

RAIC JOURNAL

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ROYAL ARCHITECTURAL INSTITUTE OF CANADA

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Toronto May 1952 EDITORIAL AND ADVERTISING OFFICES, 57 QUEEN STREET WEST, TORONTO 1

EDITORIAL

WE ARE CONFIDENT that we speak for all delegates to the Annual Assembly when we say it was a great success. Meetings differed in no way from those we have attended in the east, but hospitality broke all records. The suburbs of Vancouver are pleasant, smiling places where every door seemed open in welcome, and where garden and house were indeed one. In the east, we have such catch phrases as bringing nature in to the house, but too often, on our restricted level sites, we look out on our neighbour's laundry. Only in New Zealand, have we seen such profusion of flowers, and only in Scotland (Gourock, in 1941, to be precise) have we seen grass so green. We enjoyed several personally conducted tours during which we saw houses in all income groups. We knew the houses of the well-to-do by photograph and repute, but what amazed us were the houses built by speculative builders for people prepared to spend up to \$10,000. We wondered if, in metropolitan Toronto, there was one builder's house which we could show a visiting architect. In that Eden west of the Rockies there were a hundred that indicated taste, enterprise, an understanding of materials and an appreciation of colour. All, of course, were modern in design.

The works of man, however fine, seem small and trivial compared with those of nature, and we could not help contrasting the monuments to the founders of the C.P.R. with those architectural monuments that we erect to heroes like the Duke of Wellington or Nelson. Nelson's column, in Trafalgar Square, is but the size of a tree at the foot of Mount Stephen, and, beside those mighty peaks called the Van Horne Range, the tombs of the pharaohs are but ant hills. It is all very upsetting to our sense of values, and one should not let one's mind rest on the insignificance of St. Peter's or the Cenotaph in Whitehall. The idea of an Olympus for company directors would seem odd to the gods of ancient Greece. While we were in B.C. we asked several people of all ages what they knew of Van Horne. Not one had ever heard of him. While we never believed that his place in history warranted a range of mountains in his memory, we have always admired him as an art collector. Hugh Jones, the architect, knew him well, and had many stories to tell of Van Horne's enthusiasm for Renoir, Degas and other French painters. We strongly recommend Dr. E. J. Pratt's new poem, "The Lost Spike", for those who would like to know more of the C.P.R. immortals.

We were sorry to miss the trips and jollification arranged by the Victoria Chapter. We played hookey to fish at Cowichan where a good companion and a beautiful river made up for the lack of fish. It was on our return to Victoria on a glorious driveway that we realized that the policy of laissez-faire, which marked the industrial revolution in the 19th century, still finds an echo in the most unexpected places. We had entered a forest in which no deer grazed and no birds sang. Ground and trees were heavy with what, we thought, were a thousand years of dust. We learned later that it was cement.

There is a rumour that the next Assembly will be in Toronto. That will present quite a problem. We have rivers and lakes where we can take fishermen who will likely be as successful as we were in B.C. We have a residential district known as Forest Hill Village where the authorities discourage houses of other than period design. Tudor, for a time, was de rigueur. For our part, we always take visiting architects to the Royal Ontario Museum, though our technique may change when we can take them for a ride in the underground. We promise you an interesting meeting though you will find Toronto different from Vancouver.

CASA

DURING THE SUMMER of 1949 the idea of a nation-wide organization of architectural students was born in a Vancouver architectural office. Ted Watkins, one of the students who had discussed the idea, presented it to the Undergraduate Society on returning to the school at Toronto in the autumn. It was enthusiastically received.

A committee was formed at Toronto during the 1949-50 session, under the chairmanship of Ted Watkins, to draw up a draft constitution and to establish contact with the other four Canadian schools of architecture. All expressed themselves in favour of the principles and aims of the Canadian Architectural Students' Association. A list of suggestions from the various schools was compiled and presented to the five schools for their consideration. After a majority of them had replied, a constitution was drawn up, and, when this was ratified, CASA began to function. The first executive was elected at Toronto for the 1951-52 session, as this was the school at which most of the formative work had been done. To Don Cameron (Secretary of the committee for the formation of CASA) we are greatly indebted.

The first objective of CASA is to provide a means of communication between the member societies at the various schools of architecture. Through the Association, they will exchange information about teaching methods and courses of instruction, exhibitions of student work, student publications and information about extra-curricular activities. CASA is also to achieve stronger undergraduate representation to the RAIC, and an annual journal is an important part of its programme.

The executive of CASA, for its second session, had been elected at Ecole des Beaux-Arts. The programme for CASA is a sound one, but there is much to be done if its future growth is to be assured. I would like to take this opportunity of wishing the new administration every success.

HUGH ELLIS, *President*

ARCHITECTURAL TRAINING IN THE CANADIAN UNIVERSITIES:

BRITISH COLUMBIA MANITOBA MCGILL
ECOLE DES BEAUX-ARTS TORONTO

BRITISH COLUMBIA

Since its inception in the fall of 1946, the School of Architecture at the University of British Columbia has been affiliated with the Faculty of Applied Science, an affiliation which emphasizes to the student the close alliance of the engineer and the architect. In his first year, the student finds himself attending many of his classes in company with engineering students and receiving instruction from engineering professors. Courses in calculus, trigonometry, surveying, physics and civil engineering are conducted in this manner. However, from the start, the student comes to realize that there is much more to architecture than the mechanical process of designing structurally adequate buildings. Groundwork in aesthetics is provided through courses in basic visual design and in the history of art. The student's skill in visual presentation is developed by a course in draughtsmanship, while his facility in grammatical presentation is developed by a course in English composition.

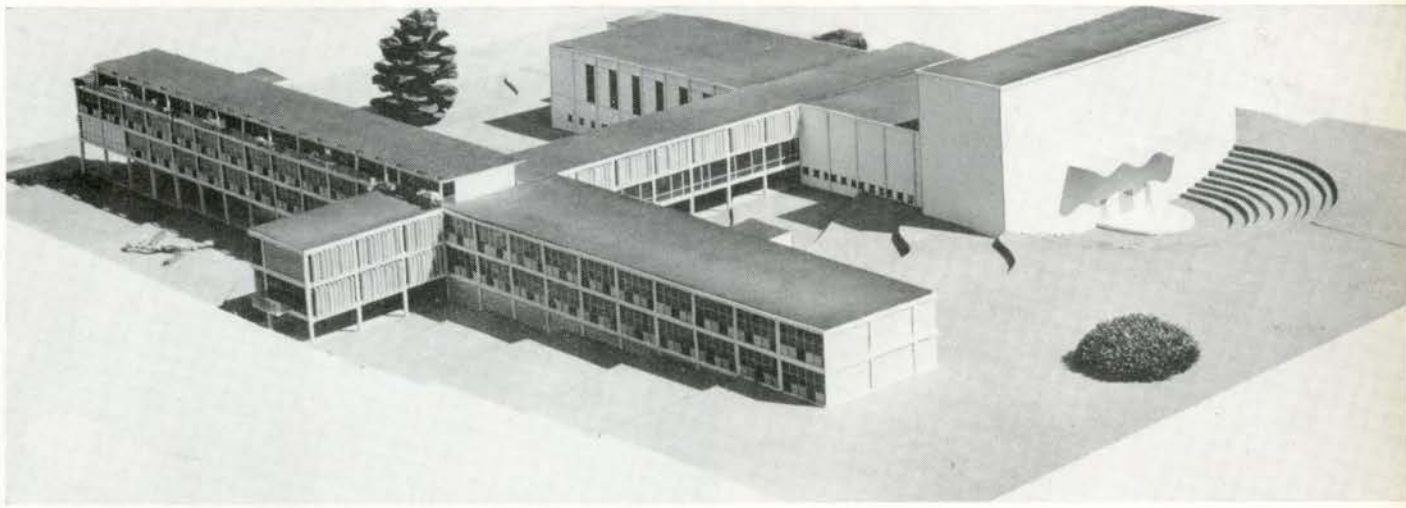
When the student advances into second year, he encounters, for the first time, problems which are definitely architectural in nature. Courses in architectural design, building construction, theory of planning and landscaping are integrated so that the interrelationship of the many aspects of an architect's practice are emphasized from the start. Though the projects assigned to the second year students are, of necessity, confined to simple structures, they provide a groundwork in the functional planning and control of space, the preparation of working drawings, and the creation of unified, harmonious and pleasing structures. The more technical aspects of his education, which the student concentrated on in his first year, are continued in the second year by courses in physics (electricity, illumination and acoustics) and strength of materials. In the second year, the student must also study the history of architecture from primitive times to the beginning of the modern movement.

In third year, the course in architectural design assumes a greater degree of importance, consuming nearly half of the student's total number of working hours per week. The projects are more complex than those of the preceding year, consisting

chiefly of the planning and design of residences and lesser public buildings. In this year, design is closely integrated with the study of mechanical services, electrical services and interior finishes. The course in history of architecture is extended to cover the contemporary period, while a course in structural engineering in timber and steel is given as a continuation of second year work in strength of materials. Basic economics is also given to the third year student to prepare him for the important rôle which the architect must play in the business world.

In fourth year, architectural design consumes still more of the student's time, for the projects by now have come to include many complex business types, and, in this year, the student is also introduced to the problems of city and regional planning. The close harmony which must exist between the architect and the highly industrialized world in which he lives is emphasized by the study of industrial design and prefabrication. The structural engineering of the previous year is extended to cover concrete design, while the business training initiated by economics in the third year is enlarged to include accounting and business administration. As an aid to the appreciation for the other fine arts with which architecture is closely allied, the fourth year student also studies sculpture, and modelling in plaster, stone, wire and other media.

Design consumes twenty-eight of the thirty-six hours which make up the weekly lecture and laboratory programme of the fifth year. In this course, the student works on civic and community planning projects and his graduating thesis problem. Despite the heavy design schedule, the fifth year student must find time to study commercial law for an understanding of contracts, tender agreements and the many other legal aspects of business transactions. As a complement to this, a course is also given in professional practice, to outline the procedure in conduct of a commission, clarify the architect's relation with clients, contractors and engineers, and to emphasize professional ethics and conduct. The community planning, begun in fourth year, is enlarged upon in a fifth year lecture and seminar



A FINE ARTS CENTRE FOR THE UNIVERSITY

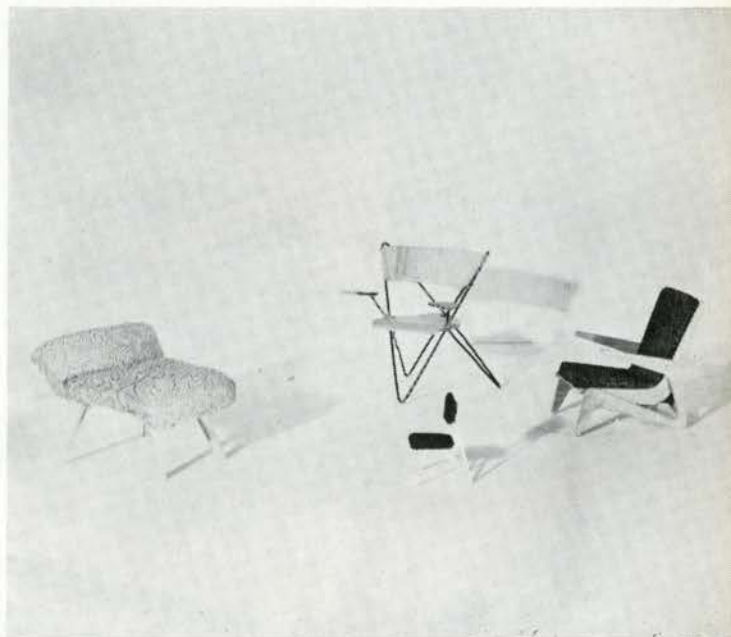
FIFTH YEAR DESIGN — Charles Wright

course, and seminar lectures are also conducted as a review of architectural theory in terms of man's structure, environment, social needs and cultural achievements. As a final training in the techniques of professional practice, a course is given in specification writing, supervision and cost estimation.

The architectural student's training does not consist only of lecture and laboratory courses. Before his graduation, the student must submit evidence of having had a minimum of twelve months of practical experience, preferably during the summer months, at least four months of which must be spent in an architect's office, and four months on actual construction sites. Students entering second year and third year are also required to submit, at the first of the term, a technical essay on some part of the student's summer experience, and those entering fourth and fifth years must pass a written examination on a book assigned for summer reading. Mid-term research papers in history are also required from students in second, third and fourth years. A two week course in sketching, drawing and painting is conducted for all third, fourth and fifth year students prior to the opening of the fall term to develop skill in architectural rendering.

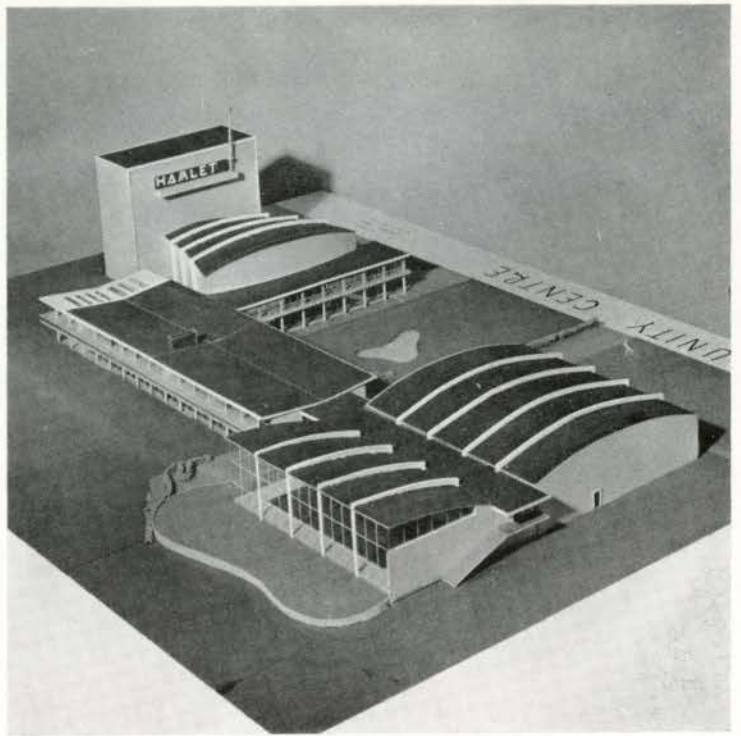
The architecture course is one of the most intensive, and, without doubt, the most varied on the U.B.C. campus. Courses given by the School of Architecture vary from the most technical to the most abstract, and, in addition to these, architecture students take courses from the departments or schools of civil engineering, electrical engineering, mechanical engineering, anthropology, mathematics, English, horticulture, economics, commerce and law. However, despite very concentrated schedule, most students come to realize that their university training is only the beginning of an education which must continue throughout the architect's career.

INDUSTRIAL DESIGN PROJECT



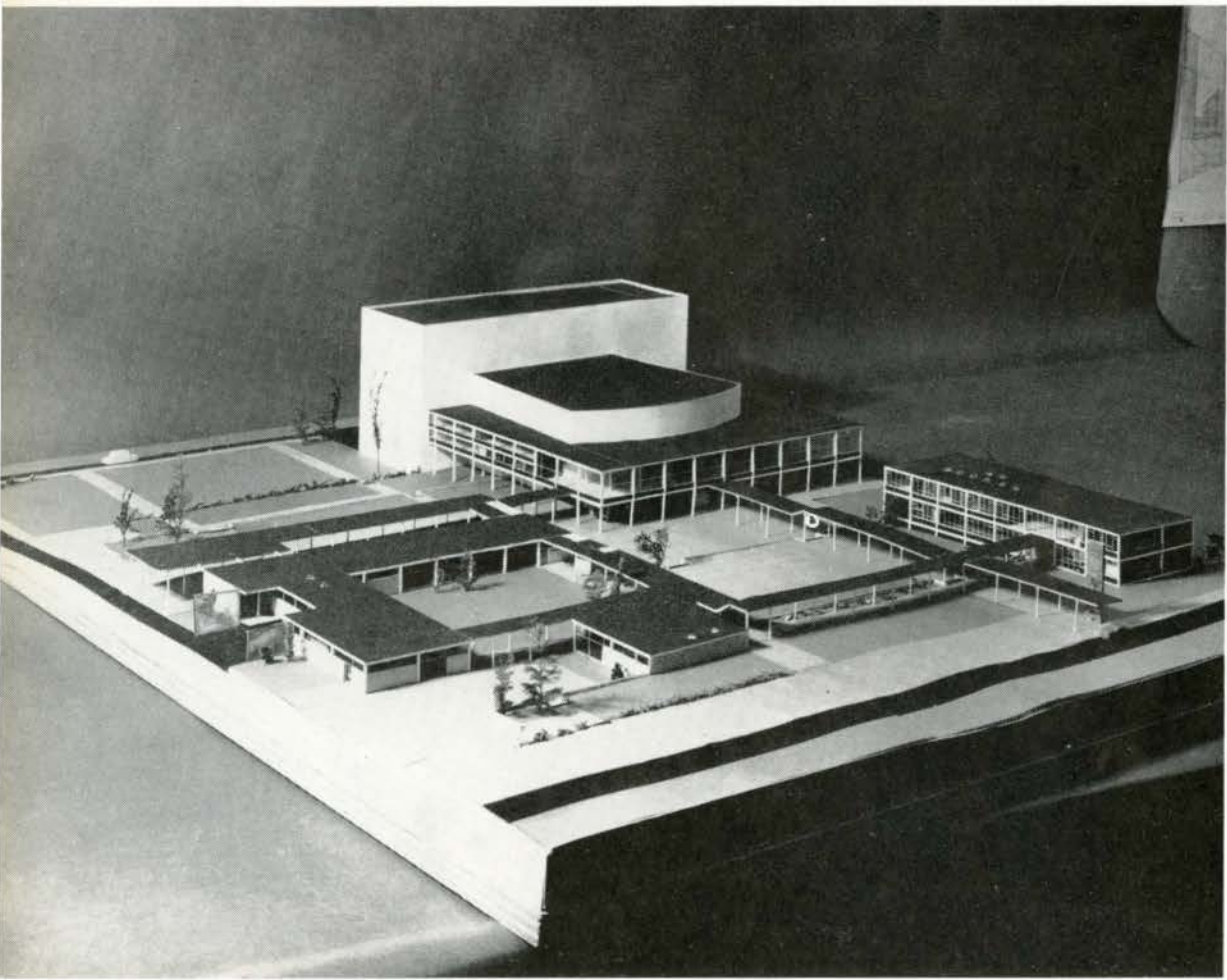
A COMMUNITY CENTRE FOR A
CITY IN B.C.'S OKANOGAN
VALLEY

FOURTH YEAR DESIGN—M. Jones



ADMINISTRATION BUILDING AND CONVOCATION
HALL FOR THE UNIVERSITY

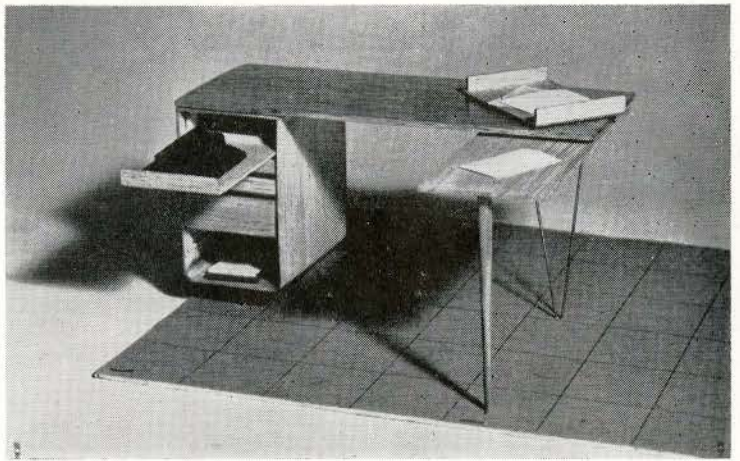
FIFTH YEAR DESIGN—R. G. Aubrey



TYPEWRITER WORK DESK

FOURTH YEAR INDUSTRIAL DESIGN

— C. Blois, V. Deneka, H. P. J. Roy



MANITOBA

In an earlier issue of the *RAIC Journal*, the director of this School stated "our aim is not to produce a special type of architect in quantity, but rather to enable each student to become an architect of individual quality." This is a difficult goal to achieve in a course which depends to a great extent on personal and intimate contacts between student and staff. Usually, a pupil will fall under the influence of his tutor, especially in a creative subject such as design. To combat this unconscious duplication stress is laid on the student as an individual. In all his work, the student is encouraged to exploit his own creative ability while the instructor acts as a guide or advisor to the extent warranted by each student's needs. The student is encouraged to use his imaginative powers in developing a solution. This strengthens his own ability and lessens the possibility of undue influence by an instructor. A strong sense of the personal element is imbued in the student.

