JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

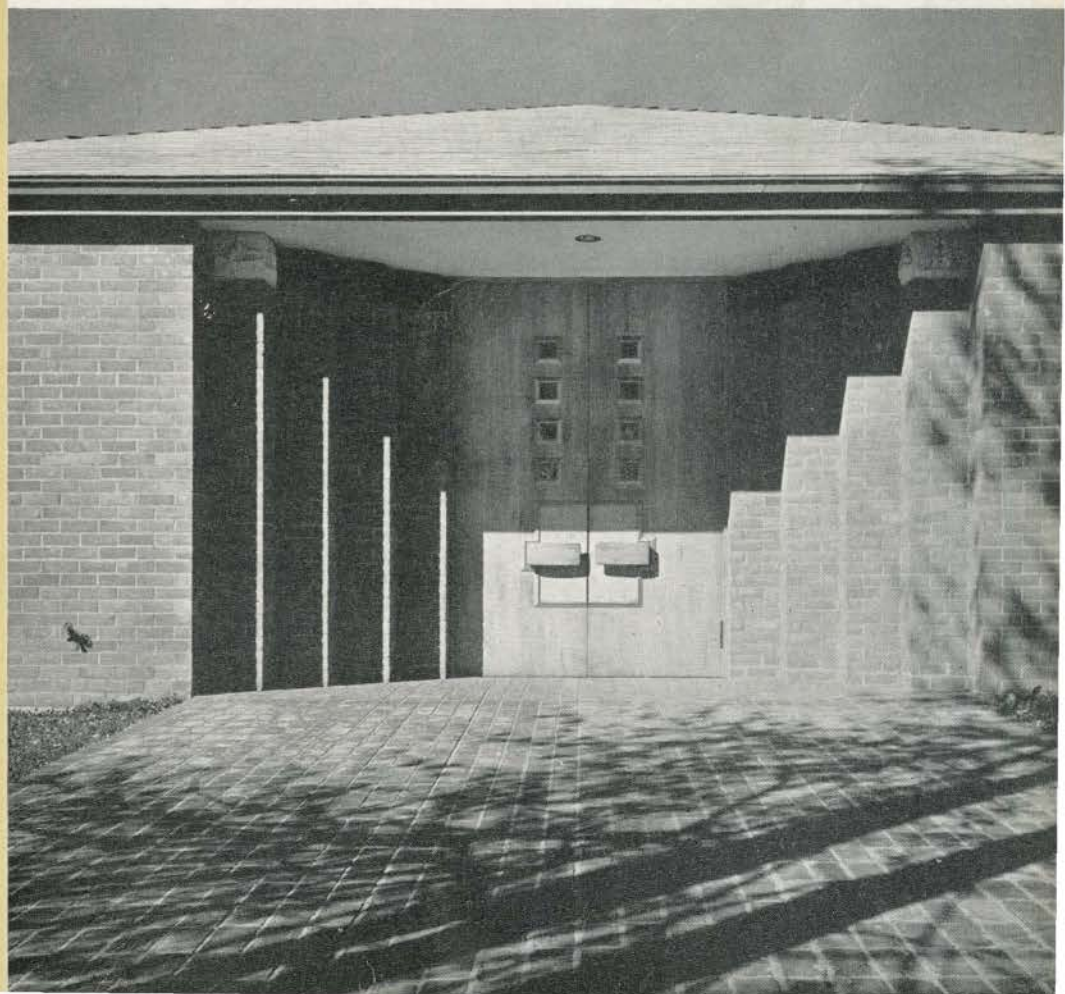

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Photo by *Elmer L. Astleford*

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

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Toronto July 1951

Secretary to Editorial Board, Mrs Vera Williams

EDITORIAL

IT WILL be the duty, as well as the pleasure, of the JOURNAL to include in several issues, comments on the findings of the Massey Commission.

The Section on architecture occupies page 216 to 221, and, while the Commission makes no recommendations, the publication of "important suggestions made" will be of interest to all architects. Some are quoted here as an indication of topics that might later be developed.

'We do not venture to discuss here the delicate professional relationship of architect and client; from the skill of one and the desires of the other architecture must, in large measure, stem. There is, however, one patron so powerful as to constitute a decisive influence on the whole future of Canadian architecture and town planning. This patron is the Federal Government which during the four years prior to 1949 was responsible for twenty-five per cent of all Canadian building. "Societies in other ages never saw so great a patron of architecture or so powerful a client."'

'The prevailing pattern of Federal Government buildings at Ottawa has been a matter of severe comment. Although, in theory, there is to be no regimentation on style in the buildings contemplated under the new Capital Plan, there is a danger, we are told, that the "romanticism" of the Chateau Laurier will be replaced by that of Greece and Rome. The Capital Plan was also criticized for its apparent assumption that all public buildings should be monumental in character. It was urged that in modern times government buildings should be monumental or otherwise according to the purposes for which they are designed, and that rigidity in such matters is unrealistic.'

'Two important suggestions were made to us. First, all important buildings should be designed in open competition. Such a procedure would help to avoid the mediocrity which so easily besets government architecture and would provide at once an example to private enterprise and a stimulus to the architectural consciousness of the public. It would have the added advantage of encouraging the able young architect who too often must spend his early years executing the plans of others. We were reminded that in a number of European countries all administrative and public buildings are now designed by architects selected through open competition.

'Second, it was urged that the Federal Government recognize the importance of community planning and aid it, insofar as this lies within its power. Regional directors, now used by the Central Mortgage and Housing Corporation, should be employed, we were told, for all federal projects and should work closely with provincial and municipal governments; and federal loans and grants should be made on the condition that building is to proceed according to a suitable and coherent plan.'

The above is naturally, but a sampling. Nothing new is mentioned, but recommendations from a variety of sources are brought to the notice of Government and general public. We should add, too, that the Report is beautifully presented in a book selling for only three dollars and fifty cents.

This is the Report of
the Pilkington Glass Limited
Scholarship winner

E. L. HANKINSON

ANNUAL TRAVELLING SCHOLARSHIP IN ARCHITECTURE

Forward

Comments on the Scholarship

The most significant point about a Travelling Scholarship of this type is the opportunity it presents for first-hand observation and analysis of the development process in several different countries, and the possibility of considered reflection on the data thus gathered.

At a point in the Student's development when facts, theories, technical details, and abstract artistic arrangements are freshly acquired, the several months of contrasting reflection, observations, and wide discussion enable a Student to formulate upon a comprehensive basis, principles of action, or a working philosophy which should immeasurably benefit the contribution which he will make to the development of society in later years.

While it may not be the particular interest of many possible scholarship holders to dwell upon what can be termed the fundamental problems of humanity, this type of of scholarship does present an unique opportunity in this connection. There will be, I am sure, a continuing need in the profession for the thus widened experience which attempts to integrate Architecture more fully with Life.

The freedom of action given the Student, throws the responsibility squarely upon him to organize his time and funds to the utmost advantage. This is indeed a commendable feature and is worthy of consideration.

This freedom also allows the Student to adjust his research period to those particular fields in which his interests may be most intense, and is superior to a set curriculum.

The Impact of the Foreign Scene

In the rich storehouse of Europe, there are many treasures to intrigue one, but undoubtedly the richest source of stimulus and enrichment is in association and discussion with the contemporary workers in the wide range of related fields to Architecture.

The tangible evidences of mature cultures, as evidenced in Britain, Italy, Switzerland, and the Scandinavian Countries, excite a new respect for the meaning of Tradition, and a new awareness of the possibilities of developing the traditions of the many peoples of Canada to enrich our Canadian scene.

We may challenge the standard of life, the material accomplishments of the older culture, but we cannot escape the richness which exists in the environments of some of the older cities of Europe.

The respect for the achievements of the past, as witnessed in the better Georgian Streets in London or Bath, or the sensitive juxtaposition of old and new as in Copenhagen or Stockholm awakens a realization that we too should be building for the future, a tradition with firm, clear roots in the past.

There is much also to note in the use of water, grass, tree and stone, in the development of streets of living interest.

We can learn that there is more to Architecture than a single dramatic building. There are whole streets of buildings, and riotous visual clamour for attention does not create a street, nor does it create a worthy tradition.

Today's Problem

The Age of Confusion

In a period such as the present fraught with anxieties, tension and international ideological contests, it is difficult to discuss Architecture as a pure and isolated "Art."

We are confused by the speed with which our theories and beliefs are challenged, upset or reversed by new facts. The anchors to our traditional procedures are torn out, and we appear to be drifting upon a sea of conflicting ideas, divergent theories, tremendous technical variety and unlimited choice. Where are we to look for the firm bed rock of sound principle?

The recent battle of "Traditionalism" versus "Functionalism" reflects how great the divergent theories can be. Even the foremost proponents of contemporary Architecture do not find themselves in complete accord.

Case studies of the growth of cities, industries, communities and almost all manufactured physical environment give evidence to the conflict and chaos resulting from unplanned growth.

Not only in the building field, but in production, advertising, merchandising and entertainment there apparently exists no real concern for the effect or ultimate influence upon the unfolding social pattern of the particular item let loose upon society in the quest for financial return.

Whole industries are based upon dubious and questionable products, such as cigarettes, distilled spirits, high-heeled shoes, etc. Thus in discussing Architecture and the problems related to it today, we must strive to anchor it firmly into the pattern of human development. Today demands of us comprehensive, clear-eyed analysis and positive action.

It should be the concern of those who consider planning

important to our ultimate advancement, to exert their influence in the interests of the sound application of our growing scientific and technical skills.

The Individual

It appears to those of us who form the free societies of the world, that a challenge is being made to our belief in the dignity of the individual human intellect.

In the light of known facts it seems most evident that we live first as individuals, then as family groups, communities and essentially intimate and limited circles of individuals. It also seems evident that in developing a fuller life for society, we are mainly endeavouring to develop a fuller life for the particular and varied individuals who make up society.

Who can examine in detail the amazingly sensitive and complex human physiology and still sincerely consider designing, in terms of broad arbitrary standards, a good human environment. To attain the necessary degree of sensitive refinement which will result in a beneficial response from the individual, and thus the group, it is surely necessary to obtain an intimate and sympathetic knowledge of the individual unit.

The dictatorial concepts of the Master Planner who strives to work out the last detail of a plan which is subsequently imposed upon a group of individuals, are harmful in as much as they preclude the participation of the individual members of the group. But apart from the loss of the individual identity with the Master Plan, there is great harm done to the continued development of that priceless human quantity – the individual intellect.

