toilet can incorporate a bowl liner which is disposed of into the incineration chamber complete with the waste where it is reduced to odorless bacteria-free ash. Units are available without the bowl liner making it a more convenient and simplified method for human waste disposal. These types of waste disposals will become more prominent as they are developed and become more efficient for usage in cottages, remote construction camps and etc.

Electric Water Purification

Recent years have also seen the development of ultra-violet rays for the sterilization of water treatment. This method is now approaching the bounds of economic reality for domestic water supplies for homes, businesses, schools etc. In the past it has been uneconomical to use ultra-violet lamps since it could not compete with the chlorination methods and the problems of organic build-up on the lamps (reducing the effectiveness of the ultra-violet rays) had been resolved. These problems are slowly being overcome and more information should become available in the not too distant future based on actual test and operating results.

In general, we can all look forward to new and improved sanitation piping methods, procedures and materials as well as new plumbing fixtures incorporating stronger, less costly and more streamlined design. Electricity may become a major factor in the reduction of bacteria in both the potable and sanitary piping systems. The increased usage of electric power and the decreasing cost of electricity may eventually eliminate the need of large domestic hot water storage tanks, boilers and pumps in lieu of small unitized generation equipment at the location of usage. Disposable sanitation materials (e.g. perineal baths) will become more economic as manufacturing procedures improve which will greatly influence hospital plumbing systems and their design. □

Estimating

The preceding article has mentioned a few of the new developments in plumbing and drainage, many of which are bound to influence the total cost of this element in a building. For some of these developments, electric plumbing for example, it is too early yet to say to what extent costs will be affected. Undoubtedly, as with anything new and different, in the early stages of development the cost will rise, but it usually settles down again as there is more acceptance and use of these new products. Wall hung toilet fixtures are a case in point here, these fixtures now costing no more than the floor mounted type.
Tin-lined red brass pipe for distilled water systems is very much more expensive than Polypropylene piping. The extra cost of tin-lined pipe over polypropylene is approximately $4.00 per lineal foot for ½" pipe and $5.00 for ¾" pipe.
A comparison of different materials for drainage systems, using a 3" size pipe as a basis, is as follows:
Transite 56¢ per lineal foot
P.V.C. 86¢ per lineal foot
Cast iron, medium weight $1.30 per lineal foot
Cast iron, extra heavy $1.76 per lineal foot
D.W.V. Copper $2.21 per lineal foot
Copper "L" $4.40 per lineal foot

In the area of hospital equipment, scrub-up sinks appear to be showing the biggest increase in price at the present time. A stainless steel unit is now available which increases the cost of a single unit by $900.00 and a dual unit by $1,400.00.

Unit prices per square foot gross floor area for various categories of buildings for plumbing and drainage work, based on costs in Toronto area in the Fall of 1967 are as follows:
a Speculative office buildings 70¢ – 90¢ per square foot
b Prestige office building 90¢ – $1.20 per square foot
c Hospitals $3.00 – $4.50 per square foot
d Laboratories $5.00 – and over
e Schools $1.25 – $1.75
f University residences 90¢ – $1.20
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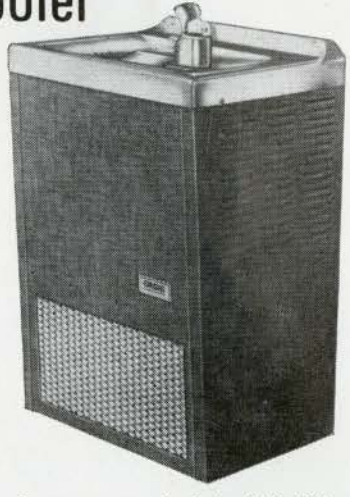

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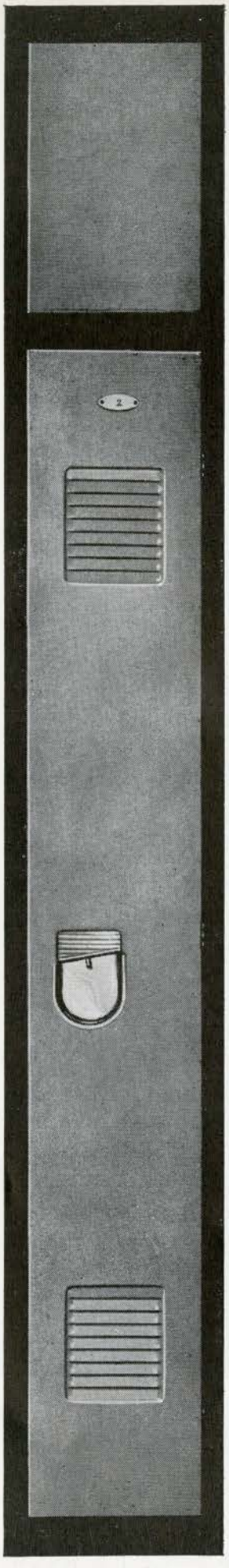

