RAIC JOURNAL

Serial No 362, Vol. 32, No 10

COVER

Office Building, Toronto, *Architects, Venchiarutti & Venchiarutti*

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ROYAL ARCHITECTURAL INSTITUTE OF CANADA

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Authorized as Second Class Mail, Post Office Department, Ottawa

EDITORIAL

THE OTHER NIGHT we had the pleasure of listening to a young architect reading a paper on architectural criticism. The paper was excellent, and the discussion that followed in a group of forty architects was equally so. It is not unpleasant to preside at an occasion when speaker, guests and listeners are obviously enjoying themselves, and we were in that happy position until conversation turned on the *Journal.* It is an old story, but nevertheless, a lively one, that the *Journal* would make more interesting reading if it encouraged the writing of critical articles on local buildings. We thoroughly endorse the idea, and, while we do not speak for the Editorial Board, we are sure of their support. We openly invite our readers to tell us how to do it. Nothing would please us more than a spate of letters for publication in these pages.

We learned a lot from Mr J. C. Parkin's paper which will be published here, and from the discussion that followed. We pass on a few matters in which we feel convinced, and a few on which we still have doubts. Most of us will agree, today, that the building must be visited by the critic and that he should have some factual notes in which the problem that the architect faced will be stated. These might properly include information on use, materials, mechanical equipment and so on, and would vary very much as between an office building and a church. Should he meet the architect? In the face of considerable opposition, we think he should not – nor should he meet the client. The point, of course, is that there may be weaknesses in the design for which the client was personally responsible. What, for instance, could our critic say of Balmoral Castle when the client described it as "my dear Albert's own creation, own work, own building, own laying out". Mr Smith of Aberdeen might reasonably want to explain how the royal shenanigans played havoc with the baronial purity of his original design. In doing so, however, would he not proclaim himself to be a lackey, a toady, a person devoid of conviction, unfit to be a member of a great and honourable profession? For lesser offences involving lack of architectural conviction, we should moderate our language, but not our personal opinion that the critic should avoid the architect. Far better to see the janitor, the housewife, the curate or the elevator man.

In insisting on buildings being judged "in the round", we realize that we should condemn competitions like the Massey Medals Competition where complete strangers are invited to pass judgement on buildings represented by photographs. We would if we had anything better to offer. As a matter of fact, the donor's original purpose was to raise the standard of building and street architecture in Canada by drawing to public attention those buildings which expert critics deemed to be of excellent quality. Might that not be achieved by decentralization, and a study of actual buildings in selected regions?

Such a proposal brings up the matter of the critic. What manner of man is this? Is he an architect always subject to the charge of sour grapes, or is he a layman with architectural criticism as a hobby or a profession? No one knows. From our knowledge of critics in the United Kingdom and the United States, we would say that they rank higher than urologists (1: 100,000 of population). Our figure for the architectural critic is 1: 40,000,000. Even so, we have an open mind for Canada where we should rate more than one third of a critic. We invite comment.

The University and Architecture

John A. Russell

I DEEM IT A GREAT PRIVILEGE to have been invited to discuss with you for a few minutes The University and Architecture. At the Conference of University Schools of Architecture held last week in Halifax, the representatives of the five schools expressed great satisfaction and pleasure that the National Conference of Canadian Universities had found it desirable this year to include this discussion of the fine arts and architecture as necessary ingredients in the total university function.

As my part of this symposium, I propose to delineate the university's opportunities and responsibilities with respect to architecture along three distinct but closely related lines: (a) to provide for a professional and broadly humanistic training of the architect; (b) to demonstrate through its campus architecture an appropriate architectural expression of an educational program geared to meet the present day needs of man; (c) to arouse in its students and staff an awarenes and understanding of what good architecture is.

Architecture and Man

> "It is no accident that the quality of a civilization stands revealed in its architecture. Few activities intersect so many aspects of daily life. Buildings spring from the very roots of social needs, aspirations, and capabilities. They reflect inevitably the underlying conditions imposed by time and place. They disclose the purposes, pre-occupation and susceptibility of those for whom they are built. They clearly reveal the varying degrees of technical knowledge, resources, skill and imagination commanded by their builders. Buildings become, therefore, tangible symbols of the societies which call them into being, and architecture provides a telling measure of a people's capacity to fulfill its highest vision."[1]

Architecture is both an art and a science: it is the result of the application of both aesthetic and scientific principles to the problem of shelter, – shelter for living, working, recreation and all the range of human activities. Buildings, to be good architecture, must satisfy more than the minimum requirements of existence and protection from the elements; indeed, they must provide space for living, – space that is adequate both physically and psychologically. As Lewis Mumford affirms, "A building may be functionally adequate from the standpoint of engineering and yet be a failure from that of physiology and psychology." In transcending engineering, architecture must be human in its approach and in its achievements, contributing to the joy of living. All the activities which architecture embraces, – domestic, educative, religious, commercial and industrial, involve human standards and relationships, cultural traditions, spiritual aspirations. "To ignore these is to reduce man to his merely physical components and acts; to recognize and promote them is the distinctive task of architecture as an art."[2]

This emphasis on the importance of the individual in the whole creative process of architecture reflects the fundamental humanism of all the creative arts. The painter, the musician, the writer, each launches the art process by creating an expressive statement according to certain fundamental principles and in the medium of his art. The resultant art form must be seen, heard, read or otherwise experienced by another human being before the creative art process is complete. Similarly, the architect aims to design a building that shall exhibit maximum human significance in both use and expression, and this creative form must be used and experienced by people in order to have the creative art process completed, understood and appreciated. In other words, architecture should be designed both to be lived in and to be looked at. The achievement of a truly great architecture in any age has always depended upon two things, – the availability of well-qualified architects and the understanding recognition of and demand for good architecture on the part of the public.

From the beginning of history, food, clothing and shelter have been the basic physical necessities of mankind. For years, educational authorities have stressed the importance of including food and clothing in the general education program at all age levels. Seldom, however, do we find such recognition given to shelter which, perhaps, has an even greater impact on man's daily life. Architecture affects the lives of everyone: as Frank Lloyd Wright declares, "It is the framework of man's existence." We are born in it; we live most of our lives in it; we work in it; we play in it. As Sir Winston Churchill has said, "We shape our buildings, but in the end our buildings shape us."

Can or should the university give guidance and leadership in our time to ensure that we shall have an archi-

[1]The Architect at Mid-Century, Vol. I: Evolution and Achievement, edited by Turpin C. Bannister. A Report of the Commission for the Survey of Education and Registration for the American Institute of Architecture, published by the Reinhold Publishing Corporation, N.Y.

[2]T. M. Greene

tecture that is one "of the people, by the people and for the people"? I am positive that the answer is in the affirmative. The university can provide the environment and opportunity for the architect-in-training to acquire the necessary background and ability to develop and exercise both his scientific and artistic imagination in the solution of shelter for mankind. The university can demonstrate the principles of good architecture by insisting on and developing a campus plan and campus buildings that are alert to present day needs and that express them. Through this positive and progressive development of its campus architecture, as well as through the provision of a program of lectures and seminars on architecture which will be both stimulating and informative, the university can arouse and foster an awareness and understanding of good architecture on the part of its students, the public of tomorrow.

The University and the Architect

Importance of University Training

The consideration of the first of these responsibilities, to provide adequate curriculum and appropriate environment for the training of the professional architect, raises the question, is the university the best place in which to train for the profession of architecture? More and more, architects and educators are reaching agreement that a university which affords the opportunity for the study of man and his institutions along with a professional course in architecture provides the best basic training for the architect who shall be capable of leadership, aware of his responsibilities to society, and, at the same time, shall be trained as a creative artist, a building technician and a business man. It is significant that, at its meeting last week, the Royal Architectural Institute of Canada's Committee on Architectural Education, made up of practising architects from coast to coast and representatives of the Canadian schools of architecture, forwarded a recommendation to the Council of the RAIC that "it would be desirable for the profession that its members be recruited only through the universities and that such a condition might be achieved in the near future." This recommendation would seem to underscore the appropriateness and importance of including the architectural curriculum within the university structure.

Aim of Architectural Education

"The profession of architecture calls for men of the highest integrity, business capacity, artistic and technical ability."[3] As builder, as professional man, as citizen, the architect has far reaching responsibilities toward his community. In fact, "no other profession surpasses architecture in its intimate relationship with all phases of life."[4] Architectural education must therefore embrace both the art of building and the art of architecture: the art of building is concerned with the science of techniques, the materials and the mechanical equipment; the art of architecture employs all these technologies plus those less tangible talents of design, inspiration, imagination and sensitivity in its creation of space that will meet man's physical and spiritual needs.

Today the medical profession has enlarged its vision beyond the mere feeding of pills to people and is directing its attention to treating the whole man, including his mental health. Similarly, we now think in terms of the architect treating man's total physical environment. Today's concept of the profession of architecture should be as broad as that implied by newspaper editorial comments when they speak of "the architect of the peace conference". Architecture in this light becomes truly "the profession of creative thought".

Coupled with this element of creative thought should also be a philosophy of responsibility as a framework on which to hang the techniques we learn. This philosophy of responsibility must be applied not only to the client but to the architect's community, to his profession and to his colleagues in that profession. The university should therefore provide the students within its school of architecture with a framework or philosophy with respect to the architect's responsibility towards society first and towards himself as a creative artist second. This is implicit in the AIA Survey Commission's statement of the objective of architectural education as "the development of architects who, as enlightened individuals, responsible citizens, and resourceful professional men, will serve their society in attaining a worthy architecture."

Curriculum in Architecture

It is not our place here today to analyze and prescribe details of the porfessional curriculum for the basic university training of architects. The five schools of architecture in Canada have similar, though not identical, curricula which are soundly conceived and generally effective in terms of achieving a standard of performance among their graduates. The accepted formal academic training in each instance includes a group of fundamental disciplines, after which the subjects group themselves into three general categories – the aesthetic or design group, the technical or structural group, and the cultural or humanistic group. Built around a central and dominant core of architectural design and building construction, each of the curricula has in recent years expanded its cultural group beyond the traditional inclusion of English literature and history of the arts to include such things as English composition, public speaking, economics, aesthetics, sociology, urbanism, geography, etc. It has been suggested in some quarters that architecture, like medicine and dentistry, should have two years of pre-professional courses in the humanities. This, however, could be argued as neither necessary nor desirable since architecture is inseparable from the humanities.

In reviewing the performance of architectural students there is ample evidence that the university has a responsibility in presenting both the humanities and the sciences in a way that will relate directly to the creative thinking of the architect-in-training. Let me quote to you what the AIA Survey Report has to say about teaching the science of architecture. After stating that "the impact of modern science has led to a broadening of the scope of architecture to include the total sensory impact of the environment this created", the report points a critical finger at the lack of understanding and coordination in the presentation of the physical sciences to the architectural trainee:

[3]The American Institute of Architects
[4]See note [1].

"In the age of science, the scientist seems to feel little obligation to those who must apply his hard-won principles. The effect is to overemphasize science as a cultural phenomenon and to frustrate the essential contribution it should be making to architectural competence. That this is not special pleading for indolent architects is amply proven by similar complaints in other fields as well. Professional students are quick to sense this indifference to their interests, and it is impossible in such circumstances for the architectural faculty to overcome their students' natural disaffection. The situation demands prompt and sympathetic attention from those responsible for the general administration of the universities."

Such a discerning and custom-made presentation as this report urges would engender in architectural students a cooperative understanding of the sciences, the humanities and the arts, as well as of the engineering techniques. In this way, we could sharpen our focus on the total university ideal – that of creating for the student a rich and full life with training for leadership – through a curriculum which blends the liberal arts, the sciences and the creative arts.

Personnel and Facilities

Obviously, the university must provide and maintain the appropriate ingredients to make such a program of architectural education effective: (a) the maintenance of a creative professional faculty whose members, while establishing and maintaining a high quality in the total educational program, should be encouraged to practise as registered architects; (b) the provision of an adequate, well housed research and reference library as a working unit immediately accessible from the drafting studios; (c) the provision of suitable and dignified quarters for the housing of the school's program of instructional activities under one roof.

With reference to the latter point, it is significant to read one of the recommendations of the AIA Survey Report:

"The Commission recommends that the AIA urge and call upon all chapters and members to demand that the profession's schools be provided with buildings of such size, character and attractiveness as are needed to accommodate teaching programs of high quality. The Commission regards a large proportion of the space now allotted to these schools as barriers to essential instructional facilities and as affronts to the profession and to the faculties and students occupying them".

I believe this is one of the most glaring omissions on the part of Canadian universities in their responsibility in the teaching of architecture. The morale of students and staff must be seriously impaired by conditions of delapidation, poor illumination, and enforced adaptation within outmoded quarters converted from other uses. In addition, the impact on the general public on prospective students and their parents must be decidedly negative, to say the least. A university school of architecture which teaches the highest standards of performance both in structure and aesthetics can never hope to be convincing or inspiring when housed in quarters which demonstrate neither of these fundamentals of good architecture.

The University and its Campus Architecture

It should be apparent that a university has an invaluable opportunity to improve its campus by permitting and encouraging the staff of its school of architecture to influence and guide the development of its campus architecture and plan. The situation observed so frequently in both the United States and Canada, namely, that the university is teaching one kind of architecture and building another is a most unhealthy one: it is unhealthy for the students of architecture, it is discouraging for the staff of architecture, it is completely negative for the rest of the campus and for the public.

Our boards of governors, administrative authorities, building committees and general campus public must be shaken loose from their preconception that new developments on a campus must conform to yesterday's Georgian or collegiate Gothic styles, façadery traditions which seem to have gained such a strangle-hold on North American universities. These university authorities are the first to admit that new developments in the sciences and new methods of pedagogy must be reflected in a properly flexible curriculum which aims not only to keep abreast of the times but recognizes its responsibility to give leadership. Yet they recognize no such compulsion when it comes to providing suitable housing and environment for the dissemination of this knowledge to the citizens of tomorrow. The truly enriched campus is the one which visually, as well as intellectually, demonstrates the integration of both traditional and contemporary convictions, one whose architecture and planning (evident in buildings, roads, open spaces and planting) has been free to express the changing pattern of needs for the fitting of the men and women of tomorrow. The new building, which meets these needs in terms of space within and whose exterior form and mass, textural materials and delineated patterns maintain a harmony of scale and proportion with the older campus buildings expressive of another age, will demonstrate convincingly that it is not conformity in style which produces or ensures good campus architecture. Already, on several of our university campuses there are examples of contemporary or so-called modern structures whose interior spaces have been created to meet and solve local requirements and whose exterior expression has definitely helped to weld a unity of feeling on the campus which did not exist formerly, even when a slavish adherence to historic style had prevailed.

The University and the Architecturally Perceptive Public

The demonstrative impact of good campus architecture will not only strengthen the teaching program of its school of architecture, but it will also meet part of the university's third responsibility which I mentioned earlier, namely, that of creating an awareness and understanding of architecture within the citizens of today and tomorrow. The effectiveness of good design in society depends largely on public recognition of it. People will not buy good design or demand it if there is no general understanding of what good design really is.

It is significant to read what the Royal Commission Report on the National Development of the Arts, Letters and Sciences had to say about the state of architecture in Canada:

"Architecturally, the public in general has little respect for the past, is heedless of the future, and apathetic or confused about the present . . . Public indifference produces indifferent architecture . . . On the whole we have succumbed

more completely than most other countries to the characteristics of this period of architectural confusion . . . Canadians are still too little aware of the power of the architect to enrich their lives; they are too little conscious of mass-produced houses and characterless buildings . . . If architects today are uncertain of the road ahead, their uncertainty, it seems, is derived from the general confusion in a society with no fixed values and no generally accepted standards."

It follows, then, that the future clients of architecture (and who in the general public is not a potential client?) should have the opportunity to learn what architecture is, what it can do for the individual and for the community. A university is constantly producing many kinds of future leaders of society: some will doubtless become big purchasers of architecture; others may participate in the decision as to public or private buildings, or may have something to say about the kind of buildings Canada builds abroad. Yet no university in Canada, to my knowledge, is consciously trying to provide any formal visual stimulation or any discussion of the aesthetic principles of architecture for its students. Our future customers in the field of architecture are therefore most illiterate about what they are going to buy.

Universities would do well to consider most seriously their responsibility to society by reviewing what instruction in architecture could and should be made available to the scientists, the industrialists, the homemakers, the business men, the engineers, the agriculturalists, the doctors, lawyers and other professional men of tomorrow. In fact, universities should present all the arts as completely normal functions of man, in which everyone is expected either to participate or to be interested. For the staff and students in a school of architecture, such action would remove the sense of being separated from or ignored by the rest of the campus. (I can imagine how important the results would be for the architectural faculty member who was asked to put his convictions about architecture into language for the layman.) For the campus public, the teaching staff and students plus all the non-academic members (the administrators, the secretarial staff, the technicians), such instruction would both stimulate an awareness of architectural environment and enrich their lives thereby.

Conclusion

It would appear therefore that the university has responsibilities to both the architects and to the non-architects. It can provide the architect not only with a well-integrated professional curriculum taught by a well qualified staff and housed in a building that is both adequate and aesthetically inspiring, but also with a well balanced knowledge of the humanities, – history, social science, literature, economics and the fine arts. It can provide the non-architect with visual as well as mental stimuli which will create an awareness and an understanding that will enable him to recognize the first-rate in any field. Today we are recognizing more and more that, in the true educational process, attitudes are frequently more important than information. Even in a professional field such as architecture, the architect's personal and professional character, his sense of integrity and moral character, are of more importance than his factual knowledge, proficiency, experience or academic records.

On behalf of my colleagues and myself, I should like to conclude our portion of this symposium by quoting briefly from Lewis Mumford's address to the Columbia University Conference on the Role of the University in the Creative Arts which was held on November 13, 1954. In his concluding paragraphs he said:

"The breach between the arts and the intellectual disciplines, or between the artist and the scholar, cries to be repaired in our time, as one of the many efforts that are needed to build up an orderly and intelligible and purposeful world. The first step for both parties, perhaps, is to bring man himself back into the centre of the picture; and to realize that the highest art is the art of making and molding man, not simply increasing knowledge, expanding power, or multiplying works of art . . .

"If this analysis is sound, the role of the university in promoting cooperation between the arts is a twofold one: that of enriching its own scholarly resources and widening its public commitments, by offering a home for the creative arts and a place for the creative artists in the midst of the academic community; but also providing for the artist the kind of milieu that is no longer open to him in a great metropolis, where the higher life so often starves in the midst of abundance . . . The university today is now perhaps destined to perform the function that the city itself performed in fifth century Greece: it must serve as a meeting place for the humanist scholar, the scientist and the artist, and those who are drawn from the practical life to seek their company." The artist, Mr Mumford believes, "has a central part to play in this function, but he has also much to gain by the spontaneous contacts and meetings possible by living together with a variety of other souls under one roof, pursuing a common purpose. If that building is well planned with respect to its specifically human needs and functions, we shall not need the services of either axiologists, praxiologists, nor communications experts to make possible the further cooperations that will ensue."[5]

[5]As published in the April, 1955 issue of the Journal of the American Institute of Architects.

The above was a paper read at the Annual Meeting of the National Conference of Canadian Universities in June, 1955.

Architecture and History

Cecil S. Burgess

Discussion frequently arises regarding the value of the study of historical architecture to the practising architect. Opinions may vary from placing a high value upon it to attaching no value at all or even to its being considered more harmful than beneficial. It may be any one of these three according to the manner of study. Rightly approached it is of great value. It is the architecture rather than the history that should be stressed. It would be better to call this subject "Historical Architecture" than "History of Architecture". Old buildings should be studied for the sake of the qualities that they express, not just because of their age, in a spirit of archaeology or antiquarianism. These are quite worthy studies ancillary to that of architecture itself and perhaps not always easy to separate from it. It is reasonable and natural to study buildings in their chronological order. That is the method of history. It provides us with a clue by which we may survey a great scene with better understanding of its many elements. It is pleasant to trace progress and development. The history of architecture offers fascinating examples of these which are well worth our study especially in the structural devices of Roman vaulting, Byzantine domical structures and medieval rib-vaulting. We may, indeed, truly say that these are elementary and that we have advanced to a stage where we can handle these and other structures from basic principles without reference to historical works. Further, the overall directing forces which called forth the types and forms of building characteristic of past ages are not the forces which direct us. These forms arose in response to religious conceptions and to social ideas and requirements which are no longer ours. These controlling forces are of great interest but they are not those which press upon the practising architect today. The effect, however, that buildings have upon the eye, their beauty, is a permanent quality. In this there is neither progression nor obsolescence because although necessarily exhibited in material things it is a quality of the spirit. Beauty is skin-deep, but it is heaven-high. It is the sunshine of the spirit creating and nourishing life by its celestial chemistry. Architecture at its best is building with beauty. Historical Architecture is all building of which sufficient record exists by which its beauty may be felt by the physical eye or by the eye of the imagination. A building may crumble into dust, as all shall, but, if sufficient record of it remains that we may appreciate its beauty, its most valuable attribute is preserved. This it is that the architect should especially study, and not only the architect but all who have the opportunity and the sense to appreciate it. Since it exists in the minds of men it is of the living present and not of a dead past.