The alternative method of progressing toward the higher order is far more difficult, frustrating, and time consuming. But it has the prime virtue of achieving individual development and participation, as well as group progress.

The process of living and developing toward a better state is the important thing in life, to individuals, not the achievement of a best or perfect state.

Therefore, the approach whereby communities and correspondingly small workable groups of individuals share in and identify themselves with the large comprehensive, flexible programmes evolved by governments, or planning boards, offers the best possibility of real progress, and the best possibility of actively supported democratic participation.

Biological analogies may be questionable, but the following analogy may serve to emphasize this particular point. Cells in a living organism of a higher order are specialists in their type of work. However, the whole being depends upon the co-operation and normal function of each cell in order to maintain a state of health. Individual cells, however, maintain an inner discipline with respect to the pattern of the larger organs and thus the whole being.

Similarly, in human society, the further development and organic growth must rely upon a discipline stemming from the individual's intellect. This seems to point to democracy as a higher type of order, but only when the individual is controlled by his own understanding of his position and responsibility to the larger order.

Thus in the realm of human social structures it follows that development of the individual intellect is of critical importance. Not for undefined or abstract ends, but for the emergence of a balanced and healthy social structure, in which the component individuals are more fully developed and, therefore, more able to participate effectively.

The Importance of Architecture

The Effect of Physical Environment

In the realm of human activity there can be few more important tasks than that of shaping the physical environment, in which we live, upon sound principles which will assist the evolution of a higher order of human society and ultimately a higher type of the species.

Physical environment is the anvil upon which various living organisms have been forged and shaped. Biologists have discovered the importance of the physical pressures existing in environment to the evolution of a species. Medical research is showing the importance of physical environment in the control and treatment of human diseases. Psychologists are emphasizing the impact of environment upon human mental machinery. Physiologists are relating the growth and health of the human body to evironment as well as diet.

Economists are giving evidence that a healthy environmental framework is necessary to a consistently healthy economy. Sociologists are indicating that solutions to the problems of human society must go hand in hand with environmental progress.

We can appreciate from the foregoing that providing a satisfactory physical environment is not a matter of intuition or talent alone. It is also a social and a physical science.

The Past Tradition

It has been the practise in the past to regard Architecture as an Art – indeed – the Mother of the Arts, and to neglect the strong, compelling relationship which must bind it to life and society. Even today there exists a tremendous rift between Architecture and the common man. He and we tend to consider it as a vague activity which might be called, rather, "Luxury Building for the few with too much money."

It has not meant, as it should do, the creation and continual modification of man's manufactured environment.

Throughout past centuries this man-made environment has reflected and restricted the structure of his societies. It has been, as it continues largely to be, a straightjacket. One which changes only with great effort and expense, but which almost never anticipates or promotes of a better social structure.

The resulting discrepancy between the need and the fulfilment forces arbitrary patterns of existence and behaviour upon the inhabitants of city and country alike. The evils of congestion, slums, depressed areas, traffic hazards, wasted time in transit, etc., have been well reported and analized by many writers. The creation of potential difficulties continues at, if anything, a greater pace today than ever before.

The Transition

This inevitable lag between need and fulfilment was due mainly to the lack of real knowledge, and ability to apply it to the ever-changing needs of developing societies.

We have entered now upon a period when it will be increasingly possible to plan and control our social evolution, to provide for the changes and anticipate the needs by sound application of scientifically obtained data.

No one pretends that we have sufficient of this scientific data, tried and proven, to apply to all our problems today. However, the data now available does enable us to establish sound principles of operation.

These principles must be framed in such a way so as to enable the incorporation of new data as it becomes available. The important thing is the general acceptance of a scientific attitude towards Architecture.

This does not mean that the ordinary architect must be a scientific genius, or type of super-intelligence, in order to make a telling contribution to the rapidly growing patterns of our complex societies. It does mean, however, that he does need to accept and recognize that Physical Planning, from the smallest detail to the largest comprehension, is indeed a science. He must accept the Scientific Viewpoint.

Regional Cultures in Canada

The comparative lack of a distinct development of Regional Canadian Cultures can be explained in many ways. But the need for a more positive physical expression of regional cultural growths as an added stimulus to their further development is evident.

In a country as vast as Canada, and with a small population, the tendency of the population to gravitate largely to regional centres is obvious. These centres are necessarily separated by vast reaches of thinly populated areas. It is in these centres that every opportunity exists for the emergence of district regional cultures which will enrich the life of our people, and provide that psychological climate in which a feeling of identity of the individual and associationship with a group will flourish.

The Canadian Architect must concern himself with this particular problem, since it is through his hands that the physical character of his region takes shape. An awareness of his possible influence upon the structure of his community, and the fulfilment of its needs is essential. This is particularly true during a period when strong influences are at work covering our communities with a cloak of uninspired sameness.

The application of modern technics has resulted in an appalling standardization and increasing loss of regional identity across the land. Each building clamours for attention at the expense of its neighbours, and each shows singular unconcern for the region's own culture.

The particular reason for encouraging healthy regional cultures should be emphasized. It is in the interests of a stable and healthy society that the individual members are exposed to and conditioned by an environment, giving concrete evidence of those fundamentals which exist in a responsible enlightened society.

Some of those fundamentals would be in the form of good housing, good schools, good shopping centres, good community cultural and athletic facilities, parks, playgrounds, nursery schools, clinics, hospitals, libraries, theatres, transportation, restaurants, etc.

The particular part which Architects must play is in the provision of an architectural environment, which will both reinforce and consciously express the best in this regional culture.

The Key to a Sound Architecture

The Physiological Basis of Architecture

In the realm of physical planning we are governed very directly by these human needs. A full understanding of the structure and function of the human unit both individually and collectively must be the basis of positive action designed to contribute to progressive development.

In all our activities there exists one fundamental reference, the human individual or unit. Science, Art, Industry and Economics result from the resolution of the needs of the human unit.

It has already been shown that we are entering a period in which the basis of our actions is shifting from empirical or intuitive one to a sound scientific one. It can be further stressed that the effect of a physical environment depends upon the reaction of given human units to it. If we are to make the reaction beneficial, then we must know structure and substance of the reactor.

To a great extent the impact and influence of a physical environment is visual. Light, space, colour, texture, arrangement, and form, all have a place in the visual impression. The Greeks developed the "Golden Mean." This section appealed visually to the eye, and was used as a basis of composition. Today we learn that this appealing rectangular section has a physiological basis in the spacing of the human eyes. The rectangular field of vision embraced by the eyes in dual vision, corresponds to this "Golden Section," consequently, the rectangular looks "right." This also explains the preferences of designers for horizontality, since the horizontal axis in dual vision is the longer.

The question of associationship is also under study, revealing the preferences for certain colours because of the natural objects and their colouring which our ancestors looked upon for millions of years, evolving the delicate differenciation of vision we have today – Red associated subconsciously with Fire; Green with Vegetation; Brown with Earth, etc.

The same may be said of textures and the appeal of certain of the rougher materials. There is of course the influence of recent misuses or overuses of colours, textures, etc., which account for some of their periodical lack of appeal. The sound use of colour, texture, form, pattern, etc., can only be made when the physiological background of the human individual or group is considered and understood.

Component Value in Architecture

Although the individual architect is usually concerned primarily with the detailed solution of the problems associated with one building, it is that structure, and countless others like it, which are building up the fabric and character of our communities, towns, cities, and regions.

The fact that each new building is an additional component to an already existing pattern, and that pattern has a distinct character of its own, demands serious consideration from the architect. We have only to look upon our main streets to see how little we have considered adjacent structures, materials, and character. Each new building

strives to outdo the last in novelty, drama, or colourful materials. The resulting diversity builds up into nothing less than visual chaos.

Component value then, is the relationship of each new part to the quality of the whole. If a conscious attempt is made to develop a sympathetic relationship between the new work and the existing, there gradually will evolve a definite feeling of character and wholeness about our streets, districts, and regions. We will be developing visual groups instead of visual chaos.

That is not to say that we must have a standardization of styles, materials, or of types, such as has been effected by legislation in some regions. This not only results in monotony and boredom, but it stifles the free development of better building.

We must draw upon the creative skill of our designers to create visual kinship and harmony by skillful use of materials, colour, massing, and group relationship. The life of buildings vary, and some of those we build today will be a part of tomorrow's scene as well. It will be to their advantage to be respected as part of our growing tradition.

The Four Dimensional Concept in Planning

From this arises another problem. A building must be constructed for the purpose for which it is required, and the technical skill and knowledge available today will be incorporated into its design. But it is highly probable that our latest achievements will be regarded as wanting in a decade or so, if not actually obsolete by the time they are completed.

Time is the Fourth Dimension we must consider in our designs. We know that we cannot forecast accurately nor can we provide the technical improvements which may be required in the years hence. But we are certain that the ability of the structure to support its design load will remain unchanged in the normal course of events.

Thus the structure becomes the constant factor in our equation; the membrane with its mechanical services, variable. Therefore, there is a need to design the structure as distinct from the envelope, so that future adjustment and renewal of envelope and services can be carried out with a minimum of expense and inconvenience.

The ideal becomes almost a structure that allows within its frame a continual renewal. The pace at which change is required today is much greater than that of the past. The adaptability and convertibility of almost all structures is becoming more important. Even the small home, with the ability to expand, adjust to, and contract with the growing, maturing and aging family, will demand such flexibility and continued renewal.

Associated with this need is the continued change in street patterns, roads, and traffic arteries. The shift away from the solid massive buildings of the past toward the lighter structure of the future is already in evidence. Time exists and we must recognize it as we build, for we have no wish to curb or clothe the future generations in a physical environment ill suited to their needs, but wish to provide one which is more adaptable to their needs.

The Role of the Architect

The Significance of Architectural Practise

Draughtsmen draw plans, Engineers design structures, Lawyers draw up legal documents, Interior Decorators arrange and colour interiors, Landscape Specialists decorate the surroundings. Zoning Regulations determine the district pattern, Town Planners deal in the over-all planning, Heating, Lighting, and Acoustical "Experts" provide "adequately" to the physical comfort of the inhabitants, and Artists draw pictures. Contractors today can provide everything from plans to completed buildings without the services of an architect, except where regulations interfere.