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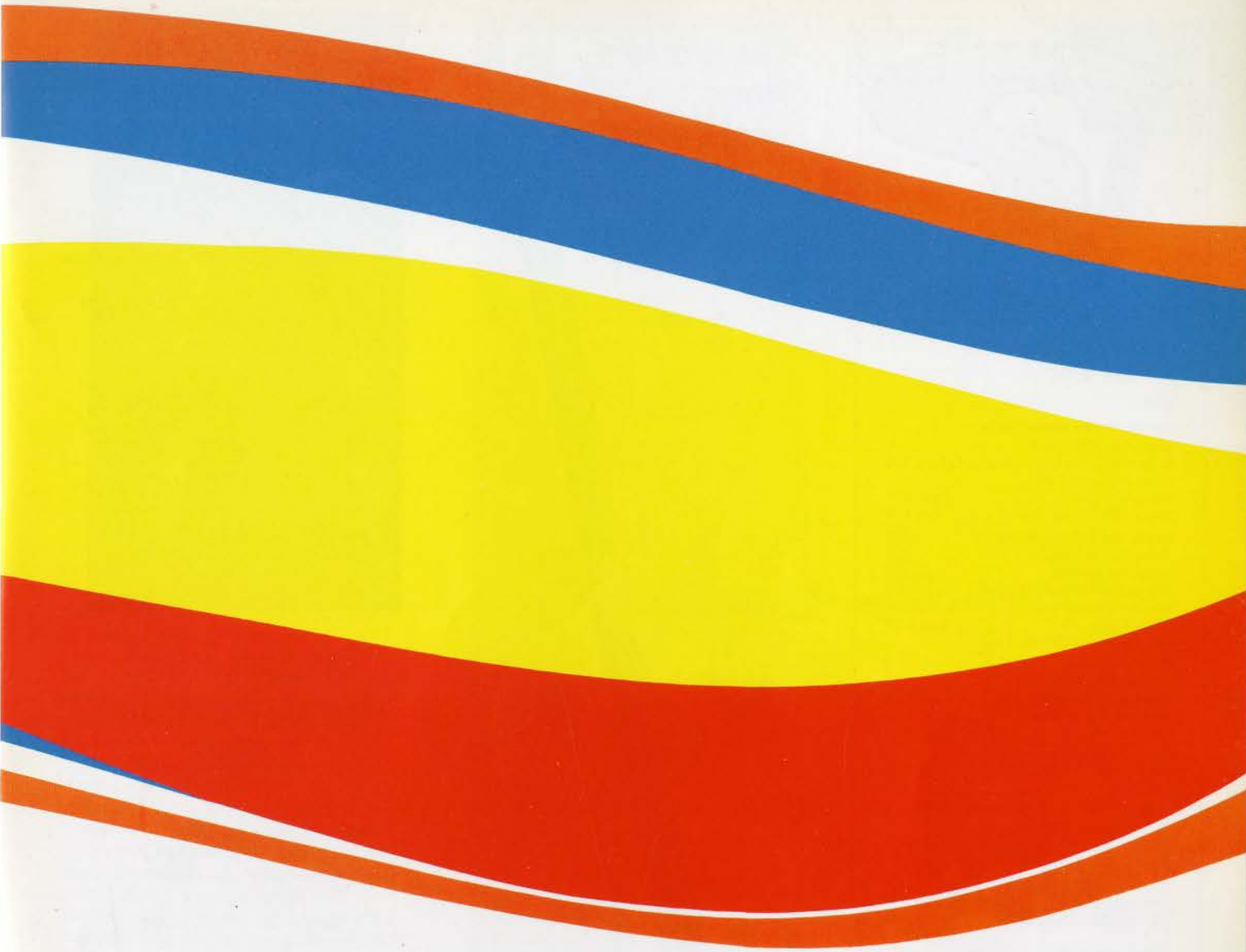