To deny ourselves the delight of the appreciation of older architecture would be to prescribe a lean and ascetic diet. To carry such an idea to its logical extreme we should destroy all buildings when they reach, say, their hundredth year. Any approach to such a measure would leave us poor indeed. The human race truly lives only inasmuch as it creates things of beauty, exercises intelligence and performs good deeds. We are able to do these things by virtue of our having roots in the past as trees live by having roots in the soil. The human past is enriched and made fertile by what it has hitherto produced. Ought we to forbid the reprinting of the writings of antiquity or of less ancient times? Have we quite finished with Homer, Shakespeare and Milton? Are we making a great mistake in preserving, at much expense the paintings of Titian, Claude, Rembrandt, Velasquez, Constable, Turner and many others? Think, if you can, what our emotions would miss were all the music of the past stilled forever. The architecture of all time provides a picture gallery in which an infinite variety of beautiful arrangements of form and colour are displayed. To take joy in these enriches the mind and gives power to the imagination.

Our approach to the study of old architecture should not be only or chiefly that we may have in our minds a full and chronologically ordered record of what things have been done in such and such places at such and such times. There is much intellectual interest in this, but it is the study of history rather than of architectural form. It is claimed that we ought to avoid the imitation of historical forms. There is, indeed, a strong temptation, when we see things that please us, to imitate just these things. Imitation has got a bad name. But let us not fool ourselves. By imitation we learn to speak, to play, to work, to live. Our social life and existence depend, to a great extent, on doing as others do. Great originality is the exception, not the rule; yet it continually presses itself upon us. We are always meeting fresh occasions. Change is a law of life; our social needs change; new circumstances are always arising. To meet these we explore our resources and find our own means to meet the changes. The architect has new problems set for him and is presented with new methods and materials to apply to these problems. The

present day is fertile in all these. Even so, most of us are to a large extent imitators, making use of what is ready to our hands with more or less genuine apprehension and success. There is no discredit in applying to our own work the successful solutions that other men have discovered. It would be folly not to do so. But, for the love of humanity, let our imitation be genuinely applied to the purpose in hand and not mere superficial mimicry, borrowing the feathers with no power of flight. It is well to be ambitious, but whilst ambition may make men great it can also make them ridiculous. It is probable that, today, the less ambitious architects are those who are producing the truest beauty. Mere imitation of the ways of others is quite as rampant today as it ever was in the most eclectic period, and just as vain. We can actually raise some heat and even flame by blowing on smouldering embers, but it is better to use our own fuel and our own sources of kindling. We must learn to speak as we hear others speaking. Our aim should be to raise our daily conversation to an effective art. Beauty is a thing to be discovered. Discovery is an individual achievement even when it is something that others have discovered before.

We, on the western side of the Atlantic, are definitely handicapped in the study of historical architecture; there is so little of it to be seen in our immediate surroundings. What we can learn from books must be supported by diligently exercising our imagination. There is some advantage in this effort. A comprehensive history of architecture "on the comparative method" presents our eyes with a bewildering series of tiny pictures from which we strive to envisage great forms and intricate methods of structure whilst at the same time we try to realize what thoughts and social customs inspired these immensities. A picture three inches square represents an object which in reality fills the eye and floods the mind. The little picture is stationary and we are stationary in relation to it. Were we in the presence of the building we would move around to appreciate it and we would feel its actual presence and size. Such difficulties must be accepted; some advantages may be gleaned from them. Many particulars being withdrawn from our observation we may perhaps appreciate more clearly the broad effects and the general place in history in which we and these things stand and so realize that history is an element in which we live and move and have our being.

In the long course of time there have been many disturbing crises. Again and again what appeared to be firmly established social structures have disintegrated. Beautiful ideals have been overthrown giving place to chaotic conditions. The question naturally arises; are we not ourselves in the midst of just another of these strange turmoils? Each of what are called "periods of architecture" arose laboriously upon the ruins of some previous structure and, for a while, seemed to be substituting something inferior, fumbling apparently blindly, with no well formed ideals, yet gradually becoming coherent and intelligible. The ancient Greeks first appear upon the scene as a barbaric race, overwhelming by force the Aegean or Minoan culture that was centred in Crete. That was a cultured society enjoying a life of luxury, building great palaces whose walls glowed with coloured pictures and whose plans provided for all the ordinary decencies of life. These people produced lovely works of pottery and they dressed in elegant style with ornaments of precious materials wrought with deft and beautiful craftsmanship. The first substitutes for these was a life of harsh austerity and the building of ponderous sprawling temples adorned with sculpture of stiff figures with foolish grinning faces. Did the people who produced these foresee what they were leading to, – to the exquisite refinement of the Parthenon with its heavenly hierarchy of sculpture, – to a social consciousness that has laid the foundations of clear intellectual vision and rational ways of human life? In turn these ideals of intellectual and emotional refinement disintegrated through more centuries than those in which they held the field. From the rude beginnings of Rome another great social structure arose. Again a relatively barbarous race imposed itself upon the ruin of something infinitely finer. Yet, in time, this rude power produced a culture binding law, order and peace upon whole nations and expressing its ideals by buildings of a grandeur that has never been equalled. Grandeur is an element of beauty, not greatly in evidence in the work of the Greeks, but which is most completely realized in Roman work. By the irony of fate there is so little left of this material grandeur that we must laboriously examine through heaps of colossal ruins piecing them together with much aid from our imagination and with the welcome help of Auguste Choisy to form some idea of its original magnificence. The ruin of old Rome is more complete than that of Greece. Both are immortal. Rome was not built in a day, nor did she fall in a day. She disintegrated through centuries all permeated with her influence. Through the "dark ages" ideals struggled, mingled, faded, revived, – preserved from extinction by the smouldering fire of old Rome.

No purely intellectual disintegration took place between the culmination of the power of Rome and the last gleam of it in Byzantium. There, still living a feverish physical existence through another thousand years, a last clear voice of architecture rang out in the church of Sta. Sophia, – fresh, strong, splendid, and resounding with echoes in Ravenna and Venice. This note is of higher pitch than the deep voice of mighty Rome. It is more ethereal, less bound to material things, – speaking of a desire to rise above the crushing weight of physical power to some expression of spirit and of beauty and expressing these with effortless grace. Some spark generated of contact between east and west has produced a "light that never was on sea or land, the consecration and the poet's dream". For a parallel we must look to the Taj Mahal, or perhaps to that stately pleasure dome that Kubla Khan created by sheer decree in Xanadu's mysterious depths. It is the most "modern" building yet designed.

Farther west, the influence of Rome did rapidly disintegrate, chiefly owing to the rising physical strength and overwhelming numbers of the barbaric northern and western populations. Amongst these some remnant of the Roman idea of the need to have law to live by persisted without the Roman ability to impose it. Slowly they struggled to construct a system of law in some new manner of their own that would be consistent with the new ideals of the Christian religion whose implications they dimly apprehended. At no period of history did the art of architecture so greatly forward the work of civilization. For it was

realized that at a time when there was vastly more of destructive than of constructive enterprise only an institution which could build strongly could endure the surrounding strains. To be powerful, or indeed, even to survive, a man must build a stone castle around him. Churches must be built of stone to secure a place amongst men. These might be destroyed but not with any profit and not without a feeling of doing violence to unresisting innocence intent only on general good. In this way what we know as Romanesque architecture gained a footing. Its first efforts were crude. To be substantial was its first object. Fire and the sword were the favorite playthings of that time. Roofs were assailable; so these too were made as simple stone barrel vaults built up externally to slopes paved with stone. Clumsy as these may have appeared they seemed to simple people a wonderful accomplishment of a desired objective. The human delight in craftsmanship felt the challenge and rose to meet it. The heavy masses took on greater stature and eye-arresting forms. Craftsmanship took charge, continuously devising and inventing, becoming ever more skilful in execution, until there was created a veritable fairyland of stone. More general respect for noble work reduced the need for exclusive use of stone. Wooden roofing was deemed sufficient, sometimes with disastrous results; but always the main substance was of stone. The society that began by erecting sombre and cumbrous structures had no idea that, in natural course, their work would result in the glories of Chartres, the stateliness of Lincoln or the queenly majesty of York Cathedral.

This wonderful medieval society at last, in its turn, disintegrated. It rested on too narrow a basis of ideas. Life hungers for more than cunning craftsmanship and men must be more than craftsmen working in material operations. The reminder came across the centuries that society must live by law and that law must live by reason and that men must live in the exercise of these, acting the law they live by without fear.

The rise of a new manner of building was not a sudden affair. In Italy there intervened the lovely *cinquecento* work, and in France the charming work of the time of Frances 1st. In these, exquisite craftsmanship still dominated. In England the cruder Jacobean work with its strap-work and "conceits" may seem to us fantastic and even unpleasant; yet it indicated the beginning of the dominance of new ideas over the old craftsmanship. All these first essays were essentially superficial and unsatisfying. The older Tudor houses were more beautiful than the Jacobean ones and, indeed, for sheer beauty they have never been surpassed. But a new social order had been born and steadily came to maturity. Renaissance architecture ran a varied course through three centuries before being called in question. Now we question and even condemn it. What have we to put in its place? We probably know no more about what we are proceeding to than did the early Romanesque builders see the great medieval era that lay ahead of them.

Architecture may actually take the initiative in forwarding the civilization and culture of a society as it appears to have done in the Middle Ages. That is probably an exceptional case. More generally, where architecture has attained a high level of development it has played a part in culture by establishing it more firmly and spreading it more widely. Greek culture was nourished and sustained by the drama and by the study of philosophy. It relied on these more than on its architecture. But that architecture confirmed and established what these fostered. Egyptian culture deserves more attention than it has received. The great temple architecture of that people has lost its original appeal. Its effect in its own time must have been enormous. That nation was the first to throw off the trammels of unregulated barbarism by an effort that may be measured by the scale of its colossal buildings. Their influence upon both the Hebrews and the Greeks was profound although not readily discernible because of the complete and subtle transmutation it underwent in the transference. The Hebrew people produced no type of architecture of their own. Yet their influence upon civilization has been vast. It was founded upon high moral conceptions expressed in a magnificent literature with a great musical accompaniment. It was not further established by the work of men's hands. It had no corresponding physical habitation. The central temple, itself of foreign extraction, relied on a symbolism that had only local not universal appeal. It was purposely exclusive. The fine architecture of the European renaissance was broadly based upon reason and the subtle observation of beauty, yet its appeal was limited. It was available to and appreciable by those to whom scholarship and leisure for refined enjoyment were possible. We desire a larger gallery, an extension of appreciation, and we have larger stores from which to furnish out a display.

In the present day the world is is a state of turmoil and uncertainty. As a consequence architecture has no certain general form or direction. This is nothing new in the worlds long history. It has occurred time and again. New and unforeseen conditions have emerged after greater or less dissolutions and reconstructions. The present state of confusion is not so complete or so hopeless as was the case in what we call the Dark Ages. Knowledge and reason are now vastly more widespread. The desire for peace and goodwill is now a world-wide aspiration in spite of an apparent division into hostile camps. More serious is the enormously increasing world population with the positive and urgent material demands that this implies. How or when more stability is to be reached we do not know nor where the centre of gravity will be found. The part that architecture can play in this is only secondary but yet vital. Ingenious architects introduce innovations in methods of building and of design. These have very little impact upon the general situation. Many of them are quite irrelevant to it. The humble practitioner need not be overtroubled about that. To design in beauty and to build in truth, each in his sphere, making his work as adequate to its purpose as his ability can accomplish will surely tend towards greater and better ends than any single effort of high ambition.

RESIDENTIAL

Apartment Building, Toronto

Architects, Venchiarutti & Venchiarutti

Apartment Building, Montreal

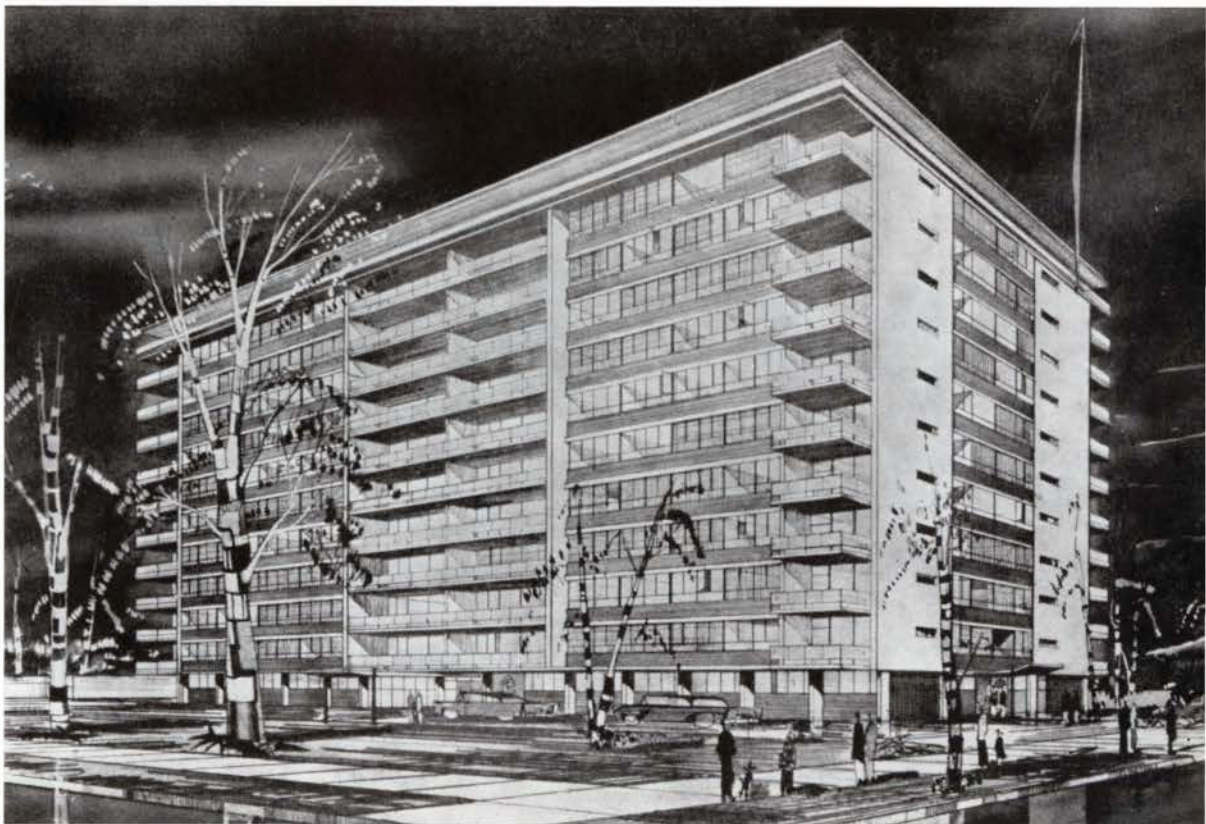
Architect, Reuben Fisher

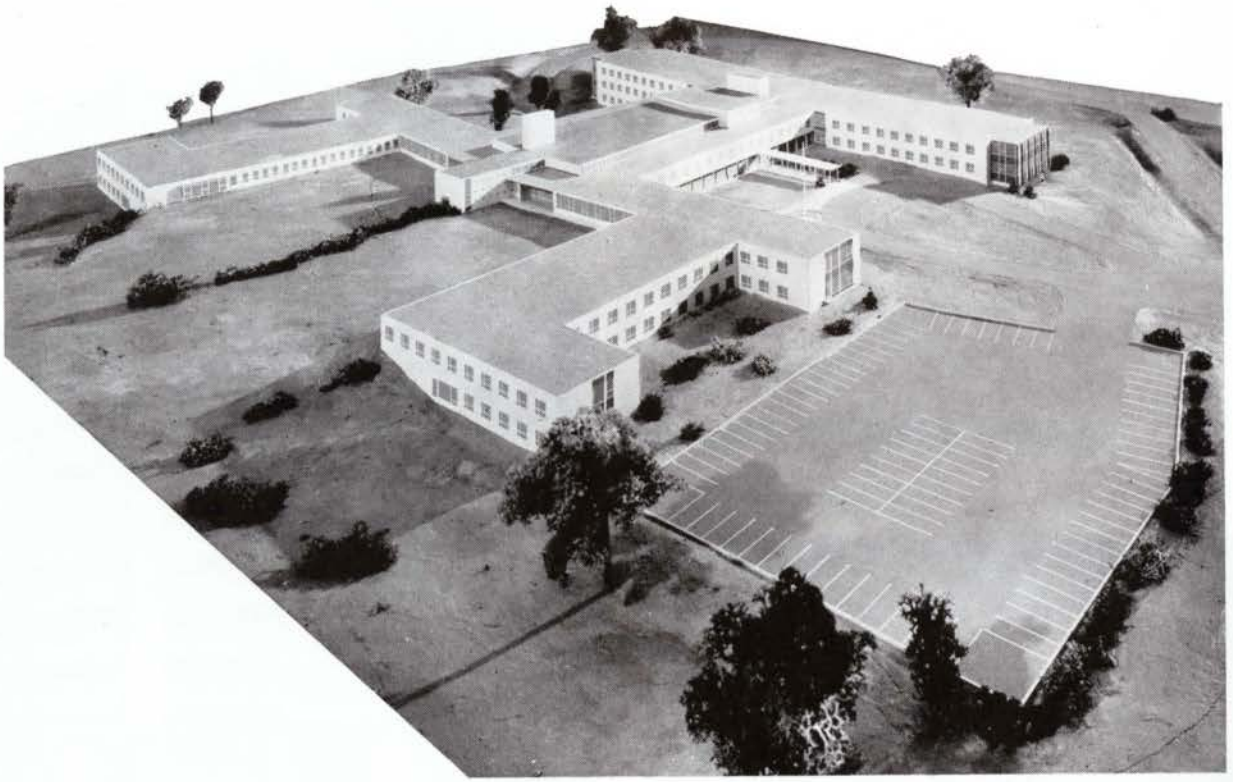
Apartment Building, Toronto

Architects, Page & Steele

Apartment Building, Toronto

Architects, Gordon S. Adamson & Associates
Associate Architects, Bregman and Hamann



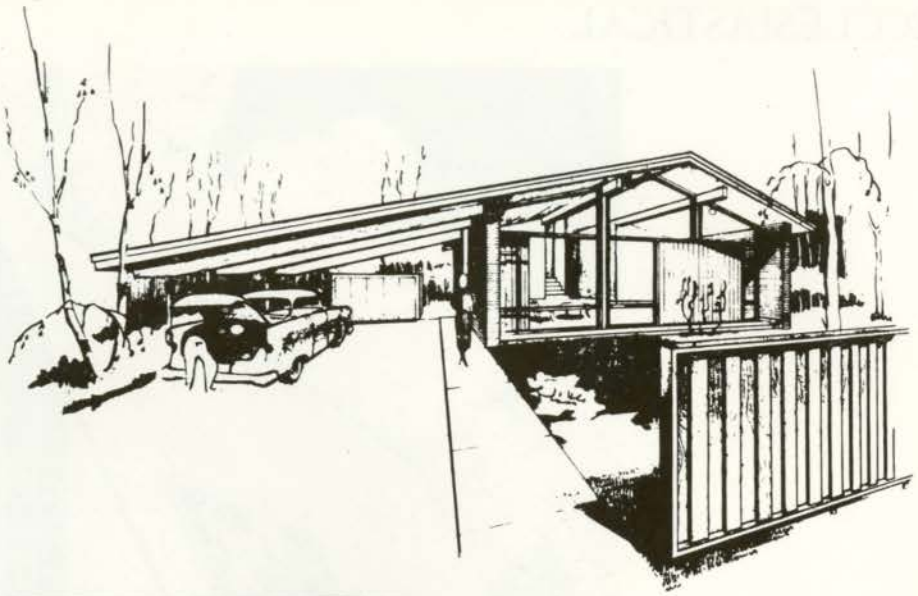


Metropolitan Home for the Aged, Newmarket, Ontario

Architect, Howard Chapman

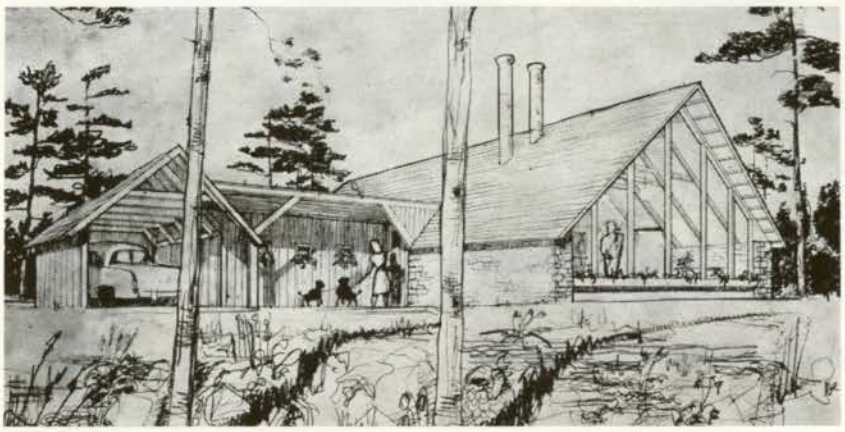
Addition to the Marlborough Hotel, Winnipeg