What then is the vital and basic contribution of the architect to the building industry, which cannot be provided by others? How does the Architect obtain the satisfaction of the Surgeon who saves human lives, the Statesman who shapes national destiny, or the Teacher who develops the minds of the growing generations?

It is a question which can be answered directly and simply. His is the prime responsibility of shaping and developing man-made physical environment. He functions as co-operative co-ordinator of the growing hosts of specialists in modern civilization as applied to building. Not only does he contribute individual items to the pattern of physical environment but through those items builds up communities, towns, cities, and regions.

Specialist Co-ordination

In recent years the remarkable technical advances, and vast increase in scientific knowledge have made it impossible for any one man to be an expert on all the subjects related to building. A growing army of specialists has blossomed forth in fields related to Architecture. This places the Architect in the position of key co-ordinator of all the specialist skills. But more than co-ordinating, he must exercise keen selection, and work out careful integration of all the varied factors so that the ultimate product will become a beneficial contribution to the pattern of human environment.

Lastly, and most important, comes positive action based upon methods compatible with the further development of the individual intellect as well as the further development of social progress.

The Training of the Architect

A Working Philosophy

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 toward the emergence of a higher order of living, then Architectural Education must develop a breadth of understanding and comprehension of the principles involved.

One of the primary problems involves achieving a set of clear principles, or philosophy, which will enable each architect to understand and integrate the contributions which he will make, with the expanding pattern of human existence.

This philosophy must be the outcome of rational thinking on the part of the individual. It must result from analysis of existing situations and facts, and conclusions resulting from this analysis. No arbitrary philosophy will suffice, for in order to achieve a philosophy capable of continued growth, modification and development, it must

be a genuine individual product.

This type of thinking can be stimulated by repeatedly presenting the student with case studies of existing situations, then demanding analysis, conclusions and a coherent set of principles drawn from these.

A Scientific Viewpoint

The belief that "form follows function" is only a part truth. Today we can say "function has form – but form also has distinct function."

A fully developed scientific approach to design, must integrate the various ingredients – space, mass, plane, line, surface, texture, form, colour, associationship, and detail, so as to develop as completely as possible the varied functions demanded of the finished structure. This work should not lack in visual expression, or human appeal, for it should include consideration of the necessary psychological functions demanded by the human eye, mind, and regional heritage.

It is an appreciation of this complete functionalism which is inherent in the Scientific Viewpoint.

The student should be given every chance to thoroughly appreciate the inter-relationship of the various courses. Individual imagination, individuality, and skilful presentation should not be discouraged – but the emphasis should be placed upon the enlightened integration of sound scientific knowledge with physical matter in such a way as to clearly function in a beneficial manner, and exert a beneficial influence upon a family, community or region.

The essence of the scientific viewpoint is the appreciation of the function of, and the provision of, all elements needed to effect full completion of a particular work, but with no meaningless or incoherent elements included.

Specialist Co-ordination

Because of the position which the Architect will increasingly occupy as a co-operative co-ordinator of specialists, it seems desirable that in the last years of his University Training, he should be provided with the opportunity of gaining experiene in this field. One possible way in which this can be done is through Inter-Faculty Group Research and Development Problems.

The benefits resulting from this type of co-operation would not be limited to the Architectural Student. It seems sure that all the Students engaged in a co-operative problem of this nature would gain a wider appreciation of the importance of the other Faculties, and how they relate in actual practise to each other.

A suggested outline of such an Inter-Faculty Problem is presented below. Students from several Faculties, possibly Architecture, Fine Arts, Engineering, Law, Medicine, Commerce, Economics, Arts, Agriculture, Interior Design would form groups. One member from each Faculty in each group.

The problem to provide a sound Canadian Community, on a local site, with all the particular factors which go to make it an essentially complete and organic structure.

The Engineering Student would survey the possible sites and after due research present his recommendations to the group. The Economics Student would study the possible sites from the point of view of a sound economy, the Medical Student from his point of view, and the rest from their particular points of view.

Joint discussion would determine the choice of site, the general outline of procedure, the special fields of research, the requirements of the community in these special fields, and all related problems.

Group members would find ample scope for research thesis in the special aspects of their particular fields as well as giving valuable technical advice and consultations to the group.

Out of this stimulating group experience, the particular value of specialist co-operation and the possibilities of increased individual contributions to the physical human environment would become more evident. Not only to the Architectural Students, but all the co-operating facilities would be gaining real experience at the University level in co-ordination and co-operation which would extend out into actual practise.

The Curriculum

Because the Training of the Architect plays such an important part in setting the direction and defining the scope of his contribution during his working years, an outline of a curriculum is discussed. Any curriculum must, however, be a flexible and adaptable framework which will provide for continual modification as needs become evident.

Training falls into four main categories which are called:

1. Understanding
2. Selection
3. Integration
4. Execution

Understanding of the conditions of life would be achieved by courses, during the years of academic education in History, both past and contemporary, Sociology, Physiology, Psychology, City Development, Town and Regional Planning.

Selection powers would be based upon courses in Physics, Mathematics, Acoustics, Light, Colour, Air Conditioning, Hygiene, and properties of materials.

Integration would be developed in courses of Design, Construction, and Planning.

Execution would be taught in courses of Draughtsmanship, Presentation Technique, Research, Analysis, Report Writing, Professional Practise, Specification Writing, Estimating, Quantity Surveying, Building Code Interpreting, and Public Relations.

A provisional curriculum is suggested (page 200) and indicates the attempt to tie all possible courses strongly into the primary historical course "U" in each year.

Conclusion

Architectural Integrity

The traditional and fundamental use of building materials is mainly organic in character. The master builders of the past and the craftsmen who fashioned with devotion the stone and tapestry of their buildings, were confined to the few available natural materials.

The Industrial Revolution and machine production brought in completely new materials which were made in the image of the old. The cheapening of decoration and the death of the handicrafts resulted mainly from the misuse of these new materials.

A PROVISIONAL CURRICULUM

	Understanding	*Selection*	*Integration*	*Execution*
1st Year	Past Human History outlining social, religious, cultural and technical development during pre-Christian period	Basic Maths, Basic Sciences, Arts & Crafts of this period	Construction and Design problems based on limited means of this period	Draughtsmanship, Sketching, Basic Craft Execution related to this period. Study of Human Form (As per Greeks)
2nd Year	Past Human History up to Industrial Revolution	Higher Maths, Sciences, Arts & Crafts of this period	Construction and Design based upon means of this period	Draughtsmanship, simple working drawings, sketching, water colours, ink drawing, etc.
3rd Year	Past Human History Industrial Revolution to 1920	Higher Physics, Steel Design, Reinforced Concrete, etc.	Construction and Design based upon means developed during this period. Single Building of simple nature	Working Drawings, Structural Detailling, Specification, Writing, Presentation Methods, Primary Machine, Production
4th Year	Past Human History from 1920 to 1950	Acoustics, Lighting, Colour Study, Heating, Plastics, Plywood, Pre-stressed Concrete, etc.	Design based upon methods of this period. Single Buildings of complex nature	Research, Analysis, Report Presentation, Specialized Building Functions. Quantity Surveying, Mechanical Presentation, Airbrush, Photography, Draughting Machine Stencils, etc. Business Procedure
5th Year	Climatology, Sociology, Psychology, Physiology, Town Planning, Regional Planning	Group problems, (Inter-Faculty as well as inter-class)	Group Problems, Co-ordination of Specialists. Groups of Buildings	Model and Report Development and Presentation. Project Engineering, Contact with Manufacturers and Contractors

Out of the best use of our rapidly increasing synthetic vocabulary comes a new approach to design. The full use of all the best materials should be made. No material should be used to imitate another, but always for the qualities inherent in itself.

The real need for honest use of material is psychological in origin. If we, who have for centuries gazed upon and translated visual objects into meaning by recognition of certain factors, colour, texture and use, are suddenly faced with substitutes which bear convincing likeness to, but are not, the real material, we are forced to question our vision. Especially if the use of these substitutes is unlikely structurally, does a subconscious uncertainty or sense of confusion and distrust result. In a period already fraught with mental hazards and confusion, it is harmful to add further to the burdens upon our intelligence.

The Synthesis of the Arts and Crafts

In the period of highest development in the past, Art, Craftsmanship and Building reached a wonderful synthesis in particular works. Today, however, Art has become remote from Buildings as well as from the people. Machine production has replaced the Craftsman. Our barren buildings bespeak our limited appreciation of the possibilities of visual enrichment as well as our preoccupation with blank machined surfaces.

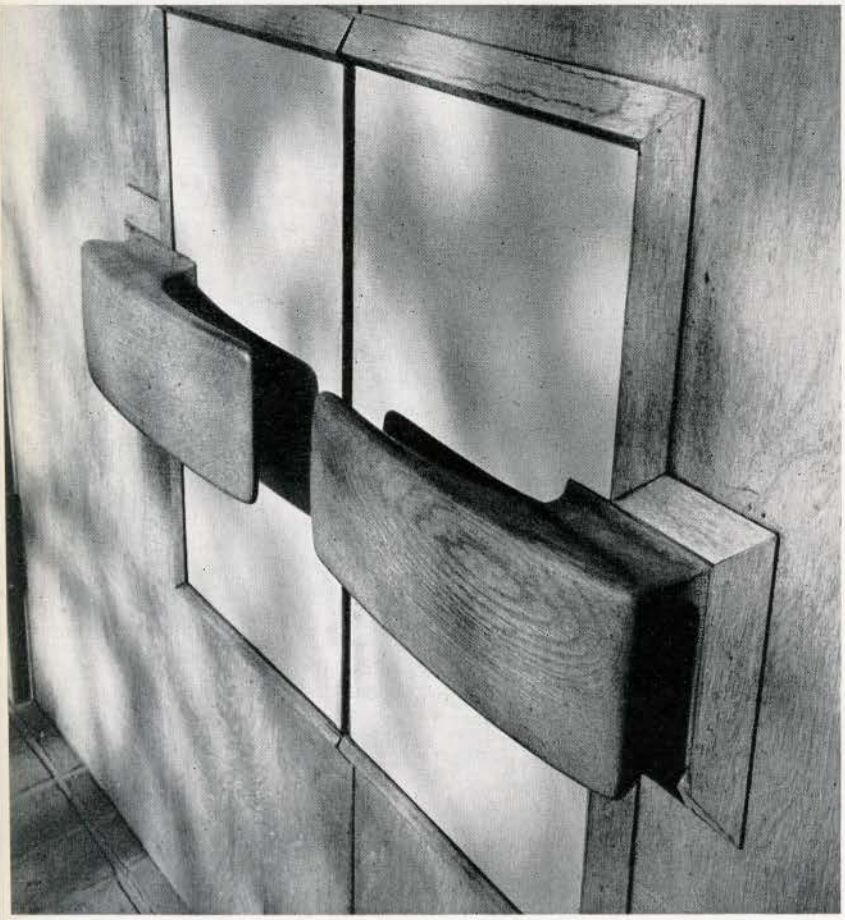
In the best development of a psychologically satisfying and stimulating physical environment there should be an important place for regional cultural expression in the form of craftsmanship and visual art. This can best be achieved by the integration of the skills of architects, artists, craftsmen and other specialists during the whole development of the design. Too often, if any consideration is given to these elements by the architect, it comes as an afterthought, and appears only as an application, not usually integrated or thoroughly related to the building and its surroundings.