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Medium Density Housing

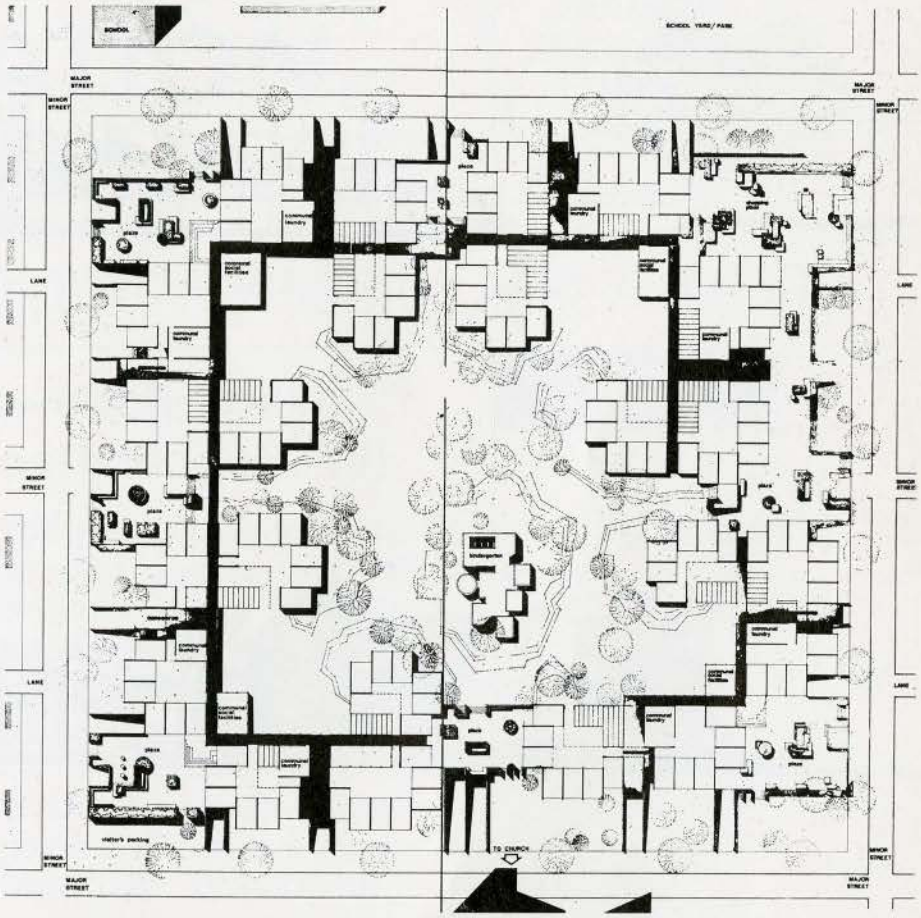
The following scheme is the prototype study of medium density housing by University of Manitoba student Herbert Bassler which won the 1967 Portland Cement Scholarship for Canada.

The intent of this prototype medium density housing community was to design urban housing suitable to the needs of a variety of family sizes, to the climate and character of the Prairies. The site is to be a nearly square 12-acre piece of land situated within an existing residential area of Winnipeg, say River Heights, surrounded by streets in relative proximity to downtown. The community is to contain 200 dwelling units, or 18 dwelling units per acre.

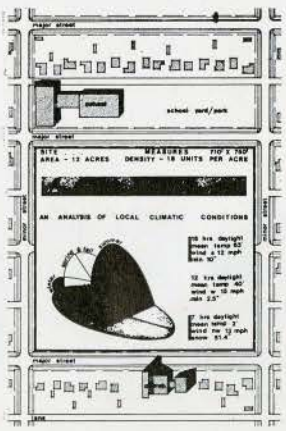
The scope of the scheme includes enclosed garages for 200 cars, a meeting and social room with kitchenette, table tennis room, and billiard room, kindergarten, common laundry, location for garbage disposal, heating and mechanical room, and one large strategically located unit to be delegated to the superintendent with an office room and a workshop. Pedestrian streets are planned for intercommunication and for play of young children, with widened spots for meeting of adults and a playground for older children. The object of the scheme is to try to combine the advantages of the detached home (privacy, green, free natural ventilation, sunshine) and to exclude disadvantages such as isolation, false individualism, lawn cutting, clearing snow. Two living areas are planned for each unit to meet the needs of the Prairie weather where a family must spend much time indoors. Intimate well-shelter spaces are planned for summer activities. The project is not planned for a specific group or income unit.