In the new course, this school has an opportunity to give the student a better background for the profession. The addition of one year to the four year course has made it possible to enlarge on the existing subjects and introduce several new ones. The basic course, design, remains the most important. To the design curriculum was added a series of laboratory exercises in fundamentals to introduce the student to creative design.

While the student is studying the basic background in the first year subjects he is given no architectural design. It is felt that since solving a design problem is more than the application of design elements, the student is not ready for such a course. First he must experience the creative stimulus which comes from actually working with materials. At first this is an experimental "kindergarten" course which stresses the fostering of creative ability rather than professional skill. It is designed to free the imagination and broaden the expressive personality under the firm guidance of a capable instructor.

Self-expression, acquired through such experience with three dimensional material, is based on grasping the elements of design through a working knowledge of space, line, form, color, etc. The student thus forms his own intuitive understanding of design elements. This is part of the basic philosophy of our school: the student is encouraged in self-enlightenment, by personal experience. This principle of learning which is begun in "Fundamentals of Design" continues through all years of university training.

Architectural design, the common denominator and objective of all studies, becomes more integrated with other courses as the years progress. Particularly in the technical studies is this noticeable. The study of steel and concrete structures, while they are part of the engineering phase of our training, are consciously related to active design problems. Previously, only the senior year had the benefit of criticism from the engineering staff. The new program provides structural criticism for the last three years of design.

Mechanical equipment of buildings is another technical phase of our course which is receiving more attention in theory as well as in the design studio. There is an effort to instill, within the student, a feeling for structure and mechanism within his problem as intuitive as the elements of design.

Perhaps the most important phase of our technical studies is the course in building construction which carries through all years. At intervals in the course a design problem is developed into working drawings. During these periods in the design laboratory, the student is treated as though he were in a professional office. The work turned out is a collaborative effort between student and instructor and must conform to accepted construction practices and governing building codes. Stimulation and interest in building construction details are provided by visits to buildings under construction and field trips to fabricating plants related to the building industry.

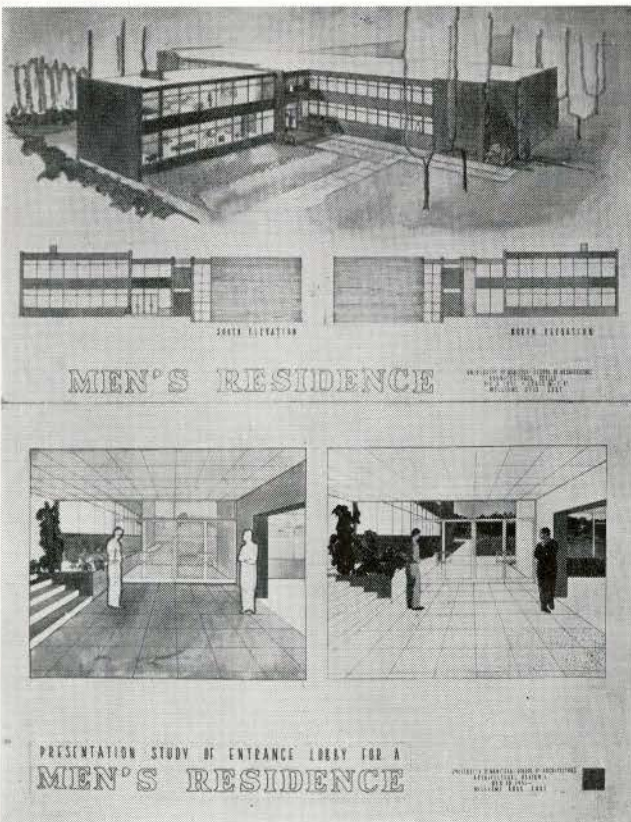
1. DORMITORY FOR MEN
SECOND YEAR DESIGN—William Lort

2. A MOTEL UNIT
SECOND YEAR DESIGN

3. BUILDING CONSTRUCTION STUDY MODEL
THIRD YEAR DESIGN

4. SPACE STUDY MODEL
B. Bouzan

5. UNITED CHURCH FOR WINNIPEG
THESIS MODEL—H. W. F. McMillan



Furthering the principle of realistic experience, the student is required to spend his summers working at some phase of the building industry or in an architectural office. In addition, the summer work is extended to include sketches in any art medium plus a report on some technical phase of architecture. Like all practical experience, the summer work should develop the theory of the classroom into a working maxim.

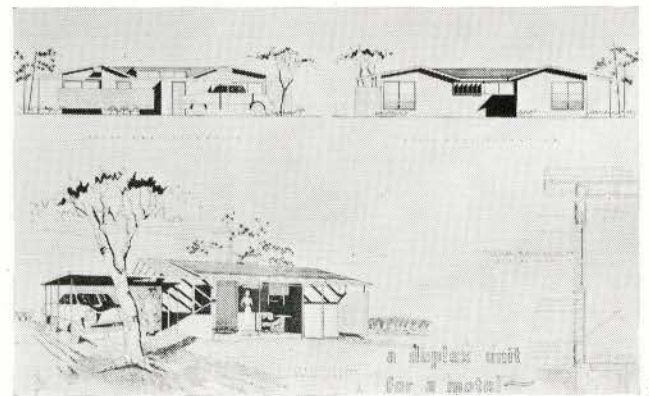
Like the technics, the humanities are closely integrated with design. The history courses are analytical to show the student the reasons and methods of various cultural periods and their bearing on the growth of Western culture. They emphasize the fundamental unity of artistic expression. They do not try to teach design fundamentals but rather verify them to the student who has already mastered them as an experience in creative work. History is more concerned with the influences of location and society on the arts and architecture.

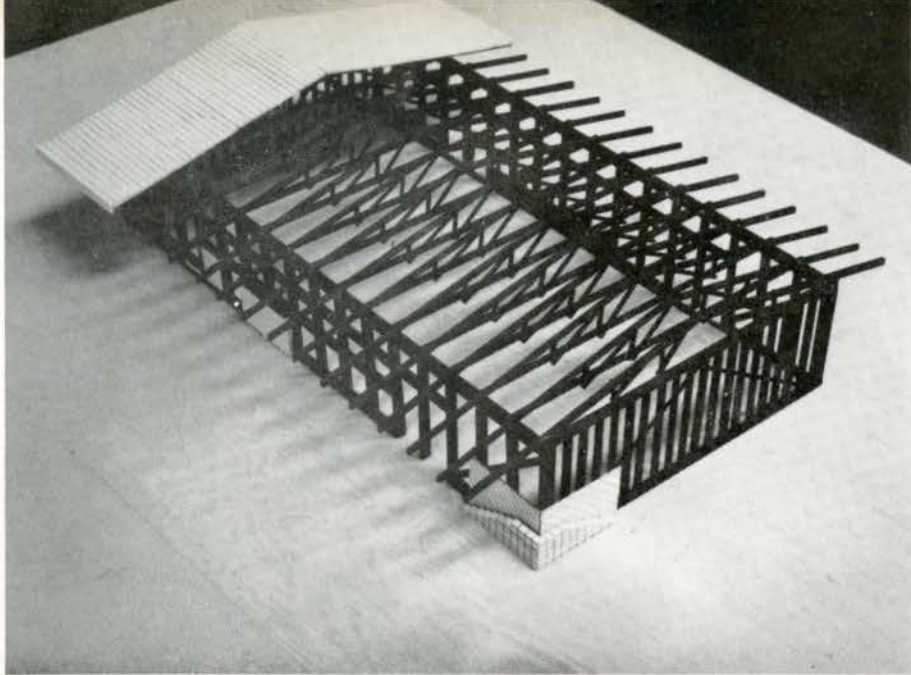
Sociology is a major influence on architectural design. Architecture, since it expresses physical manifestations of the needs of society, must interpret the basic philosophy of a society into visible expression. If we, as a profession, are to contribute to a changing society, we must develop ourselves in the empirical law of human ecology. We must have an understanding of social institutions and phenomena to be useful as leaders of society and interpreters of its philosophies.

In the installation of the new five year course, it has become possible to better prepare the student technically for his profession. But even more important, it has enabled the school to mentally orient the student into the proper attitude and ethics of the practising profession.

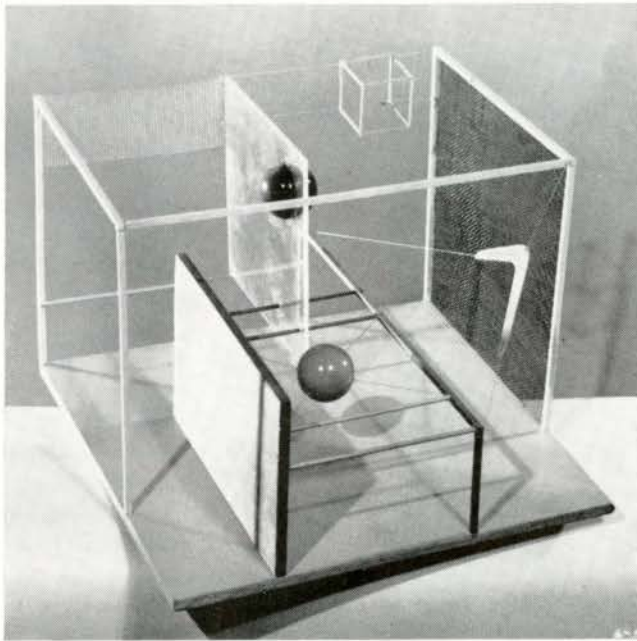
Through an expanded curriculum in the humanities, we have sharpened our awareness of the social problems. Our extended technical training helps broaden our understanding of the increasing complexities of fitting our structures with mechanical equipment.

If the architect is to be a collaborator, co-ordinator, and designer his formal training must provide a background in the technics, the humanities, and design. If training emphasizes any single phase his ability to fulfil his professional duties will be impaired. This school recognizes the many-foldness of the professional man and the need for his balanced training. For this reason, the school places equal importance on all three.

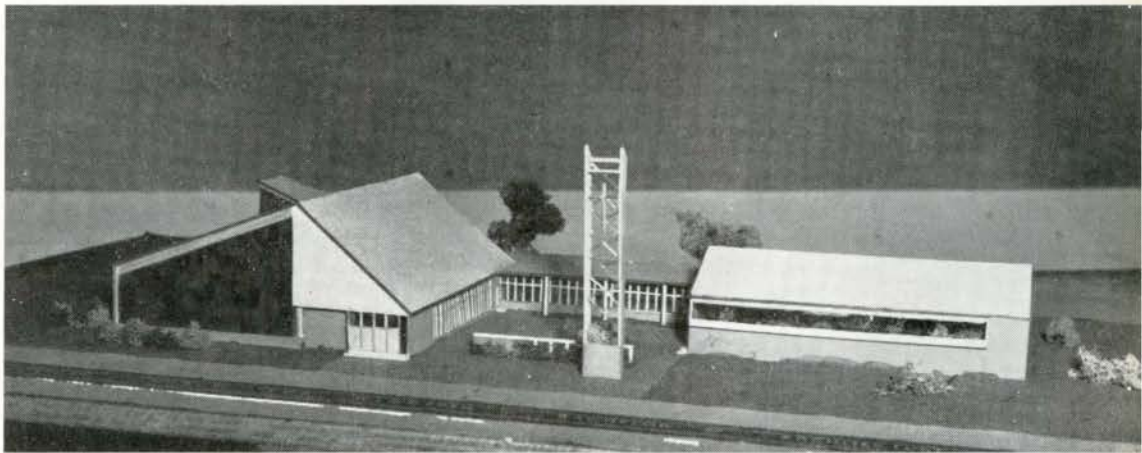




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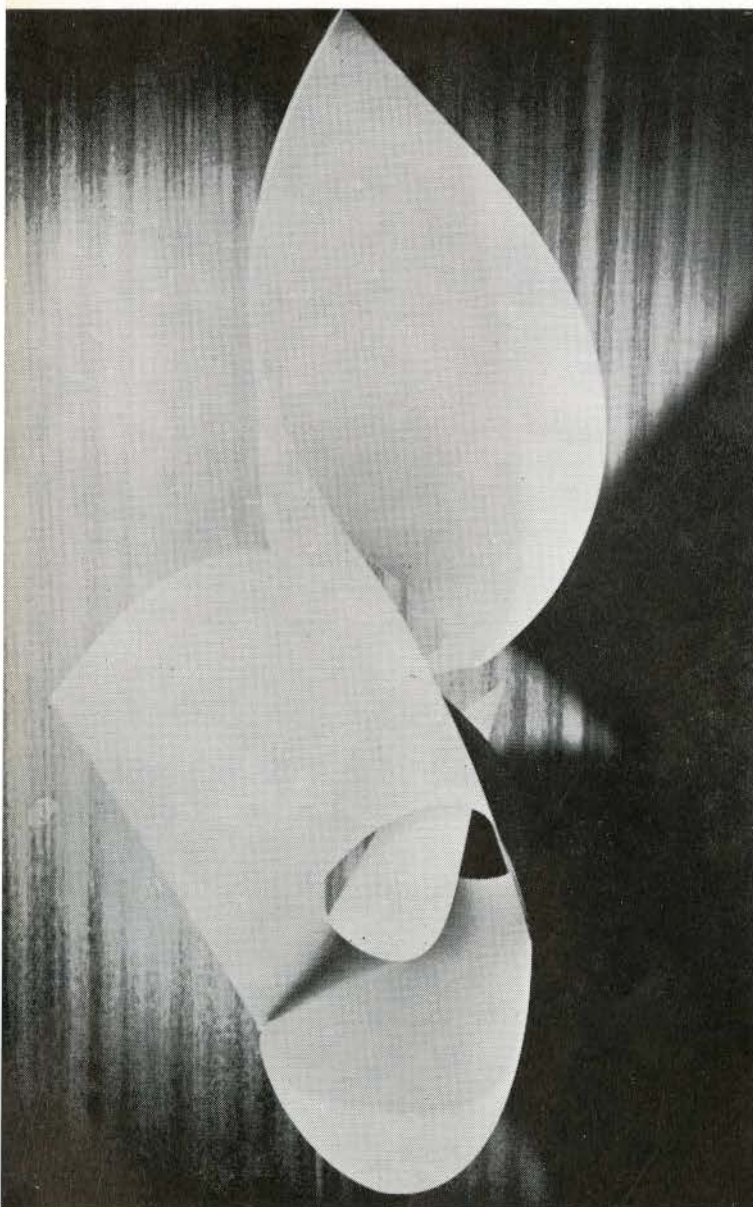


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McGILL

LIGHT MODULATOR

SIX YEAR DESIGN WORKSHOP — R. Cassidy



The objective of the McGill School is to offer a university training programme for the practice of architecture — university in the sense that we attempt to draw widely upon the university's resources, to gain a truly broad view of architecture in our society.

We believe that architects require a specific quality of mind as well as particular technical skills. Thus, we endeavour to select apt students and then to encourage the development of their sensitivity to people's needs, their imaginative capacity to interpret needs in terms of buildings, their understanding of the symbolism of buildings, their awareness of traditions and environmental factors, and finally their sense of materials and techniques of construction. We endeavour to reveal the whole scope of the practice of architecture, hoping that students will appraise their own capabilities and choose a happy and useful part in which to grow after leaving us.