Architects too often believe that they can fill all the needs without recourse to other specialists. That may have been possible in other times, but is becoming less and less possible today. We should demand of our locality that its talents should contribute as richly as possible to its own physical environment.

A masterpiece by Picasso is very nice in its way, but why must we bask in reflected masterpieces. Let us call upon our own Artists and Craftsmen as upon our own Builders, Manufacturers and Specialists to make a worthy contribution to our physical scene. Let us strive to identify our work with our people, and let our people identify themselves with our works.

The best stimulus and influence will result from an environment expressing the skills, talent, genius, and sound thinking of those very people and their children who live in an environment of their own creation. This surely is a worthy aim.

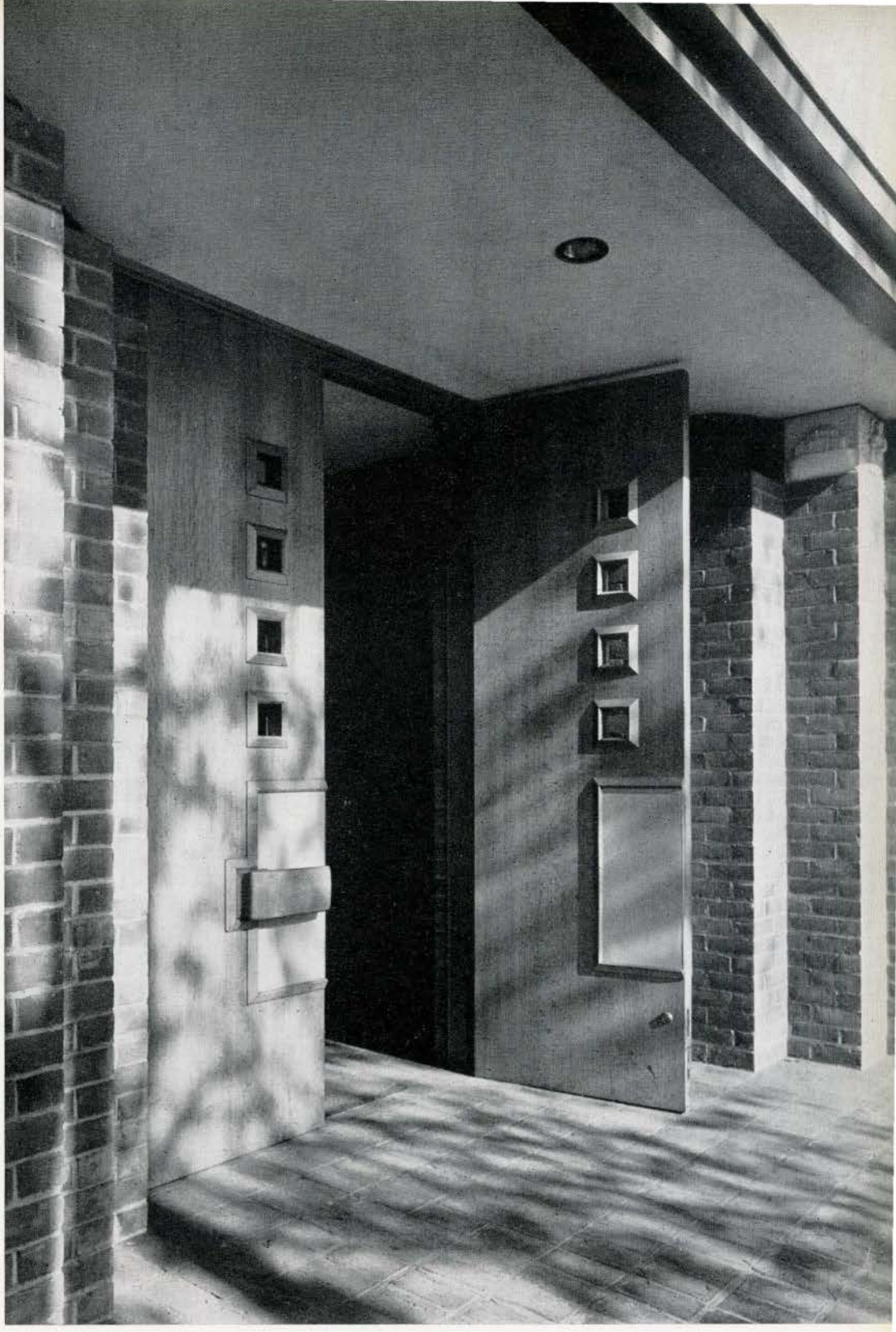
ALL PHOTOGRAPHS BY ELMER L. ASTLEFORD



REORGANIZED CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS

Alden B. Dow, A.I.A., Architect

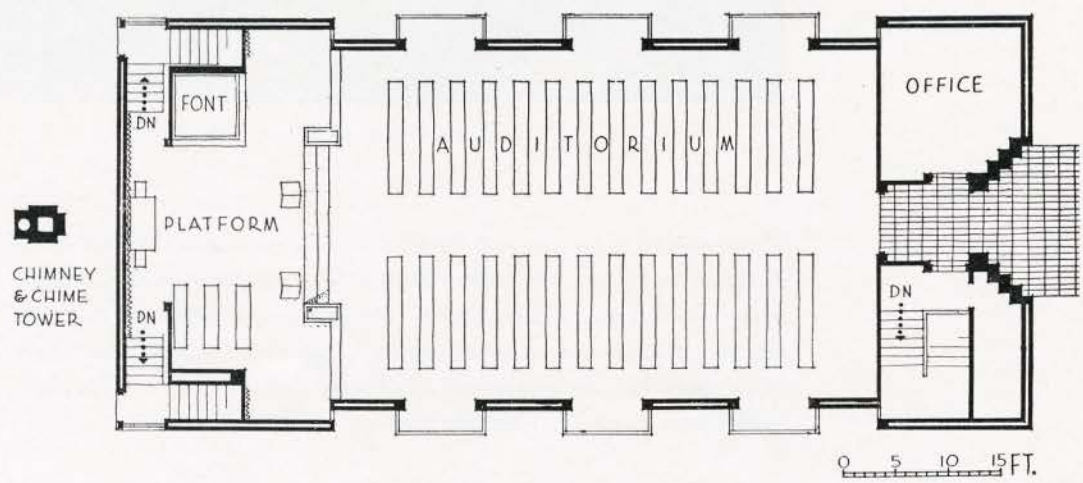
Midland, Michigan, has a new house of worship, a church designed in an humble spirit by a remarkable architect-client group. The building committee of the congregation expressed to Alden Dow a desire for a church to suit their particular requirements. To quote him: "Grouped around the drafting board, we designed the church as it is today, each member contributing his share." The congregation also did most of the actual construction; and the result of their labors under inspired architectural guidance has no forbidding *Sundays Only* look; it is an inviting yet dignified building, usable seven days a week. In it is achieved a goal more often eulogized than won: the total blending of spiritual and physical characteristics.



In such elements as the door-pulls, above, and the windows, shown in detail on the next page, the honesty of the building appears. Solid, straightforward oak, naturally finished; common brick in common bond; clear glass set in a fashion borrowed from store-front practice, with no corner mullions to obscure vision; stock steel shapes for the sash — these are used without the pretense which has made so much of our contemporary church design meretricious.

The building is roofed with white asbestos shingles which, in addition to keeping out the weather, reflect much of the summer sun's heat; and which, after eighteen months of service, remain brighter than the sky to the camera lens.

First floor is an auditorium and necessary appurtenances — including an office which, incidentally, seems the one poorly lighted space in the building. Space below stairs is used for study groups, recreation, dinner gatherings, musical and dramatic productions. Walls above grade are of common brick inside and out, built in the hollow-wall fashion more common abroad than here, in order to reduce penetration of cold and moisture.

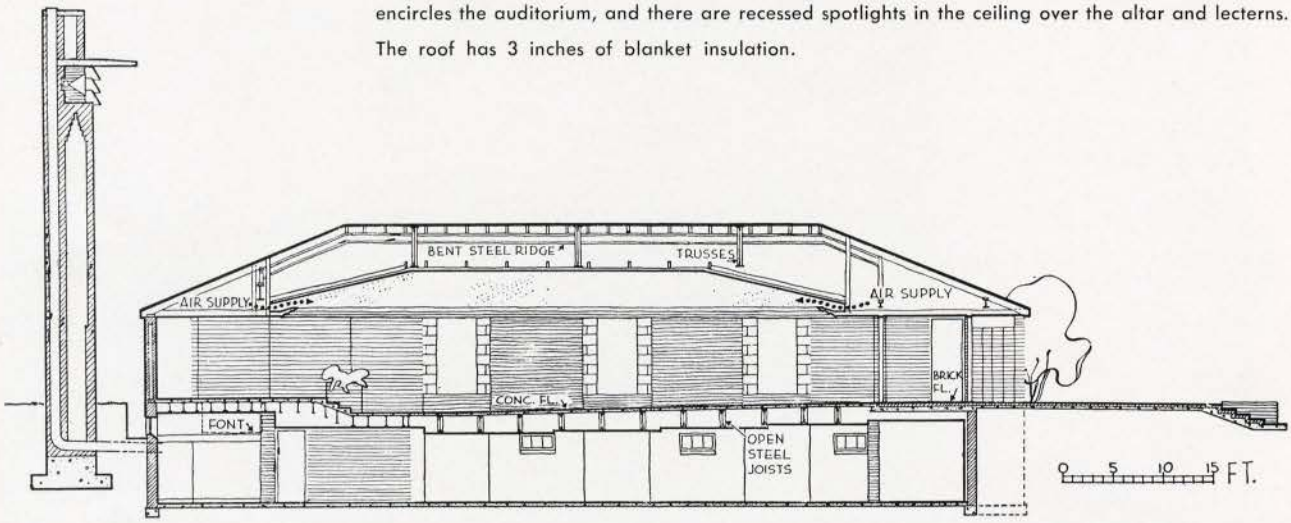


GROUND FLOOR

The windows, seen from inside, tell the story of this remarkable small church perhaps better than any other view. The close relationship between outdoors and in; the simplicity of natural materials which unashamedly abut one another; the vase of flowers; and above all the expanse of clear glass, whose clarity will be enhanced rather than obscured by later decoration in the small, square panes, combine to make the building as pleasantly contemporary in spiritual feeling as it is in more mundane characteristics. Its esthetic satisfaction grows out of its practical success; and if it shows a slighter relationship than most of Dow's published work to the Frank Lloyd Wright tradition, yet it displays a fine appreciation of the common virtues. It passes with honors a most difficult architectural test when it achieves success without great financial outlay, without ornament, even without being "completed."