Statement of Intent

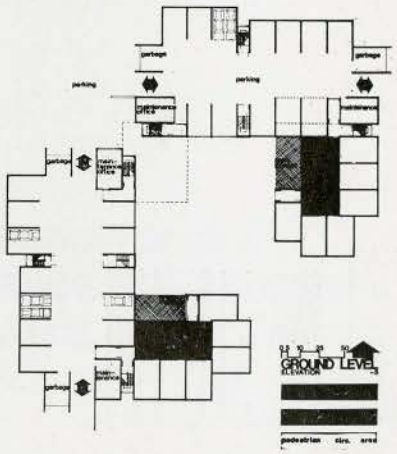
"It is the conviction of this designer that the success of multiple housing depends largely on the degree of integrated flexibility and choice. The system of concrete shear walls as main structural elements allows for great freedom in placement of the units between them. Coupled with this, it is felt that the strength of expression of the material is such that it is in tune with city life and further can prevent chaos in the play of elements. The monolithic nature of concrete is of prime importance in establishing a unity with the community but at the same time providing a variety of texture and richness."□



1 *Area plan / Plan d'ensemble*



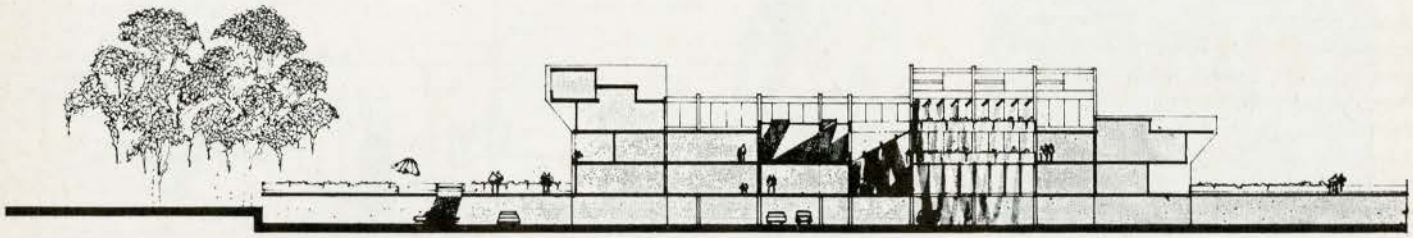
2 *Site plan / Plan d'emplacement*



3 *Ground level, elevation, pedestrian circulation areas shown in solid black*
Niveau de terrain, élévation

4
Section
Coupe
5
Elevation
Élévation
6
Plans

7
Isometric of typical unit
Isometrie d'une unité typique



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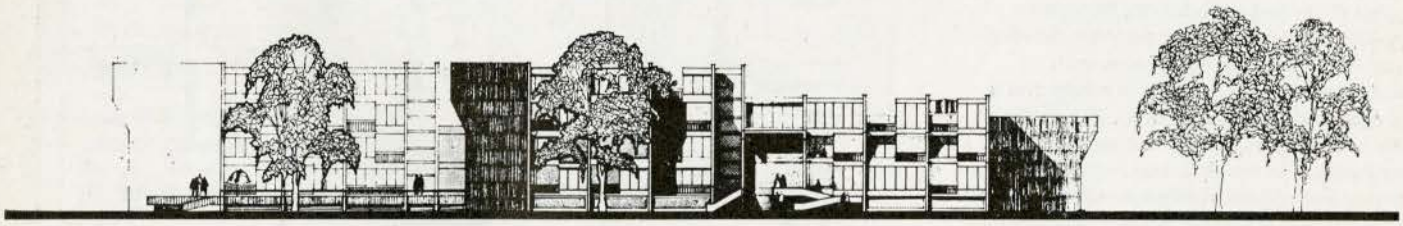