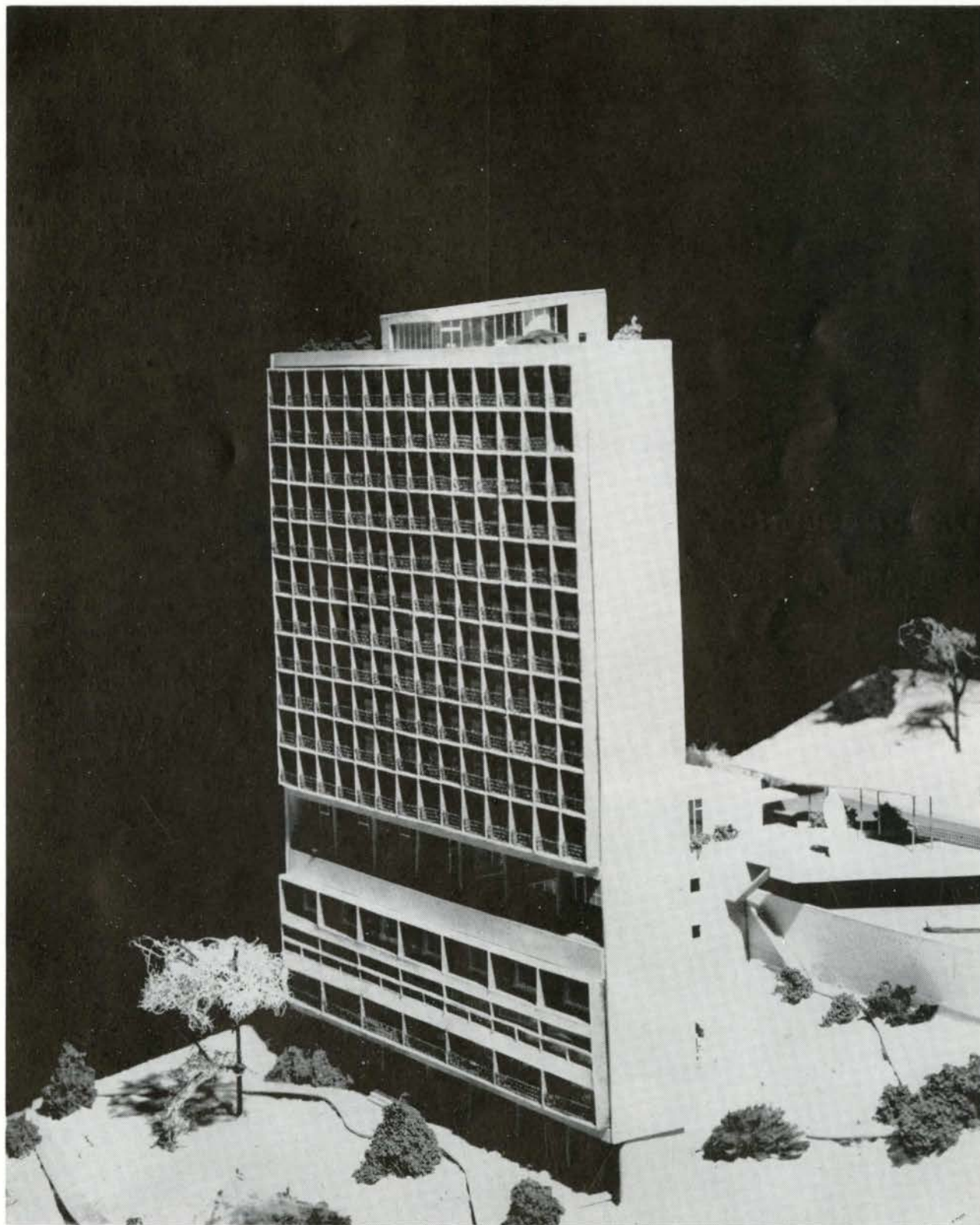
Whether for better or for worse, we are a school in a Faculty of Engineering. This sets us apart from the exclusively architectural schools! It limits us in some ways but gives us opportunities in others, which for the past five years we have been attempting to exploit. Our students are selected from among those qualified to study engineering — persons with more than usual capacities in high school sciences. Furthermore, students commence architecture after successfully completing the first two years in engineering — a further screening device for the unscientific. Later, we attempt to combine courses in the exact design of structures and the like, which our students take with the engineers, with courses concerned with feeling. Our purpose is to bring knowledge and feeling together, believing that the architect divorced from structure is merely a decorator.

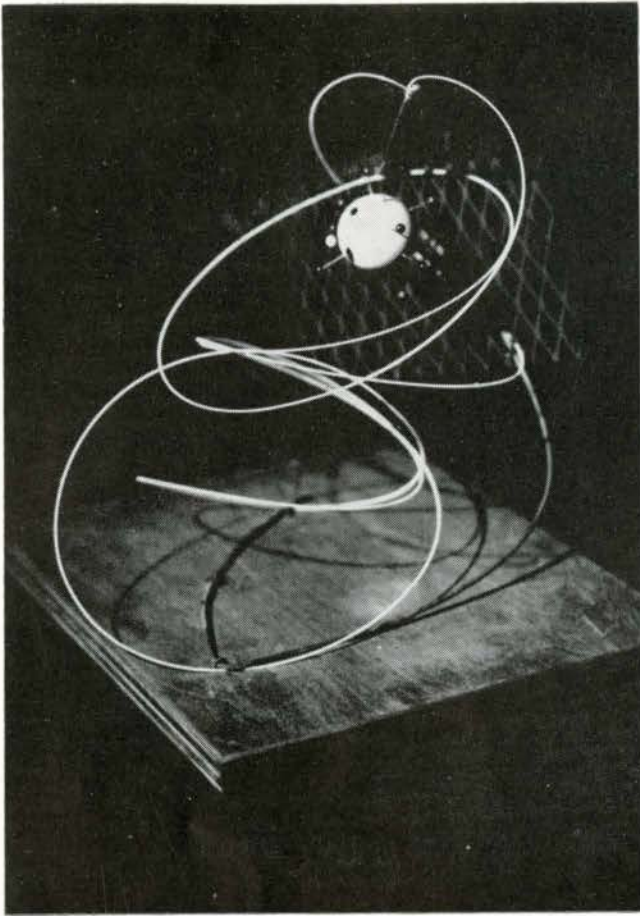
To counterbalance the stress upon engineering subjects, we allow freedom in the arts that apply to architecture. Courses in basic design show the limitless possibilities for design in the mere arrangement of materials. History of art and history of architecture demonstrate the immense achievements that have been made by artists, striving within strict limitations, to explore the whole of the potentialities of their means. Freehand drawing and photography exercise the ability to observe and record

(continued on page 136)

McINTYRE HALL, RESIDENCE FOR STUDENTS, MCGILL UNIVERSITY

SIXTH YEAR DESIGN THESIS — Jan Rowan





SPACE MODULATOR

SIXTH YEAR DESIGN WORKSHOP — Ian Ferrier

SIX YEAR TOWN PLANNING—W. Briggs, J. Girvan,
H. Henry, L. LaPierre, D. Oldham, J. Venters



design. Building construction demonstrates good building practices having regard to our climate, materials and manners. We consider building construction to be the basis of architecture; above all an architect must know how to build. Further courses in architectural design involve the solution of problems in terms of space, structure and expression, and, like other schools, most of our time is spent upon these. Courses in planning demonstrate that design goes beyond site; that the grouping of buildings and the relationship of buildings to environment are aspects of architecture, as extensive and as exacting as the manipulation of structure and the arrangement of internal spaces. As well as these, there are a number of short courses dealing with aspects of practice, the position of the architect in our society and specific items such as acoustics, lighting, heating and ventilating. These are treated more as introductory to the literature in the particular fields rather than as conclusive treatments. In the time at our disposal we can do little more than acquaint students with principles concerning these matters, but the courses are given by expertly qualified persons, and, even though they are unpretentious in content, they are seriously treated.

We try to avoid being doctrinaire in presenting architecture as a formal accomplishment. On the contrary, we teach that architecture is achieved when all the relevant circumstances involved have been comprehended, and materials have been exquisitely assembled into a building that serves its purpose in a full sense.

The first term of the sixth year is given to the design of a residential area. The purpose of the study is to extend architectural interest into civic design. The problem was set to broad requirements — an area of about 300 acres at Baie d'Urfe, Quebec, was to be laid out for houses and urban facilities that would be needed at a gross density of ten persons per acre and according to generous standards for public open space, public buildings and other facilities. The design of the layout was to be undertaken by groups and each member of a group was to study in detail a part of the layout involving the design of streets, the grouping of houses and landscaping.

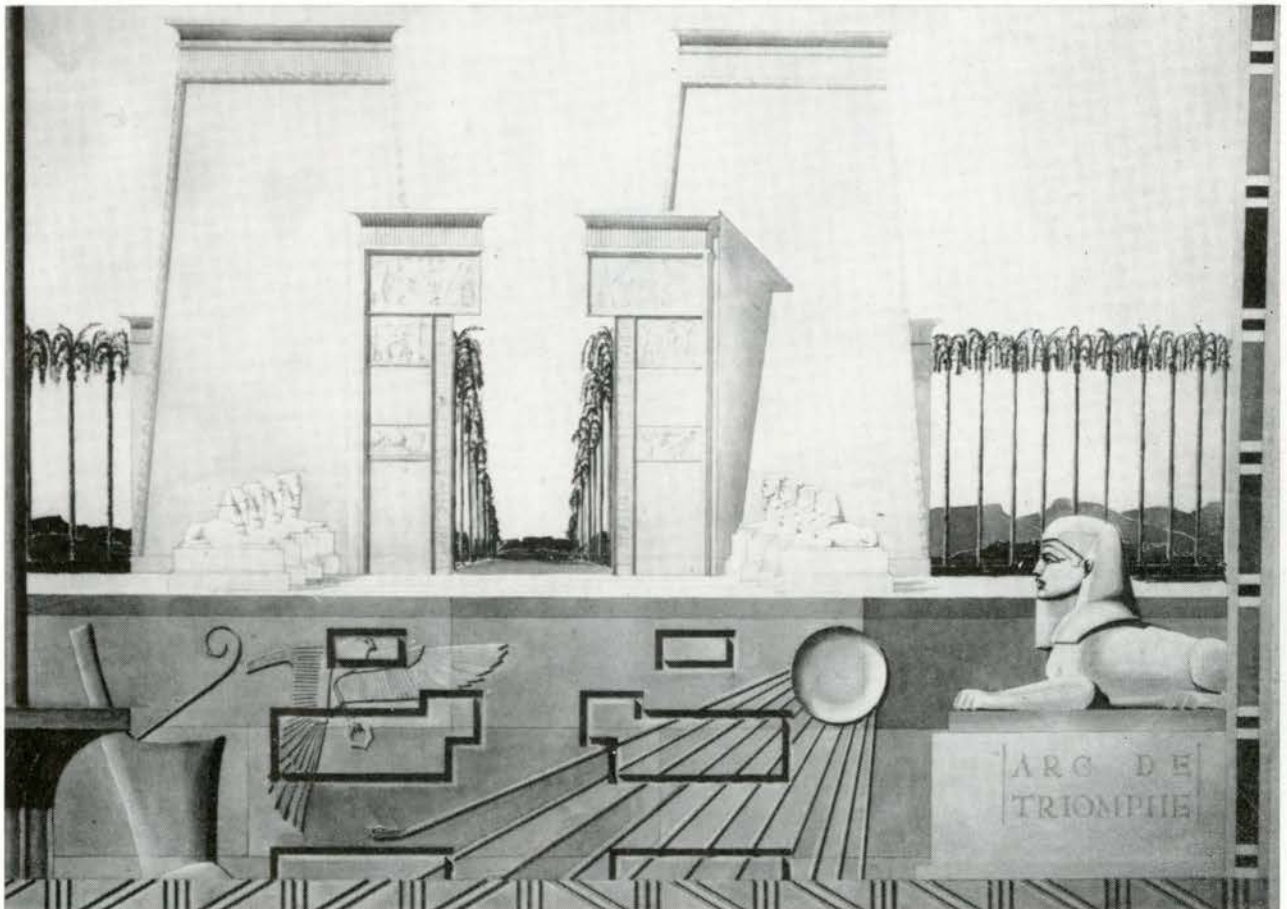
ECOLE DES BEAUX-ARTS

A titre de membre de CASA (l'Association Canadienne des Etudiants en Architecture) nous présentons cette année par son entremise et en collaboration avec l'Institut Royal d'Architecture du Canada, un aperçu sommaire des études poursuivies, nos sentiments sur quelques aspects de l'enseignement, des travaux d'élèves, et les réalisations récentes des autorités de l'Ecole.

Celles-ci débutent par la création, en décembre 1950, d'un comité de recherches pour l'enseignement de l'architecture nommé par l'Honorable Monsieur Omer Côté, Secrétaire de la Province. D'après les recommandations de ce comité dont le mandat était de tracer les conditions d'admission et un programme d'enseignement, l'Ecole procède actuellement à la réorganisation générale des cours d'architecture.

Ainsi, depuis octobre dernier, l'année préparatoire est éliminée et la durée des études est maintenant réduite à cinq ans. De plus, seuls sont admissibles en première année les candidats munis d'un des titres suivants: a)—le baccalauréat ès-arts, b)—le baccalauréat ès-sciences, c)—le diplôme d'études secondaires modernes, d)—les titres des systèmes anglais ou étrangers dont l'équivalence peut être reconnue. En outre, les frais de scolarité ont été substantiellement augmentés et sont portés à 200 dollars par année. Un changement de statut préconisé par le comité de recherches devrait prendre forme sous peu. Il est recommandé, en effet, que la section d'architecture devienne autonome et soit affiliée à l'Université de Montréal tout en demeurant annexée à l'Ecole des Beaux-Arts. Une telle décision ne dépend pas de nous; nous ne pouvons

PREMIERE ANNEE — René Dumont



qu'espérer un tel changement.

Quant aux études, le programme existant ainsi que le système en vigueur demeurent à la base des propositions du comité. Cependant, plusieurs lacunes ont été comblées et de nouveaux cours créés. Notons l'introduction de cours et de démonstrations sur la théorie de l'architecture, l'architecture paysagiste, la chimie industrielle, la confection des maquettes, etc. Les matières techniques reçoivent toute l'attention que requiert la complexité des constructions modernes. Des cours d'urbanisme, de décoration intérieure et de composition industrielle seront bientôt donnés sous une forme plus élaborée. L'école cherche en outre à tenir l'esprit en éveil à toute activité culturelle par des participations variées et des conférences sur tout sujet d'art ou de science ayant quelque affinité et influence indirectes sur l'architecture.

L'enseignement de la composition architecturale a conservé, il nous semble, le même esprit. Nous croyons aussi que cet enseignement doit avant tout viser à former le goût, à éveiller la sensibilité aux formes et aux volumes et à développer l'esprit

d'analyse et de synthèse. L'homme, sensible, crée des formes harmonieuses et évolue à travers les civilisations sans que ses caractères essentiels ne soient altérés. Seuls, les programmes changent parallèlement aux normes de vie de même que les matériaux et les techniques. S'il est intéressant d'étudier les réalisations contemporaines, leur plagiat n'est pas plus justifiable que celui des réalisations anciennes. Il est essentiel que nous en saissions l'esprit et non seulement la recette.

Quoique bien brièvement exposé ici, l'enseignement de l'architecture tel que conçu à l'Ecole des Beaux-Arts, ne peut ouvrir la voie qu'à de saines réalisations. Les programmes sont rajeunis et nous permettent d'aborder l'étude des problèmes humains les plus pressants, tel celui du logement. Grâce à la nomination de professeurs en plus grand nombre, nous bénéficions d'une attention et de critiques plus suivies et si le manque d'espace et d'équipement entrave encore le rendement désiré, nous sommes par ailleurs justifiés d'envisager avec optimisme d'heureux résultats du régime actuel.

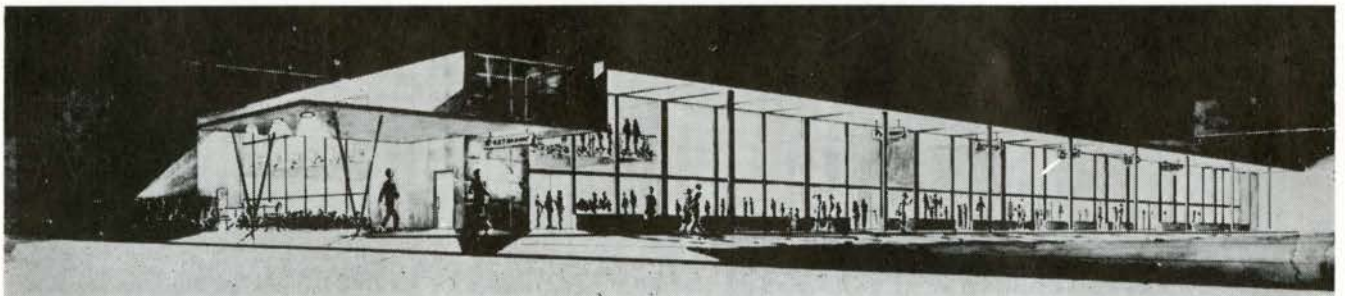


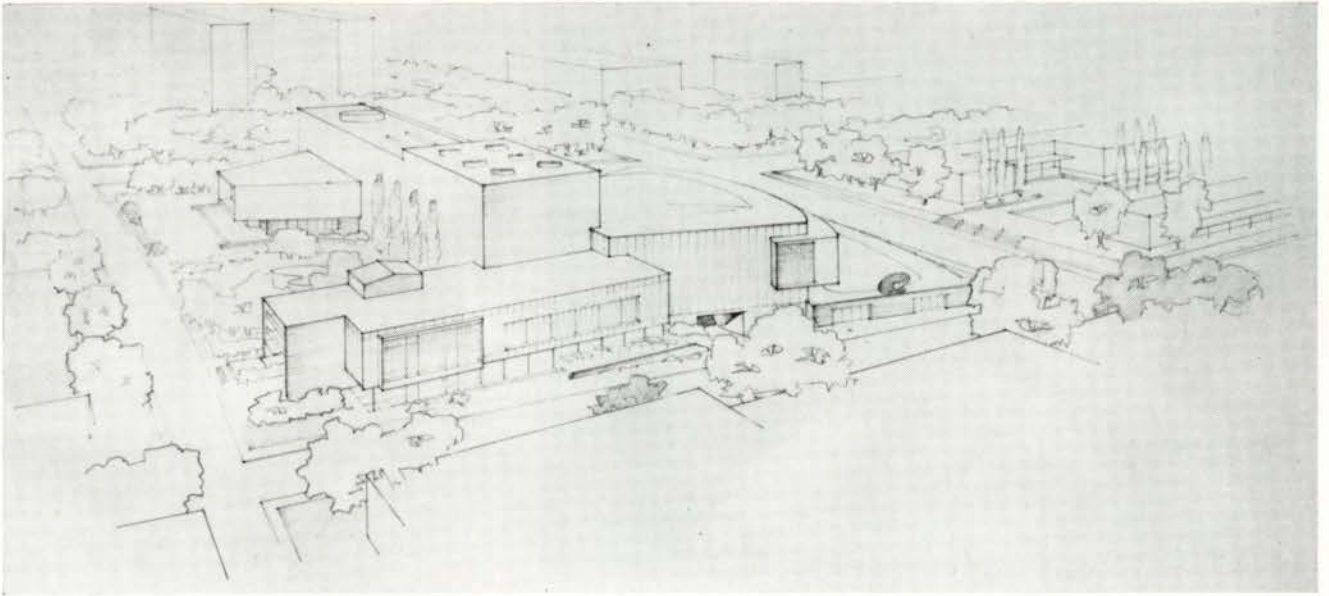
CINQUIEME ANNEE — Dufresne,
Lusignan, Poulin

Quelques planches seulement sont ici reproduites. Sur un site appelé à être démoli et longeant une artère également appelée à être élargie, l'équipe étudie les possibilités d'un groupe type d'habitations en tenant compte des facteurs locaux et des projets et perspectives d'urbanisme de la ville; zonage, densité éventuelle, démographie etc.