The interior of the church, like the exterior, is at once unpretentious and dignified. The exposed brick walls carry lightweight steel members which support the roof and ceiling. The concrete floor, covered with mastic tile, is also supported on lightweight steel joists, and slopes down toward the platform. Here, too, work remains to be done. The plasterboard ceiling, at present exposed, is eventually to be partially covered with acoustic plaster, partially with fabric held in place by small wood battens which will form a decorative pattern.

The building is heated by a forced-air gas-fired furnace, with galvanized iron supply ducts in the ceiling and returns under the windows. Indirect light sources are located in the trough which encircles the auditorium, and there are recessed spotlights in the ceiling over the altar and lecterns. The roof has 3 inches of blanket insulation.



LONGITUDINAL SECTION

REORGANIZED CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS

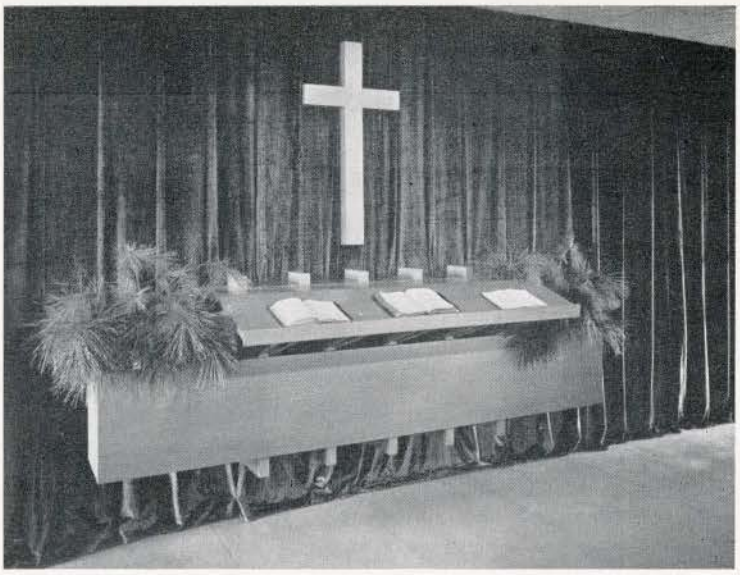
Set determinants guided the church's design: space in which to seat comfortably about 300 people; a raised platform suitable for church meetings yet easily convertible into a stage for small dramatizations; a recognition of nature as an important part of the creed; facilities for community and social activities as well as worship; and such worldly requirements as sufficient parking space and the need for staying within a limited budget.

Located on Ashman Street in Midland, the church is in a neighborhood which is fast becoming commercial. All the more appealing, then, are the gardens which surround it; quiet, informal, much like old English flower gardens, they are pleasantly conspicuous. The plot is approximately 100 by 300 feet in size, and provides adequate automobile parking space in the rear of the building.

When the design had reached the sketch stage, the committee presented it to the local membership, and after winning their enthusiastic endorsement, informed their head officials and sent in the sketches to obtain their approval to build. Thereupon, as the architect puts it: "the officials immediately came to Midland and met with me and the building committee. I think they were afraid that the architect was trying to sell the building committee something different just for the sake of being different; but after we explained the philosophy of the building they were as enthusiastic as we, and immediately approved the plans."

Alden Dow gives as reasons for the success of the church, first, the intense enthusiasm of the congregation (as many as 30 members at a time, all working, participated in its construction) and, second, the fact that it is not completed: the sculptured caps (cast concrete) at the entrance, each to be done by an individual member of the parish, will eventually tell the story of their faith. Square panes in the windows will be treated similarly, different bays being assigned to different groups. The flower gardens need continued attention. When the basement was usable, before the main auditorium was completed, services were held below stairs. By such simple means is enduring interest assured, while the building grows to a gracious climax.

Since nature plays such an important role in the church's philosophy, built-in plant containers flank the platform and the altar on its rear wall. Lecterns — to quote again — "designed to inspire any man behind them to lecture," are of naturally finished light oak, as are all furniture and wood trim. Choir pews, lecterns, and alter and cross (the latter two suspended on the wall) are portable, easily cleared away when necessary for dramatic presentations. Draperies on the altar wall were installed by members of the parish. (See next page.)



ALTAR WALL

LECTERNS

The text of this article is here reprinted by courtesy of Pencil Points.

This paper on some United Kingdom Developments was specially written for the Journal by the Editor of The Builder

IAN M. LESLIE

RECENT BUILDING TECHNIQUES

ONE WAY to aid in implementing the belief – shared by Mr C. D. Howe, Minister of Trade and Commerce, and Mr Richard Stokes, Minister of Works, H.M. Britannic Government – that the prosperity of Canada and the United Kingdom is bound up with a greater flow of ideas and goods between our two countries, is to bring to the notice of the construction industry new ideas on building plant and materials. For that reason I welcome the invitation of the Editor of the RAIC JOURNAL to contribute some notes on recent U.K. developments.

Much of recent progress is concerned with reinforced concrete work which acquires special interest in view of a shortage of steel likely to become universal by reason of rearmament programmes. Much research into prestressed concrete has been made of late years leading to economy in steel. One of the most recent developments is a new type of mobile prestressing unit devised by Mr Donovan Lee, M.Inst., C.E., for use with the Lee-McCall system of prestressing. The unit is self-contained, comprising a 42-ton jack and pump with a winch for quickly levelling the jack with the bar to be prestressed. The jack can be used facing any direction by swinging the jack and turning the trolley. It can be lowered also well below the ground for prestressing foundation beams or, by use of a ginney wheel on the scaffolding, can be raised to a higher level than the trolley. Two jacks can be used side by side to prestress two bars simultaneously. It is claimed that by avoiding the necessity of disconnecting the hydraulic connections and the simplicity of handling, this prestressing unit saves considerable time on the site. (Fig. 1)

A load-bearing panel which compares favourably in price with a plastered breeze partition has been developed by Bellrock, Ltd. These panels are 8 feet, 10 feet and 12 feet deep, 2 feet in width, and of thicknesses of 3 inch, 4 inch, 6 inch and 7 inch. They consist of two ⅝-inch faces of plaster held together by a honeycomb of scrim and plaster (Fig. 2). They are easily erected by butt-jointing two panels and pouring liquid plaster into the joints through a hole from the outside. When the plaster is set, the whole is sealed, and there is a perfect finish to the face of the wall ready for paint or distemper. The panels, which are fireproof, can be worked with ordinary woodworking tools; they have high heat-and-sound-insulation properties, and can be manufactured in any country where gypsum is available.

The application of a cementitious surfacing composition by one complete mechanical operation, using a special patented spray gun is a useful process developed by Pyrok, Ltd. This material forms a stable, strongly-adhering, non-cracking coating which can be applied to practically all building materials, and is claimed to give proctection against heat and condensation, to be remarkably thermal and to be suitable for use inside buildings and out. The spraying plant is self-contained and easily transportable. (Fig. 3)

Architects may be interested in the latest achievement of Pilkington Brothers, who have made in their St Helens plant a plate glass window, 50 feet by 8 feet by ⅜ inch, and transported it safely 200 miles to the Festival of Britain site in London, where it has been placed in the Power and Production building. While the manufacture of this glass under modern methods of continuous production presented no great difficulty, the handling, packing and transport problems were a little out of the ordinary. A vacuum-operated "sucker" was used to lift the glass into its case, seen in Fig. 4. It is the world's largest-ever window.

Builders' Plant

There has been much activity in the design and production of small mechanised plant, sometimes hand-operated but more usually powered. Fig. 5 shows a small builders' hoist which enables two operators to elevate bricks, mortar, roofings, etc., with ease. Of strong welded tubular construction, this "Thwaites" hoist is powered by a 1.3 h.p. Villiers petrol engine and is mounted on pneumatic-tyred wheels. It will hoist 800 bricks through 18 feet in one hour. The "Winget" Mechanical Moke powered dumping barrow (Fig. 6) has a capacity of 9 cubic feet or 12 cwts, and takes a complete mix from a 10/7 concrete mixed in one operation. Driven by a power unit mounted on a turntable having a 360 degree turn on its own axis, a forward or reversing movement is obtained simply by turning the steering wheel 180 degrees. When pressure on the steering wheel is released, the brake is automatically applied. The skip is interchangeable with a steel platform with a maximum load of 12 cwts. The machine is powered by a J.A.P. 2.4 air-cooled 4-stroke unit.

An interesting development in site transport is the Monorail Transporter, seen in Fig. 7. No driver is required; it travels alone and stops automatically at any desired point. With a trailer which, like the self-propelled wagon, is of 11 cwt capacity, it will travel at the rate of 100 yards per minute and maintain this speed on gradients

up to 1 in 18. The power unit consists of a 3 h.p. air-cooled petrol engine coupled to a gearbox of special design which is provided with forward and reverse gears operated by a single lever through a lined clutch. The clutch can be disengaged by hand or automatic stop. The stability of the wagon is maintained by four idler rollers making contact with the bottom flange of the rail.