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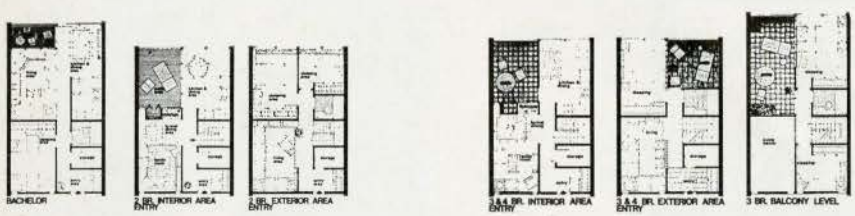

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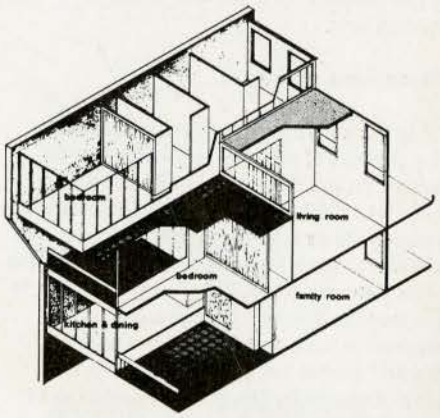

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Change of Address

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Positions Wanted

Canadian architect, age 32, seeks new association with progressive firm. Presently a principle in private practice. Full details upon request. Box 145 c/o *Architecture Canada*.

Architect, 28 years old, B.Arch. 1963, and summer training courses in West Germany, wants a job in Toronto. Speaks English, French and German. Four years experience in design and execution. R. A. Missih, c/o Armanios, 655 Briar Hill Ave, Apt 404, Toronto 19, Ont. Tel: 789-5551.

Indian architect, 28, Associate of the Indian Institute of Architects, has worked as Senior Draftsman with American Civil Engineer and with Ministry of Transport, New Delhi, seeks position in Canada. Write Joshua A. Murishwar, Block No 15, Flat No 279, Lodhi Colony, New Delhi 3, India.

Graduate of the Architectural Department, Great Union College, Hong Kong (July, 1967), Chinese, 26, working in a prominent architect's office in Hong Kong since 1961, able to design and draw independently, expert in perspective, seeks a post as draftsman. Wong Chin-Shing, 348A, Hennessy Road, 3/F, Hong Kong.

Architect, 50 years of age, prospective immigrant to Canada, B.Sc. in architecture in 1942, enlisted in Syndicate of Engineering Professions in U.A.R., 22 years experience in designing and constructing, documents available when needed, will consider any position in Canada, Ontario preferred. Please write to Mr A. Hanna, Maibed Building, Horrla St, Fayoum, U.A.R.

Architect, University of Buenos Aires graduate, 1961, experienced in working drawings for buildings and housing quarters, member of Council of Architecture, Buenos Aires, and of Association of Architects, Israel, speaks English and French, seeks position. Intends to leave for Canada December 1967. Adolf Fihman, 23 Golomg St 108, Jerusalem, Israel.

Chartered Architect, ARIBA (1950), private practice, experience in design, building of factories, residential and commercial buildings, schools and colleges, hospitals, churches, town-planning and community centres; wants position as senior architect in private or Government Architect's Office; contact: J. B. Irani, 512 R.P. Masani Road, Bombay 19 DD, India.

Jeune architecte français, parlant anglais, cherche situation au Canada. Diplômé de l'Ecole des Beaux Arts de Paris; sept années d'études et sept années d'expérience pratique dans la construction hospitalière etc. Ecrire à: Jacques Perrinel, Architecte DPLG, 120 rue Saint-Exupéry, 92 Antony.

Architecte polonais, 30 ans, diplômé de l'Ecole Polytechnique de Cracovie en 1961 désire travailler au Canada. En France depuis 1965, a collaboré avec plusieurs architectes sur des projets différents. S'adresser à: Wojciech Lesnikowski, architecte, 47 rue du Ramelagh, Paris 16.

Swiss architect (BS), 27 years old, with several years practical experience in construction and planning in general architecture, seeks employment with Canadian architect. Speaks German, French and English. Please write to Swiss Technical Service of Employment, Lutherstr. 14 CH-8004, Zurich.

German architect, 27, Berlin-Arts School Diploma, having worked in Paris for one year, now in Toronto looks for starting position. Interested in housing and working drawings. Please phone 537-6008 Toronto or write K. Rieger, 82 Albany Ave.