Architects, Libling Michener Diamond



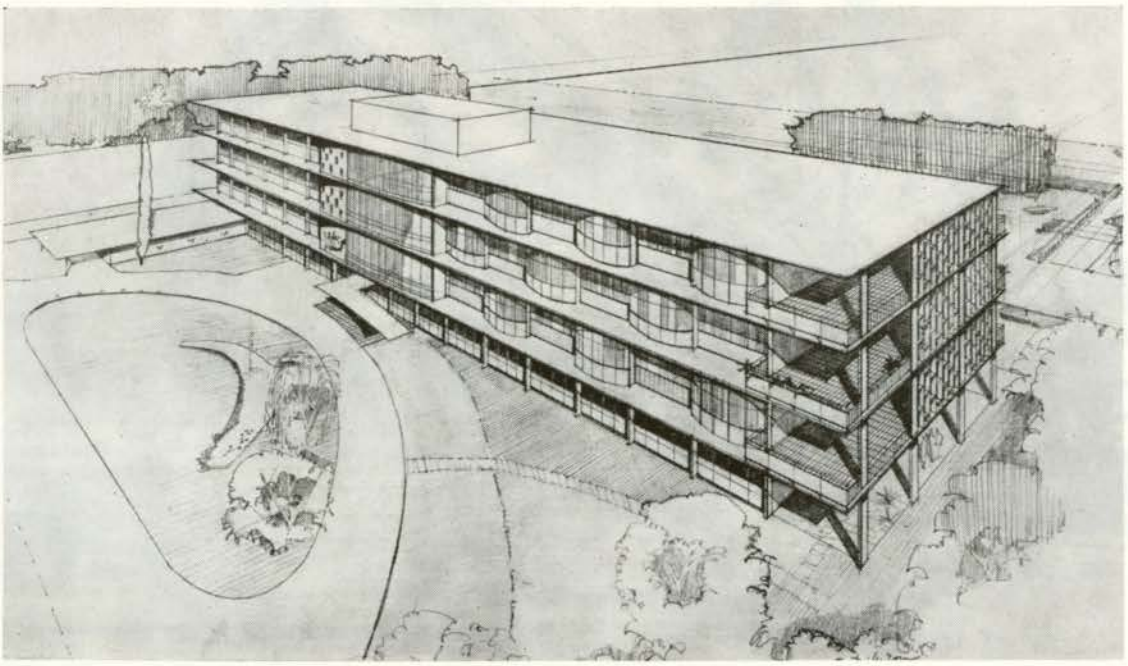
House, Thorncrest Village
Ontario

Architects, Venchiarutti & Venchiarutti



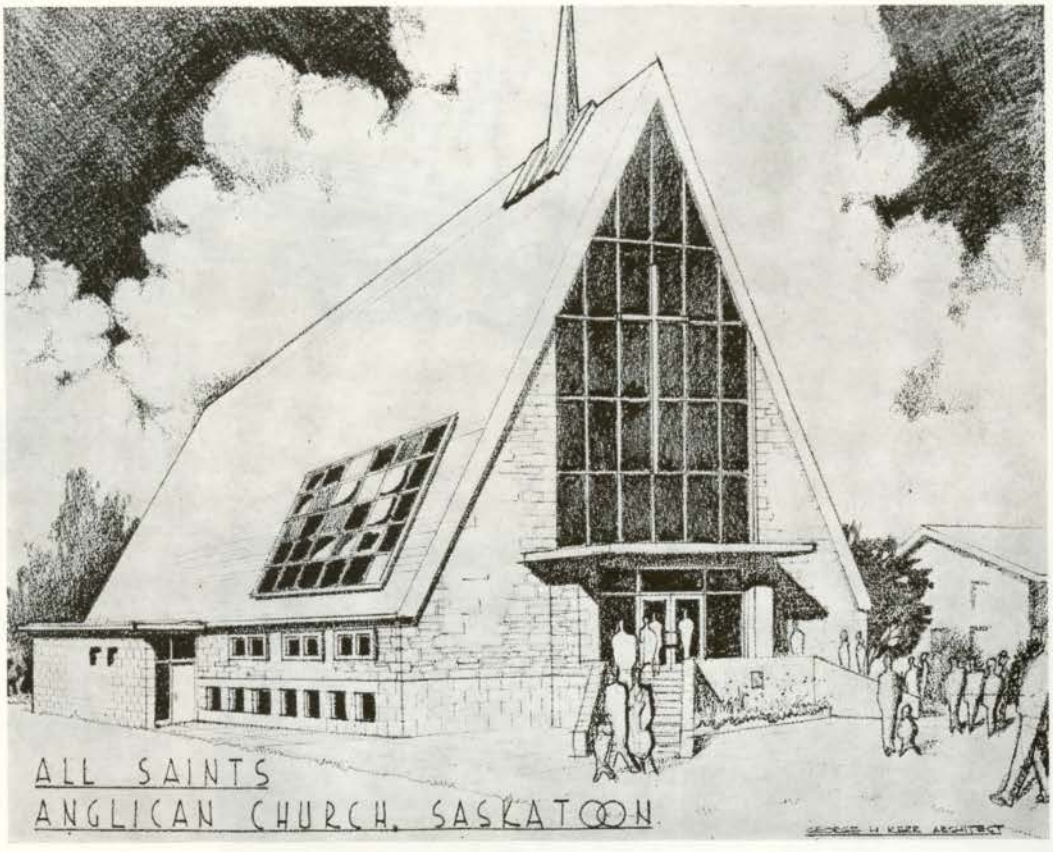
Guest House, Hudson Heights, Quebec

Architects, Durnford, Bolton & Chadwick



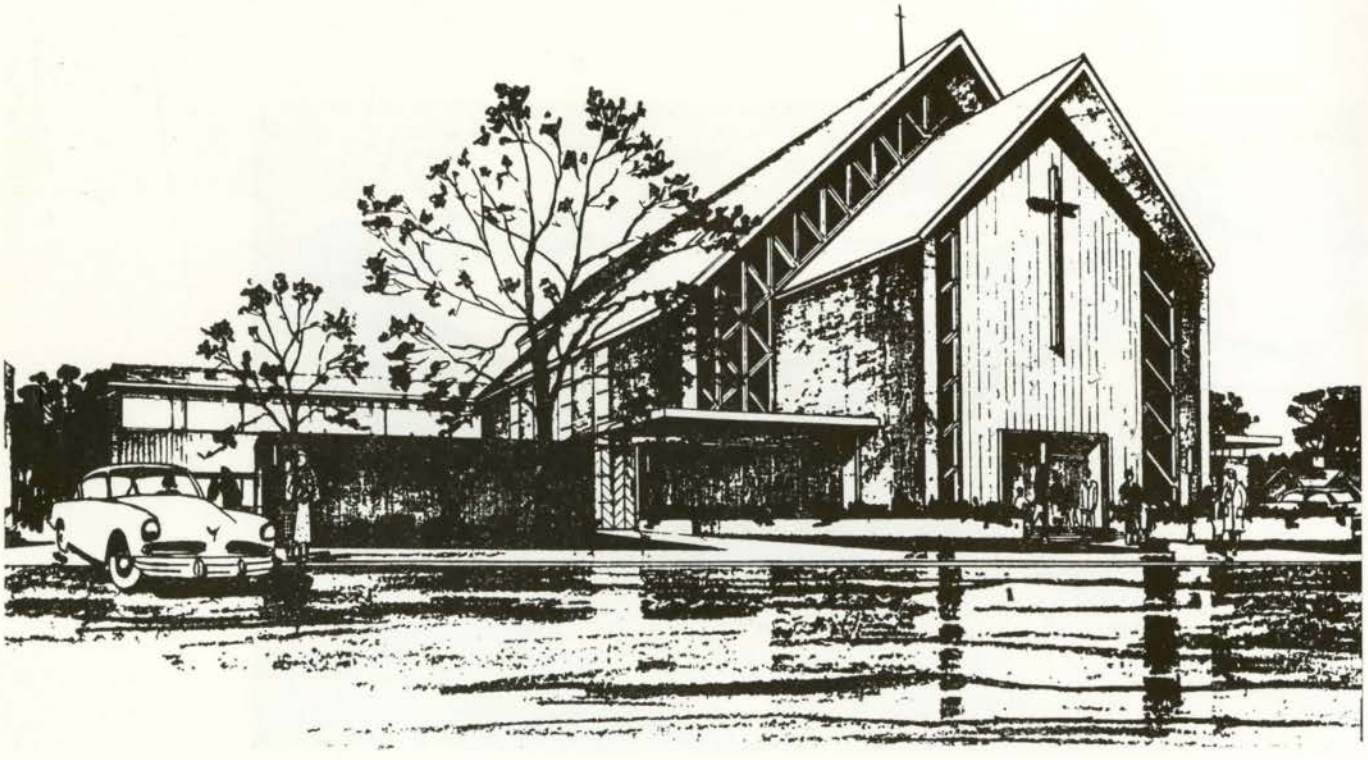
Homes for the Aged, Toronto

Architects, Page & Steele



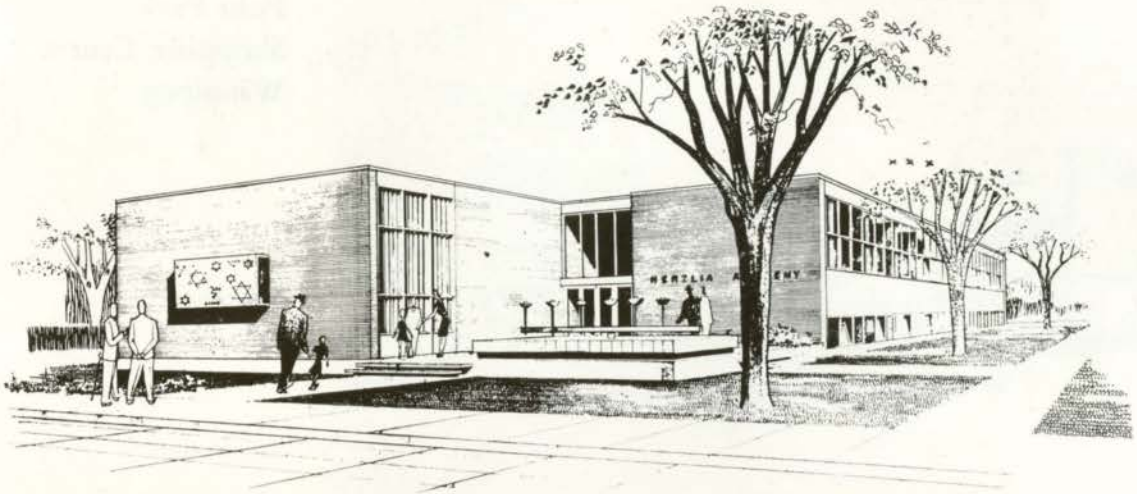
All Saints Anglican Church, Saskatoon

Architect, George H. Kerr



Church of St. Raphael, Toronto

Architects, Venchiarutti & Venchiarutti

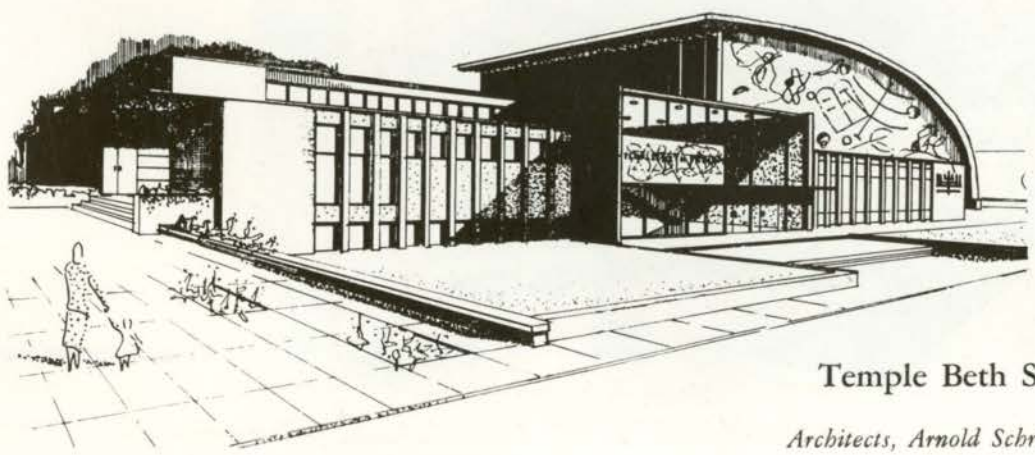


Synagogue and School, Winnipeg

Architects, Libling Michener Diamond

Ville St. Laurent Synagogue
Montreal

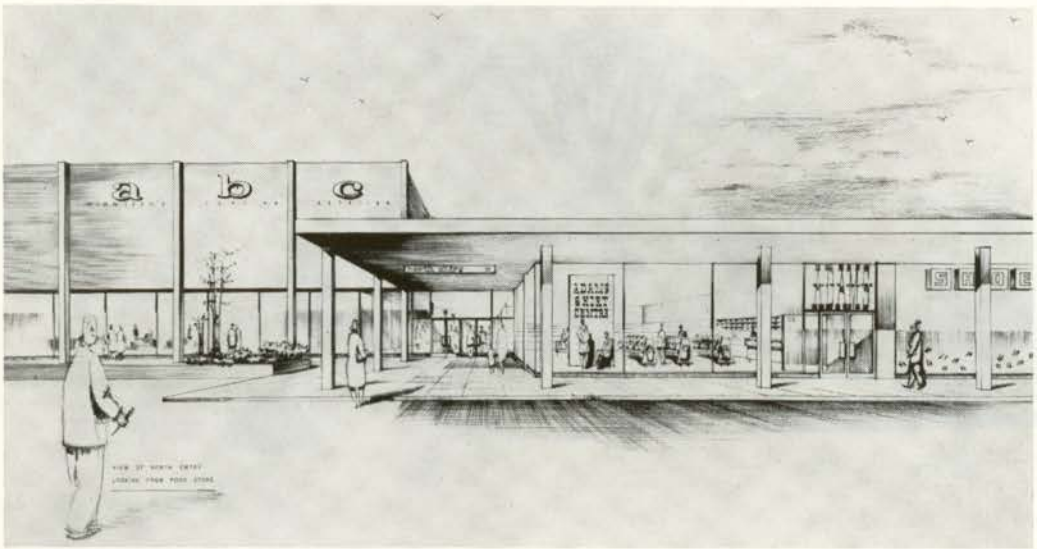
Architect, Arnold Schrier



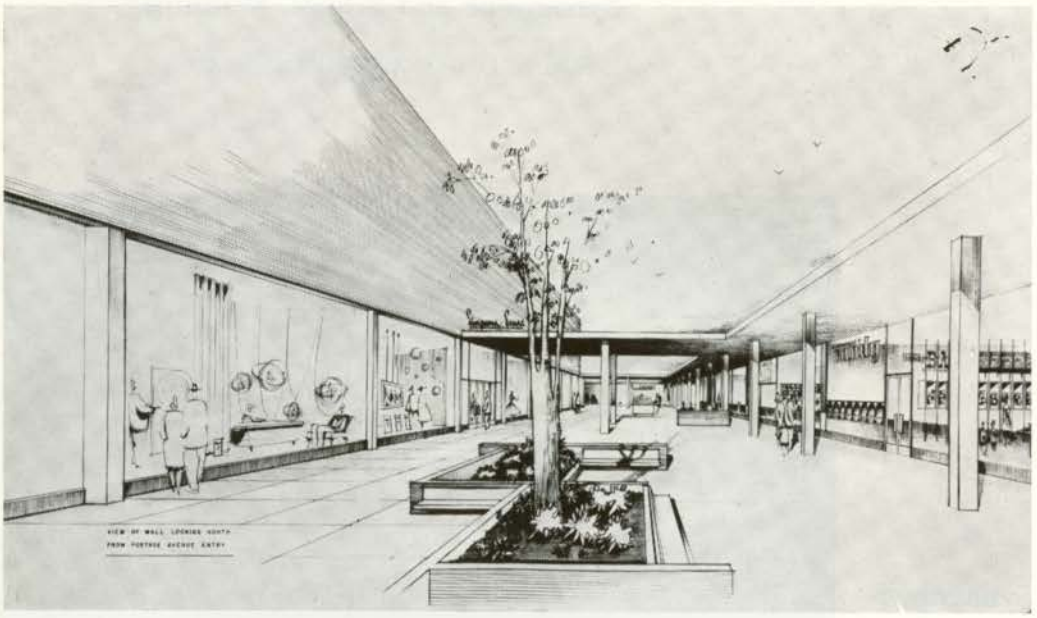
Temple Beth Sholom, Montreal

Architects, Arnold Schrier and Sydney Gerson

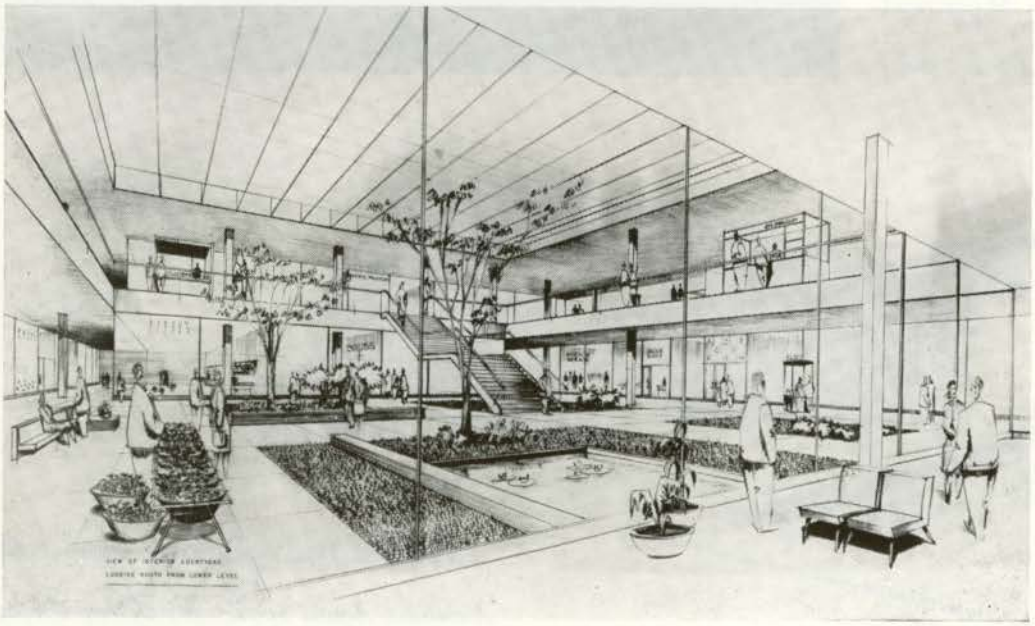
Polo Park Shopping Centre Winnipeg



View of entry



View of mall

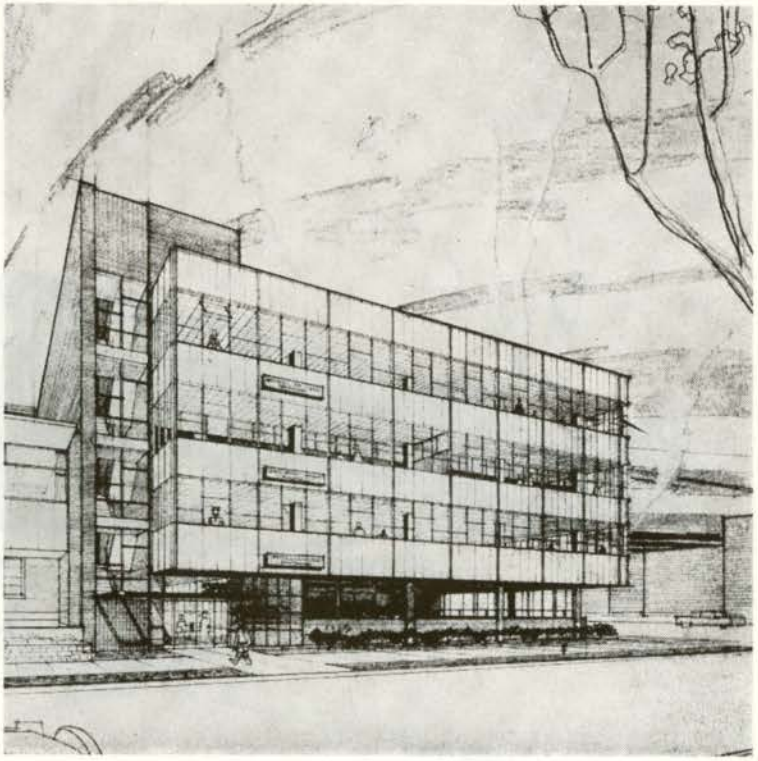


View of interior courtyard

Architects and Consulting Engineers, Green, Blankstein, Russell and Associates

Imperial Oil Ltd., Toronto

Architects, Mathers & Haldenby



Insurance Building, Winnipeg

Architects, Moody and Moore

St. Lawrence Seaway Headquarters
Cornwall, Ontario

Architects
Gordon S. Adamson & Associates

Office Building, Toronto