UN GROUPE DE SIX MAGASINS

QUATRIEME ANNEE — Jacques Coutru





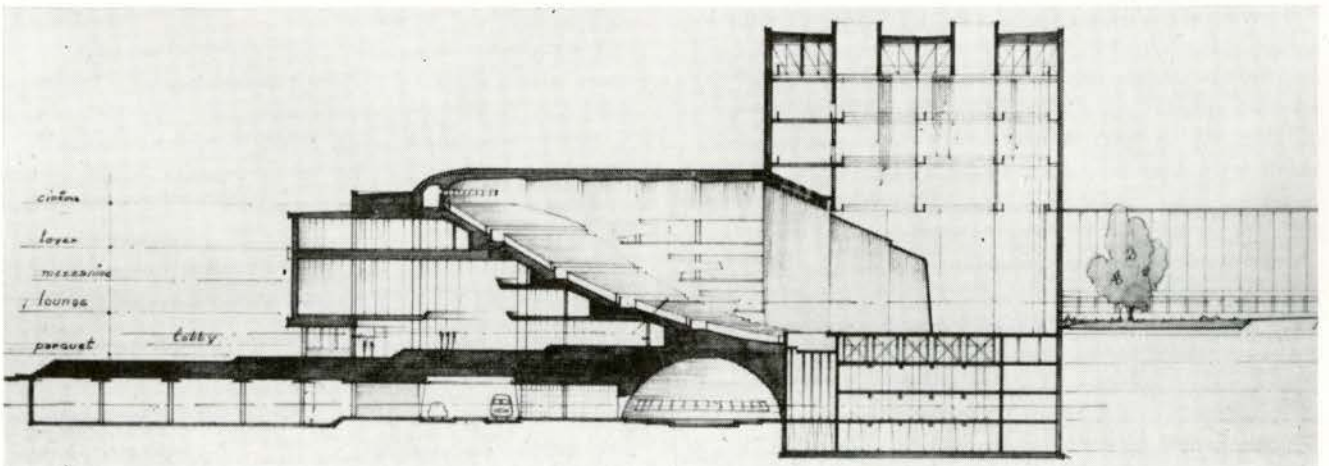
PERSPECTIVE D'ENSEMBLE VUE VERS LE NORD

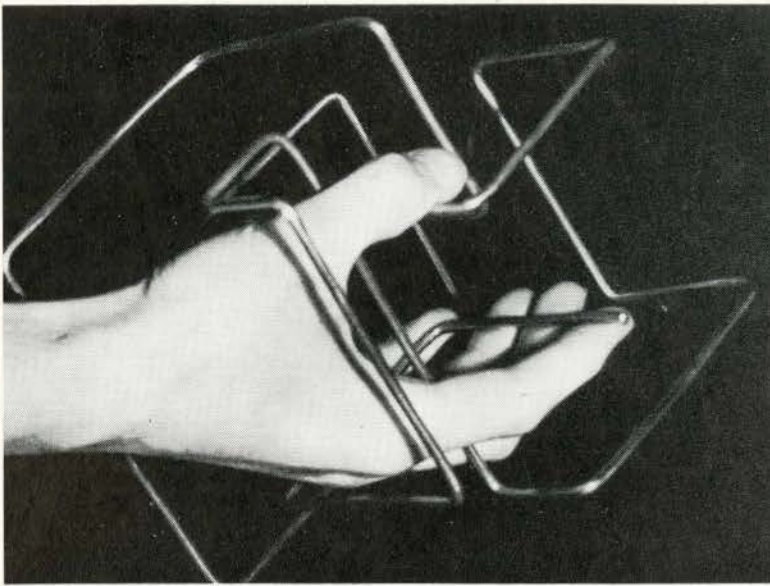
UN CENTRE MUSICAL ET THEATRAL

CINQUIEME ANNEE—Claude Longpré

Les vignettes ne représentent qu'une partie des planches du projet-thèse. Par ailleurs, le programme complet et la solution graphique sont développés et motivés dans un texte rédigé par le candidat suivant des données générales établies par la direction. Ces données comprennent le site, les éléments essentiels du programme, (une salle de concert pour 3,000 personnes, un théâtre pour 1,000 personnes et un petit théâtre d'essai pour 250 personnes), et les restrictions imposées par les règlements municipaux de construction. Les professeurs agissent comme consultants et non comme critiques. Cette participation limitée permet au candidat de démontrer ses aptitudes ou qualifications personnelles. Un jury composé de personnalités et choisi en dehors de l'Ecole examine et juge, et le projet et le candidat en personne qui doit expliquer et défendre sa thèse.

COUPE LONGITUDINALE





LINES IN SPACE DEFINING A CUBE

TORONTO

"The School of Architecture was established in 1890 as a Department of the School of Practical Science, which later became the Faculty of Applied Science and Engineering. At that time, Architecture, like other departments in the Faculty, was originally a four year course."

"Beginning with the 1922 session, the degree was changed from the B.A.Sc. to B.Arch. and in 1928 the course was extended to five years. In 1948 the University recognized the importance of Architecture in the life of the University and the Province by making it a separate School." It is fortunate in retaining its close affiliations with the Faculty of Applied Science.

Admission requirements demand a high standard of academic achievement, especially in English and mathematics. Three mathematics must be included in the entrant's Secondary School Diploma.

1. Recently, first year has seen considerable changes. In recognition of the lack of previous design training of the incoming students and of their uneven training in graphic expression, an introductory course in the fundamentals of two and three-dimensional design is now given. The aim here is to stimulate the student's imagination, while at the same time beginning to develop his grasp of space and materials, and the means to graphic expression. No specific architectural design problems are assigned until second year.

Courses in mathematics are undertaken which endeavour to make the student competent to deal with structural design problems in later years. English and History of Architecture lectures are begun which lead to further studies in the Humanities.

2. By second year, the design of small buildings, such as a park pavilion, is undertaken and represented by means of drawings and models. A complementary lecture series on the Theory

of Planning is given. Presentation techniques are further developed through field and studio sketching and through lectures in the theory of colour and in draftsmanship.

Technical studies continue with such courses as mechanics of materials, sanitary science, materials and methods, etc.

History of English Literature and History of Architecture lectures are continued, and to them are added short courses in Economics and Philosophy.

3. Third year sees the student attempting considerably more complex problems in design, and, in addition, a measured drawing of an existing building, complete with field notes, is marked as one of the problems for that year. The theory of the Functional Requirements of Buildings is examined in a lecture series.

Problems in actual Structural Design are begun in third year, and a beginning is made of the study of other technical aspects such as light and acoustics.

The courses in History of Literature and of Architecture conclude in third year, and to them is added a series of lectures in Aesthetics. As in previous years, essays are required from time to time in some aspect of particular interest related to these subjects. Also, in order to further develop the students' ability to express themselves in words, a short course in public speaking is included.

4. As in third year, fourth year begins with a 10 day field sketching camp at Dorset in the Haliburton district of Ontario during the latter part of September.

Housing and Town Planning Theory are studied fairly extensively, and the technical courses broaden to include foundations, illumination design and heating and air conditioning as well as structural design.

One large problem in Architectural Design is assigned, and, as preparation for the fifth year thesis, a "Student's Own" problem is formulated and solved by each member of the class.

5. Like its predecessor, fifth year commences late in September with a sketching trip to Dorset, or, optionally, a field trip to some centre of special interest such as Boston or Chicago.

On returning from one or other of these, the student finds that his year centers largely around his two theses; written and design. The topics of these are, of course, selected by the student and are of special interest to him. Considerable research, intensive study and original thought are demanded for the successful completion of each.

Academically, further study of Town Planning is undertaken and a design project for an actual site is undertaken by groups. A wide variety of visiting lecturers lends interest and diversity of viewpoint to this series.

Also in fifth year more advanced work in Structural Design is done, and the theories developed are put into use wherever possible in the drafting room. Allied to this work, specification writing is studied in theory and undertaken as a practical assignment.

The academic schedule is rounded out by lectures in Professional Practice, Architectural Economics, Modern Political and Economic Trends and Modern World History.

In addition to the foregoing, a total of 1900 hours practical experience is required of each student before a diploma is granted. Four months of this must be with an architect, and, in addition, it is strongly recommended that at least four months be spent in the field on construction work. Each summer a report is completed which deals with some aspect of the student's field

or office experience of the preceding months.

Summation

From the above, it will be seen that the aim at the school is education in the broadest sense.

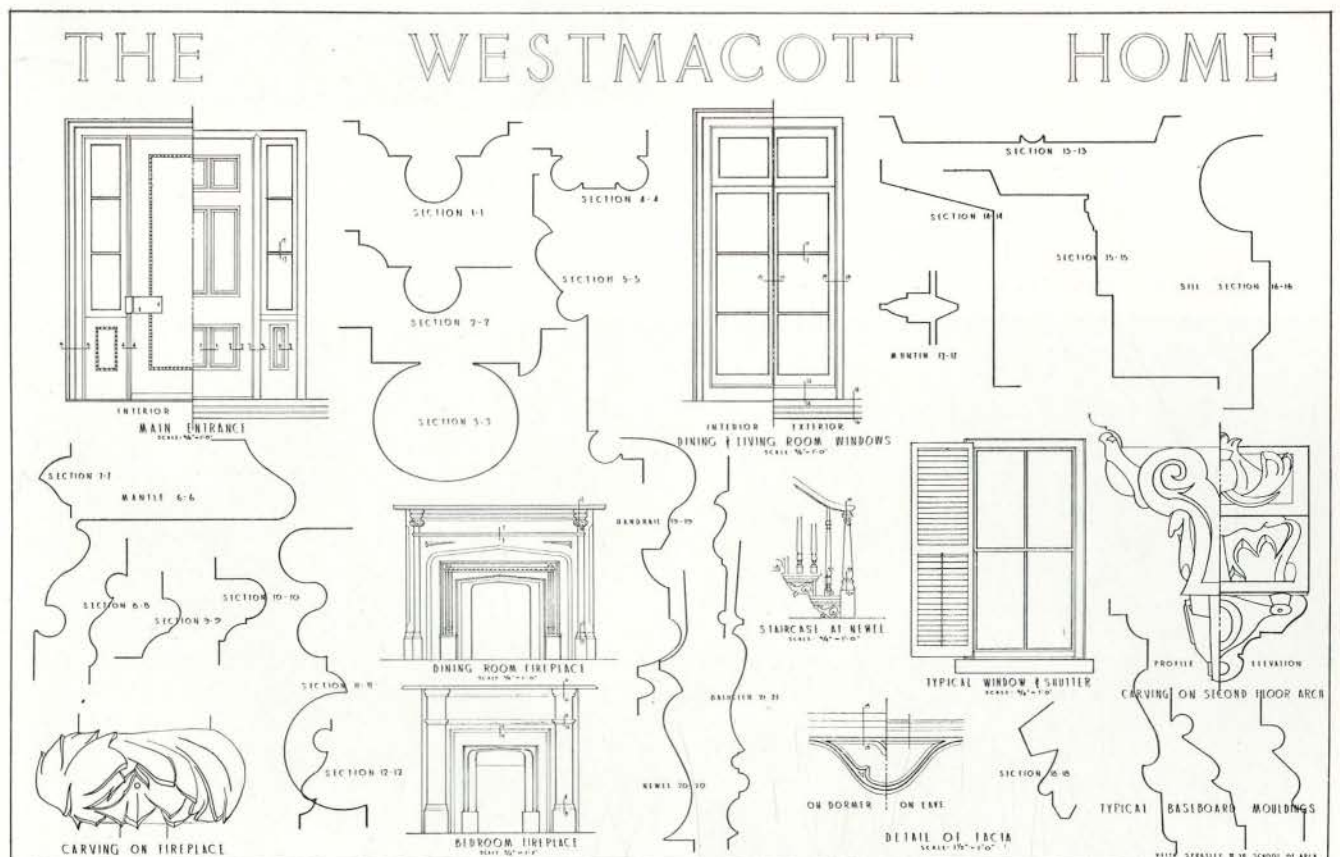
The mechanics of building are examined both extensively and intensively in work which extends throughout the course, while the profession itself is the subject of considerable study.

The humanities are receiving increasing emphasis, particularly now that a three year English course is included in the curriculum. Most of these courses, with the exception of English, are in the form of generalized surveys of, or introductions to their topic, but they nevertheless fulfill their function of stimulating interest in areas of education which, it is expected, most will explore more fully at some other time.

Withal, however, the central core of the course remains Architectural Design. After the first year, which is largely preparation for it, design occupies approximately half the student's scheduled time each year. As he progresses, more time is spent on each specific project in order that the more difficult problems may be studied with appropriate thoroughness. Throughout the design process individual criticisms are given at frequent intervals, and at the conclusion of a project both group and individual criticisms are undertaken by the staff.

Also included in each year of design work are three three-day design problems which are completed without staff instruction. These problems are included in order to train the student in independent thinking, as well as in thinking quickly and presenting sketches in attractive and clearly readable form in a short space of time.

MEASURED DRAWING THIRD YEAR — Keith Spratley



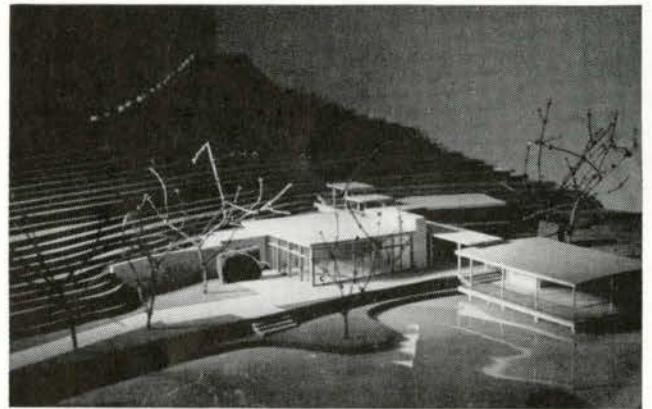


LOW RENTAL HOUSING PROJECT

FIFTH YEAR DESIGN THESIS — Alfred Tilbe

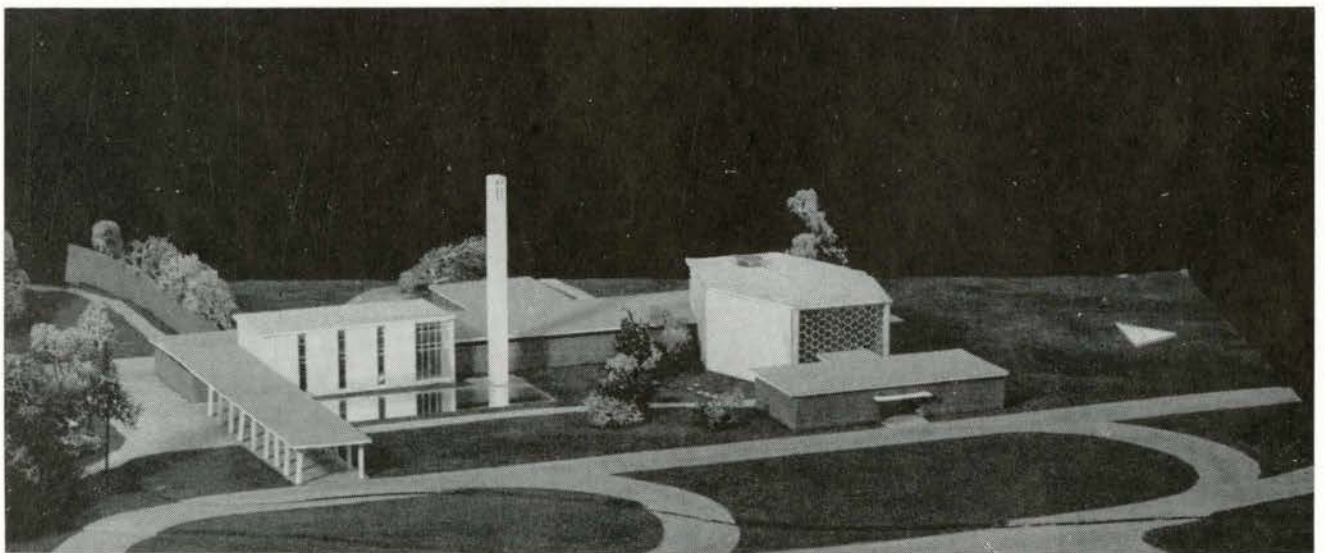
PAVILION FOR HIGH PARK

SECOND YEAR — T. Ransom, W. Ridpath, J. Shaw



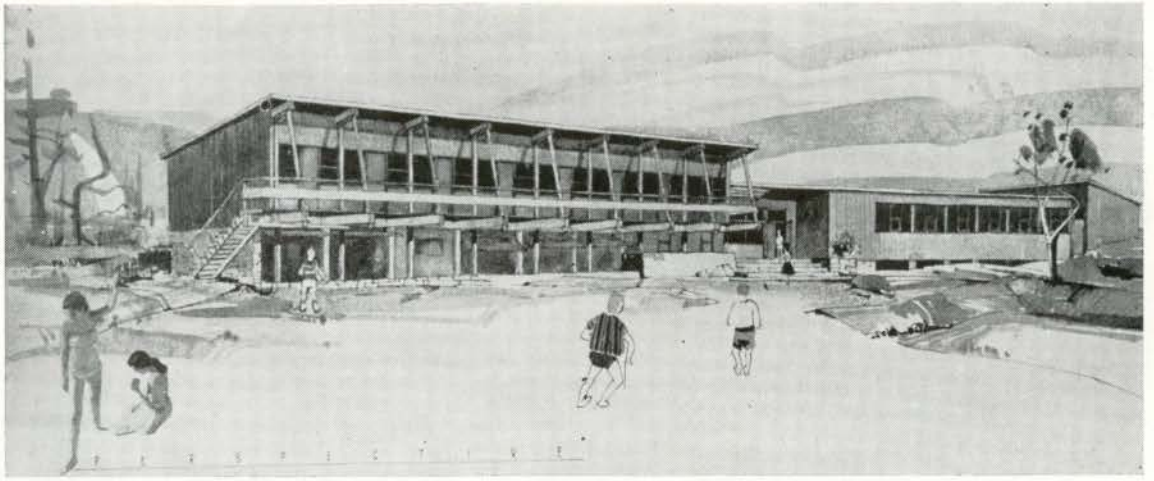
A CREMATORIUM

FOURTH YEAR — Sam Young



**A SUMMER
CAMP**

**FIFTH YEAR
DESIGN THESIS**
— John Ma



**HEADQUARTERS FOR COLOUR PHOTOGRAPHIC
ASSOCIATION OF CANADA**

FIFTH YEAR THESIS — Bruce Douglas



**BUS
TERMINAL
FOR
TORONTO**

**FIFTH YEAR
DESIGN THESIS**
— Ken Tidy



ART EDUCATION AND ARCHITECTURE

WHEN ONE THINKS of architectural education two different aspects come to mind; the education of the general public in architectural appreciation and the education of architects in their profession, both in school and out of school. In this writing I intend to discuss both these problems, interpreting what may be found from art and general educational principles, using this information as a basis for a conception of architectural education.