British Graduate Architect seeks employment in Winnipeg after October 15. Seven years State High School, Ordinary and Advanced Diplomas, five years University of Wales. Degree B.Arch. 1967. Recognized RIBA. Approx. 18 months continental and British experience. Fluent French. Robert C. Hill, 27 Windsor Terrace, Penarth Glamorgan, Great Britain.

Young Architect (25), Associate member of the Indian Institute of Architects, with three years post-graduate office experience (one year and nine months in London), seeks position in Architectural office in Canada. Contact A. K. Maitra, B.Arch. Cal; AIIA, 51 Woodhurst Road, London W.3, U.K.

Indian architect, 25, with architecture diploma and passport, desires interesting position with architects in Canada. Working toward B.Arch. (Bombay), has three years pre-degree experience, and is associate of Indian Institute of Architects. Can join April-May 1968. Kindly write Devendra Ashar, 269 Ratan Sion East, Bombav-22. India.

Chinese, 24 years old, willing to work as architectural draftsman in Canada, ordinary certificate in Building, GCE (London University) certificate. Experience in hospitals, schools etc. design. Knowledge in many fields. Please reply to Tau Man Wai, 6, Alhambra Building, 8th Floor, Hong Kong.

Seeks position in architectural firm, Architectural Draftsman, Diploma in Architecture, Government of Maharashtra Art Examination, Bombay, India; Associate Indian Institute of Architects; six years experience in architectural drafting. P. S. Sehra, 289 Salem Ave, Toronto 4, Ontario.

Young Indian architect wants employment in Canada, holds Diploma in Architecture and is member of Indian Institute of Architects. Six years drawing office experience in planning and detailing of industrial, residential and office building. Contact: Kirit Kothary G.D. Arch. AIIA, Deepak Kinj, Maneklal Estate, Agra Road, Ghatkopah, Bombay-77, India.

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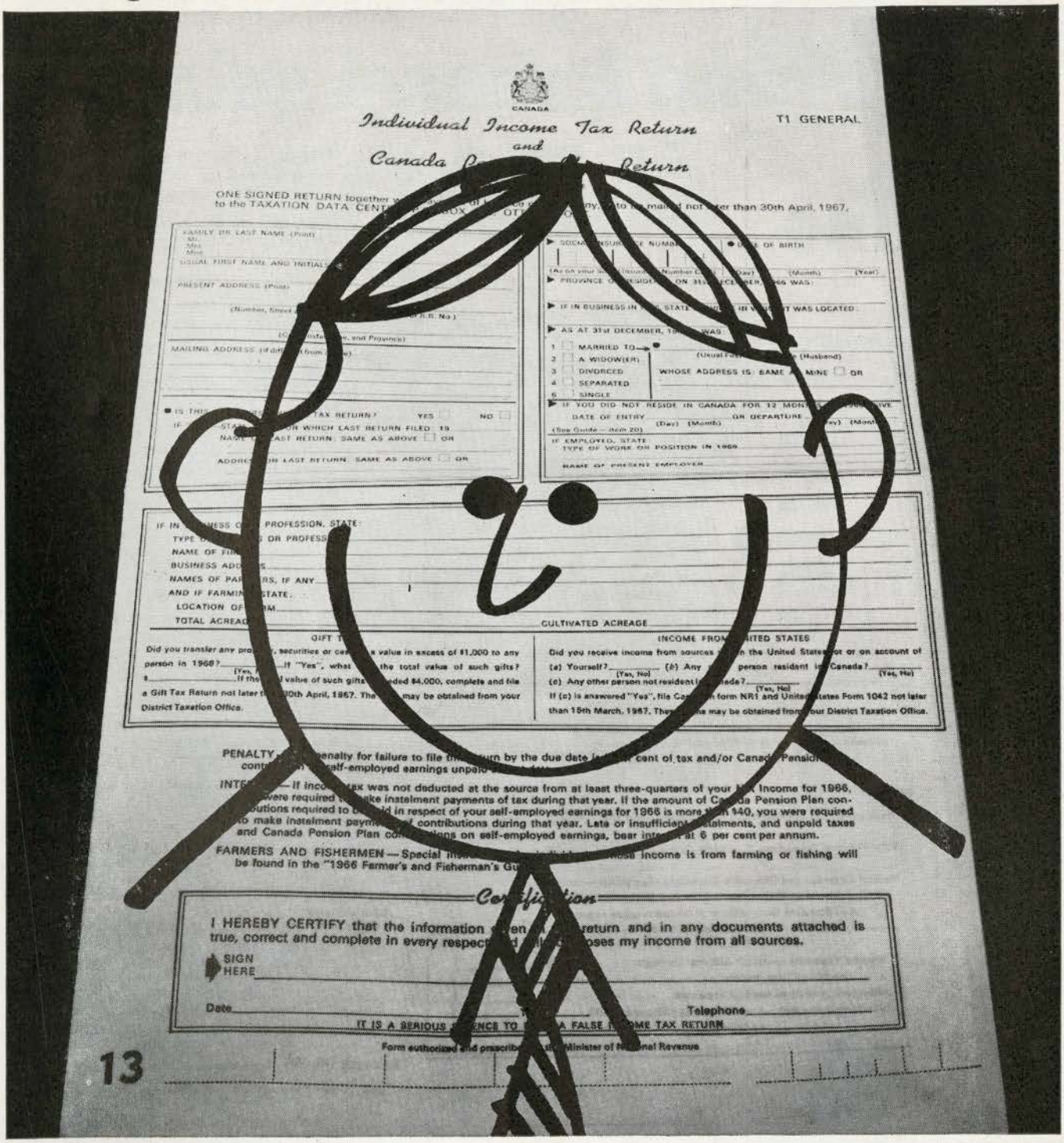