Architects, Venchiarutti & Venchiarutti

Canadian Overseas
Telecommunication Corp., Montreal

Architect, A. Leslie Perry

Bank of Canada, Toronto

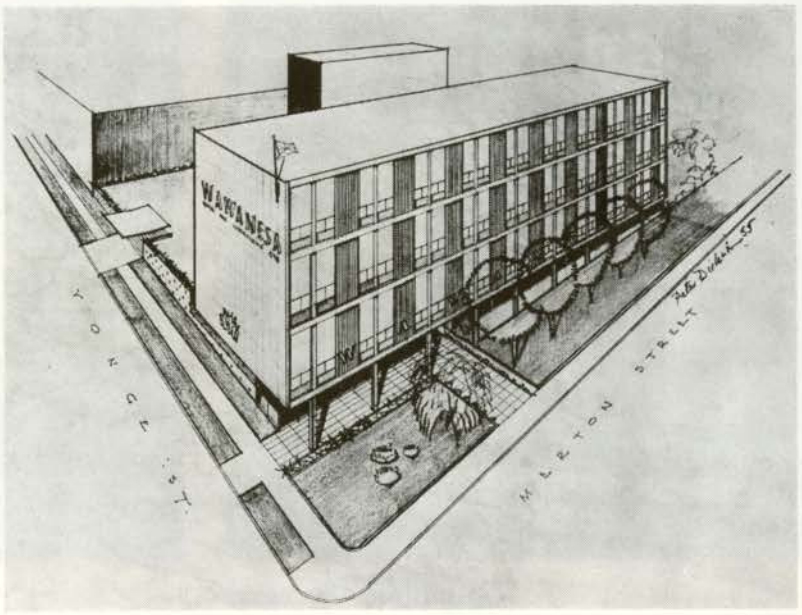
Architects, Marani & Morris

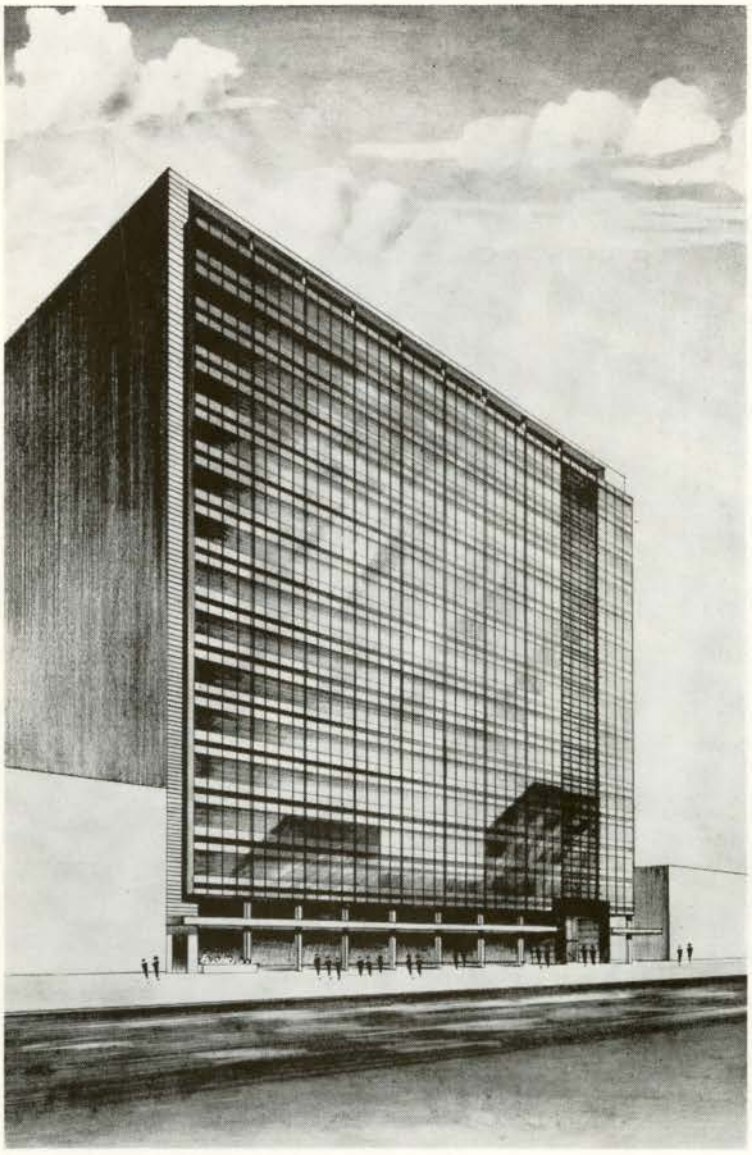
Marlborough Hotel Parking Garage
Winnipeg

Architects, Libling Michener Diamond

Wawanesa Mutual Insurance Co.
Toronto

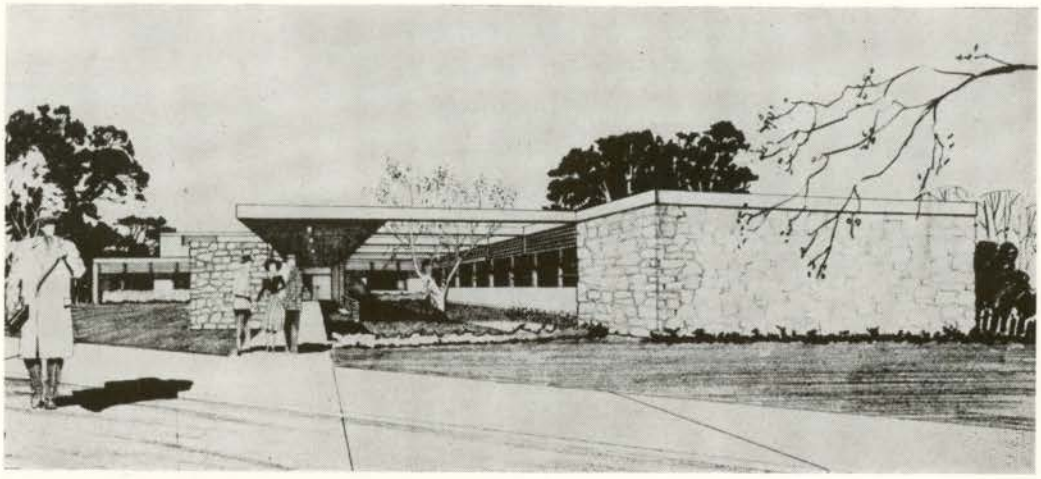
Architects, Page & Steele





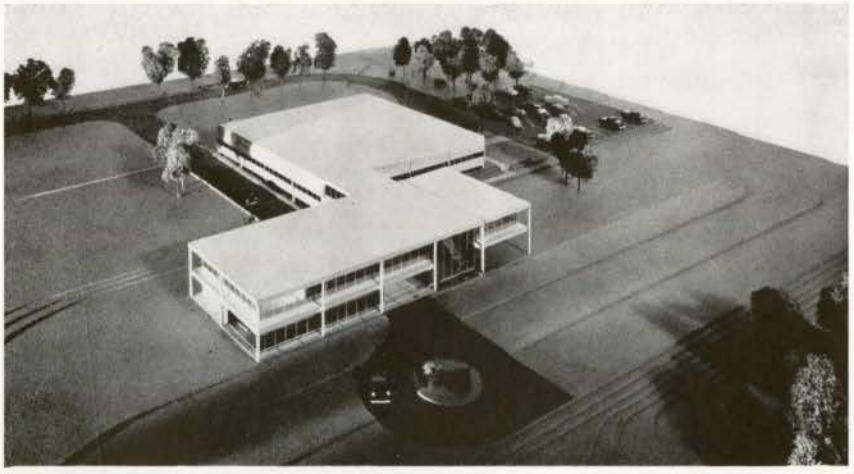
Office Building, Montreal

Architect, Ben-Ami Shulman



Office Building
Toronto

Architects
Venchiarutti & Venchiarutti



Ortho Pharmaceutical
Corporation (Canada) Ltd.
Don Mills, Ontario

(see also below)

Grand & Toy Ltd.
Don Mills, Ontario

Architects and Engineers
John B. Parkin Associates

Office Building, Vancouver

C.B.K. Van Norman and Associates

CNR Hotel and Office Building Montreal

Architect, George Drummond

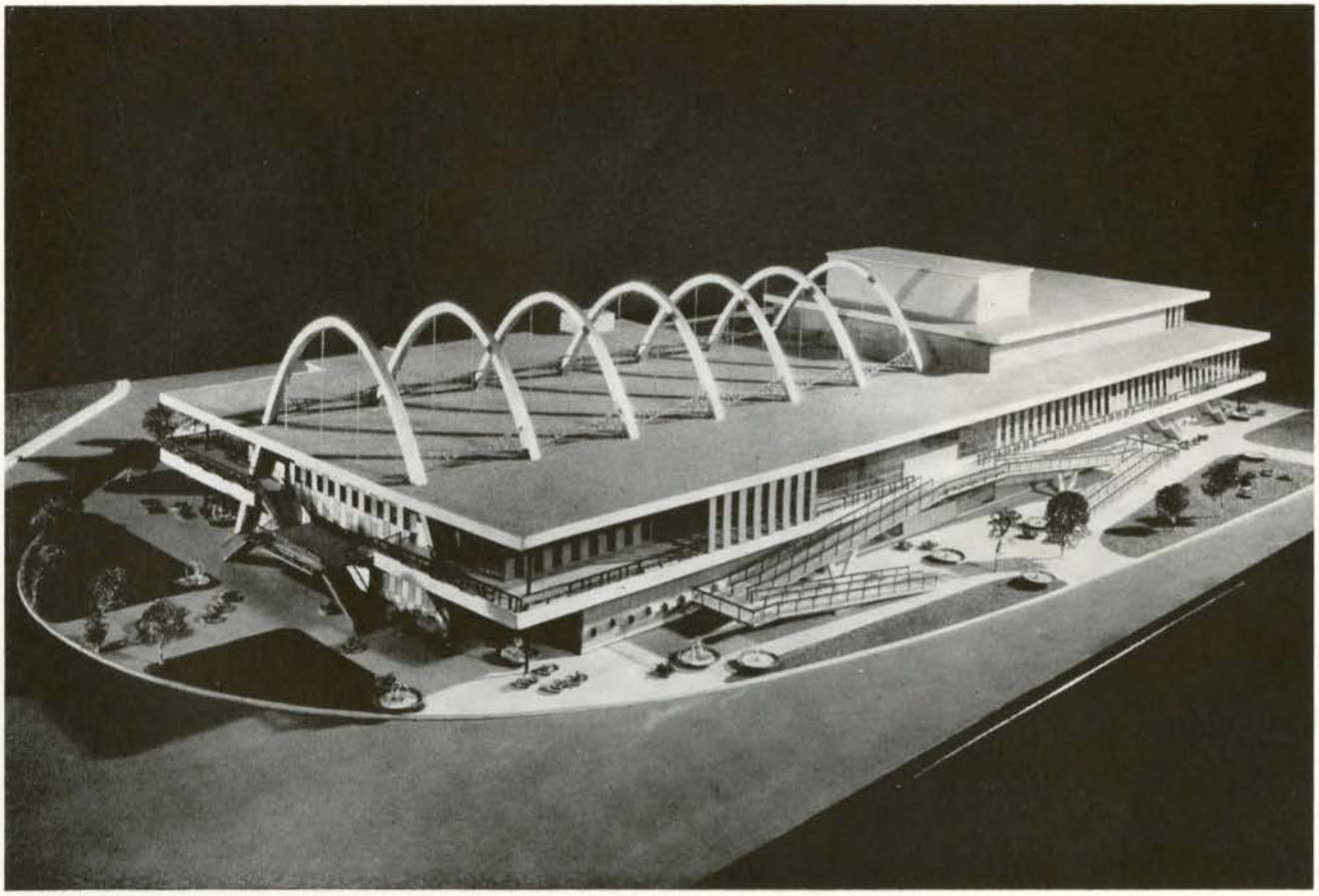
Office Building, Montreal

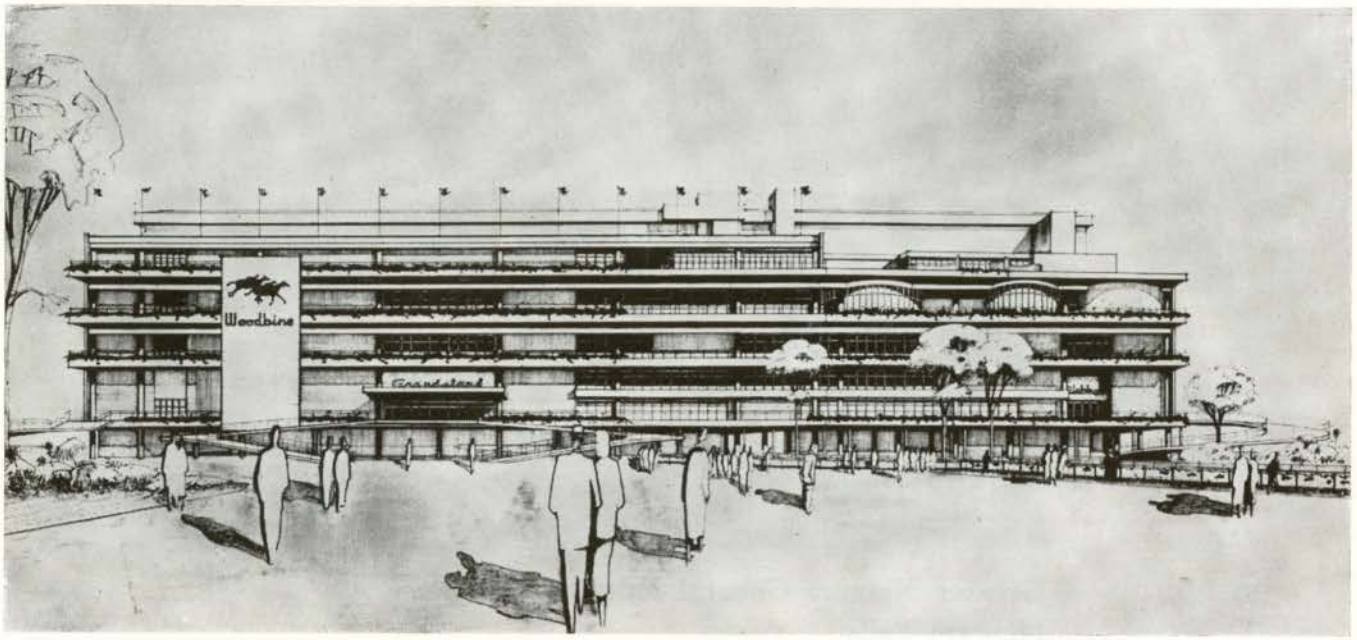
Architects
Reuben Fisher
Powers & Kessler, N.Y.
Howard T. Fisher & Associates, N.Y.

RECREATIONAL

Women's Building, CNE, Toronto

Architects, Page & Steele





Woodbine Grandstand and Clubhouse, Toronto

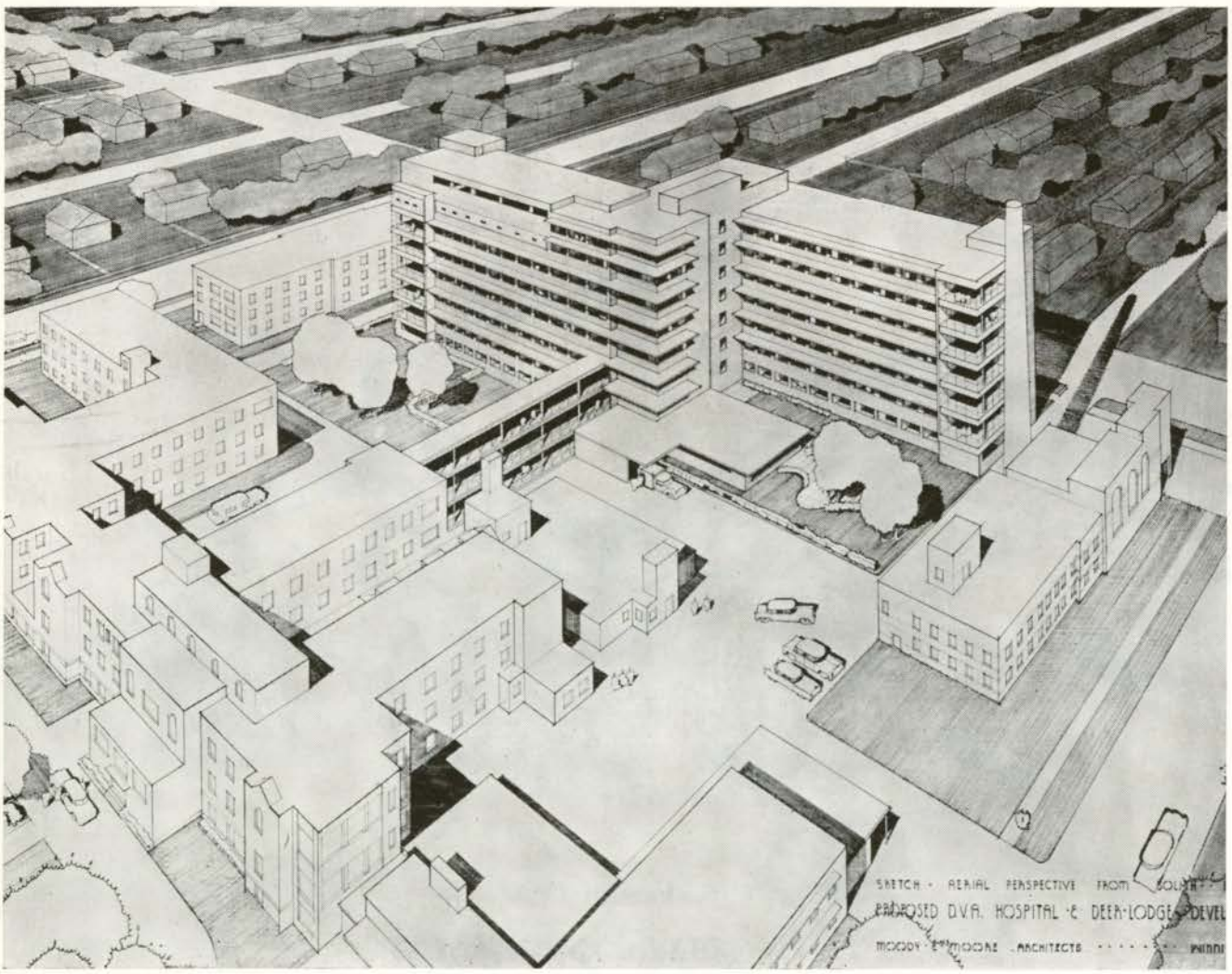
Architect, Earle C. Morgan

Saskatoon Club

Architects, Kerr & Cullingworth

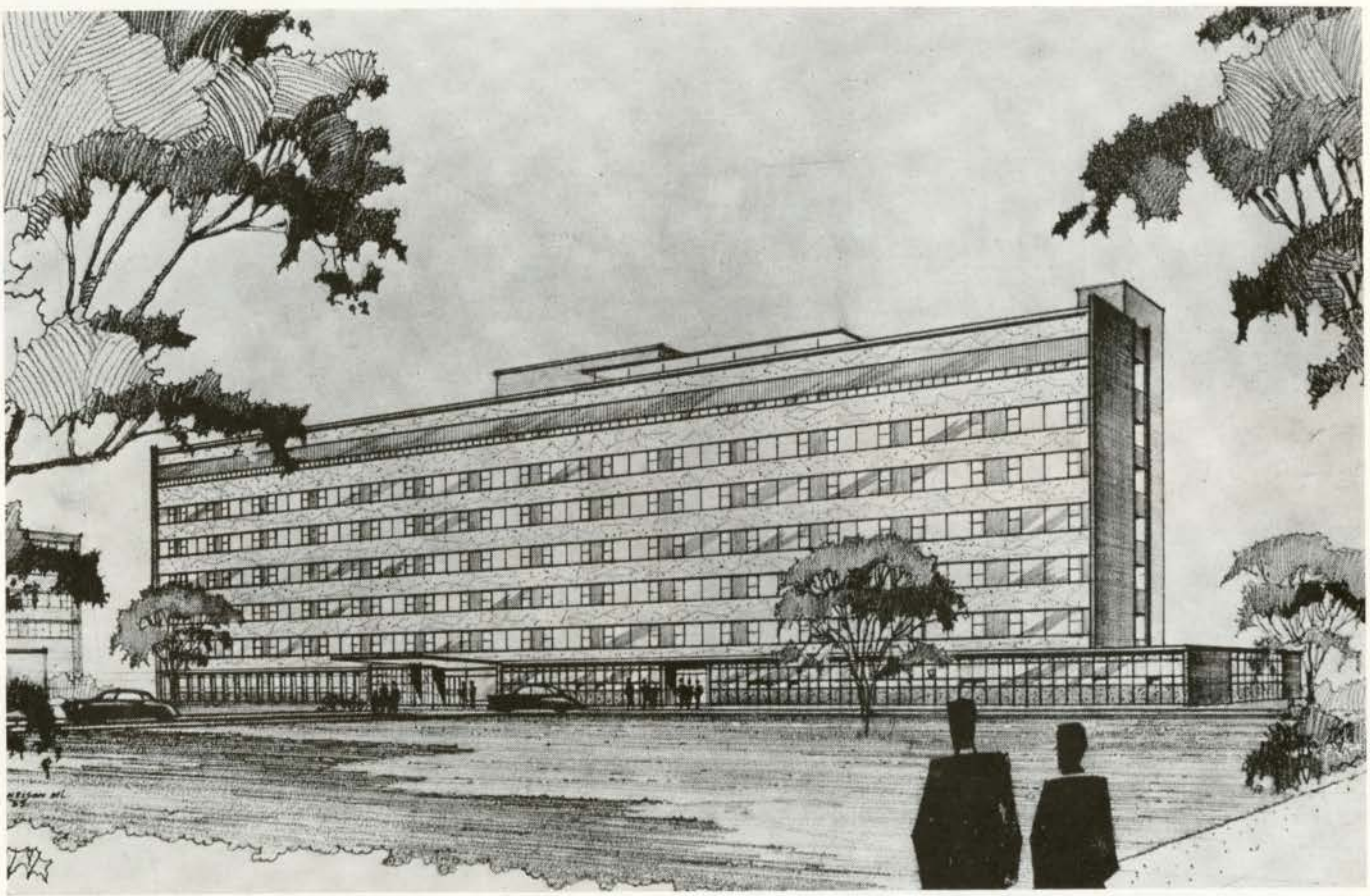
Greater Niagara General Hospital
Niagara Falls