To begin, the basis of all knowledge is in personal experience. God exists only to persons who have actually felt and experienced his presence. To tell another individual of the existence of God means nothing to that individual unless he has learned through personal contact that there is a force all powerful. I can be shown as a student, the logical procedure in arriving at the solution of a structural problem, but it is only through carrying out this procedure myself that I can say that I know how to do it.

If knowledge is acquired through personal experience, then the more an individual works and strives as a separate entity, the more he will learn. Learning is not merely the acquisition of facts and principles, but the balanced development of mind and senses. Any other concept of acquiring knowledge only develops one faculty and not the other.

A system of education which will enable each individual to attain a certain integrity of development, so that his mind is never cultivated at the expense of his senses, or his senses at the expense of his mind, is a necessity in an industrialized society. There are many people in our mechanized civilization who learn a mechanical skill, but it is not an integrated skill for it is not geared in any way to the rest of their mental or social activities. It is, and remains an isolated habit, learned at the end of the educational process instead of being the educational process in itself. Skill should be taught as a basic education of the senses. This can only be achieved through personal experiences and contact with creativeness. In our civilization we have lost the notion of cultivating the senses.

When any human being works with his hands, whatever he does will be translated to the brain as knowledge. This knowledge, in turn, will react on his inner self. That is how a higher level of personality is achieved. Thus, emphasis upon individuality is the creative factor in life's experiences. This creativity is the meaning of artistic activity, which is manifested in all forms of art and life that are not tied down to what is established by custom and convention. In re-creating them in its own way it brings refreshment, growth and satisfying joy to one who participates.

There is no inherent difference between activity and artistic activity; the latter constitutes being fully alive. Hence, it is not something possessed by a few persons and setting them apart from the rest of mankind, but it is the normal or natural heritage. Its spontaneity is not a gush, but it is the naturalness proper to all organized energies of the live creature. Persons differ greatly in their respective measures. But there is something abnormal when a human being is forbidden by external conditions from engaging in this fullness according to his own measures, and when he finds it diverted by these conditions into unhealthy physical excitement and appetitive indulgence.

Conrad Fiedler states that "artistic activity begins when man, driven by an inner necessity, grasps with the power of his mind the entangled multiplicity of appearances and develops it into configurated existence." Scientifically, this statement that artistic activity is a general attribute of the human mind, has been verified by Gustaf Britsch. He demonstrates, through children's untutored drawings and through the stages of art of all times, the existence of definite evolutionary stages by which artistic configuration develops gradually from simple to more complex relationships of form.

Because a child grasps the world preponderantly by means of perceptual experience, then the creation of unity of form is his way of reaching visual cognition. His modest artistic activity thus becomes indispensable to his mental growth. All normal children display this inner drive for pictorial creation. But because, even in the course of general education, attention is still mainly directed toward acquisition of conceptual knowledge, the child's spontaneous drive for genuine visual cognition is neglected. As he grows older the creative urge diminishes. It is therefore understandable that in most persons visual conception and its material realization are not developed beyond the stages of childhood. But the ability itself has not vanished. It is always latent and can be awakened. Artistic abilities are inherent in all humans and can be awakened by trained educators who understand each particular stage of visual conception.

In the entire field of visual art, the same mental process, the same kind of visual conceiving of qualitative relationships of form, is the decisive factor. Always in a work of art, visual cognition that is symbolized by a definite relationship of form, is attained.

Within the growing ability of visual conceiving, the work to be achieved grows also, within its structure, stage by stage, from simple to more complex organizations of form. The principle of natural growth underlies

the entire pedagogical procedure. As the main trend of this art education is inwardly determined by the law of man's growth of visual conception, and as the artistic result is the fruit of that growth, education and artistic activity become functionally united.

Modern biology substantiates the belief that a change in any part of the human organism has a reflection upon the rest of the organism. Thus it becomes comprehensible that in the evolution of innate artistic abilities, man functions mentally and physically as a psycho-biological whole. The unfolding of his artistic creativeness is intimately related to his whole being. Education, artistic activity, and the physical organism of man thus constitute a dynamic synthesis, a wholeness that is life.

The ability to create artistic form by means of visual conceiving is a natural attribute of the mental existence of man. From the beginning, artistic activity, creativity, is an autonomous operation, independent of conceptual calculation and abstract thinking, but based upon sensuous creation and visual thinking of relationships of form. Further, as a natural attribute of man's spiritual being, artistic activity should be also considered as a part of nature. Its growth can only take place in accordance with natural laws of unfolding and developing; that is, as in the growth of all things in nature, simple structures precede more complicated ones. Art education which stands on such natural foundations becomes able to achieve results hitherto unexpected of the general public. Thus it may become a decisive factor in the groundwork of a culture that rests on creativeness as an inherent quality of man.

Personal experience and self-taught knowledge are the means for realizing the natural limitations of our creative powers. If we learn, and thus comprehend more readily through personal experience, then, in order that the standard of art education and appreciation be higher, encouragement should be given to every individual to participate in creative activity.

The social significance of being recognized as a creative being cannot be over-estimated. Such recognition reflects back upon the creator's self-esteem and makes him realize that he has something unique to give. This furthers self-confidence and at the same time stimulates him to do more, for he knows he has much more within him to set forth as his own, which in turn will bring him yet more recognition.

An approach to works of art based on an individual's creative experience leads to understanding and enjoyment of artistic products which are related to his own accomplishments. Such an understanding opens the way to genuine appreciation of specific artistic stages of early and modern epochs.

The enjoyment of his own creative work produced by each member of a community leads spontaneously to an interest in the work of co-workers, especially when there is a close relationship of form in the final result. The neighbour appears in the light of a productive being. In cooperative work all participants must adjust themselves to one another for the sake of attaining the unified order of form in the whole design.

The spontaneous critical judgement which mainly causes the organic development of an individual's artistic

abilities is gradually applied also to the observation of his environment. Architectural design, town planning, industrial design of his surrounding world do not possess for him that basic order which was the decisive factor and quality of his own achievements. The present shape of his surrounding world must inevitably cause similar irritating reactions upon every sensitive and participating individual and therefore should not be tolerated. When critical judgement, as the result of genuine artistic activity, leads to the knowledge of needed change and improvement of living conditions, it attains the utmost social importance.

With art education, in an industrial age, we are faced with two problems which are inter-related. The manufacturer can sell his product only if there is a demand for it. This demand originates in the general public and the standard of design of articles produced by the manufacturer is dictated by the taste of the general public. If an article is rightly conceived and is not appreciated by the public, that article does not sell and hence the manufacturer, because he is in business for profit, is not encouraged to continue the production of that article. Thus there is first the problem of the education of the consumer in aesthetic appreciation and secondly the problem of the education of the producer in aesthetic creation.

Distinction must be made between aesthetic appreciation and aesthetic creation. The latter originates in the mind and is directed outwards to objective materials by the power of the will — an intellectual power. The former originates in the senses and the depth of appreciation is affected by personal experiences which have contributed to the individual's social and intellectual backgrounds. But the two are woven inseparately together; appreciation without creation is sterile and has little meaning. This is the condition that our industrialized society is in today. It is only in participation in creative activity that a true appreciation of art may be realized.

If the general appreciative standard of art is raised through creative participation, then the producer can do nothing but comply with the taste of his potential buyers. Similarly, but to a far lesser degree, if all producers manufacture articles of great creative quality, the general public has no other choice than but to buy what is available. The fallacy of both arguments, of course, is that some individual will desire or produce an article of lesser conception. However, the solution to these problems is possible only through the extension of sensorial directness, that directness which is inherent in all of us, into creative work with materials, color and relationships by the general public and the manufacturer alike. This may sound easier said than done. But once each individual becomes aware of his inherent artistic potential, encouragement and understanding are all that will be required to open a new appreciative outlook towards art for him. It is true that the Industrial Revolution divorced art from industry. Why is it not possible that the encouragement of participation in creative activity may unite art with industry? For those who produce without creativity, and for those who create without the acceptance of a machine age, there can be no true meaning to contemporary life.

Application of the principle that knowledge is gained through personal experience leads one to believe that what

is learned in one experience may be applied to another field of knowledge. To the individual who works with his hands in creative activity, this is very evident, for he realizes that his senses have become more susceptible to imperfections, not only in his own work but in the work of others. All art and architectural education should be based on this fact. This principle has the significance and is proof that we can never speak about a single thing without relating it to the whole. We can never speak about the art of a specific civilization without thinking of and correlating the contributions that architecture, painting, sculpture, handicraft, literature and music have made to that art. Education, artistic activity, and the physical organism of man constitute a dynamic synthesis. The conception of totality is consistent with this idea. The parallelism found in the structure of the atom and the structure of the universe implies that totality is to be found all around us in nature and therefore there must be truth in its existence.

Totality gives art a new meaning. The work of art now is the correlation of all the scientific, biological, and social factors, in a unified whole. No artist can create without first learning to use materials, to understand space, to see color. For this reason the Bauhaus was formed.

Both Gropius and Moholy-Nagy felt that total participation and personal experience were the prerequisites of an architect's training. The primary aim of the Bauhaus "was that the principle of training the individual's natural capacities to grasp life as single cosmic entity, should form the basis of instruction throughout the school instead of in only one or two arbitrarily specialized classes." The quality of man's creative work depends on a proper balance of his faculties. It is not enough to train one or another of these, since all alike need to be developed. That is why manual and mental instruction in design were given simultaneously.

Gropius felt that, since the apprenticeship to a master-craftsman form of education was impossible in a machine age, because the craftsman has disappeared, a synthetic method of bringing practical influences to bear on the pupil simultaneously by combining the teaching of first rate technicians with that of first rate artists was the answer. Every pupil of the Bauhaus was taught throughout his training by two masters, and he could not be excused from the classes of either. In this way the Bauhaus preached in practice the common citizenship of all forms of creative work and their logical inter-dependence on one another in the modern world.

I have tried to show earlier that the function of education is to develop the mental, physical and sensual qualities of man. Man has survived through all stages of civilization because these three qualities have been alive simultaneously. In periods of great culture, Greek, for instance, there were great thinkers, great athletes, and great creators. This consistency with totality leads to the belief that to live means to participate totally. Gropius, as director of the Bauhaus, set these principles of the meaning of life again in motion through architecture, for he looked upon the architect as a co-ordinator, whose business was to unify the various formal, technical, social, and economic problems that arise in connection with

building.

If the profession of architecture is to supply from its ranks the type of intellect which can better co-ordinate the growing number of specialist skills, and direct their application towards the emergence of a higher order of living, then architectural education must develop a breadth of understanding and comprehension of the principles involved.

The participation of students in all forms of design is essential for their development, since what one learns in one field may be applied to others. The problems involved in the design and manufacture of furniture are very similar to the problems involved in building. The participation in water color and oil painting gives the participant a new or revised feeling for color, composition and texture. What I am implying is that a student who wishes to develop wholly cannot do so unless he understands that in order to develop he must not limit himself to specific design fields. Creativity means design. The merit of a person's creativity is dependent on the understanding and knowledge that the person has for design. This understanding and knowledge can have a greater depth if, through personal experience, the student participates in all the fields of design related to architecture.

One of the goals of architectural education should be the establishment in the student's mind of a set of clear principles, or a philosophy, which will enable him to understand and integrate the contributions which he will make with the expanding pattern of human existence. Such an overall philosophy has a profound effect on design. Similarly, design stimulates the formation of such a philosophy.

It is only through personal experience that a philosophy of design can develop and can be formed. Participation in all fields of design develops this philosophy to a greater extent than participation in only one field. The individual who totally participates has the chance of having his philosophy reformed and revised over and over again. This is necessary, for if an individual assumes that he has reached a comprehensive philosophy and takes no measures to change or be influenced, then his creative powers are sterile. Total participation in all fields of design is the only way that the creative potential in a student may be developed wholly. Total involvement in architecture means total involvement in all things related to architecture; in industrial design, in fabrics, in furniture, in sculpture, in painting, in ceramics and so on. Total involvement in architecture means total involvement in art and life itself for the two are connected so closely together.

To many in education, design exists, like pure research to the scientist, free of human use connotation. It may be possible to theorize that design can be an entity without human association. But architecture cannot be abstract because it is the application of all forces — social, psychological, and physical — needed to produce a man-made environment. Pure scientists reason that science can and must exist without other reason than itself. Architects must never consider themselves scientists for architecture is based on needs that are created by human existence.

For the architectural student this fact is important,

because it allows him the opportunity of forming a philosophy that includes all aspects. Students should be made aware that no true architecture can exist without the humanities and the sciences. And if the student is to realize this, he must learn through personal experience and contact. There is no meaning to learning how to solve a structural problem if its correlation to an architectural problem is not made clear. Similarly, sociology, psychology, philosophy, and physiology are meaningless unless they are related to the whole, architecture.

The comprehensiveness of the word architecture is to a large extent what Frederic Kiesler calls the "biotechnic quality" — the application to building technology of the needs of the people, psychologically, and physiologically. To the teacher, this breaks the old boundaries of eclecticism and adds service to design and construction. The unit of measure becomes the human being instead of the inch or the module. This once again is the idea of totality. The "grand plan" is the city and region as a human whole, designed as a compound environment. Each building within the compound environment and all open space between and around must be designed to a human unit of measure to provide the order, beauty and satisfaction which are true architecture.

The source of all true architecture is in the realm of the human and artistic, of the creative and emotional. Knowledge, technical skill in general, represent the means by which creative ideas and emotions can be expressed in terms of space, of mass and form. Only the building which expresses spiritual, emotional, and material motives alike can truly be representative of modern architecture. Therefore, the object of all our educational effort should be to awaken and bring out latent talents, and to deepen the insight into vital problems of art and life in general.

It is only when the student realizes that the experience that he needs to fully comprehend art and architecture is personal, that the full meaning of creativeness is apparent to him. This experience is to be found in all fields related to the arts and architecture. Provision should be made in all curriculums to provide this experience. Lectures should be given in human and architectural history, in sociology, climatology, psychology and physiology, in town planning and regional planning, and in forms of mathematics that could be applied to architecture. Practical instruction should be given in the basic mathematics and sciences, in structural design, in acoustics, lighting, color, heating, plastics and other materials, and in model making, methods of presentation and working drawings. Supervision and encouragement should be given in the practical

periods in the drafting room where all forms of design should be studied collectively, for the problems of creativity and the means by which a satisfactory solution is reached are identical in all cases since they are influenced by the same factors — man's sensual, intellectual and physical needs.

If the idea that nothing can be spoken of without relating it to the whole is true, it should be the basis of all education. But it should be the basis of something more — creativity. Not one particular individual could be expected to know from practical experience all details that lead to design. With the increasing developments of science this is becoming more apparent. The total achievement of a group of individuals who are trained in specific fields, but who are also aware of the correlation of their respective fields with the whole can be expected to be and will be of a higher order than the sum achievement of the same group of individuals working alone.

These, then, are the arguments set forth. Knowledge will come to life only by individual experience. The more an individual participates, the more he learns, and this learning can be applied from one field to another. Since creativity is a natural attribute of man, the development of the sensual aspect of man's nature is as important to total education as are the intellectual and physical aspects. We have lost the idea of the cultivation of the senses in our mechanized society.

Personal experience and self-taught knowledge are the means for realizing the natural limitations of our creative powers. Creativity dies when the process of education ceases. Therefore, the general standard of art appreciation can be raised through creative participation.

Education means the development of the total qualities of man. To live means to totally participate in all the fields of man's endeavor, the sensual, intellectual and physical aspects of man's nature. We can never speak about a single thing without relating it to the whole. Therefore, correlation, totality, is the only basis of education in an industrialized society.

A society which is encouraged to participate in creative activity will find for itself a greater appreciation of the arts and architecture.

A student who is encouraged to participate in all the fields of the arts will find for himself a greater understanding of design and architecture, and hence will be of greater value as an architect to that society which he will serve.

These are the ideals which should be the basis of all architectural and art education.

A shortened version of a fifth year thesis by Mr K. H. Foster at the School of Architecture, University of Toronto.

THE FREEDOM AND RESPONSIBILITY OF THE ARCHITECT

I AM DEEPLY SENSIBLE of the honour you do to me in allowing me to speak to you this evening. I am pleased to be able to do so for a number of reasons, not least amongst which is the fact that this is the first time I have ever talked to a body of architects in Canada – for when I left British Columbia in 1922 to study abroad, I was still an engineering post-graduate, and since I took up the practice of architecture in London in 1928, I have not had the opportunity to come home. My second reason for being pleased to address you this evening in this great city of Toronto, is that it is the chief centre of the province in which both my parents were born – on my mother's side, our forebears have been in Ontario since the days of the United Empire Loyalists, when they travelled across the border from Vermont. I hope therefore you will not – in spite of my lapses in pronunciation – receive me as a foreigner but as a countryman and friend. I hope, too, that as an architect speaking to architects, my remarks will not be considered too abstract, or unspecific: it has seemed to me that architects should quite often converse with each other about their duties – and I have selected as a title to my remarks the words, "The Freedom and Responsibility of the Architect."

THE ESSENTIAL INTENTION OF ARCHITECTURE

Let us first remind ourselves that the apprehension and appreciation of creative forms in architecture – an art which in its imitative forms continues to uphold obsolete social, moral and even technical principles – becomes a difficult affair to set out in words.

And let us begin by saying that the social characteristics of an age determine the characteristics of its art and that this is more so in architecture than in any other art. And by "characteristics" we mean the diversity of form over and above the sameness of essential intention. The true tradition of any art lies in its essential intention.