An hydraulic scaffold platform for use on work where elevation is needed is seen in Fig. 8. The working platform of this "Beanstalk" plant is raised by hand on a triple telescopic ram by means of a pump lever attached to the platform, operating a powerful hydraulic pump contained in the oil reservoir. From the retracted level of 6 feet 5½ inches above the floor, the platform can be raised to 17 feet in two minutes. When retracted, the "Beanstalk" may be pushed through a doorway 6 feet 6 inches high and 2 feet 6 inches wide.

The concreting boom seen in Fig. 9 is a piece of equipment which simplifies the distribution of concrete over a small building site. The boom, which weighs some 400 lb., is hinged to a quickly erected transportable structure close to the mixer. The skip, holding 7 cubic feet of concrete, runs along the boom which can cover an area of 40 feet radius from the mixer. The illustration shows a job on a housing site near London on which five men concreted pairs of footings containing 22 cubic yards of concrete at the rate of one pair every 4½ hours, or 1 cubic yard per man-hour, including the moving of the equipment.

Uses which vary from living accommodation for construction camps, building site booths to grain storage and camping can be found for the Uniport Altent (Fig. 10). These lightweight rigid aluminum constructions give long service. The walls consist of identical panels, as also the roof. These nest together in compact space and are easily transported and simply erected. Windows and doors can be fitted to choice, and heat is reflected from the surface. Altents are supplied in two models, Uniport Senior, 160 square feet, and Uniport Junior 80 square feet.

Finally, coming nearer home, is the "Belling" safety electric fire which is an entirely new portable appliance. This factor of safety is achieved in two main ways, first, by elements which are deep seated in a reflector behind a totally enclosing grille guard, and second, by a controlling mercury switch so suspended as to cut off current if the fire is tilted or overturned and also if the fire is lifted for carrying purposes. A convection passage of roughly venturi shape exists from a grille in the front base of the body to outlet at front top. This increases efficiency and keeps the whole external surfaces of the fire cool and safe to touch.

KEY TO MANUFACTURERS

Lee-McCall system of prestressing: McCall & Co., Ltd, Sheffield, Eng.

Bellrock load-bearing panel: Bellrock Ltd, London Street, Chertsey, Surrey, Eng.

Pyrok surfacing: Pyrok, Ltd, Newcastle Wharf, 40-42, Nine Elms-lane, London, S.W.8, Eng.

Plate glass: Pilkington Bros, Ltd, St Helens, Lancs, Eng.

Thwaites builders' hoist: Thwaites Agricultural Engineering Co., Ltd, Central Chambers, the Parade, Leamington Spa, Warwicks, Eng.

Mechanical Moke: Winget, Ltd, Rochester, Kent, Eng.

Monorail transporter: Road Machines (Drayton), Ltd, West Drayton, Middlesex, Eng.

Beanstalk platform: William Moss and Sons, Ltd, North Circular Road, Cricklewood, London, N.W.2, Eng.

Concrete boom transporter: Fredk Parker Ltd, Viaduct Works, Leicester (steel); Brockworth Building Co., Ltd, Hucclecote, nr Gloucester, Eng. (aluminum).

Uniport Altents: Unit Construction Co., Ltd, 34, St James' Street, S.W.1, London, Eng.

Safety electric fire: Belling and Co., Ltd, Enfield, Middlesex, Eng., or Ferranti, Ltd, Hollinwood, Lancs, Eng.

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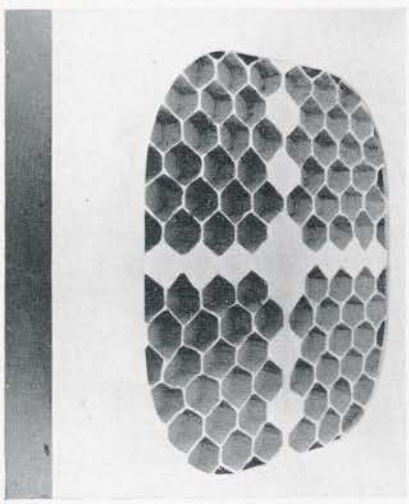

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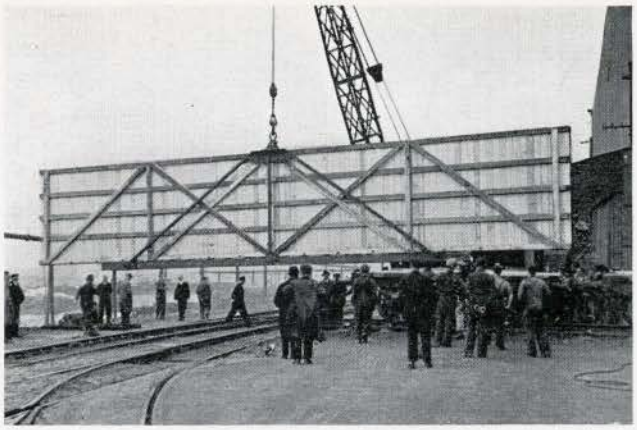

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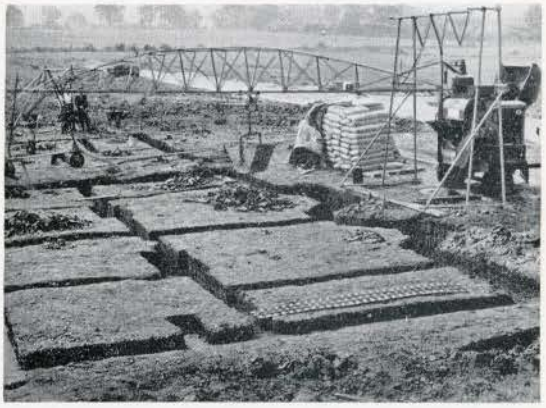

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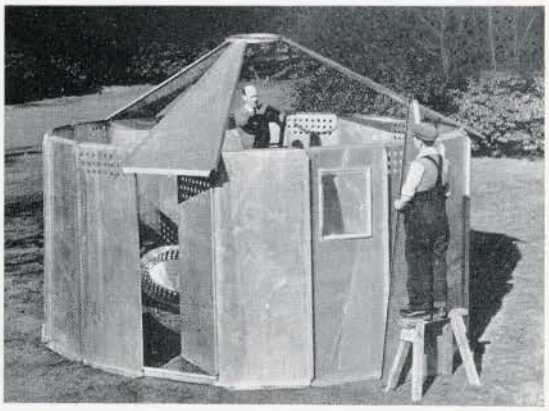


10

SIMON D. STEINER

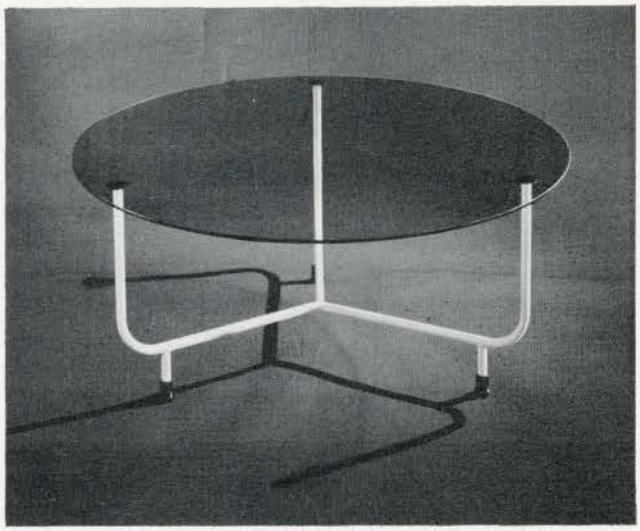
FURNITURE DESIGN AT RYERSON INSTITUTE

CANADA'S GROWING INFLUENCE and importance in the world production picture would seem to suggest a similar growing maturity and independence in matters of product design. This is of prime importance to a country moving towards advanced industrialization.

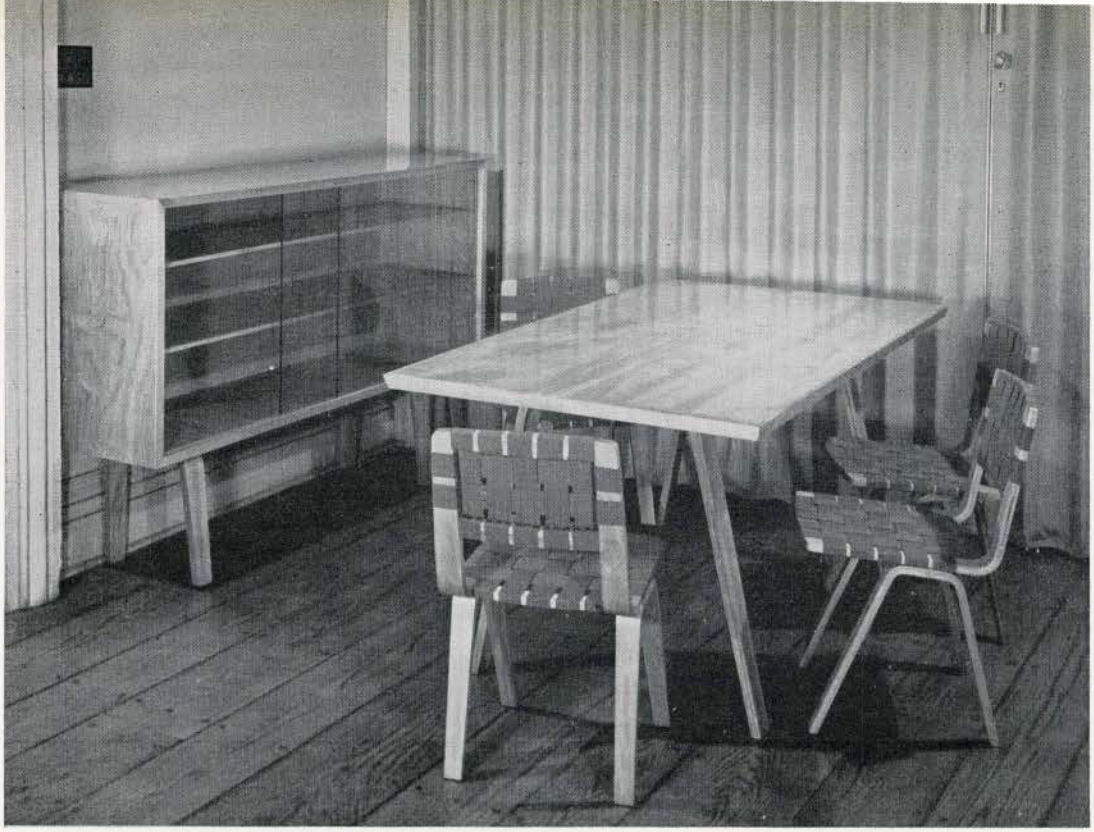
While the writer does not presume to be an authority on this matter, it is probably safe to attribute Canada's delay in developing independent design to its rather recent entry into the area of mass production and to the powerful influence of U.S. design. This reliance on U.S. design would have been bad enough if imitations had involved the better things done in the states. In the main, however, these imitations have been of the worst things with cheap glitter and false streamlining much in evidence. Even the serious Canadian designer seems to be out of step with the times when it comes to furniture. The writer has seen rather amateurish bent plywood chairs heralded as Canadian contributions to design. There thus seems to be a twenty year gap between the general level of design development and the level that some designers are working at. This is not an unrecognized problem, and in the last few years this problem has been the concern of various groups interested in design. The efforts made by these groups has been mainly educational and while they have met with public response very little qualitative change has taken place in the items found in the shops.