Architects and Engineers, John B. Parkin Associates



DVA Hospital and Deer Lodge Development, Winnipeg

Architects, Moody and Moore

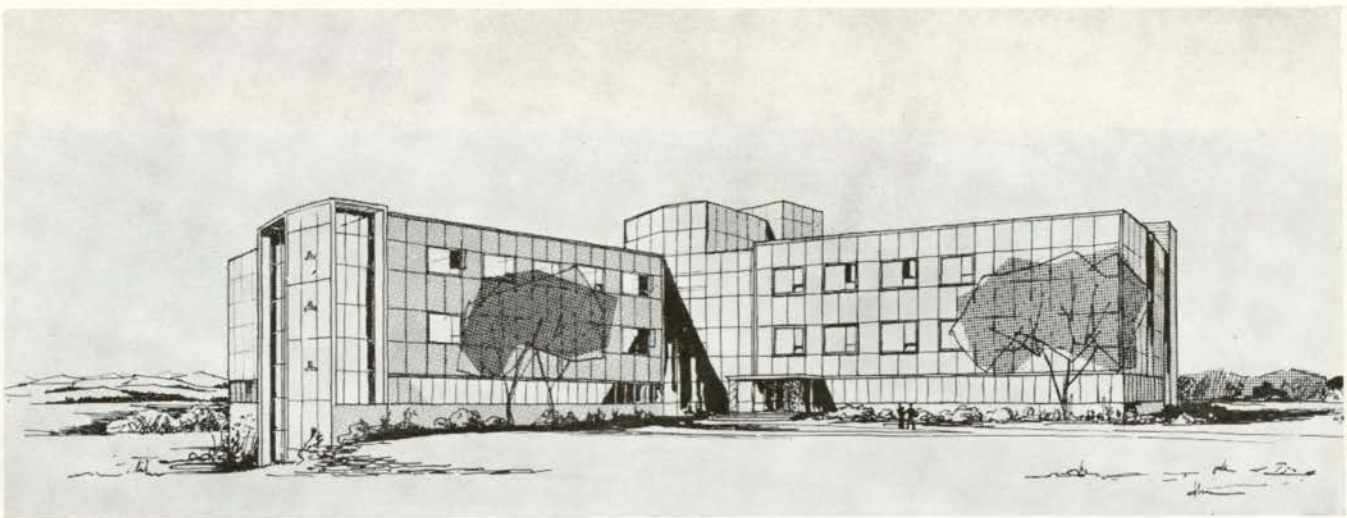


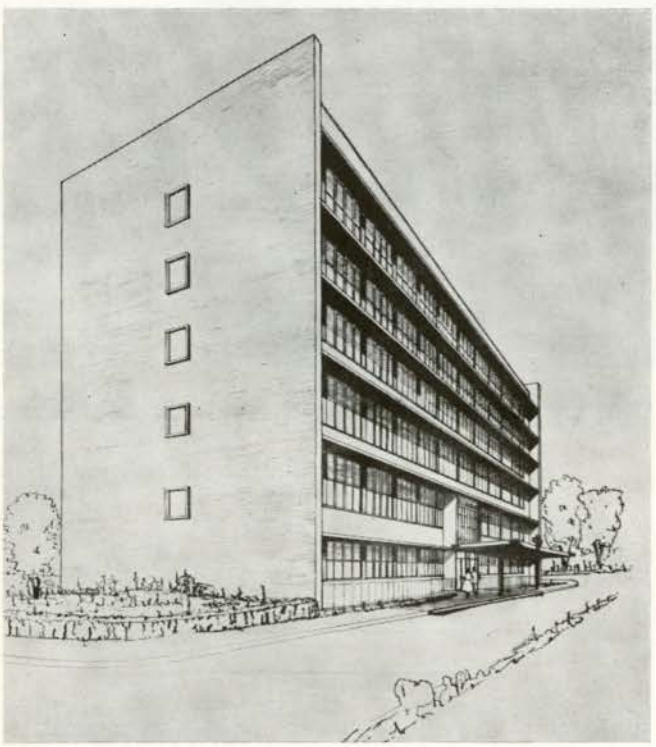
Winnipeg General Hospital, New North Wing

Architects, Moody and Moore

Saguenay General Hospital, Arvida, Quebec

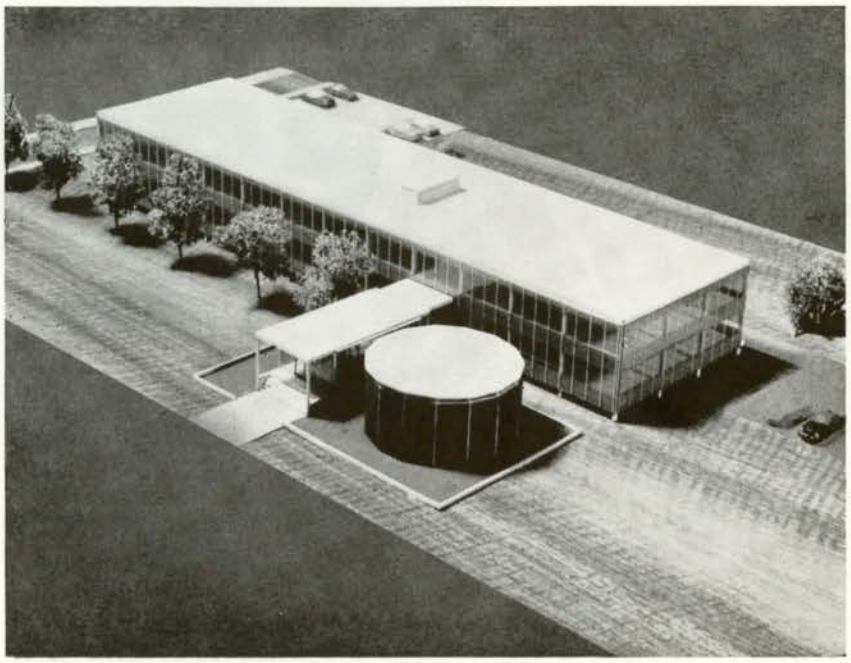
Architects, Durnford, Bolton & Chadwick





Misericordia General Hospital, Winnipeg

Architects, Northwood, Chivers, Chivers & Casey

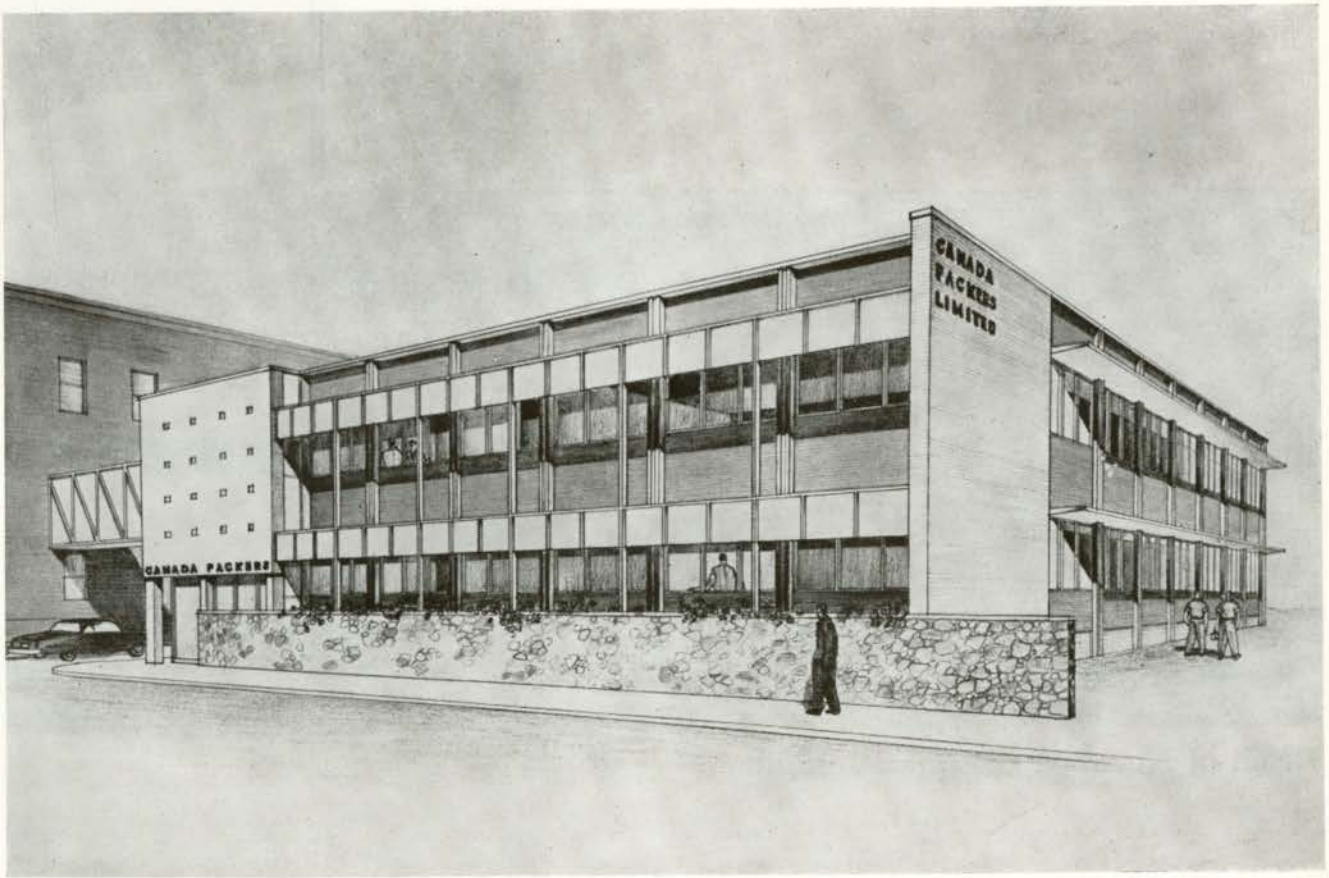


Engineering Building
Imperial Oil Ltd.
Sarnia, Ontario

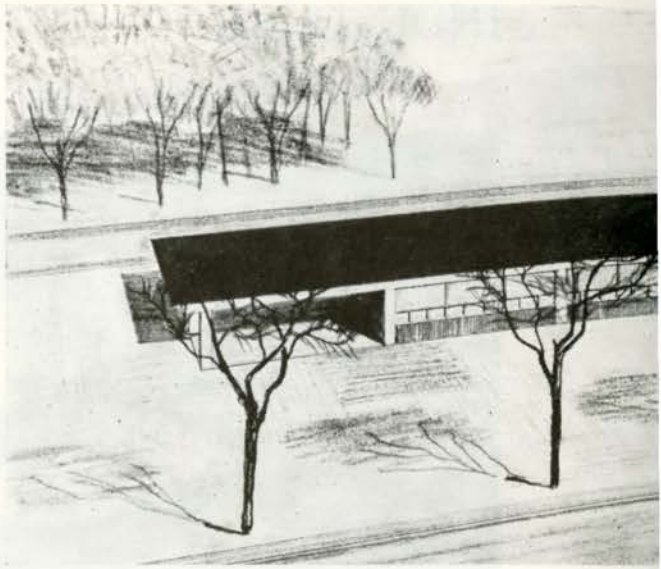
Architects and Engineers
John B. Parkin Associates