What is the essential intention in architecture? Reduced to its simplest elements it is the provision of ordered shelter, and an aspect of significance in the arrangement of buildings and the forms of nature in which they are placed. These buildings must cater for a multitude of human needs and activities.

In this sense, architecture has always been the most direct, the most complete, expression of the culture of an age: the least personal, and the most objective, of the arts. We may thus outline the nature of a society, its phase or stage of culture, by direct observation and analysis of its architecture, and, nowadays, we must also say, its town and country planning.

But let us return now to the nature of the architect's own problem in assessing his responsibility to society. Firstly, we must mention the whole complex of human

impulses and attitudes – the needs, expectations satisfactions, surprisals and disappointments – which are the first of the architect's raw materials.

Every change in human conditions brings with it possibilities of new relationships between human needs, and the necessity arises to order them anew – to give them form, freedom and fullness – the richness of life.

But more often than not, we find that the past is not all behind us: too often it is right there in front, blocking the way to the kind of future we can picture but not yet achieve. And blocking the way, moreover, in the most alarmingly durable materials of construction.

Our inheritance of culture, and the majority of architectural forms in which it is contained, has not, perhaps, been discounted by death duties commensurate with the real deadness of the encumbrances passed on to us.

The effects, the functions, and the qualities of the old architectures can be imagined, experienced, remembered or reconstructed in our minds. To respond to the old forms and materials, and to perceive their true intent in their own age, is to begin to understand the essential intention of the New Architecture of today.

To know the difference in value between a merely surprising trick and a noble invention, to know what subtle combinations and resolutions of human impulses make up the select values of an enclosed and habitable space, to know what are the ingredients in the making of that particular quality of residual repose which fine buildings alone can possess – this is to hold the essential intention of tradition in architecture.

As Paul Valery said in his book, "Eupalinos, or the Architect":

"What is important for me above all else is to obtain from that which is going to be, that it should, with all the vigour of its newness satisfy the reasonable requirements of that which has been."

How free is the architect today, in the carrying out of his essential intentions, and where does his responsibility take him?

THE FREEDOM OF THE ARCHITECT

Firstly, I think the architect must contrive to be quite free within himself. The "Black Box" within his cranium must have a specially sensitive system of selectors and predictors which enable him to discern significance where others see only disorder, and to allow him to be free to accept the ideas that come to him, and to interpret these into forms which will serve life.

In the routine practice of his art, like the conductor of an orchestra, the architect must first be free to select his instruments and his executants. He should, preferably, be practised in the art of a number of these instruments,

and certainly must know how all of them should be played. He must ensure that the whole orchestra, including the soloists (the specialists), is playing in tune, and, moreover, playing the same tune.

And, as he is also the composer of the music to be played, in him is vested the freedom to identify, to differentiate, and to eliminate. Throughout the rehearsals he will be creating, together with the whole orchestra, the composition which will finally be performed.

Now this is all very well, you may be saying — but what about the programme, the requirements, the financial backing; indeed, what about the client?

What I have been trying to outline is a kind of yardstick with which we may measure the whole performance of architecture, which includes the client — the customer who pays for, and must use, the acts of this performance — and I see no reason why the highest standards of calibration should not be employed and set forth in these matters.

It is, indeed, at this stage in the development of our thesis, that the first obstructions to freedom, but also the real responsibilities of the architect, are encountered.

THE ARCHITECT AS CLIENT

Clients may be divided into a number of categories. Firstly, the ideal client, the architect himself, from whose imaginative and fertile brain have sprung much of the truly inventive architecture of the world. Many of the revolutionary movements in architecture — structurally, there have been indeed very few in our history — have derived from such an architect as Le Corbusier in our own day. He will have influenced 10,000 times the number of clients he might have had, through the conveyance to other architects of a whole world of forms, and of liberations from the pretences of other days and ways of building. An architect in this fortunate position may perhaps permit himself to say that a building is never finished till it has been torn down, or torn up, to make way for a better one.

The architect, if he is to be more than a practitioner or master-builder, will not accept the world as it is, and yet he will not deny its existence and live like a hermit, nor will he deny his primal responsibilities as an artist, to the social structure of which he is a part. He may, perhaps, have learned with Confucius that “there are only the wise of the highest class, and the stupid of the lowest, who cannot be changed,” and fortified with this cheerful thought, he will enter the world of action, neither accepting nor denying its structure, and sooner or later he will meet a client.

THE PRIVATE CLIENT

If he is lucky, or lives in certain countries, he may meet a client of the old pattern, the patron of the arts, whose magic wand and illimitable purse, allows the grandest, or the wildest of conceptions to be realized.

Much of the best, and most of the really pretentious architecture in the world has resulted from such a conjunction of architect and patron, in which freedom to realize forms is coupled either with a complete assumption of responsibility to his fellow men in society, or without boundaries or limits of any kind, when his freedom has expanded into expensive and irrelevant irresponsibility.

But the architect is more likely to meet a client of quite a different sort: the man of perception, taste and talent who is possessed of a purse totally inadequate for his purpose. These are the sorry design-situations. Freedom to express is in being, but cannot be manifested, and the responsibility for the absence of realization can never be pinned down.

And again, he may meet a person whose precise purposes match the contents of his privy purse. The architect will be handed, in diagrammatic form, the total requirements for a building — it is only necessary for him to fill in the sordid building details. He becomes the building servant, he is expected to have no freedom, and little responsibility. Such people I call “designing clients” — they require careful handling.

The process whereby the operational requirements of private clients may be transformed into real structures and significant forms, allow of every kind of variation, of every interplay between the parties, of their respective freedoms and responsibilities.

Architects will agree that the most difficult of tasks is the equating of his client's purposes not only to his purse, but also to his own conception of architecture, his responsibilities to his own ideas about the essential intentions of architecture towards society as a whole.

If *a*, his client's purpose, does not equate to *b*, his purse, there are only two solutions: decrease *a*, or increase *b*.

But if the purpose is not in alignment with his sense of responsibility, the architect is presented with an equation which is not immediately soluble. He may even be forced to decline the commission. Such a decision, especially for the young architect making his way, presents many difficulties, not the least of which is economic. His feeling of responsibility denies him the freedom to create; his freedom of choice determines that he shall not take on an impossible responsibility.

THE PUBLIC CLIENT

In the next category of client we may mention the group of persons, the executives of an industry, the building committee of a vast authority: whose interests lie in the launching of a financial operation rather than the placing of an architectural commission in the broad sense.

In such situations, very great powers are wielded for good or for evil, architecturally speaking, and the architect's freedom may be whittled down by an attendant group of specialists and ‘know-how’ men employed by the group-client, to whom he is expected to be a ‘yes-man’.

Thus, a part of the architect's responsibility devolves upon the shoulders of a vast, impersonal, calculating machine-like entity. Architecture gives way to mere building, to the spending of millions in order that more millions shall be produced from the fabric of steel, concrete, wood, stone and glass. Relationship, responsibility to other buildings and to society, or to the comfort and happiness of the people who will work or live in these structures, is not on the agenda at all. And, unfortunately, there are always practitioners in architecture and in building who will, irresponsibly, provide what men ignorantly and wrongly and anti-socially desire for their own personal ends — or what they think will be good, or good enough, for others.

But I imagine a new light is beginning to shine, even amongst these vast constellations of big industry: it is beginning to be understood that the provision of amenity—to use a much abused current word—for all the people, is itself a long-term financial operation. Formal beauty, significance—in fact architecture—can pay big dividends. We are at the gates of a new road towards responsibility for architecture.

Especially in the new and undeveloped territories of the world it is beginning to be realized that mere encampments suitably adjacent to the huge plant—the so-called ‘company-town’—are not adequate to retain the interest, to preserve the spirit and thus the employment, of the people in that place.

Nor is it enough, they have discovered, to provide amusements, arrangements for pastimes and sports of all kinds. The natural beauty of the countryside and the landscape must be retained and enhanced in value by the moulding into it of an organic and integrated arrangement of buildings. Man’s appointed place for work and for living must be made manifest: his natural instinct to found a family and to settle down must be invited, and richly fulfilled.

At the next stage of our saga of clients, the tendency for governments to step in and to make laws demanding the provision of ‘amenities’ for a free and full life, is revealed. The essential intentions of architecture are clearly discernible here: the conditions wherein architects may be allowed to achieve freedom within a framework, a skeletal structure, of governmental responsibility are everywhere beginning to be announced.

THE SOCIAL RESPONSIBILITY OF THE ARCHITECT

And so we come to the next stage in our thesis—the architect’s responsibility in the contemporary scene expands from an interpretation of the necessities of what I term the “select value of a personal environment” for a private client, to the social requirements of the day and age.

These requirements outreach the building of single structures in the disordered and tortured muddle of contemporary city streets which so many of us have had to be content to build. Those tiny precedents, or previews, for the architecture that we know can only be realized in larger formations and sectors.

So we move from ‘postage-stamp’ architecture, located upon choice nodal points of the city map, to a collection of pictures of streets and squares, of parks and parkways, of centres or ‘cores’ for community life. We move on to the conception of a new town.

The ingredients or elements must be disposed: places for work, and for living, the areas designed for the cultivation of the mind and body—all of these linked with systems of communication which command vehicles to be orderly instead of irresponsible; systems which ensure the re-establishment upon his proper throne, of the Pedestrian (*le royauté des piétons*, as Corbusier puts it). Given such responsibilities, the architect-planner will not misuse his new freedom.

The tradition of architecture is to seek the order that leads to freedom and fullness of life. Architecture has to serve the purposes of the people, as well as the purposes

of beauty: thus will it “serve life.”

So in the new society which is evolving today, the architect finds himself in the most arduous, the most responsible of positions. Human possibilities have altered more in the past one hundred years than they had in the previous ten thousand. But customs change more slowly than conditions. To assume the survival of a dying society in order to bring once more to life what Lethaby called a “pretence to beauty at second-hand” is to urge the continuance of a stupid and meaningless torture.

The architect’s experience shows that most people accept an existing pattern or framework in which to live without assuming too many responsibilities. They do not want revolution, or even evolution, but, at the same time, we find that if a new pattern is presented to them for inspection—a new and articulate pattern—the people naturally accept and begin to desire order and significance, and a new freedom in the stage settings for their lives, whether at work, at home, or at play.

The common run of people lack the opportunity and the creative capacity to make for themselves, as they did in less complex, less specialized ages, the forms which serve life.

If the responsibilities of the contemporary architect to his final clients—society as a whole—are to be fully shouldered, essential changes must be made in the form and composition of his orchestra.

Mere taste, fashion, or precept cannot rule in this new domain. The sociologist, the economist, the psychologist and the biologist—all the new specialists in humanist advance through greater knowledge, through the making of new tools and instruments to access and predict what people really need or want—all these must somehow be brought into the general playing area—the orchestra—of architecture, and assist in making the new compositions for which society unconsciously waits.

Advances in techniques of construction of an entirely new order—including the advancement of industrialized building techniques—must, on a national scale, be brought into play: the bigger the orchestra, the bigger the drums needed to keep time: so that the performance may equal the principle, and the realization match the new relationships between man and man, between man and his environment, his society.

CONCLUSION

If at any time in the history of mankind, all persons of high regard and intelligence had been bound to work together, the result would doubtless have been a prodigy of power. We must remember, however, as Sir Norman Angell puts it “the world has suffered as much from the errors of the good, as from the crimes of the wicked.” I believe that in such groupings as I have indicated, between the new scientists of human advancement and the artists of architecture, a new and collective responsibility may arise, which will create the conditions for an architecture worthy of the mighty powers our society has at hand to wield.

The wise of the highest class cannot be changed: maybe they need not be: they need only to consent to work together, to plough a common furrow through the fields of

(continued on page 159)

THE ARCHITECT AND RESIDENTIAL ZONING

SUFFICE TO SAY, human behaviour thus far makes zoning a socially desirable legal control. But, its universal application in placing restrictions on design of housing, makes it imperative that, residential zoning ordinances are based on proper conception and evaluation of design, *of what and how it controls*.

Considering the circumstances of evolution, most zoning ordinances are a reasonable and fair attempt to deal with a perplexing problem. But, the inadequacies of prevailing practices are becoming increasingly apparent and the following drawbacks are typical of most ordinances.

1. The side yard requirement is usually imposed for reasons of fire protection; provision of light and air for the rooms facing the sides of the lots. With the predominant lots of 40 and 50 foot widths, a 10 per cent or more clearance requirement, which leaves 32 and 40 feet or less respectively, certain drawbacks are manifest. Most architects, who have occasion to design houses for these lots are probably familiar with the use of the following to retain a workable plan; a narrower hallway, a shallower closet, narrower doors, sliding doors or no door at all, shortened kitchen counters, and so on. The alternative of shaving a few inches off the dimension of a room just eliminated any rearrangement of its furnishings or the use of a particularly cherished piece of furniture, which in effect destroys the house as a home.

For a two room depth house, there is no need for any excessive side yards to provide light or air. For fire protection reasons, modern methods of fire fighting, less hazardous heating and cooking facilities, use of rated fire resistant building materials and so on should be considered if any finite set back is required.

2. The front yard set back, intended as a minimum usually, more often than not has become a maximum, resulting in the monotonous alignment of building fronts, street after street. The small scale speculative builder conforms to this "maximum" because any extra set back means increased cost in providing utilities, sidewalk and driveway paving, grading and topsoil. Front yard set backs could be made variable by making them a function of the building height, width or some other basis. A possible integration of zoning and subdivision controls may help to relieve this situation. Though a strict requirement that a variation in front yards based on aesthetic grounds is not possible, it is a fact that much weight is given in assessing the "character" of a residential area on such criteria as atmosphere, monotonous or otherwise. In this sense, a repetitious front yard set back helps to establish the "character" of a residential area, desirable or otherwise.

3. Back yard requirements are not too prevalent but where they occur with excessive set backs, drawbacks are evident. When the lot fronts south, and 50 per cent can in a grid-pattern subdivision, an excessive back yard requirement prevents the exploitation of southern exposure, with adequate outdoor living space. Much of the "livability" quality of the integrated indoor-outdoor living space is thus negated. Any back yard requirement could be treated similarly to that of the side yard.

4. Lot areas, building coverage and building bulk regulations are grouped together for this analysis. The basis of these minimum and maximum requirements are to control density and also to assure enough open area to provide necessary yards and a suitable lot arrangement. There seems to be no reasonable objection except when ordinances definitely state exact dimensions for the height, width and depth to control building bulk and coverage. Obviously, unless these dimensions are wholly adequate, limitations are imposed on the design of the house.

5. The ordinance stating maximum floor area requirement and minimum cost of house present two major categorical drawbacks. The first is "designing" at another level but it is very intimately related to physical design. The "qualitative character" of a residential area, which the ordinance attempts to establish through means of minimums becomes a means towards economic and social segregation. This is a prerogative of the individual but is not, I understand a socially desirable feature. The relationship of the second drawback is clear. To be able to "afford" the floor space, to live in that area, many potential and deserving home owners are forced to forego other amenities and even necessities. Some of these are outside of the "home" but many are distinctive features of the house that help to make a more livable home. Such items are a fire place, built-in fixtures, garage accommodations, a garbage disposal unit, better finishing or glazing, insulation and so on. The minimum 1,200 square feet does not necessarily mean a healthier, safer, more convenient etc. home than a 1,100 square foot home. Obviously there is a minimum beyond which this argument is no longer valid but it is a fact that the substitution of any one of the items mentioned or any one of countless items for the extra 100 square feet, at this level, in terms of the livability of the house may make all the difference in the world. The "alternative" suggested is much more in line with the basic premise of zoning, the protection of health, safety, morals, convenience, and general welfare, than the requirement of any minimum floor area or cost of house.

6. The last regulation under discussion, is that concern-

ing "use" in the residential district, which segregates dwelling types into, one, two, three or more family units. This is to control density, to establish the types of residential character, single-family, apartment, etc. and to maintain values in accordance with these characteristics. Where residential areas are developed on a comprehensive scale, zoning ordinances usually waive the usual requirements and the designer is allowed to mix "uses" so long as he abides by the overall density requirements. It is comparatively simple to maintain the integrity and character of any group of dwelling types in these cases. Where development takes place in other ways, this is not probable unless rigidly controlled. On the other hand, the controls must be flexible as insistence on a particular type, say the single-family unit type does prohibit or at least discourage the carrying out of some basic tenets of family and social intercourse. For example, much is made of the problem of housing facilities for the elderly and the cyclical expanding and contracting phenomenon of the family size during its life span. A floor space requirement discussed before, prohibits such "luxury" as raising one's family in that district by the very desired type of people who cannot initially afford or want a large house at the beginning. It should be possible to build units to accommodate this cyclical change in family space requirements or to allow the young couple to help finance their home by being able to build a "divided" house, renting space as not needed to other young couples or to the elderly, before and after their family raising period. Residential zoning properly conceived can help to reduce the size of this ever increasing and perplexing problem of the elderly, of the couple who should have the advantages and benefits of the better residential districts, the couple without children and others who are now restricted from areas in which they wish to live. Zoning and subdivision regulations might be integrated to facilitate evolving a just and easily administered regulation.

Though a more sensitive and comprehensive analysis would uncover countless other drawbacks and considerations, the foregoing should suffice to show that what we seek is the *proper performance* of the residence and residential areas through zoning.

The up-to-date building code is a good example of the use of performance standards. The simple live load specification permits the designer to *evolve his own spans and other spatial dimensions* from the choice of a variety of structural materials, the *only condition* being that his design *performs* the function of carrying the specified load. The recent proposals for the rezoning of New York¹ follows this type of reasoning. Based on actual light measurements and requirements a system using "light angles" is evolved, instead of any finite set backs for skyscraper forms. This method permits the architect to evolve his own building form with greater freedom, so long as the shape of the building will perform according to the provisions of light requirements. A direct application of this principle is proposed for the side yard requirements in the residential zones.

The task for the architect is to help reduce as many phases of housing design to performance standards with the minimum resort to actual spatial dimensions. This is no

easy task. The use of alternatives has been suggested, that is, the substitution of a piece of household equipment or built-in feature for extra space is an example. The "units" of measurement must be applicable universally yet be sensitive enough to permit maximum flexibility.

The complexity of the problem presents many avenues of approach yet the expediency of the moment, suggests that a systematic analysis of real cases of designs attempted under these regulations is perhaps the best. To accomplish this task realistically and to achieve a "relatively" quick relief at the same time, the following is proposed. The responsibility of the analyses will be divided into two parts, involving the architect first, as a lone practitioner and second, as a member of a panel. The responsibility of the architect will be as follows:

1. Each architect would become familiar with the zoning ordinance in his own particular area.
2. Then when he is called upon to design houses under these regulations, he is to note which ordinance and how it affects his design, and list the alternatives used.
3. Finally, he would suggest a revision of the ordinance on the *basis of what he thinks are performance standards* which would avoid the conflict while preserving the original intent of the regulation.