The School of Furniture Arts at the Ryerson Institute of Technology hopes to act as an agency for the augmenting of a more significant policy for Canadian design. Ryerson Institute, by providing a wide variety of technological courses, is closing a gap in the Canadian educational scheme. Established by the Ontario Department of Education in 1948, it has, under its principal, Mr H. H. Kerr, received national attention. One of the few schools of this sort on this continent the school of Furniture Arts offers two major courses. These are Furniture Design and Interior Design. Each of these courses is of two or three years duration, and applicants for the courses must have junior matriculation and evidence a sincere interest in the work. The furniture and allied industries are at a point of departure, with one foot in the past and the other foot in the future, or perhaps one should say with the little toe of the other foot in the future. With the possible exception of architecture there is no product more involved in the maze of eclectisism than furniture. However, the way is opened and I do not think that too much optimism is involved in the belief that the industry will become more and more interested in problems of research in design.

It is obvious that training for this situation must be dynamic in character if the training is to have any sense at all. The increasing tempo of technical development points to the need of training that will result in a creative synthesis of these developments. It is my belief that this



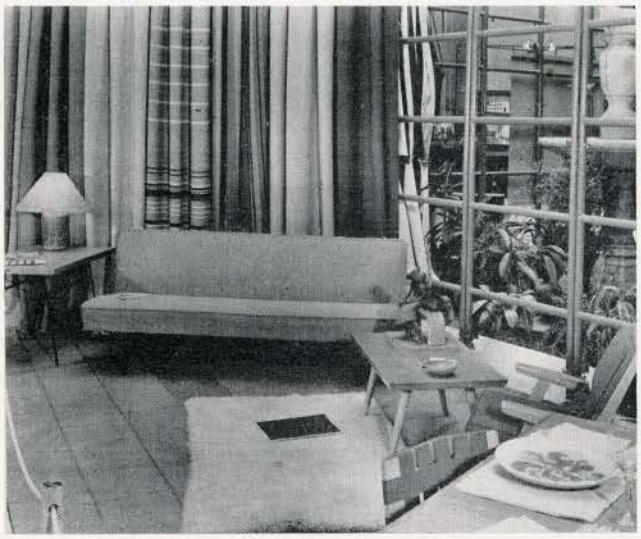
amounts to an organic and sensory basis for education. When the senses have been released from their formal obligations we can expect some sort of realization of form, colour and organization to which we can respond as being sympathetic to our biology. Simultaneously we should find



EXPERIMENTS IN WOOD-LAMINATING BY ADVANCED STUDENTS

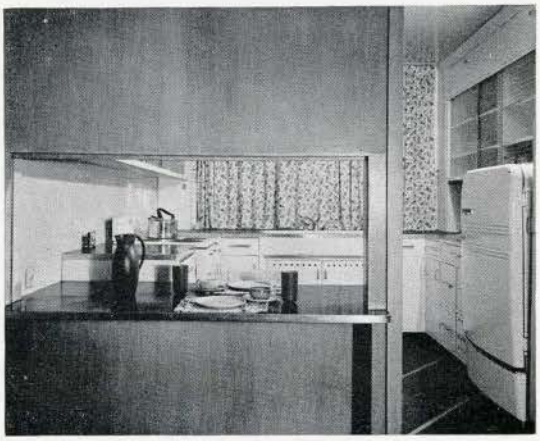
an enriched understanding of materials and tools as the sensory liberation should result in the ability to make an intellectural revaluation. This of course is nothing new. Gropius and Moholy-Nagy made this their aim at the Bauhaus and at the Institute of Design. Other schools have borrowed from the techniques established by them, usually with limited success as the comprehensive implications of their work has not been clearly understood.

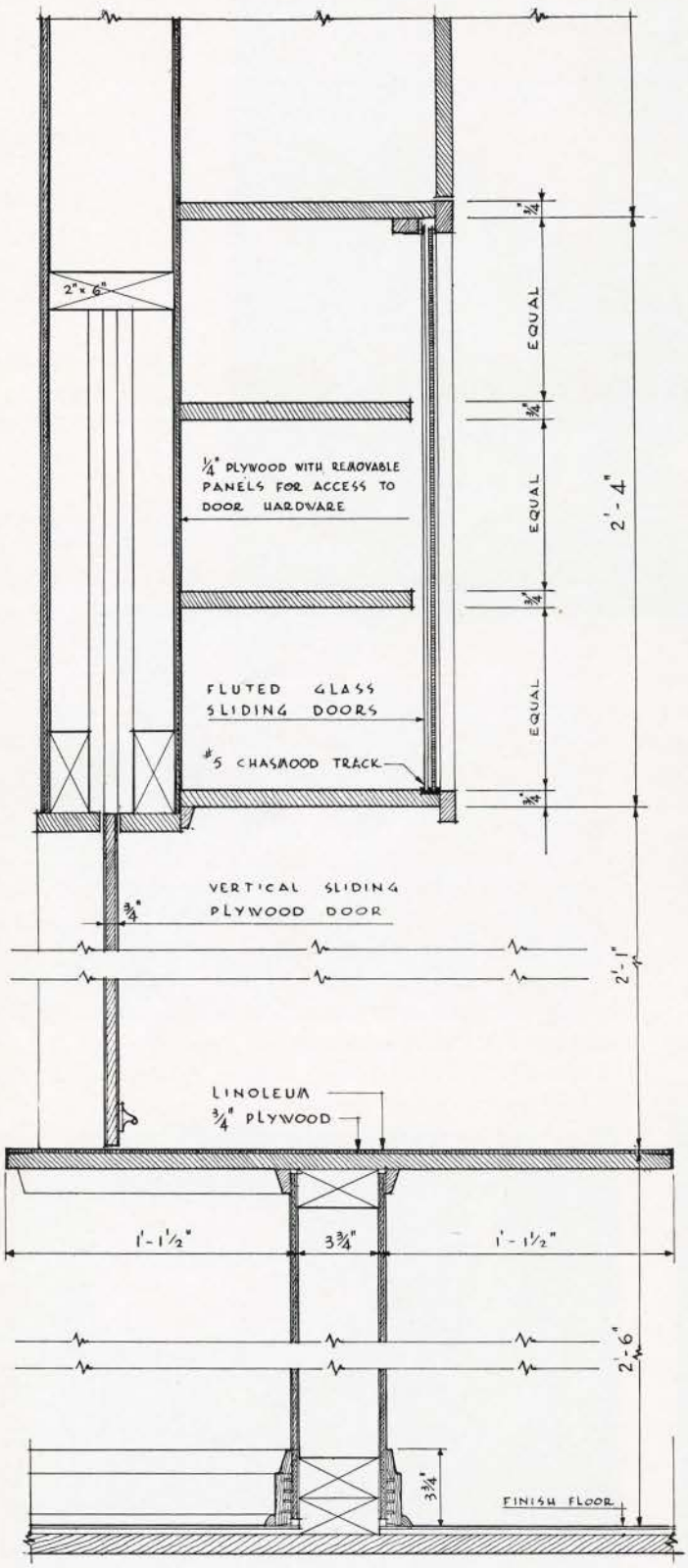
The school of Furniture Arts does not make any claim as to the training of product designers as such. At the present time this is a matter for other agencies. Our purpose is to create a sort of technician craftsman-designer and it is hoped that within the limitations of its stated area, the Furniture School can move towards the direction of developing a creative atmosphere and of integrating creativeness with technical development. The School of Furniture Arts finds itself in an ideal atmosphere as part of the family schools that constitute the Ryerson Institute of Technology. Here the student has available to him a great variety of tools and equipment. While the school enjoys the aid of an advisory committee made up of manufacturers designers and architects, it would appreciate having the interest and criticism of all those seriously interested in these problems.



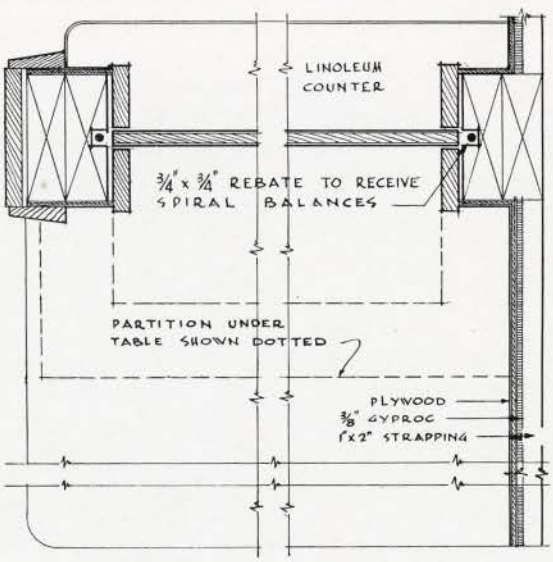
RYERSON FURNITURE AT ART GALLERY EXHIBITION IN TORONTO

FURNITURE SCHOOL DESIGNS AT CANADIAN FURNITURE EXHIBITION 1951 TORONTO





SECTION 1½" = 1'-0"



PLAN 1½" = 1'-0"

BREAKFAST BAR

HOUSE FOR MR. & MRS. J A MURRAY

JAMES A. MURRAY
ARCHITECT TORONTO

FELLOWSHIPS

For Study of Community Planning

Nine fellowships of $1,200 each have been made available by Central Mortgage and Housing Corporation for the study of Community Planning during the academic session 1951-52. These will be awarded for study at McGill University, University of Toronto, University of Manitoba, or the University of British Columbia.