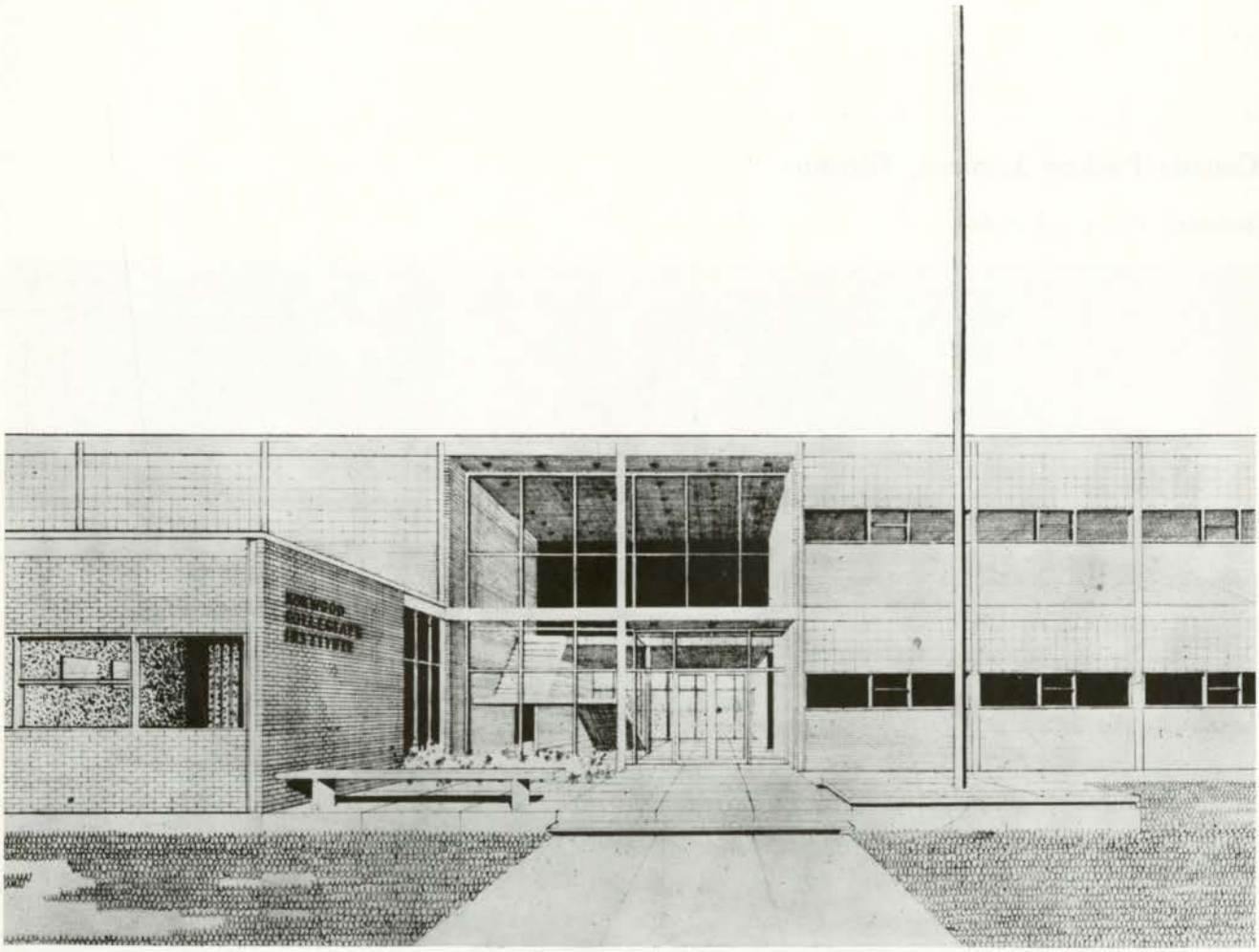
Canada Packers Limited, Toronto

Architects, Fleury and Arthur

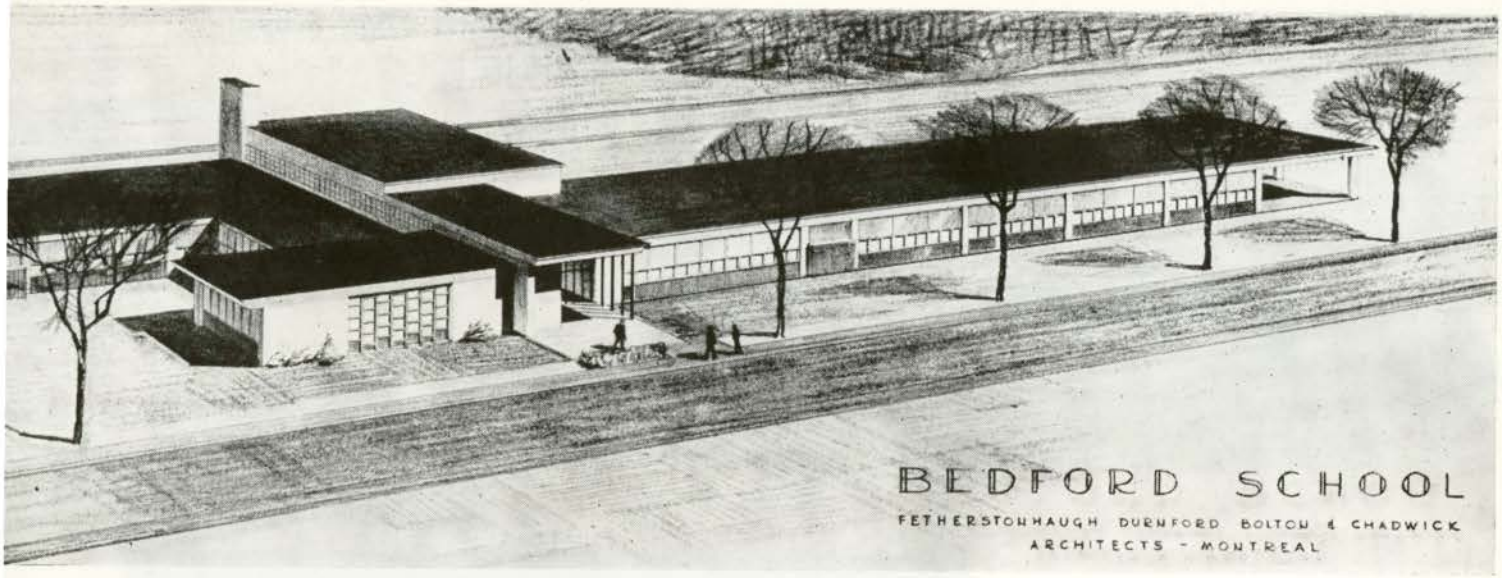


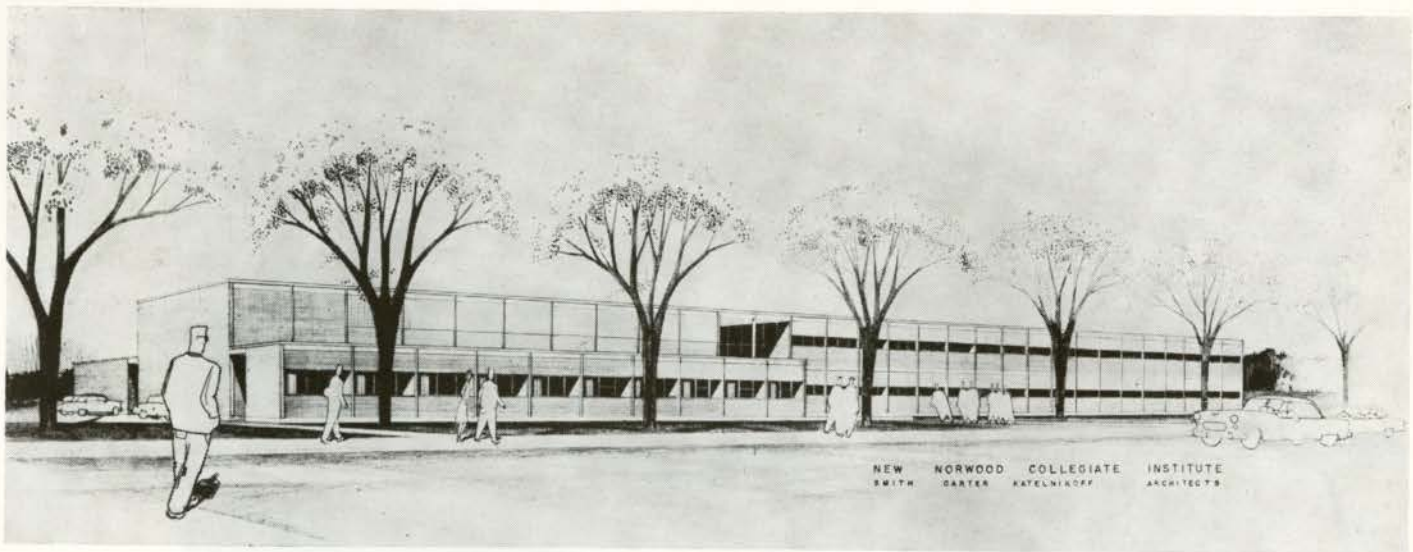
EDUCATIONAL





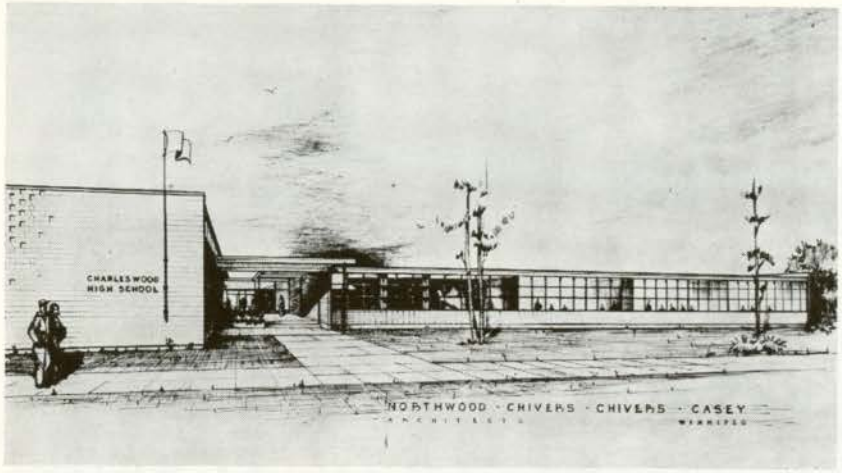
Detail of Norwood Collegiate Institute





Norwood Collegiate Institute, Winnipeg

Architects, Smith, Carter, Katelnikoff

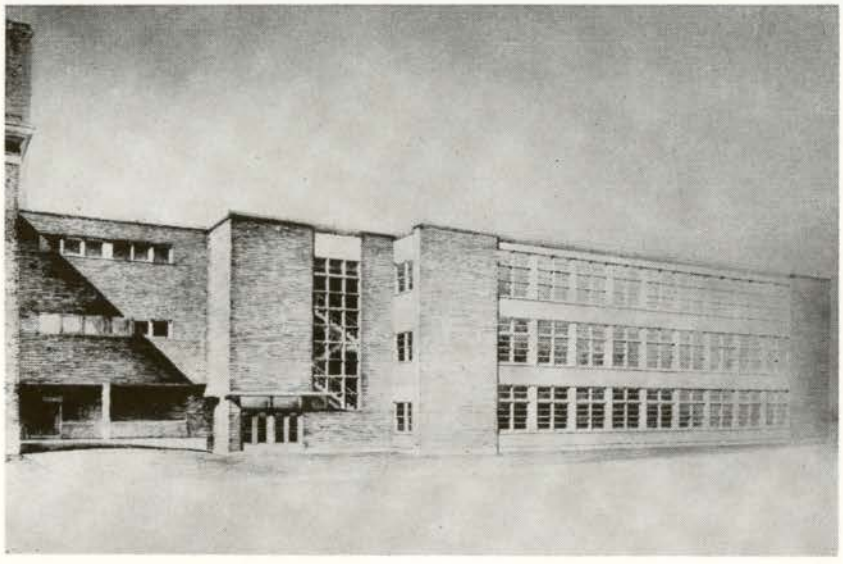


Charleswood High School
Manitoba

Architects
Northwood, Chivers, Chivers & Casey

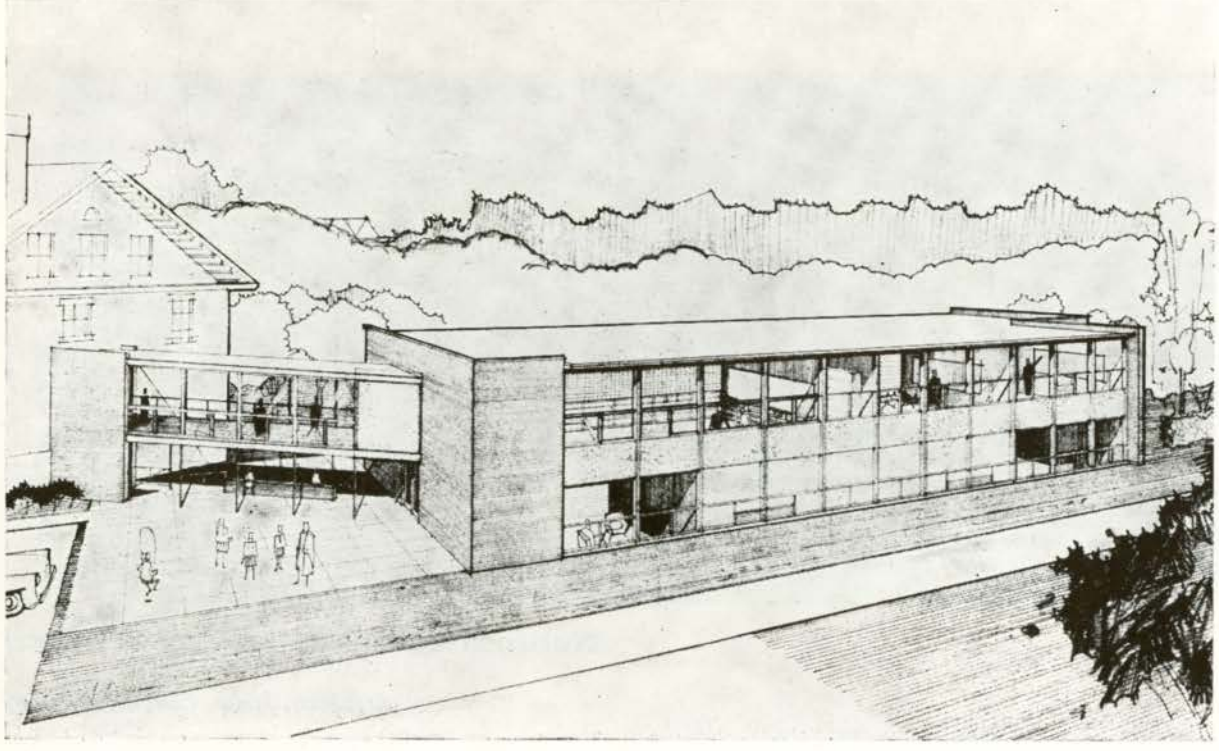
Addition to School
Sussex, New Brunswick

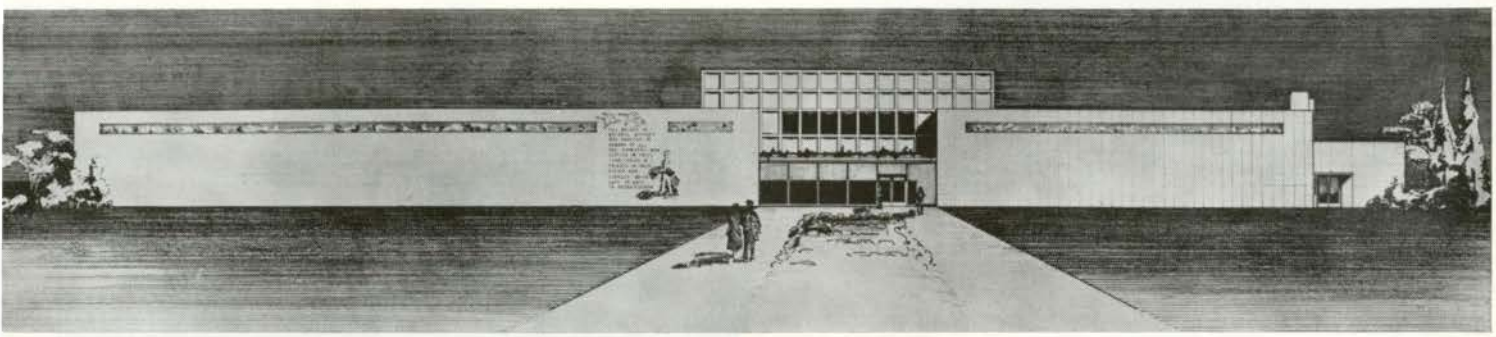
Architect, Stanley W. Emmerson



Addition to Balmoral Hall
School for Girls, Winnipeg

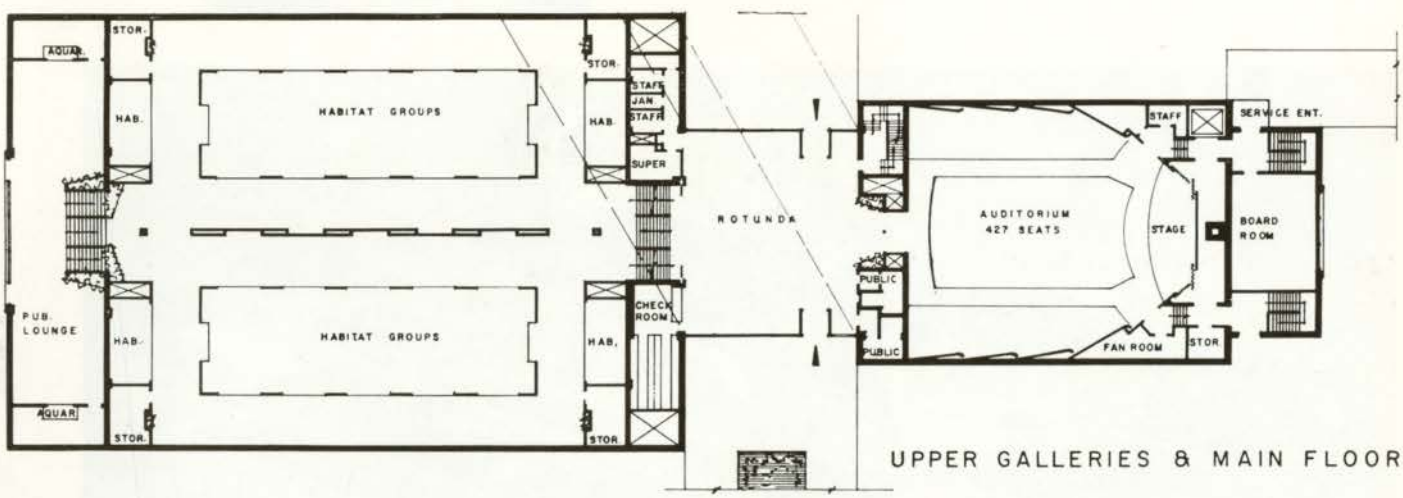
Architects, Moody and Moore



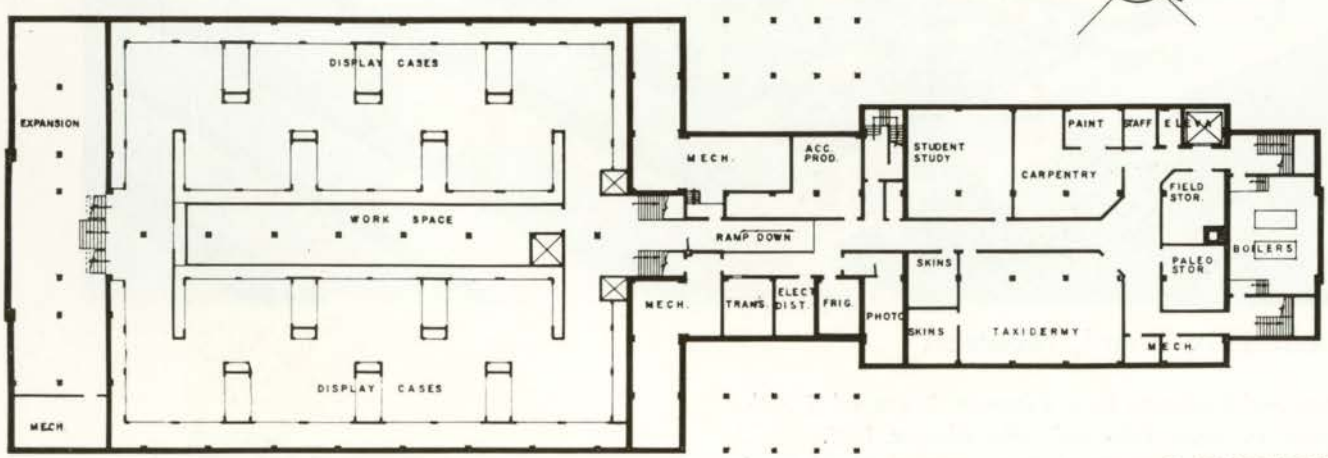


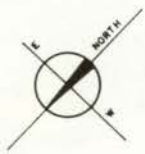
Museum of Natural History, Regina

Architects, McCudden and Robbins

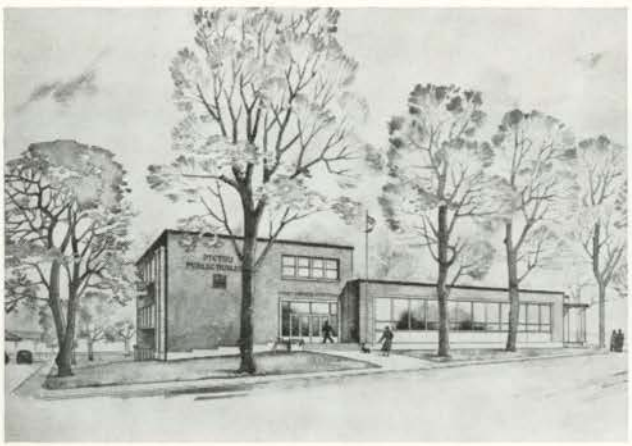


UPPER GALLERIES & MAIN FLOOR





LOWER GALLERIES & BASEMENT FLOOR PLAN

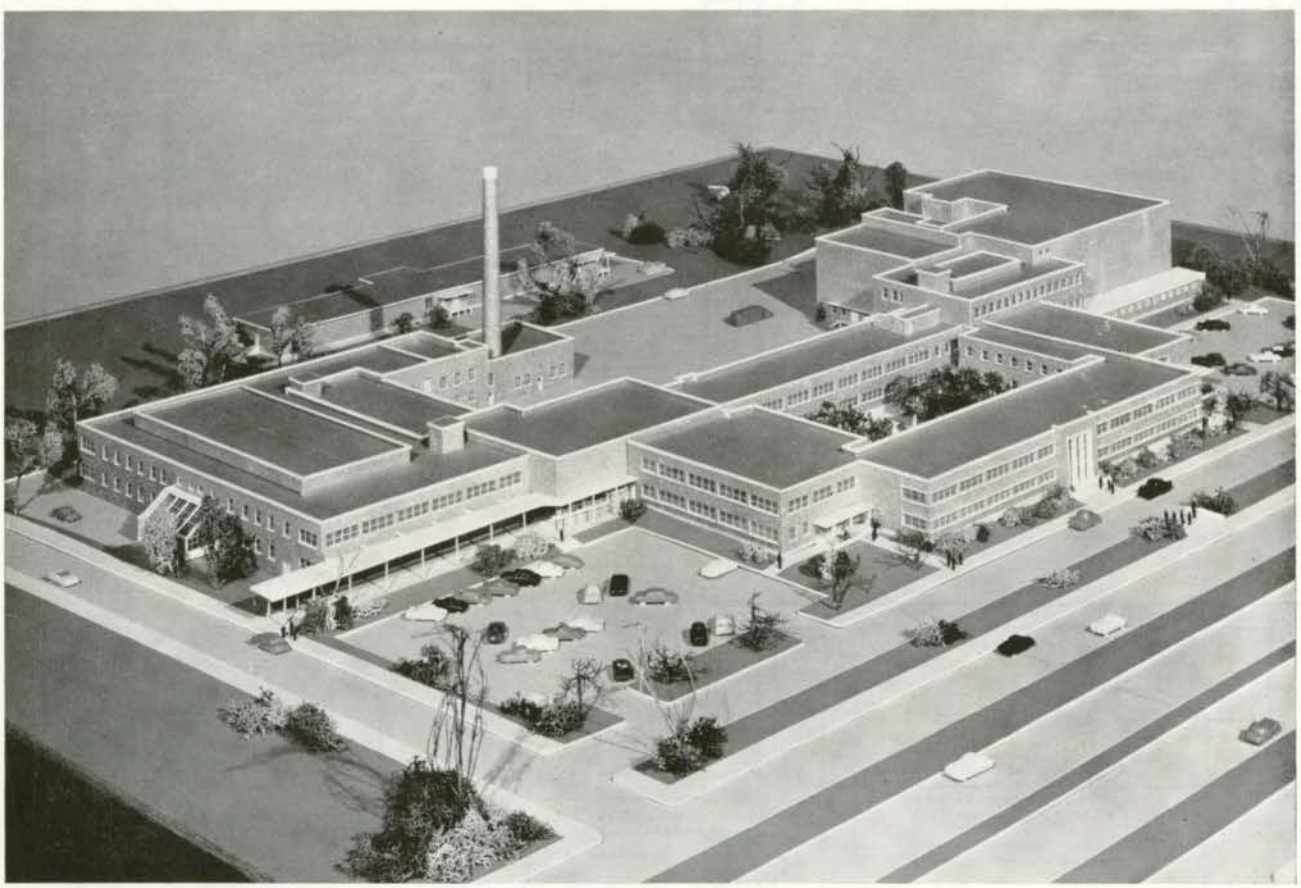


Public Building, Pictou, Nova Scotia

Architects, Davison, Duffus, Romans & Davis

Workmen's Compensation Board, Toronto

Architects, Page & Steele

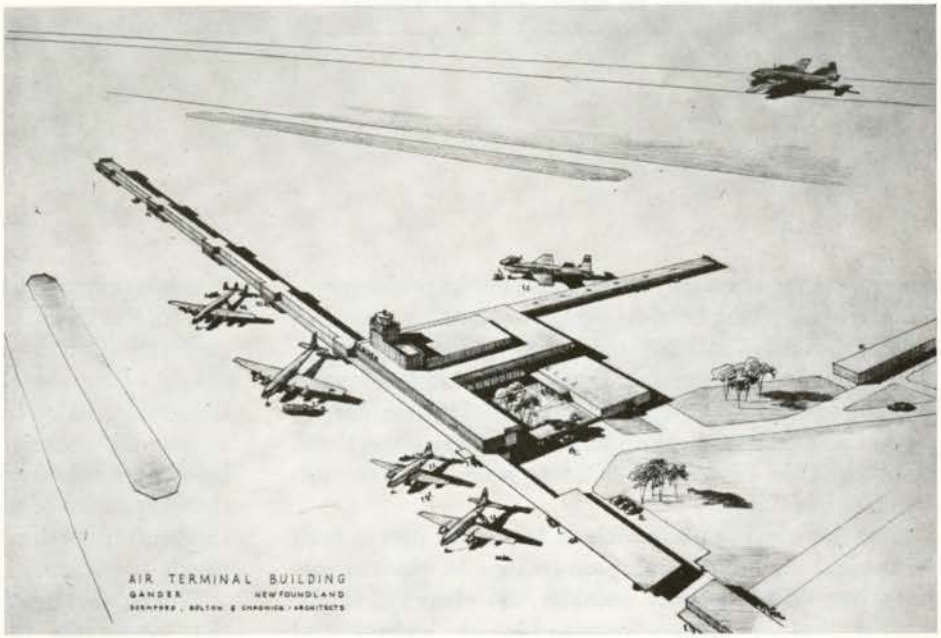


National Film Board, Montreal

Architects and Engineers, Ross, Patterson, Townsend & Fish
Consulting Architects, John and Drew Eberson, N.Y.
E. A. Gardner, Chief Architect, Department of Public Works

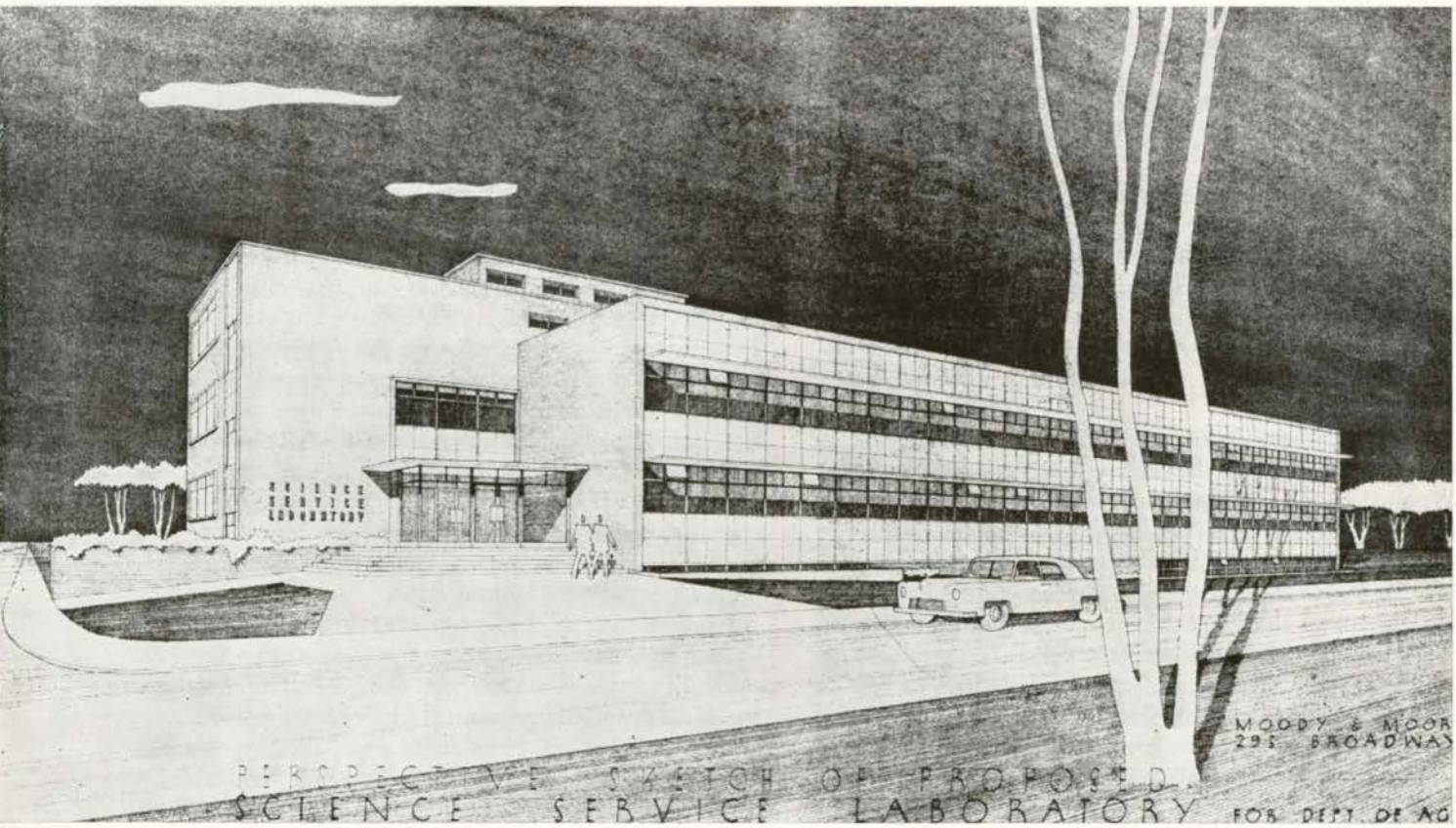
Air Terminal Building, Gander, Newfoundland

Architects, Durnford, Bolton & Chadwick



Science Service Laboratory for Department of Agriculture on University of Manitoba Campus

Architects, Moody and Moore



Weather as a Factor in Masonry Problems

D. B. Dorey

THE GENERAL EFFECTS OF THE WEATHER on the performance of materials has long been recognized as a major consideration in the design and maintenance of masonry buildings. The seriousness and extent of the current problems arising from the effects of the weather is indicated by the number of cases of leakage and deterioration that have come to the attention of the Division of Building Research from various places in Canada.