The panel of architects, local, provincial, federal or any combination, will then tabulate the information in the following manner:

1. The type of ordinance in question.
2. The type of restriction on design.
3. The alternative used or how he got around it.
4. The suggested revision of the architect.
5. And most important, what the individual architect thinks are elements of design that measure performance.

Following further analyses as to:

1. The frequency of:
 - a. ordinance in question
 - b. alternative used,
 2. The similarity of:
 - a. restrictions imposed on the design
 - b. alternative or type of compromise used
 - c. concept of performance standard suggested,
- and so on the committee should then draft a "master" revision. This would then be circulated to architects, planners, city engineers, administrators, zoning boards of appeal, planning commission, etc. (and the National Research Council). If found "valid" the revision could then be incorporated into their respective zoning ordinances. In the meantime, the responsibility of the panel would be to continue analyses, and synthesize those "architectural" design elements that can be used to measure performance. These would be tentative only.

Participating architects will become aware of other considerations. Lot size and shapes, street design and patterns, orientation, utilities and service, aspects of site planning which are within the aegis of subdivision regulations will appear to have or be the cause of drawbacks related to those of zoning. In short, an appreciation of site planning problems will result with a very enlightening impact. In turn, site planning, outside of the competence of most architects and justifiably so, needs architectural enlightenment. But, before concrete suggestions can be made

to integrate subdivision and zoning controls, other tangential problems, such as the complex business of developing and marketing entire residential areas or portions thereof must be analyzed in a similar manner.

As the field of examination broadens to include socio-economic influences, one will return again to the basic problem of the "home unit." The concept of the home, its function as a setting for the activities of the resident family, its part in the larger sphere of community activities and so on must be examined to help filter out those "elements of performance" but in this area and level of operation, the architect can no longer work alone as suggested in the initial stages. The minds of the sociologist, the economist, the psychologist, the engineer, the builder, the administrators, the people themselves and others are required for the proper analyses of the problem at this level. I have suggested that the architect start the ball rolling but if he is to participate further, he must now develop an "architectural jargon" commensurate with the other disciplines, so that they may appreciate the limitations and possibilities of the architectural approach. Similarly the architect must become familiar with the terms and values of the others. For instance, the correct solution for a previously discussed problem, that of mixing "uses," one, two and three or more family dwelling units, must be solved with this coordination and respective understanding of each discipline. The architect alone is not competent to suggest a revision of this type of ordinance, purely on "design" considerations as might be possible in lesser issues.

Through such cooperation and coordination, we must then modify, expand and refine our tentative "architectural" design standards. A zoning ordinance based on performance standards will then eliminate the drawbacks discussed, *but more important*, other present and future trends in housing will demand that zoning be positive and flexible in order to justify its concept as a means of planning implementation.

Mass-housing, though nothing new, is beginning to provide more and more of the housing units. Zoning need not concern itself too greatly with the first type of this trend, already very evident, the large-scale speculator builder, who with a limited pre-fab process builds his houses *in situ* when he retains and benefits from the services of a "competent" designer. But, another form of mass-housing, the complete pre-fabricated house presents its own peculiar problems. Basically there are two forms of standardization used. In the first case, the standardization is carried to the extent that the entire house is of a standard size, plan and form. The second standardizes only units or sections of the house to permit many variations as to the size, plan and form of the house. The first case, that of the completely standardized house, without the benefit

of the site planner, presents a problem. The possibility arises that a variety of types and sizes is not available at any one area by the very nature of the product. Its bulk and possible distribution of producers, due to economic, technical or market conditions, may make it impractical to have this variety at any one area. If only to assure that the monotony of the standardized unit will not be further accentuated by endless repetition, zoning should consider some measures to help the "uneducated" site planner, the small-scale speculator and the layman, in making an "aesthetic" decision, if you will. This is no small problem and yet if these units are to be distributed, bought and placed singly to any large degree in one residential district, it is not hard to imagine the probable "character" of this area, to the detriment of both the home owner and the community. Aesthetics does have an economic value.

Another trend in "homes" is the increasing use of trailers. It is estimated that there are over 500,000² permanent trailer homes, housing some 1,500,000 persons in the United States. However temporary this may be, these "residents" should be entitled to the benefits of any good residential area. Though the present number of "mobile homes" is largely due to the war emergency and actually affect only a few select "defense" areas, there is no assurance that a large number of these "homes" will not remain. We are concerned now with the tremendous increase in the mobility of the people,³ and it is not impossible that we will be confronted with the problem of the "mobile homes" on a still larger scale.

It is probable that in the future, for that matter today, we wish to assimilate, public housing, veterans' housing, defense housing, even trailer homes and other possible "communal" housing into the fabric of the community on all levels. To socially, and economically integrate these into a homogeneous residential pattern will make its demand on zoning. To facilitate slum clearance and rehabilitation, temporary housing is needed for the "evicted" tenants. Only a proper zoning technique, based on performance standards will facilitate the fulfilling of such humane desires democratically.

¹ Harrison, Ballard and Allen, *Plan for Rezoning of New York*. Also see *The Redevelopment of Central Areas*, Ministry of Town and Country Planning, His Majesty's Stationer. Also, a paper by Dennis O'Harrow, *Performance Standards in Industrial Zoning* read at the 1951 ASPO Conference in Pittsburgh.

²*Boston Globe*, 10 November, 1951.

³The previous discussion on floor area and use restrictions shows that zoning restrictions does contribute to this problem of the increased mobility of the people. The family is forced to move around to find suitable accommodations at every stage of family cycle.

NEWS FROM THE INSTITUTE

ALBERTA

The RAIC has a carefully prepared code for the conduct of architectural competitions which was agreed to by the component associations in November, 1940. It is evident from this document that the subject of such competitions is one that is not heartily endorsed by the profession. Indeed, the first clause intimates that the Institute is not to be understood as recommending the holding of competitions as a usual means of the selection of architects, but admits that competitions are appropriate in cases of important buildings and of those of a novel or special character, but not for those of a private nature or for commercial purposes.

It has been claimed, in favour of competitions, that they may reveal talent in an aspiring architect who may have no other means of displaying his ability to the public; but it has been equally strongly represented that the winner of a competition may be just such an aspirant whose sole ability is in producing a striking design, but whose practical experience is totally insufficient to ensure his ability to carry out satisfactorily a large, novel and ambitious scheme.

Although competitions will probably continue to be held for important works from time to time, it is probably true to say that there has never been so great a run of important competitions as took place, principally in the U.S.A., from about 1906 to 1913. During these years competitions were held for state capitols, city halls, post office buildings, great libraries, public administrative buildings and other works of first rate magnitude or cost. Almost all of these were designed on "Beaux Arts" lines and a number of well known firms appeared fairly regularly as protagonists, sometimes coming in as winners, sometimes as "also rans". Amongst the firms prominent in these races were McKim, Meade & White, Carrere & Hastings, Palmer & Horbostel, Van Buren Magonigle, Cass Gilbert, Paul Cret, Donn Barber, Jas. Gamble Rogers, Horace Trumbauer and others. The style of the buildings was always massive and monumental.

Canada shared in this competitive phase. Frank W. Simon of Liverpool won the Manitoba Legislative Buildings, Winnipeg, in a competition open to architects in the British Empire in 1912. This competition was assessed by Leonard Stokes of London, England. In 1908, the firm of E. & W. S. Maxwell of Montreal won the competition for the Parliament Buildings for Saskatchewan at Regina, assessed by Bertram Goodhue of New York and P. E. Nobbs of Montreal.

There is a radical difference between the RAIC code and that of the RIBA and probably all older codes. The RAIC code calls for a professional 'adviser' and also for a Board of Assessors of which at least half of the members shall be architects of high standing. The principal duty

of the adviser is to manage the general conduct of the competition and to place the issue clearly before the Board of Assessors for whom he acts as chairman with or without a vote. The decisions are made by vote of the board. The RIBA code, on the other hand, provides only for an assessor (or several assessors), architects of high standing, who handle the whole conduct of the competition and give their personal judgment on the merits of the designs submitted. This judgment is final so far as awards to competitors are concerned.

It is evident that, in preparing their code, the RAIC deliberately rejected the method of the RIBA code. They had, no doubt, some sound reasons for this. It may, however, be a matter worth considering whether, in minor competitions, the RIBA code furnishes a simpler and less expensive pattern.

Cecil S. Burgess

MANITOBA

An interesting activities program is building up for the 1952 season, through the joint efforts and co-operation of the School of Architecture, University of Manitoba and the Manitoba Association of Architects.

Special features of the program started off with a series of lectures and discussions conducted by Konrad Wachsmann, Director of Advanced Building Research, Institute of Design, Illinois Institute of Technology. In dealing with "The Meaning of Advanced Building Research," Mr. Wachsmann stressed the essential components of the continuing process of research. In discussing "Industrialization of Structure," he carried the audience through the stages of development of prefabricated building units, such as metal wall panels and new forms of skeletal framing, to their application in actual building with resultant economies for the time and cost factors of construction.

The Annual Dinner of the Manitoba Association proved to be a notable event and was well attended by members, guests and associates. The retiring President, G. Leslie Russell, presided at this occasion and introduced the guest speaker, Mr. Wachsmann. His discourse was on "Utopia and Reality," — the relationships of theory and realization, illustrated by remarkable examples of wide-span structures resting on a minimum number of supports.

Two exhibitions, arranged by the School of Architecture to run concurrently, were officially opened by Mr. Wachsmann at the Winnipeg Art Gallery. The "Metals in Design" exhibition emphasized the nature and use of metals through selected examples of lighting fixtures, steel and wire sculpture and jewellery, and articles for everyday use from Swedish, Canadian, and American sources. The larger exhibition, "Brazil Builds" occupied the Long Gallery for its first showing in Canada. Much interest was shown in the 150 huge photographic enlargements, tracing

the development of Brazilian architecture from the 17th century to the present time, when Brazil is said to have the lead in the western hemisphere by its discriminating and active encouragement of contemporary architecture.

In addition to these events, a social get-acquainted evening was staged in connection with a specially arranged showing of the "Massey Medals in Architecture" exhibit. President John A. Russell acted as host. Entertainment and refreshments were provided by the Students' Architectural Society. A color-sound film on "The Construction of the United Nations Building" rounded out the evening and attendance soared above the 250 mark. Many favorable comments and suggestions have been received and are being taken into account in planning programs for the future.

H. A. Elarth

ONTARIO

This province, and more particularly the City of Toronto, recently enjoyed a visit from Mr A. Graham Henderson, President of the RIBA, and Mrs Henderson, and the Secretary, Mr. Spragg.

By the time of publication these distinguished visitors will have met a good number of the members of our Institute; it is hoped that they will retain memories of pleasant experiences and new-made friends.

Guests from overseas are usually impressed with the volume of work in the hands of private practice here as opposed to the dearth of commissions in Great Britain. It may be expected that, when the President returns to report to his members, he will remark upon our prosperity; such a report might easily have the effect of stepping up emigration of British architects and draughtsmen.

Mr Henderson will not have had an opportunity to see that, although we are in the midst of the greatest building boom in our history, employment for qualified personnel is becoming increasingly scarce.

Fifty per cent of this year's graduates of the School of Architecture of the University of Toronto have not yet any prospect of employment in architects' offices. A large number of licensed architects from all parts of Europe are unable to find positions. Since legislation prohibits both of these groups from practising on their own until office experience is obtained, difficulties will result in their departure from the profession either temporarily or for life.

The writer suggests that one or all of three factors are contributing to this state of affairs: (a) Applicants lack sufficient office experience to accept responsibility or are not trained in Canadian methods. (b) Architectural commissions, particularly defence projects, are being designed in a few large offices or by Federal Departments and are not being distributed to private practice. (c) Too large a percentage of design for building construction is not carried out by registered architects or their staffs.

It appears that this situation is Federal in scope and that it can have an undermining effect on the profession, eventually leading to corruption. Here, therefore, is a challenge to the committees of the Institute on all levels. We hope that employment for qualified personnel is given a first priority on the agenda for 1952-1953.

Norman H. McMurrich

LETTERS TO THE EDITOR

Sir:

The RAIC is to be congratulated on the appointment of a permanent Secretary, drawn from the ranks of the Institute. I believe we can now look forward to more active things for the Institute. It is to be hoped that, among the many and varied duties of our Secretary, the opportunity will be afforded him of regularly meeting with architects of the various member associations across the country. There is inclined to be a lack of national unity and endeavor among the architects of thinly populated Canada, and much of this shortcoming can be eliminated through the Secretary becoming acquainted with the membership. This, I believe, is one of the more important of his varied tasks and so in passing I want to wish him every success at his new job.

However, to salute the Secretary is not my purpose for writing; rather I feel it increasingly necessary to offer some comments concerning the *Journal*, which is by some strange virtue the only publication devoted to Canadian architects and architecture on a national scale. Because of this unique position the *Journal* must serve a twofold purpose. In the first place it must perform certain duties as the official organ of the RAIC and, in the second place, because no other publisher has taken the opportunity, it must illustrate for Canada and the world contemporary work of Canadian architecture. Permit me to discuss each of these functions separately.

As the official organ of the Institute the *Journal* is, in part, charged with the responsibility of creating and maintaining a national viewpoint among Canadian architects, for it is virtually the only regular tie that all Canadian architects have with the national scene. It must communicate the news and activities of the Institute and its components and it must publish the views and thoughts of individual members. As a reporter and recorder in these respects I believe the *Journal* is doing its job. The fact that Institute news and readers' reports have dwindled to a point that they sometimes have trouble filling a page points up a woeful antipathy within the Institute. I believe, however, that the *Journal* has a responsibility and a conscience to do whatever it can to again put some vigour in the national life of the Institute so that readers may realize what there is of interest happening across the country.

I believe also that the responsibility rests with the *Journal* to provide Canadian architects with news and information of general interest to the profession. At present we must obtain our news about government policies and about the activities of the construction industry from a column in an American publication, or from other magazines in the Canadian construction field. Neither is satisfactory to the Canadian architect. I, therefore, charge the *Journal* with a new responsibility in this respect. If such a news page could be carried out much greater interest would be due the *Journal*.

I would also like to venture a few thoughts about the *Journal* and its second function: that of illustrating contemporary Canadian architecture. This is a duty of which the *Journal* finds itself ill adapted, for at best it does no more than illustrate a cross section of Canadian work. It

is not in a position to be critical or seemingly to offer comment of any sort. The truth is that the *Journal* cannot lead Canadian architecture, it can only follow and this is not a meritorious position when Canadian architecture is as dull as any in the new world. The fact is that the most successful issues of the *Journal* have been those devoted to the architecture of another country or to the activities of one or other of the allied arts in Canada. When the *Journal* deals with these subjects it can readily be more positive and objective. Surely there must be some possibility of giving Canadian architecture the same consideration. The *Journal* can, I think, be more selective in its choices, even if fewer buildings have to be published, and these in greater detail, with some analysis of the problem and its solution.

I trust that these comments and criticisms will be viewed in a favorable light. I have been a constant reader of the *Journal* for eight years and it is chiefly an interest in the *Journal* and the Institute which prompts me to offer them. Perhaps the *Journal* will hear also from other members who feel some changes are desirable. There is no doubt in my mind that, if the *Journal* is to fulfil its tall purpose, further editorial assistance is necessary and I can see no reason why this development is not possible.

Ian M. Brown

Sir:

Mr Ian M. Brown's hopes for greater unity within the profession through personal contact with the RAIC Secretary are being fulfilled. The Secretary has had an opportunity to stop at many points to meet members who were unable to attend the convention in B.C.

The Editorial Board shares concern with Mr Brown over the apparent "antipathy" of our readers. The *Journal* is forced to depend on the willingness of the members of the component societies to co-operate with the local Editorial Board members in supplying Provincial Letters and other material for publication. With some notable exceptions, the Editorial Board has experienced great difficulty in obtaining this co-operation. The Board has given serious consideration to a suggestion that a half column of blank paper follow the heading of a delinquent provincial body in the hope that copy would be forthcoming for future issues.

The *Journal* has never attempted to enter the news field in publishing Government policy statements or rulings, and has no quarrel with any other Canadian or American Publication including such information in its columns. The *Journal* is "put to bed" too far in advance of the issue date for such information to be of value to the profession generally. The ruling might be changed two or three times in the interim.

The Editorial Board cannot assume the role of official architectural critic for the profession. Such a course of action might well lead to either strained relations with the designers of the criticized work or the formation of a mutual admiration society. An American publication, on occasion, has made use of the "Round Robin Critique" whereby a number of architects submit full details of a job, each writes a criticism of the work submitted by the others and then replies to the collective criticism of his own work.

Such a scheme might serve a useful purpose if adapted by the *Journal*.

In recent years, there has been a steady increase in the quantity and quality of the text, illustrations and advertising. Issues are planned months in advance of publication and every effort is made to include the best work available. With the wholehearted co-operation of the architects concerned, the *Journal* has been able to give extensive coverage to important Canadian buildings.

The varied design requirements of the several Canadian regions prohibit the development of a Canadian style of architecture which would be suitable equally in Victoria, North Bay or Brandon. If the *Journal* publishes a representative cross section of the best work in all areas, it serves the profession well. It is impossible to satisfy all design tastes even though the Editorial Board includes among its active members some reactionary types who still cling to Georgian — and even Gothic!

A. G. Keith

Sir:

For some time many of us have been wondering where the blame rests for the lack of progress in Canadian architecture. This, to some, is of little concern while to others it is answered glibly that "of course, one can only go so far, as the public are either uneducated or unimaginative."

But how true is this? Perhaps it is only a convenient excuse for some of us to rest on the oars and get by with mediocre solutions.

One of the most striking characteristics of a good deal of our Canadian architecture is its singular lack of creative imagination. Unfortunately, too many of us seem to be carried away with commercialism which may put a Cadillac in some of our garages, but doesn't do a great deal to promote any widespread admiration for our national efforts in the field of architecture.

Many of our buildings have the stereotyped, mass produced look which is expected in electric toasters but not in architecture. Until we realize that a combination of clichés and technical gadgets do not produce good design we will remain in our present architectural limbo. Only when creative imagination is utilized in our solutions will we produce worthwhile work.