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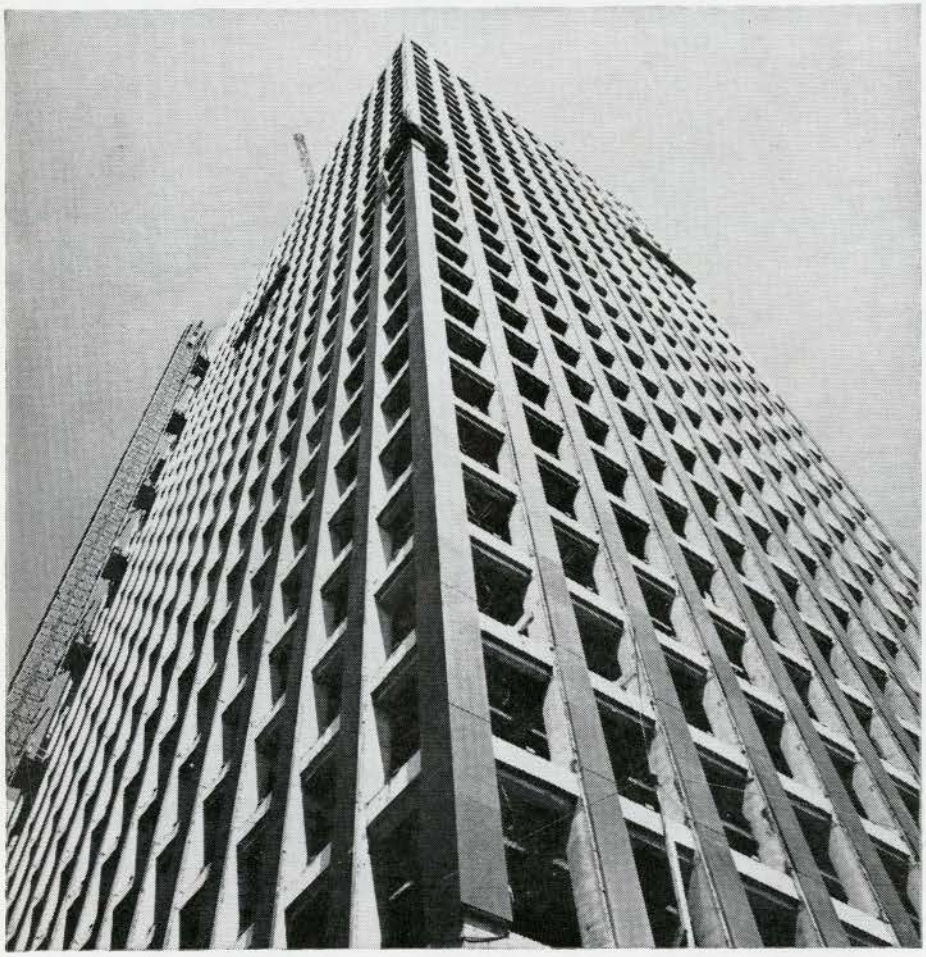

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