Since the weather plays such an important part in both the present and continuing performance of exposed masonry, we might usefully consider the elements of the weather that are chiefly responsible for leakage and deterioration of masonry. These elements are: rainfall; wind; and temperature and temperature change (freeze-thaw cycles).

In studying the effects of rainfall in relation to leakage and deterioration problems in masonry, both wind-driven rain and vertically falling rain must be considered.

Since sloping and horizontal roof surfaces deflect rain and are designed to shed water, the non-masonry materials used in their construction are seldom affected in the same way, or to the same extent, as the masonry materials used in the vertical walls of a building. This being the case, this note will only consider the effects of rainfall on vertical masonry walls.

If rainfall is unaccompanied by wind, there is less chance for rain to cause trouble if the design of the wall is such as to prevent water from entering the top or any point of the wall or from spilling down over the face of the masonry. If water does gain access to the wall, or forms a wetting film on the exterior surface, then the condition becomes similar to that of wind-driven rain and trouble can develop.

When wind-driven rain strikes the face of the wall, a film of water forms on the surface of the masonry resulting in an extremely favourable condition for possible leakage into the wall, and quite possibly to the interior surface. It is the formation of this film of water on the exterior surface, or the wetting of the side exposed to the horizontal component of the wind-driven rain that is the cause of much trouble; wind pressure is secondary and produces an additive effect. Under prolonged conditions of wind-driven rain, water not only finds its way into any cracks or minute openings in the wall but also enters the pores and capillaries of the masonry units and saturation may eventually result.

When water gains access to a masonry wall, deterioration may take place in three ways: by the expansion and contraction of the materials (either by the wetting and drying of the materials, or by temperature changes); by the stresses set up by the formation of salt crystals beneath or near the exterior surfaces of the materials as the water laden with soluble salts evaporates; or by the freezing and thawing action of the water present in the materials as the temperature of the material fluctuates with exterior atmospheric conditions.

Therefore rainfall coupled with wind provides a condition favourable to leakage and deterioration to some degree, and moisture, having gained entrance to a wall, coupled with freezing and thawing, provides a condition favourable to progressive deterioration.

Of the three ways in which deterioration may take place, it is still not clear whether it is the growth of salt crystals or the freezing and thawing of water that creates the most severe condition for deterioration. It has been assumed, however, in a study of the Canadian masonry problems by the Division of Building Research that freezing and thawing of water in the materials is the most severe condition, although the importance of other possibilities has not been overlooked.

The Division of Building Research has two masonry test huts in operation in Ottawa, one insulated and one uninsulated. A study is being made of the effects of weather on masonry walls, including the effect of the horizontal component of wind-driven rain, moisture changes in the masonry with changes in atmospheric environment, and freezing and thawing cycles on the deterioration of the materials. Complete and regular records are kept and are correlated with weather data from the local weather station. It is hoped that an extension of this test hut program will soon be in operation elsewhere in Canada. The performance of standard and identical test huts of frame construction is also being checked with local weather conditions at Ottawa, Saskatoon, Churchill, and at Pennsylvania State College in the United States.

In addition to work in progress at the Building Research Centre in Ottawa, a number of other research organizations are carrying out studies on climate and its effect upon the walls of buildings, particularly from the point of view of rain penetration. Notable amongst these is the Norwegian Building Research Institute which has published a report by Sven D. Svendsen on experimental research

on the resistance of external walls against rain penetration entitled "Driving Rain"[1]. In the section entitled "The Action of Driving Rain", this report states,

> "The quantity of water penetrating a wall will naturally be dependent on the amount of rain driven against the wall. On the other hand, it is not always understood that a particular wall has a limited ability to absorb water, i.e., any rain water introduced in excess of this merely runs off the wall and onto the ground. This maximum absorption rate will vary with the material and the type of construction, among other things.
>
> "It is therefore important to determine the duration and occurrence of the rainfall. A given, total quantity occurring during short and intense gusts will produce a different effect from a steady downpour during the entire period being observed."

During intense gusts of wind it is reasonable to expect that the direction of the wind-driven rain is often horizontal, or even upward, at the exposed face of wall and also that the amount of rain striking a given area of a wall may exceed the amount of rain falling vertically on a horizontal surface of the same dimensions. In the studies carried out by DBR Ottawa, as well as in those conducted by the Norwegian Building Research Institute, it has been found necessary, therefore, to measure directly the total amount of rainfall striking a vertical wall by means of special rain cups designed to sample only the horizontal component of the rainfall.

Since adequate weather data form such an important part of the study of masonry problems in Canada we may now consider the sources of information on weather, and then discuss the limitations of available weather records in relation to masonry studies.

As a supplement to the Climate Part of the 1953 edition of the National Building Code, the Division of Building Research and the Meteorological Division of the Department of Transport prepared a joint publication, "Climatological Atlas of Canada". Eighty-two charts and tables were compiled for ready use from meteorological data taken at 1,050 different climatological stations across Canada over a period of from 5 to 100 years.

Although the charts and tables contained in the Atlas, and the regular climatological summaries issued by the Department of Transport, give the overall picture of the weather elements, they do not (because of topography, buildings, vegetation, etc.) indicate the small-scale deviations which often occur short distances away from a weather station. The climate of a relatively small area in which these small-scale deviations occur might be called "urban climate".

To give some indication of the order of these deviations reference is made to a study by the Meteorological Division of the Department of Transport in the city of Halifax during the period May to September, 1953. The Dominion Public Weather Office at Halifax made a survey of local temperature variations in the city, including four temperature-recording trips around the city, in an attempt to measure the instantaneous temperature variations. During each of the 30-minute drives around the city, temperatures were recorded at each of thirty-two predetermined points. The conclusions reached from these studies are as follows:

"Summer daytime temperatures vary considerably from point to point within the city of Halifax. These variations are particularly large with southerly winds and reached at least 14°F during 1953. It is probable that differences as high as 20°F exist at least once each summer".

These results are typical of what is found elsewhere in respect to local temperature variations.

Climate may be subdivided still further into what we might call "site climate". This subdivision is necessary to describe the climate or weather at a building site. Many factors such as, size, shape and nearness of adjacent buildings, elevation above sea level, degree of exposure, amount of solar radiation reaching wall areas, and the wind funnelling effect of adjacent buildings, alter the climate at a building site from that observed at a standard weather station which is probably located at a local airport. Rainfall measured at weather stations, and as recorded in weather office summaries, is measured by standard rain cups but does not indicate the combined effect of rain and wind. Wind speeds recorded at weather offices are taken also under standard conditions, of height for instance, and do not show what the actual wind speed is at a particular building site due to the effect of adjacent buildings or elevation of the site.

Many modifying factors therefore exist to make the environment of any one point on a wall different from the conditions recorded at a meteorological station. The influence of these factors *must* be studied, but, since it would require another 10 or 20 years of records to obtain special weather data by direct measurement, an attempt must be made in the meantime to extract, by some arbitrary means, as much useful information as possible from the weather records already available.

Members of the Division of Building Research who are engaged in an extensive study of climate and masonry problems have developed a method of comparing leakage, deterioration, and freeze-thaw cycles in different geographic areas of Canada from existing weather records. This method is based on the comparison of special indices compiled from the daily values of the weather elements taken at standard weather stations in Ontario, Quebec, Nova Scotia, and Newfoundland. The value of such a comparison of weather severity in current field studies will be apparent. Eventually, unless all buildings are to be built to withstand the worst conditions to be encountered anywhere, it will be necessary to establish for larger areas, and preferably even for particular sites, the severity of the conditions to be encountered there, so that designs may be suitably adjusted. Mr Donald W. Boyd, Climatologist for the Division of Building Research, has undertaken this task and the initial results of his work are incorporated in this paper.

The six weather stations chosen to indicate the relative severity of leakage, deterioration, and freeze-thaw cycles are Malton, Ottawa, Dorval, Quebec City, Dartmouth, and Torbay. Leakage and deterioration indices have been prepared for a five-year period, 1947 to 1951 inclusive, and are based on values for wind-driven rain only, since a properly designed masonry building should not be affected by

[1] Svendsen, Sven D., Driving Rain (experimental research on the resistance of external walls against rain penetration). Norwegian Building Research Institute, Oslo, 1954. 37 p.

difficulties from vertically falling rain.

The wetting or formation of a film of water on the face of a vertical masonry wall by the horizontal component of wind-driven rain is a major consideration. Thus, in the compilation of leakage and deterioration indices, leakage was tentatively assumed to be proportional to the amount of rain and to the wind speed, and therefore, proportional to their product. Deterioration was tentatively assumed to be proportional to the rain and the wind speed, and also to the amount of freezing, and hence, proportional to the product of all three. To simplify the multiplication, the weather elements were divided into classes and the assigned class numbers were multiplied to give provisional indices. The actual sums for the years, 1947 to 1951, of the daily indices for the cardinal and intermediate wind directions for the six stations were then reduced so that the total of each index averaged for the six stations is 4.0. The leakage indices are based on the occurrence of 0.05 inch of rain or more with 100 miles of wind or more per day. The deterioration indices are based on the occurrence of 0.05 inch of rain or more with 100 miles of wind or more per day when the temperature dropped below 26°F before eight o'clock the following evening.

To compare the number of freezing and thawing cycles for the different geographic areas it was assumed that no appreciable portion of a masonry wall will freeze until the daily minimum temperature drops several degrees below freezing, say to 25°F, and that it will not thaw again until the daily maximum temperature reaches a few degrees above freezing, say to 35°F. Then, a count of the number of times the temperature drops from above 35°F to 25°F and then rises again to 35°F and higher, indicates the number of freezing and thawing cycles to which a masonry wall would be subjected in a given area.

A summary of Mr Boyd's work to date is presented in Table I, which gives the total leakage and deterioration indices, including the largest indices for a particular wind direction, of each station for the five-year period. Table I also gives the average number of days per year for which there was a leakage or deterioration index, the average annual rainfall for each of the standard weather stations listed, and the average number of freezing and thawing cycles per year.

It is interesting to note from Table I that Torbay, Newfoundland, had the highest leakage index (6.4), 1.3 of which was rain accompanied by wind from a southwest direction. The corresponding number of days that had a leakage index was 100. On the "deterioration" side of Table I, Torbay was second highest to Dartmouth with a total index of 5.1, with 2.2 of this total occurring when the wind direction was south. The average number of days per year having a deterioration index was 9, again second highest to Dartmouth. The average annual rainfall for Torbay is 46 inches and the average number of freezing and thawing cycles per year was 27, which is less than the number for Dartmouth, and also less in number than both Ottawa and Malton farther inland.

Dartmouth was second to Torbay with a total leakage index of 6.2, 1.9 of which was made up of rain and wind from a southeast direction. The average number of days per year for the five-year period for which there was an index was 91, as opposed to 100 for Torbay farther east, and 74 for Quebec City farther west. Dartmouth was highest with a total deterioration index of 7.6, 3.2 of which occurred with a southwest wind. The average number of days per year for which there was a deterioration index was 12. Dartmouth is highest with an average annual rainfall of 52 inches. The greatest average number of freeze-thaw cycles per year also occurred at Dartmouth, but differs from the next highest number, which occurred at Ottawa, by only one per year, and would, therefore, not appear to be significant.

Quebec City had a total leakage index of 3.3, approximately one-half the total for Torbay, 2.8 of which was made of rain and wind from a northeast direction, the remaining 0.5 of the total being made up of rain and wind from the other seven cardinal and intermediate wind directions. The average number of days per year for which there was a leakage index is 74, 6 days less than the average of 80 for all six stations. The total deterioration index was 3.2, again with a large portion of the total (2.7), made up of rain and wind from a northeast direction, which corresponds roughly to the direction of the St. Lawrence River Valley. The annual rainfall is slightly higher than at Dorval, but 22 inches less than at Dartmouth. Quebec City shares the lowest number of average days for which there was a deterioration index with Malton, and had the lowest number of freeze-thaw cycles for the six stations.

The large portion of the total leakage index and the total deterioration index that is made up of rain and wind from a northeast direction confirms the long standing practice of the old builders in Quebec City who regularly

TABLE I
Compilation of Data in Relation to Masonry, Leakage and Deterioration for the years 1947 to 1951

	LEAKAGE			DETERIORATION				
	Total Index	Directional Index	Days Per Year	Total Index	Directional Index	Days Per Year	Annual Rainfall (Inches)	35°F to 25°F Cycles/Year
Torbay	6.4	1.3 S.W.	100	5.1	2.2 S	9	46	27
Dartmouth	6.2	1.9 S.E.	91	7.6	3.2 S.W.	12	52	30
Quebec City	3.3	2.8 N.E.	74	3.2	2.7 N.E.	5	30	20
Dorval	3.2	1.1 N.E.	76	3.9	1.8 N.E.	7	29	24
Ottawa	2.6	1.1 E	72	2.7	1.5 E	7	27	29
Malton	2.2	0.7 S.W.	66	1.4	0.5 S.W.	5	25	28
Average	4.0		80.0	4.0		7.4	34.8	26.3

sheathed masonry buildings with exterior wood sheathing on the northeast walls as protection against the weather.

Dorval had a total leakage index of one-half the total for Torbay, and slightly higher than one-half the total for Dartmouth. The northeast wind direction had the highest portion of both the total leakage and the total deterioration index, the same as the prevailing direction at Quebec City. The average number of days per year having a leakage index, and a deterioration index, was slightly below the average for the six stations. The annual rainfall is approximately midway between the values given for Quebec City and Ottawa. The average number of freeze-thaw cycles was 24, as opposed to 26.3 for the average of all the stations.

Ottawa and Malton, which are still farther inland, have index values below the average value for both leakage and deterioration, but are third and second highest, respectively, in the average number of freeze-thaw cycles occurring per year for the period studied. The annual rainfall for both centres is below the average for all six stations.

In summarizing the main points of this paper it is found that:

1) Leakage conditions are most favourable under the action of wind-driven rain when the horizontal component of the rain wets or forms a film of water on the exterior face of unit masonry walls. Vertically falling rain may produce an equivalent condition, if the design of the wall, or lack of adequate flashing, allows water to spill down over the face of the wall;

2) Deterioration can take place in varying degrees in three known ways once water penetrates a wall: by the expansion and contraction of the materials from wetting and drying; by the formation of salt crystals in the materials; by the freezing and thawing of water in the materials and in the wall. It is not known, however, which of the last two processes produces the most severe condition;

3) The weather data obtained at standard weather stations must be modified, and the influence of local factors studied, before they can be correlated with leakage and deterioration of any part of a building, or any part of a wall;

4) The initial results of a study of the weather records of six standard meteorological stations in Ontario, Quebec, Nova Scotia, and Newfoundland by the Division of Building Research suggest that weather conditions favourable to leakage and deterioration of masonry walls increase in severity in an eastward direction from Malton, Ontario to Torbay, Newfoundland as shown in Table I.

5) Table I also shows that the annual rainfall decreases in the same manner, but fails to show any significant difference in the number of freezing and thawing cycles per year for the six stations over the five-year period. The importance of wind direction was shown, however, by the portion of the total indices that occurred in one of the cardinal or intermediate wind directions, and was particularly noticeable in the summary for Quebec City where as high as 84 per cent of both the total leakage and the total deterioration index was made up of rain accompanied by wind from a northeast direction.

It is clear that climate has a direct influence on the performance of buildings and nowhere in Canada is this more evident than in the Atlantic Provinces. The Division of Building Research is correlating climatic data with all its building research work and will give special attention to this matter in all its future studies of buildings in this part of the country.

The above was a paper read at the Annual Assembly of the Royal Architectural Institute of Canada in June, 1955.

Acoustics, Architecture and Music

Robert H. Tanner

THE SUBJECT OF ARCHITECTURAL ACOUSTICS is one which man has dealt with, consciously or unconsciously, for many centuries, first as an art and only in very recent years as a science, striving sometimes almost desperately to find reasons for, and attach meanings to, the vast collection of practical data which has been accumulating since before the time of Christ. Students of acoustics work in a kind of no-man's-land between the physical realm of measurable quantities and ascertainable facts, and the aesthetic world of artistic opinions and prejudices (not to mention temperaments), under conditions which present a very sharp contrast with those experiences, for example, by researchers in the field of atomic physics. These latter work (often literally as well as figuratively) in the desert of a completely new subject, scattered with cases of knowledge which are being steadily enlarged. Acoustics workers, on the other hand, often feel that they are hacking their way continually through a thick jungle of preconceived ideas and empirical results, in an attempt to clear away an undergrowth of misconceptions. Under such circumstances, therefore, it may be well worth while trying to step outside our subject in an effort to discover some of the real fundamentals of acoustics, to see the wood rather than the trees.

For the roots of acoustics, we must go back in history at least to the time of Ancient Greece, where the plays of the great Greek authors formed the world's first public entertainments depending for their success on the audience *hearing* what was happening rather than merely seeing it, for up till then public entertainments had been purely visual. These plays at first took place in natural amphitheatres, usually around an altar to the Greek god Dionysius (who like his Roman counterpart, was god of wine and other entertainment), but it was not long before two important changes were made. The soft grass around the altar was replaced by a circle of paving called the "orchestra", and a stone building or "skene" was erected on the side of this away from the audience. The "skene" had pillars in place of the wall facing the spectators, with broad stone steps leading up to the raised floor. Both of these changes, although they were not made solely for acoustical reasons, had a decided effect on the audibility of both the actors in the "skene" and the chorus on the "orchestra", for in both cases the hard reflecting surfaces gave much-needed reinforcement to the voices. At the same time, the absence of any large enclosure surrounding the audience avoided trouble from prolonged reverberation. It seems clear that the Greeks realized that the shape of their theatres helped the actors to make themselves understood and as new theatres were built they incorporated acoustical improvements.

Thus it appears that the Greeks appreciated the main acoustical function of any building used for the dissemination of entertainment or information. In modern terms, such a building is a transmission system whose fundamental object is to convey sound from the source to the listener with as little loss or distortion as possible. This, of course, is the same objective as that of a broadcasting system, and we can now explore an interesting analogy. Throughout the existence of radio, it has been an acknowledged fact that the average domestic receiver has distorted the transmission by introducing a considerable loss in the higher audible frequencies, and in a matter of some twenty-five years or less, this state of affairs appears to have produced a considerable number of people who actually prefer their music (and maybe their speech) distorted in this way. If, by a stretch of the imagination, we can picture the passing of several centuries during which music could be heard only with such a top cut, it is reasonable to assume that a reversion to "wide-band" reproduction would be extremely unpopular, especially as by then the great mass of music would have been composed to suit the restricted conditions. By this time, what we would now call distortion would have become desirable reproduction.

Since the time of the Greeks, something similar has been happening in the realm of architectural acoustics, so that we have come to accept as actively desirable a condition which in the strict sense is a distortion, so let us elaborate on this apparently rather sweeping statement. As civilization and culture spread northwards throughout Europe, weather conditions made the open air type of theatre impracticable, although even in Shakespearian England only the best seats were under cover. But in course of time, almost all places where music and plays were performed acquired four walls and a roof enclosing both players and audience, and, of course, introducing reverberation or the prolonging of each sound beyond its original duration, undeniably a distortion in the strict sense of the word. But here the complications set in: the musicians of the day, probably without realizing it, set to work to make use of this unavoidable reverberation by suiting their music to the conditions under which it was most usually played, with such success that, for example, the organ works of Bach played in a dead studio rather than a live church would be quite intolerable.

Thus the theoretical distortion has become in course of time a desirable condition and designers of new concert halls and studios have to give a great deal of thought to the amount of reverberation which their buildings shall introduce at various frequencies. But at once they run up against a serious difficulty, because since the days of the earliest composers, the conditions for which music was written have been continually changing. Worse still, one composer might write in two or more completely different styles depending on where the music was to be performed. To take Bach as an example again, his Cantatas, Mass and organ works were written to suit comparatively live stone churches (many of them for the Thomaskirche in Leipzig), while his chamber music, Brandenburg Concertos and the famous Forty-eight Preludes and Fugues were designed for the music rooms and drawing rooms of various German princes.