It is not always the public that is at fault. Clients do exist who are sympathetic and even highly enthusiastic to follow through an individual solution to their problem. These people, whose number are growing every year, have not had to be brow-beaten into submission. On the contrary, they are highly receptive, and inordinately proud of their buildings. We cannot help feeling this is not a situation unique to any particular part of Canada. If all architects would take the time to consider seriously the problem at hand, to analyse it, to explain their ideas to the client, there would be many more fine buildings than exist at present.

On the west coast there has been considerable enlightenment in the past few years. Architects here, particularly the younger men, are trying and we can take justifiable pride in some of the work both in Vancouver and Victoria. However, this effort could be more intensified and much more popularly practised.

Particularly to blame for our architectural lag is a surprising lack of interest among architects in Canada in the other and allied arts. It is pretty well universally accepted that all arts are interwoven and dependent each on the other. And yet, what a shocking ignorance and worse than ignorance — lethargic disinterest — is common among most of us. If all licensed men in Canada were called upon to name spontaneously ten contemporary composers, ten contemporary sculptors, ten contemporary artists and so on, not many of us could.

If an architect is going to do creative work and make steady progress, it is essential that he keep up with contemporary progress in all fields of creative work.

Bruce Goff used to say that an architect was like a sponge: he squeezed out his ideas, but he had to have something in the sponge to start with. A sponge will certainly go dry if it isn't given a drink periodically, and, similarly, an architect, or any other creative artist, will find his well of imagination empty if he doesn't refresh himself constantly with further study.

John A. Di Castri

Sir:

Mr Di Castri proposes that the first requirement of architects should be creative imagination of a kind that produces buildings of uniformly good design. He suggests that too many Canadian architects are singularly lacking in creative imagination, and, in consequence, our architecture is generally stereotyped and unprogressive.

Is it not a platitude to say that creative imagination is essential to good architecture, when bad architecture can have this virtue in like quantity, but of a different kind? The activity of design is, in fact, the superior discipline limiting an imagination which takes its forms from prevailing tradition.

If there is dissatisfaction with our buildings, (and who can deny our almost chronic dissatisfaction), then the fault must be more than an elementary lack of imagination on the part of Canadian architects. The fault within ourselves is a tempting conclusion, for it suggests at once that we need only wake up and become enlightened to find the remedy. I would propose that the fault is more in our stars, and that even the persuasive powers of a profession militant cannot prevail entirely against the perennial discrepancy between fitness and obsolescence the condition of a growing country.

For example, a barber shop in a bush camp might be a nail keg on end; it satisfies both barber and customer; it lends itself to conversion of use; it offers amenities not otherwise found in the more conventional salons. But it might be replaced next year by a more elaborate structure, or perhaps the need it served will either disappear, change, or move to a new site. This is nail keg design, and its product is the architecture of successful expediency, but nothing more.

In the matter of the arts, I do believe that failing to recite names of contemporary composers, artists and sculptors is hardly a fair indictment of architects. To turn the tables, one could command a random sample of composers, etc., to name ten contemporary architects, and I venture to say that these gentry would display

ignorance as overwhelming as our own. It is reasonable to say that one can respond to good literature without a vicarious interest in the author.

Concerning definitions, it is difficult to show that appearance and good design are, in fact, synonymous terms. Furthermore, by what causistry can it be shown that the appearance of a building testifies to the merit of its design?

We await a new language of criticism, but we had better hurry, or a newer architecture will arrive before we learn how to account for the old.

Robert Fairfield

Sir:

Please allow me to heartily second the motion of Harold J. Smith for the publication of more real art instead of the counterfeit stuff that is being shown.

I am all for progress and do not wish to go back to the days of Doric, Ionic, Corinthian, etc., but the pendulum has swung too far the other way and these modernistic outbursts are but a passing disease like jazz, jitterbugging, mah jong, etc.

Abstract paintings are bad enough but they are seen by few compared to large buildings — often erected with public funds, they stand for a long time for all to see, and abhor, and where ecclesiastic buildings have been treated in this manner, it is enough to bring down the wrath of heaven.

As Mr Smith mentioned, Mr Kenneth Forbes expressed this very pungently in a recent article to the press and I would like to see his remarks republished in the *Journal* as I am sure they would find favour with a very large number of your readers.

J. P. Thomson

APPOINTMENT

E. A. Gardner is appointed Chief Architect to the Department of Public Works, Canada.

Born in Pembroke, Ontario, on July 14th, 1902, **Edwin Alexander Gardner** moved to Ottawa with his parents, where he received his early education in the City's Public and High Schools. He attended McGill University, graduating in 1927 with the degree of Bachelor of Architecture and winning the Lieutenant Governor's (Quebec) medal for architectural design. During summer recesses, as a student, he worked in the office of J. Albert Ewart, Architect, Ottawa and with the Architectural firm of Messrs Richards and Abra in Ottawa.

Following graduation, Mr Gardner entered the office of Cecil Burgess, Architect of Ottawa and early in his career became a member of the OAA. His association with Mr Burgess resulted in a partnership in 1930, operating under the name of Burgess and Gardner. In addition to the numerous apartment houses, residential and commercial buildings designed and erected through this association and partnership, were St Matthews Anglican Church, Ottawa; Presbyterian Churches in Pembroke and Perth, Ontario; extensions to the Kenwood Woolen Mills and their head office building in Arnprior, Ontario; Caldwell Linen Mills at Iroquois, Ontario; and the Postal Terminal at Ottawa.

From December, 1940, to the close of the war, Mr

Gardner served in the Naval Works and Buildings Branch of the Department of National Defence, taking charge of the architectural work of that division and finally specializing in hospital work for the Royal Canadian Navy. In 1944, he was loaned to the Department of Veterans' Affairs to assist in their extensive hospital programme for veterans throughout Canada. The work of the Navy and Veterans' Affairs necessitated his travelling extensively to many parts of Canada, including Newfoundland.

In 1946, Mr Gardner entered the Department of Public Works, carrying on the hospital work for the D.V.A., and also the hospital work for Indian Health Services. In 1947, he was appointed Assistant Chief Architect of the Department and upon the retirement of the Chief Architect, Mr C. Gustave Brault on March 15th, 1952, succeeded to that office.

OBITUARY

Evans, Gladstone, was born at Barnes, England, and received his early education at Winchester College, later going to Reading University College, where he received his grounding in architecture.

Coming to Canada in 1912, Mr Evans settled in Toronto, his first position here being as a junior in the office of the late Mr John M. Lyle, with whom he worked for the next three years.

Disappointed in being unable to get into the war, he joined Canadian Aeroplanes Ltd as a war job, later holding varied positions, until he joined the staff of Sproatt & Rolph in the summer of 1922.

Here, Mr Evans' ability was apparent from the first, and in the years that followed, he took charge of many of the firm's larger projects, including such work as the T. Eaton Co. (Georgian Room, etc.), the Canada Life Building, and the Head Office for the Imperial Bank.

His work with the firm was interrupted for a time during the recent war, when he undertook the supervision of the government housing project at Orillia, Ontario, for War-time Housing, and, returning to Toronto in 1945, he continued his architectural work, becoming an associate of the firm in 1946, and a partner two years later, retaining his interest until his death.

Mr Evans took an active interest in the Association's affairs, being elected Chairman of the Toronto Chapter in May of '41, which position he held for the next two years. He was also a member of the Editorial Board of the *Journal* for a number of years, but latterly he had found the ordinary pressure of work and a not too robust constitution, limiting his activities.

Apart from his profession, he had varied activities, and was an accomplished musician, being a member of the College of Organists for a number of years, and during this period he was organist of St Mary Magdelene for two years, leaving there in 1919 to become organist of St Peter's Anglican, giving up this work only in 1923 when the pressure of business became too great. As a composer, he won the Ontario Open Musical Festival in 1923, playing his piano composition (a sonata), before a critical audience in

Massey Hall. Later, in 1931, he won the Lord Willingdon Competition for a pianoforte accompaniment to "Wanderlied" which found favour in musical circles.

He was a member of St James' Cathedral, being a sidesman there for many years, and a lay member to the Anglican Synod.

He was a member of St George's Society, and also a member of the Arts and Letters Club, Toronto.

Charles Sproatt

Klein, Ditlev Vilhelm, a member of the RAIC since 1935, died in Toronto on January 22.

Mr Klein was born in Copenhagen, Denmark, in 1885, and received his education at the College of Technology and the Royal Academy of Arts in that city. He was associated with architectural firms in Copenhagen and in Chicago before coming to Canada in 1912.

John Caulfield Smith

McIntyre, Hugh Alexander, architect with the Department of Transport, Ottawa, passed away on February 28.

Mr McIntyre was born in Buffalo, N.Y., in 1902. When he was quite young his parents moved to Toronto, where he attended Central Technical School and obtained his matriculation prior to enrolling in the Faculty of Applied Science, University of Toronto. In 1923, he graduated with the degree B.A.Sc. (in Architecture) and, in 1924, obtained the degree Master of Architecture.

Shortly after graduation, Mr McIntyre joined the staff of James, Proctor & Redfern, municipal engineers. While with this firm, he supervised many municipal and industrial projects throughout Ontario. In 1940, he became a member of the Airways Engineer Section of the Department of Transport, Ottawa, and, in 1944, was made architect. In this position, which he held until his death, he was responsible for all architectural work done by the Air Services Branch of the Department of Transport.

John Caulfield Smith

Story, Herbert, who died in Edmonton on April 1st, 1952, at the age of 87, was for many years a member of the Alberta Association of Architects. On his retirement from active practice in 1936 he was made an Honorary Member of the Association.

Mr Story came to Canada from Carlisle, England. He had been elected an Associate of the Royal Institute of British Architects in 1895. For more than twenty-four years, from May, 1912, to August, 1936, he held the post of Architect to the School Trustees of the City of Edmonton.

During his long period of retirement, he enjoyed vigorous health and interested himself in many activities. He was People's Warden of All Saints Cathedral, and was treasurer of the church funds. He was also treasurer of the Garneau Community League, and of the Garneau Lawn Bowling Club, of which he was an active member to the last year of his life. His loss is regretted by many friends to whom he had endeared himself.

Cecil S. Burgess

THE FREEDOM AND RESPONSIBILITY OF THE ARCHITECT

(continued from page 150)

our heritage and therein to plant the seeds of a twentieth century classicism, a broadly based and democratic architecture, a society with the means, the tools, the instruments for personal freedom, and for the proper distribution of responsibility to all the people.

This age of Science and of Steel is differentiated from all other ages, fundamentally. The new conditions of life create not only the possibility, but the necessity, for a new dimension of plan and order in the arrangement and aspect of life. The function of integrating, unifying and synthesizing a multitude of new material details, processes and conditions, and of new human desires, needs and appetencies, and of giving to the whole a formal aspect of significance, presents itself to creative architects today.

At closer range, it is for us to see our design as one thing marked off from the rest of the universe: then to see it as a thing, complex, multiple, divisible, separable; made up of its parts; the result of its parts and their sum; harmonious. Then to see it as that thing which it is, and no other thing: so that, if you removed a single part of it, it would not be that thing, but become another lesser thing, or become nothing. In this complex of meditation, analysis, decision, the architect finds both his freedom and the expression of his responsibility to the people as a whole.

To this attainment there are requisite Science — the science of the inside of things: science the identifier, measurer and calculator: and also Art, which is the science of the outside of things, art the differentiator, selector. For Architecture — the surest and completest art — is both a science and an art.

I believe that a new conception of freedom, and of responsibility, on the part of the architect, is not only possible, but essential, if he is to take up his true role in contemporary society. This more so in rapidly evolving and developing countries such as our own here in Canada. New centres of imaginative control, employing every resource of science, productive power, and native skill must somehow be created to provide forms of environmental control commensurate with the scale of the problems of freedom of the individual, and his responsibility to society as a whole.

For the rest, an artist will continue to see within himself the freedom he needs, and the degrees of responsibility he is prepared to shoulder.

An address given to the Toronto Chapter of the OAA on March 19, 1952.

CHANGE OF ADDRESS

The firm of **Stanford & Wilson** has moved to new premises at 86 Charles Street, E., from 373 Church Street.

The office would be obliged if manufacturers and suppliers would address catalogues, samples, etc., to the above address.

CONTRIBUTOR TO THIS ISSUE

Wells Coates, OBE, FRIBA, PhD, is one of the best known contemporary architects in Britain. He is President of the Royal Designers for Industry and was the founder of the MARS group of modern architects. After an engineering training in Canada (his native country) Wells Coates studied architecture in Europe and started practice in London in 1928. He has built office blocks, apartment buildings, hotels and stores in addition to broadcasting and television studios for the BBC, and the Telecinema and Television Pavilion for the Festival of Britain.

K. Izumi was born in Vancouver, B.C., 1921. Graduated from University of Manitoba, Univ. Gold Medal. Studied Economics and Town Planning at London School of Economics and A.A. School, London with Pilkington Glass Travelling Scholarship in Architecture, 1948. Studied City and Regional Planning at M.I.T. and Harvard with RAIC College of Fellows Scholarship, 1950. Architectural work with Rule, Wynn and Rule, Calgary, and H. K. Black, Regina. City Planning work with Metropolitan Plan, Winnipeg, and preparation of master Development Plan for City of Fairmont, Minn.

BOOK REVIEW

BRITISH FURNITURE TODAY by ERNO Goldfinger, DPLG, LRIBA Eighteenth volume in "Chapters in Art"

Alec Tiranti Ltd., 72 Charlotte Street, London, W.1. 7s6d
A neat little book is **BRITISH FURNITURE TODAY**. It contains a brief, concise introduction and ninety-eight well chosen illustrations of modern furniture of good taste. Leafing through the book, one is once again reminded how international contemporary design has become. The book shows many examples of design which could be credited to an Italian, Scandinavian or American designer if one didn't find them subtitled "British."

With joy in the heart one admires a Maxwell Fry, Marcel Breuer or Ernest Race design and is informed in the introduction by Mr Goldfinger that "the furniture illustrated is far from being a comprehensive catalogue of all that is available since many good designers had to be omitted to avoid duplication." And with sadness one recalls all the inferior specimens of furniture still produced and bought in Britain and elsewhere.

It would be only too wonderful if the entire British furniture market would live up to the title and contents of this book. However, we all realize that this does not apply to Britain only. And one cannot place the blame completely on the consumer. Since modern furniture is meant for mass production it should tempt and flirt with the public at large. We shall hardly succeed in introducing contemporary elegance to the market by trying to convince the man on the street that he can easily afford \$200 for a modern chair, or by disregarding his sceptical contemplation of a glass topped occasional table which in all its transparent beauty is featured on the cover of Mr Goldfinger's book.

Michael Bach

Facts by Pilkington about Glass

FOR ARCHITECTURAL STUDENTS

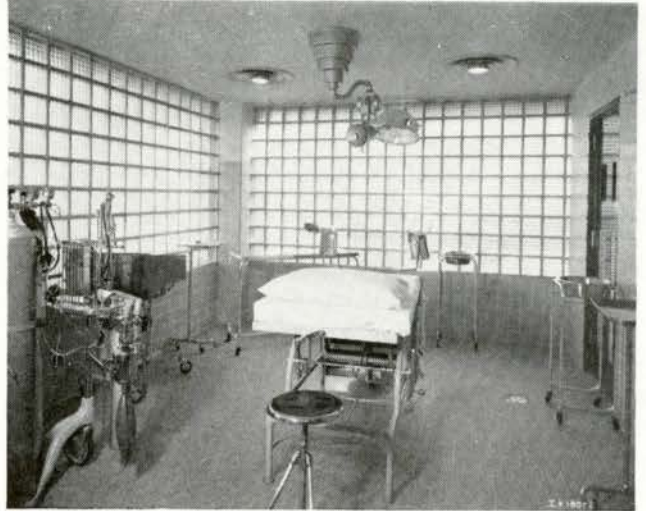
VOL. 2 — No. 12
Uses of Glass
INSULUX GLASS BLOCK
Hospitals

Control of Light

An abundance of light is a necessity in maintaining hospital standards of cleanliness and sanitation. Panels of Insulux Glass Block in exterior walls will transmit daylight into the interior of the hospital without the intense glare frequently experienced from ordinary windows if unshaded.

The No. 365 8-inch and No. 465 12-inch Insulux light-diffusing glass blocks are generally favoured for hospital use. They are translucent yet provide more uniform light transmission than other light transmitting units, during a greater part of the day. Insulux makes possible daylight in operating rooms without the hazard of drafts from leaking windows, and the ingress of dust and dirt. By using Insulux Glass Block, operating rooms can be daylighted, yet as completely sealed against dust, dirt and drafts as if the walls were of unbroken stone or brick construction.

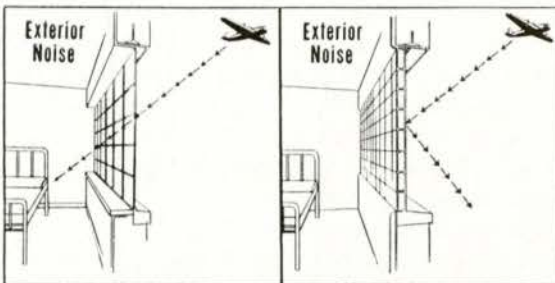
Combination panels of Insulux Glass Block and windows are generally favoured for rooms in which patients are to be housed.



Low Condensation

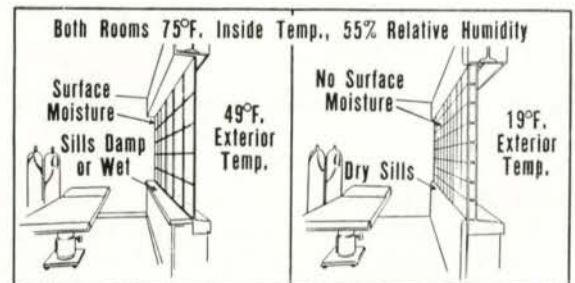
In any operating or treatment room the percentage of relative humidity should always be high. This condition is almost certain to produce condensation on a single-glazed window, resulting in wet sills which are undesirable from the standpoint of sanitation and maintenance.

The diagram below illustrates two rooms, one lighted with an ordinary window, one with a Glass Block Panel. The temperature and humidity in both rooms are the same, 55% relative humidity and 75° temperature. With normal air movement, condensation will not occur on the outside surface of the Glass Block Panel until the outside temperature drops below 18°. However condensation will appear on the window when the outdoor temperature drops below 50°.



Low Sound Transmission

Outside noises must be kept out of the hospital. Here again Insulux offers advantages. Sound transmission tests show an average sound reduction over a range of nine frequencies of 40.7 decibels, comparable to an 8 inch brick wall.



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