The music room played a large part too in the life of Haydn, but by the time of Mozart, the opera house, with quite different acoustical characteristics, was influencing more and more composers. In the history of music, however, nothing stands still: the opera house itself developed until by the 1870's we find Wagner designing his own at Bayreuth and incorporating in it many original acoustical features, which he considered his music demanded. To name only one, the orchestra pit at Bayreuth, large enough to accommodate a full Wagnerian symphony orchestra, is mainly underneath the stage, instead of between it and the audience, with quite a narrow gap through which the music emerges. This was done to overcome the effect of the orchestra interposing itself between the singers

and the listeners, and, at the same time, it allowed the composer to indulge in much fuller and richer accompaniments, without drowning the vocal parts, than would be tolerable if the orchestra were in the open. Acoustically, however, the Bayreuth pit provides an example of coupled enclosures having two different reverberation times, so that it is difficult, if not impossible, to reproduce in a concert hall or studio the effect that Wagner himself desired.

In the same way that styles of composing developed along several different lines at once, we find that standards and conditions of performance changed too. The small orchestras of Bach and Haydn gave place to bigger and bigger combinations, until by the time of Hector Berlioz, we reach the complement of approximately one hundred players which has lasted until today. This change, of course, demanded a corresponding enlargement of the concert halls (accompanied by inevitable changes in acoustical properties) giving us such places as the Carnegie Hall in New York, or the Royal Albert Hall in London, where Bach and Haydn would probably have felt completely out of place.

From all this, it would seem that the job of the present day acoustical designer is a difficult, if not an impossible one; but fortunately human taste and human ears both have wide tolerances, and especially in the concert hall field the skilled designer is able to effect a compromise which is reasonably satisfactory to all but the most extreme purists. After all, most lovers of Bach's organ music are quite content to hear it played on a good modern instrument and do not insist on the use of a Baroque organ such as exists at Harvard, while Mozart symphonies are regularly played by orchestras which would have seemed fantastically large to the composer himself. So, by analogy, it is unreasonable to demand that present day listening conditions shall exactly reproduce those for which the composer wrote, although naturally the more nearly we approach them, the closer will we be to complete harmony with, and appreciation of, the composer's ideas and thoughts.

The case of the broadcast studio is admittedly even more complicated, mainly owing to the interpolation of a monaural transmission system between the studio and the listener at home, as well as the effect of the combined acoustics of both studio and listening room. In addition, there is the problem that for economic reasons the designer can seldom if ever provide for as many different sizes and types of studio in any one radio station as purely acoustical reasoning would require. Thus further compromise is necessary, although in some cases a greater variety of acoustic conditions is achieved by the use of variable wall treatment. In practice, however, studios with variable acoustics normally demand from the operating staff a degree of knowledge and skill that is often lacking. In short, few people would dispute the statement that a great deal of work remains to be done on this subject, and, to return to the metaphor of the first paragraph, the undergrowth is still very thick.

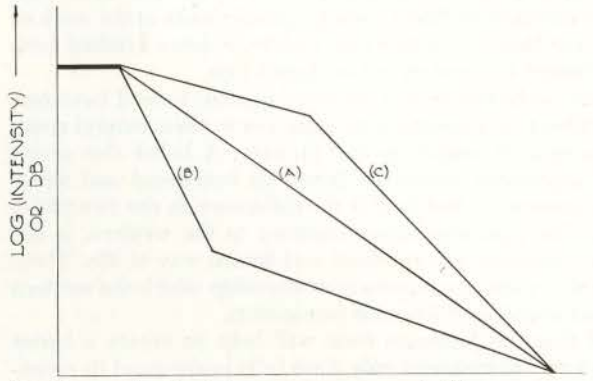


Fig. 1 Idealized decay curves

Of recent years, acoustical designers have tended to take quite a new approach to the problem, which paradoxically enough, is derived almost directly from the theatres of Ancient Greece. The great mass of modern acoustical theory has been built up around the assumption made by Sabine that sound in an enclosed space dies away logarithmically (Fig. 1a). Yet, as anyone who has measured decay curves knows, cases often arise when this does not hold even approximately, the usual departure being fairly quick drop at the beginning of the decay followed by a much slower tail to the curve (Fig. 1b). If this state of affairs is found to occur in many positions in a hall or studio, it represents a definite fault, since a little thought will

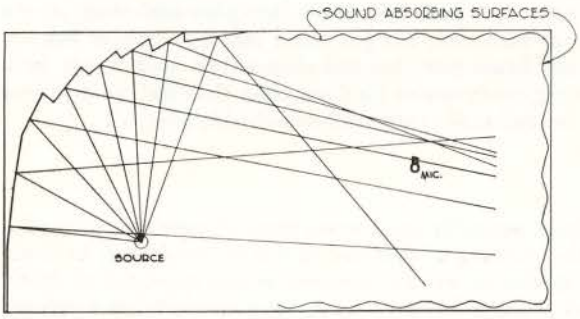


Fig. 2 Diagrammatic elevation of bandshell studio

show that it corresponds to comparatively little reinforcement of the sound, but plenty of muddling due to prolonged reverberation at fairly low level. This at once suggests that a decay curve which displays a slow initial drop, followed by a quick cut-off (Fig. 1c) might correspond to even better listening conditions than the theoretical ideal of Fig. 1a, since it would indicate maximum reinforcement with a minimum of muddling. It has already been pointed out that this is just what occurred in the theatres of Ancient Greece, where the "skene" and "orchestra" gave reinforcement, while the absence of any enclosure avoided reverberation. Much more recently, it would seem that the same principle has been revived, at first perhaps without too clear an appreciation of the underlying logic. One example is the "live-end, dead-end" technique of studio construction, the name being self-explanatory. In a studio of this type, the performers occupy the live end, while the microphone is placed in the end which is acoustically dead, the analogy with the Greek theatre being obvious. However, this is not an ideal application of the principle under discussion, since the live end itself will have a definite reverberation time, unless its walls are very carefully arranged. An elaboration of the idea brings us to the famous Disney bandshell used for the recording of *Fantasia*, which created quite a sensation in the acoustics world. Here, the live end of the studio (or the "skene" of the Greeks) was replaced by a bandshell, the polycylindrical walls of which were so shaped as to direct as many reflections as possible of the original sound through the open front into the dead sound stage, the main function of which had been reduced to keeping rain and extraneous sound away from the microphone. Of course, this particular arrangement is hardly suitable for general use, but it can be readily modified for application and studios and auditoria. This involves a construction similar to that of the live-end dead-end type, except that the design of the walls and ceiling in the live end is directed mainly to delivering as much reflected sound as possible into the dead end, where it is absorbed as completely as possible. This is illustrated diagrammatically in Fig. 2. A room of this type will act as a very efficient transmission system, giving the illusion of reverberation owing to the slow initial drop of its decay curve, but giving increased clarity due to the quick cut-off.

These last conclusions are so far mainly theoretical, and need to be confirmed by experiment. Unfortunately, while an electronic designer can so readily try out new ideas at almost negligible cost, the acoustical designer nearly always requires a large construction job to test any new theories, and the cost of failure is very high. Doubtless this is one of the main reasons why progress in the field of acoustics is often so painfully slow.

VIEWPOINT

The Journal's August issue on Japan showed the Japanese development of a post-and-beam-free-plan-and-shoji-screen domestic architecture. Do you think that our current interest in post-and-beam-free-plan-and-shoji-screen will result in a better living environment for Canadians than did our previous interest in stud-wall-centre-hall-and-double-hung . . . ?

The optimist probably felt a warm glow of hope on reading the title of this month's subject and saw it as an attempt to atone for the bookful of archaic nonsense which appeared in April. A second reading however must have aroused the suspicion that this was a quick retreat after the luke-warm reception which the *Journal's* daring attention to the curtain wall received last month. Japanese architecture must have seemed to the *Journal* an inspired choice, combining the spatial freedom so significant in the contemporary world with an antiquity which pre-dates even the Renaissance. What more could an eclectic ask?

All that is needed to provide "a better living environment for Canadians" is a Canadian architecture – with equal emphasis on both words. If it bears a resemblance to Japanese – or any other – architecture, that will be incidental. We already have enough examples of the "conscious influence" of Japanese, Frank Lloyd Wright and any number of other styles, produced in other eras with other technologies, to demonstrate the superficial qualities which result from such literal adaptation.

In producing architecture of quality, there is still no substitute for beginning with an honest analysis of the problem, both human and physical, and then effecting its solution through the use of the most advanced technology which can be commanded under the circumstances. The form and "style" of the result are inherent in the qualities, physical and aesthetic, of the materials and the degree to which the designer is conscious of the spirit of his age.

This is the design approach to which Wright gave the term "organic", and a more expressive term has yet to appear. The buildings of this age which will live in architectural history are those which have been conceived on this basis, not those which indicate some designer's belated recognition of some phase of archaeological excellence.

It is saddening to realize that a statement such as the above apparently is still necessary in a professional magazine.

Keith B. Davison, Vancouver

Definitely. But I was not aware that we had a "current interest in post-and-beam-free-plan-and-shoji-screen", particularly when most of the house plans that find approval with the lending agencies are of the cubicle type. If we only could put to use some of these principles naturally a better living environment would result. Any device such as a shoji screen that allows an easy re-arrangement of space for different purposes will prove valuable. More usable space is available for the same outlay and this same space can be divided and redivided according to the inevitable changes in the family's requirements and habits. The screen defines the space without restricting it and no environment is more elevating than one that has a feeling of spaciousness. Post and beam construction dictates the use of a fairly large module which in turn gives an orderliness to the design both interior and exterior and relates the one to the other. Anything that is orderly in itself will encourage orderliness and orderliness contributes to a better environment.

Wallace A. M. Kyro, Port Arthur

The elements of the architecturally conceived Japanese environment symbolize a deeply rooted cultural pattern, a slowly evolved synthesis of life and form, resulting mainly from two factors: the sweetness of the mild monsoon climate and the genius of the people; their fixed mode of life, good manners, their austere and exquisite taste; the people whose very gait and gestures are almost a choreographic ritual performed to a "peaceful concerto" of sensitively harmonized elements of delicate woodwork, mats, shoji screens, flowers, pottery and lettering, each significant in the total order. This is admirable and stimulating and enviable.

But here we have the Canadian scene: a country of climatically different regions; a young, dynamic, largely crude, boisterous civilization barely beginning to crystalize into an identifiable entity. A very different set of formative forces and conditions.

Our interest in the Japanese idiom can only be rhetorical. It will contribute to Canadian architecture only as a study of the workings of regional empiricism.

The opportunists will, no doubt, flood the country with shoji screens ad nauseam, as they did in the case of the "ranch home" transplanted lock, stock and barrel to our northern cities, but the process of evolving a permanent architectural expression of the Canadian ways of life will be slow and painful, just as slow and painful as the way of truth.

Victor Prus, Brockville

Very definitely. During the past five decades, the history of western domestic architecture has emerged slowly but surely from the age-old concept of 'home as castle' – with its ponderous, impregnable, fortress-like walls – to that of 'space for living'. Western architects have finally arrived at the general use of the skeleton frame which relieves the walls from their traditional role of supporting the roof and allows them to hang, like curtains, as space-definers. These effects were used by Japanese architects as early as the eighth century! Our current discovery of this fact, plus the wide interest and enthusiasm for the Japanese architectural expression which have developed in the western world, serve to strengthen our conviction that the post-and-beam-free-plan-and-shoji-screen should and do produce a better living environment – one that is consonant with and complementary to our mid-century pattern of living.

John A. Russell, Winnipeg

An architect, today, looks at the ancient Japanese form with the same enthusiasm that a modern painter looks at the work of El Greco or Bosch – as one who suddenly sees a kindred feeling, perfected to some extent centuries ago.

Modern architecture and ancient Japanese indeed have certain parallels: An enjoyment of materials in their natural state; An enjoyment of simplicity and honesty; A belief that architectural expression should be based on functional and structural requirements. But here is the difference in the two philosophies. The Japanese house, contrary to the western, is the flawless expression of a subdued and formal way of life. Then, too, it is the result of a minute craftsmanship which the western world has abandoned for mass production.

I feel that the Japanese form will help us create a better architectural environment only if we fully understand its meaning rather than attempt to copy its "surface appearance".

For me, a beautiful form must be the visual expression of Zeitgeist (the spirit of the time); for without this, form becomes a hollow shell.

Eberhard H. Zeidler, Peterborough

ONTARIO

In some respects we are in the midst of a "golden age" for the profession of architecture. But many of us feel somewhat uneasy at times. We see problems of concern to the entire profession that still remain unsolved. We ask ourselves whether this profession is truly strong – whether the profession enjoys the public esteem that it deserves – whether the public understands and appreciates fully the service and advice we have to offer. There is, in fact, some evidence to suggest that we lack that degree of prestige and public understanding which we must have if we are to cope successfully with problems of concern to all in the profession.

The challenge is evident to our professional organizations, the RAIC and its sister Associations in the provinces. Their's is the heavy responsibility of guarding the interests of the profession of architecture. We would be unfair to criticize those devoted few whom we have elected to the various offices and the handful of paid executives and staff. Indeed, we may be thankful that they have worked so hard and so well, always with little reward and at personal sacrifice.

If we feel, however, that we lack strength and public prestige, then we must look to our professional organizations. To ask them to play a more effective role in building and maintaining the strength of the profession and its public relations is asking too much. Architects more than ever before are needed and should devote their time to serving their community. Their services in the management and control of the profession must therefore surely suffer.

Serious study should be given *now* to this matter and we should be prepared to retain the full time services, if necessary, of the best experts to give council and advise us as a profession in a full scale continuing program. Surely this is no more than sound insurance for the future, and it would be a tragic thing indeed if a few years hence we awakened to find that our strength within and public esteem had fallen into a position of irreparable weakness for want of past vigilance.

Langton G. Baker, Toronto

OBITUARY

K. S. Gillies, Commissioner of Buildings for the City of Toronto, passed away at his home on September 17th, 1955. Mr Gillies commenced his services with the City in 1905 and was Commissioner of Buildings from 1932 until his retirement in March, 1954. He was made a member of the Ontario Association of Architects in 1908. He was an outstanding official in the field of civic government and a specialist in the field of his chosen porfession, and made a notable contribution towards the growth and development of Toronto.

Entering the civic service as a draftsman in 1905, he applied himself diligently to the tasks assigned to him. In successive steps, he was promoted to the positions of Chief Draftsman and Deputy Commissioner of Buildings; his devotion to duty in the City's interests culminating in his appointment as Commissioner of Buildings, a position which he ably filled with distinction.

As Commissioner of Buildings, he directed the planning and erection of many large and important civic building projects which have added to the progress and development of Toronto and stand as memorials to his ability. His primary duty as Commissioner of Buildings was to ensure that the provisions of the Building By-law were properly carried out. His impartial application of the Building Code added very materially to the enviable reputation enjoyed by Toronto as a city of good homes and fine buildings.

He was an active member of the Building Officials Conference of America and served on the executive committee for some years. His advice and assistance was sought by the authorities of the Government of Canada in the drafting of the New National Building Code.

Following his retirement he was appointed to the Committee of Adjustment in connection with Zoning By-law problems and he was on the Board of Governors of the Toronto East General Hospital.

His passing leaves a deep sense of loss with all who knew him.

W. F. Holden

NOTICE RE LEGAL DOCUMENTS

It will be recalled that, in the June 1955 issue of the *Journal*, advice was given of the revision of RAIC Document No. 12, the Canadian Standard Form of Construction Contract for Stipulated Sum.

The translation of this document into French is also available and it is known as RAIC Document No. 12F.

Since that time RAIC Document No. 13, Canadian Standard Form of Construction Contract for Cost Plus Percentage or Fixed Fee, has been revised and reprinted and copies of this Document are available now from the Executive Offices.

The Legal Document Committee is preparing a translation into French of RAIC Document No. 13 and also of RAIC Document No. 10, Canadian Standard Form of Construction Tender, and it is expected that these translated documents will be available this fall.

APPOINTMENT

Appointment of Ian R. Maclennan as chief architect of Central Mortgage and Housing Corporation has been announced by Stewart Bates, president. Mr Maclennan succeeds S. A. Gitterman who has been appointed adviser on house construction in the Corporation's development division.

Born in Regina, Mr Maclennan received his Bachelor of Architecture degree in 1950 from the University of Toronto, where he was elected president of the University of Toronto Architectural Society. He later completed postgraduate work in housing at Columbia University.

From 1950 to 1952, Mr Maclennan was employed by the firm of Voorhees, Walker, Foley and Smith in New York. He then joined Oficina Don Hatch of New York and Caracas, spending three years in Venezuela. Mr Maclennan became an associate of that firm in January, 1954.

During the Second World War, Mr Maclennan served

as a pilot in the RAF and the RCAF and was awarded the Distinguished Flying Medal. He was retired in 1945 with the rank of flight lieutenant.

PRIZES AND AWARDS

The School of Architecture, University of British Columbia, announces the following awards made at the end of the session, 1955.

Fifth Year

Royal Architectural Institute of Canada Medal to D. Coulter
Architectural Institute of British Columbia Book Prize and Award of Merit to D. E. Horne
B.C. Coast Woods Prize of $100 to D. Coulter
Powell River Company Prize for Planning of $50 to A. Church

Fourth Year

Canadian Pittsburgh Industries (Hobbs Glass) Scholarship of $250 to G. Hartley
B.C. Coast Woods Prize of $100 to B. J. Wensley

Third Year

Architectural Institute of British Columbia Book Prize and Award of Merit to A. Allen
The McCarter & Nairne Scholarship of $250 to A. Allen
Atlas Asbestos Company Prize to N. Jones

Second Year

Schlage Lock Scholarship of $250 to P. Batchelor
The Charles J. Thompson Prize for History of Architecture of $50 to P. Batchelor
B.C. Coast Woods Prize of $50 to C. Verhagen

CONTRIBUTORS TO THIS ISSUE

Donald Boyd Dorey graduated from the Nova Scotia Technical College in 1952 with a B.E. degree in civil engineering. He joined the Division of Building Research of the National Research Council in May 1952 as a member of the Building Design Section. While in this Section, Mr Dorey made a study of the effect of loads imposed by climatic conditions on the various elements of a structure. This included full-scale testing of wall panels, roof trusses, and a full-scale experimental house. In July 1955, Mr Dorey assumed new duties as Head of the Maritime Regional Station of the Division of Building Research in Halifax, Nova Scotia.

Robert H. Tanner was born in England and graduated with 1st Class Honours in electrical engineering from London University. After a year's post-graduate research in architectural acoustics, he was for eleven years a member of the engineering staff of the BBC, mostly in the Research Department. During World War II, he served in the British Army where he was engaged in technical research and development. Mr Tanner came to Canada in 1947, joined the Northern Electric Company, and now heads the Development Department at the Company's Belleville plant. In his spare time, Mr Tanner engages in acoustical consulting and, among other things, was responsible for the acoustical treatment of the Stratford (Ontario) Festival Concert Hall.

BOOK REVIEW

ELEMENTS OF INTERIOR DESIGN AND DECORATION by Sherrill Whiton. Published by Longmans, Green & Company, Toronto. Price $7.25.

This book is written by someone who has taught for many years in the School of Interior Design in New York. The first edition was the standard work on the subject. This second edition brings it up to date. It covers in the field of interior design what Bannister Fletcher's perennial book covers in the field of architecture. It however goes further than Fletcher and treats contemporary design in a most competent manner. It is very rare to have a book, which is basically an analysis of the art styles of history, treat contemporary design with any true understanding. This book does this.

It is divided into three parts. The first part describes the "styles" of interior architecture and furniture from prehistory to Robsjohn-Gibbings. The second part covers the history of textiles, floor coverings, wall paper, paint, ceramics, light fixtures, etc., through the same period. The last part is devoted to "selection, arrangement and harmony." All three parts are excellently illustrated in photograph and have as well an adaptation of a Munsell Colour chart for background colours. The wide nature of the subject, which is covered in some 800 pages, does not allow an exhaustive analysis of each period or of each material. To make up for this lack, there is a useful bibliography at the end of each chapter. There is also a glossary of decorative art terms.

For any teacher of the arts this book is an essential part of his library, and I presume has been designed for him. For an architect, interior decorator, materials manufacturer it can be of much use.

As an example of the author's attitude two quotations follow:

"The designer must guard himself against popular slogans, consider their merits and to what extent they should influence his decisions. A universal application of similar ideas in decoration tends toward lack of individuality, a deficiency that has often been noticed in modern interiors. The term 'functionalism' can lead to an excess of utility at the sacrifice of soul. 'Open-planning' can easily lead to lack of privacy. 'A machine for living' must be considered with caution and 'bringing the garden into the house' is not always an advantage. In spite of the economic savings in 'rooms for double and triple use,' this principle eventually may prove detrimental to family life. Similar formulas produce identical answers. All human beings differ, and each has individual requirements.

"Man must be taught to see, and to feel and to think coherently for himself, and to follow his own reasoned preferences, even if they conflict with fashion and public opinion. Art should be an integrated part of the life of every individual, who must learn to use, understand, respect, and revere every object that has been produced by the honest efforts of an artist."

Anthony Adamson

O CANADA

Truly the light is sweet, and a pleasant thing it is for the eyes to behold the sun.