The purpose of these fellowships is to aid students in receiving advanced education which will enable them to enter the field of community planning and allied occupations, either in a professional capacity or in public service.

Candidates must be graduates of recognized universities in the social sciences, architecture or civil engineering. Their academic qualifications must meet the requirements for graduate study at the university to which application is made. All candidates will be required to undertake a prescribed course of studies.

Enquiries and applications should be directed to the Registrars at McGill University, University of Toronto, University of Manitoba, or the University of British Columbia.

Applications should be made at the earliest possible date.

Central Mortgage and Housing Corporation

Would employers please draw this to the attention of possible candidates. *Editor*

Netherlands Scholarship

The Information Division of the Canadian Department of External Affairs has advised the RAIC that the Netherlands Ministry of Education, Arts and Sciences is offering a scholarship of fl. 2,000, with an exemption from university fees of fl. 325, to a Canadian national for study over a ten months period in the Netherlands during the academic year 1951-52.

Candidates may be university students, research workers, architects, painters, musicians, etc. Applications should be made to the Netherlands Embassy at Ottawa and supported by recommendations from scientific, cultural and educational authorities.

ALBERTA

An architect does not need to be told that his duties are many and various. One of the least discussed of these duties is the more intimate relation with his client. An architect of my acquaintance, now long since departed, was discussing matters with a client when a friend dropped in to his office and could not but hear part of the conversation. When the client departed the friend remarked "You seem to treat your clients as if they were utter fools." "Well" said the architect in surprise "aren't they?" Clients, however, must show a modicum of sense in coming to an architect for advice. It is when they fail to take that advice that they go astray. What the architect's attitude should be in advising his client is a matter of diplomacy which is an art in itself and is therefore not subject to strict rules. It all depends on the circumstances and is often a matter of difficulty and delicacy. How far should an architect go in preventing foolish enterprise, either in the matter or the cost, on the part of his client? A situation of difficulty most frequently arises in the case of small associations such as handle community buildings or small churches. These are apt to adopt highly optimistic views about how much can be built for their money and about how much money they can get together. They have promises of great help, – not committed to paper, – from a number of their supporters. By the time these are called for a strange shrinkage has taken place. They are apt to have obtained a recent knowledge of the costs of certain things, which may be genuine knowledge so far as it goes, but which does not place them in a position to estimate the cost of the whole work. It is difficult to persuade a man who does know something that he does not know it all. Such people are apt to fail to realize that the architect's work is a very valuable item requiring payment in cash. They do not know that his superintendence is an important element in the success of the work. Even the contractor's eight or ten per cent appears a quite dispensable cost. They may prefer to do the work themselves employing a superintendent on wages. This is a pretty sure way of butchering an architect's design. The superintendent has not the command of the market either in labour or materials that an experienced contractor has at his disposal. Difficulties in carrying out the work as shown on the architect's drawings are sure to occur. A regular contractor is in duty bound to meet these squarely. The superintendent adopts substitute methods and materials and thus commits a thorough butchery. It is a deplorable fact that the clients are easily persuaded that this process is in their best interests and they are too apt to be satisfied that they are getting what they really want. They cannot realize how much they have failed to obtain.

The tendency for clients of this optimistic class to overspend their means sometimes lands them in a serious financial situation. This is not the architect's responsibility; but if he has not been diplomatic enough to secure payment for his services at an early stage of proceedings he may find himself forced to make an unsatisfactory settlement. It may thus be well for an architect to treat his clients from the start in a somewhat stern parental manner.

Another professional difficulty arises in the case of houses of the smallest class. In the public mind it is

naturally, and perhaps rightly, assumed that these must be pre-eminently the responsibility of the architect. Most ordinary practitioners probably simply evade this difficulty or responsibility, if responsibility it be, by refusing to accept this class of work. It does not pay them and, on the other hand, the small house builder looks on the ordinary fee of an architect as an exorbitant drain on his economy. What is the proper resort for these needy customers? There are two ways which are to some extent practised. Some contractors maintain a drafting staff to cater to these clients. There are also a few architects who specialize in this business. In both cases the designers must trust to meeting the demand by a limited number of standard plans. Both methods represent a good and necessary service, even if the product can be of no distinguished quality.

Cecil S. Burgess

BOOK REVIEW

THE MOTION PICTURE THEATRE
PLANNING AND UPKEEP

Published by Society of Motion Picture Engineers, Inc., 342 Madison Avenue, New York 17, N.Y., U.S.A. Edited by Helen M. Stote. Price $5.50.

To the architect interested in the design of the motion picture theatre, this book is the first authentic publication covering an interesting field in an informative and comprehensive manner. It deals with the problem as it exists today for the architect, the owner-operator and the patron. Most publications skirt the various technical problems pertaining to theatre form, vision and sound and treat the subject with a large measure of hokus-pokus. This is probably due to the very recent emergence of the cinema as a separate entity, apart from the legitimate theatre, for the presentation of a popular form of entertainment, with its resulting lack of adequately tested standards. The Society of Motion Picture Engineers founded in 1916 has as its mandate the advancement of the motion picture theatre through the establishment of standards for the industry.

The material in this book is presented as a series of papers by outstanding authorities in their respective fields at the 62nd semi-annual convention of the Society held in October, 1947, in New York City. These papers assess the latest scientific information on major phases of theatre design and construction. An additional aim of the convention was to exhibit all new theatre equipment, the development of which had been delayed by World War II.

This reviewer had the good fortune to be present at this convention which like all conventions was a happy mixture of serious conferences and discussions with an opportunity of meeting the outstanding personalities in the field. It also provided the reviewer's wife a chance to catch up on her New York shopping.

For the architect, the papers which are of greatest interest are those which deal naturally with the physical envelope of the cinema resulting from its proper functional use. The opening paper by confrere Ben Schlanger discusses the advancements made since 1931 and the aims and aspirations of the properly integrated cinema.

Subsequent chapters discuss the major components which constitute the modern motion picture theatre.

Architect John J. McNamara of New York City starts off his discussion on general theatre construction and design with able assists from leading architect delegates from all over the country.

The highly important features dealing with seating, vision and effective presentation is discussed by such outstanding men as Felix W. Alexa and architect Ben Schlanger.

The chapters dealing with ventilation, air conditioning, acoustics, lighting, floor coverings and promotional display are recommended for close examination.

Of passing interest to would-be Canadian television fans, whose only television station is at present stowed away in crates in some warehouse in Montreal, are several papers on theatre television.

A noteworthy feature of the book is the inclusion of the discussion periods held after the presentation of each paper.

This book deserves to be in every architect's library.

Henry E. Greenspoon

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Alden B. Dow began his professional schooling as a mechanical engineer at the University of Michigan, Ann Arbor. After three years of study, he changed his course and his enrolment to the School of Architecture, Columbia University, and was graduated from that school in 1931.

Mr Dow spent the summer of 1933 working with Frank Lloyd Wright at Taliesin, and in the fall of that year he opened his own office in his home town of Midland. Since that time he has designed many schools, churches and war housing projects, but is best known throughout the country for his individualized residences.

Just prior to World War II, he designed the town of Lake Jackson, Texas.

E. L. Hankinson was born and educated in British Columbia. His schooling was interrupted by war service with the R.C.A.F. and the Royal Navy Fleet Air Arm, after which he returned to the University of Manitoba. He graduated in Architecture in May, 1949, and on graduation, he was awarded the Pilkington Annual Travelling Scholarship. He spent the following eight months in Britain and on the Continent.

Ian M. Leslie is Editor of THE BUILDER, oldest journal in the world devoted to the interests of the construction industry, and now in its 110th year. Mr Leslie, with his colleague Mr John B. Perks, last year made a survey for his paper of the Canadian construction industry. Keenly interested in the Boys' Club movement in Great Britain, he sits as a Magistrate in London's juvenile courts.

Simon D. Steiner received his B.A. at the Institute of Design in Industrial Design. While at the Institute he studied under Maholy-Nagy and Serge Chermayeff. He worked in the organization *Contemporary Workshops* and taught at the Layton School of Art, Milwaukee. From 1949 to the present he has been the Director of the School of Furniture Arts of the Ryerson Institute of Technology, Toronto.

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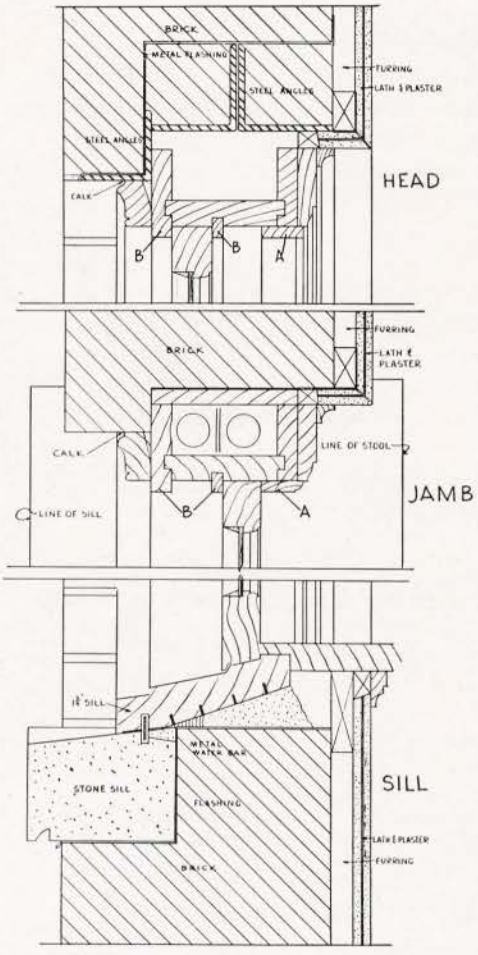
Facts by Pilkington about Glass
FOR ARCHITECTURAL STUDENTS

VOL. 2 – No. 3
THERMOPANE
CONVERTING EXISTING WINDOWS

It is not difficult to convert existing windows to double-glazed *Thermopane** picture windows. If the wood frame is in good condition, it need not be removed. The *Thermopane* unit can be installed by making certain minor adaptations to the frame and following the glazing and installation instructions contained in Nos. 1 and 2 of this series.

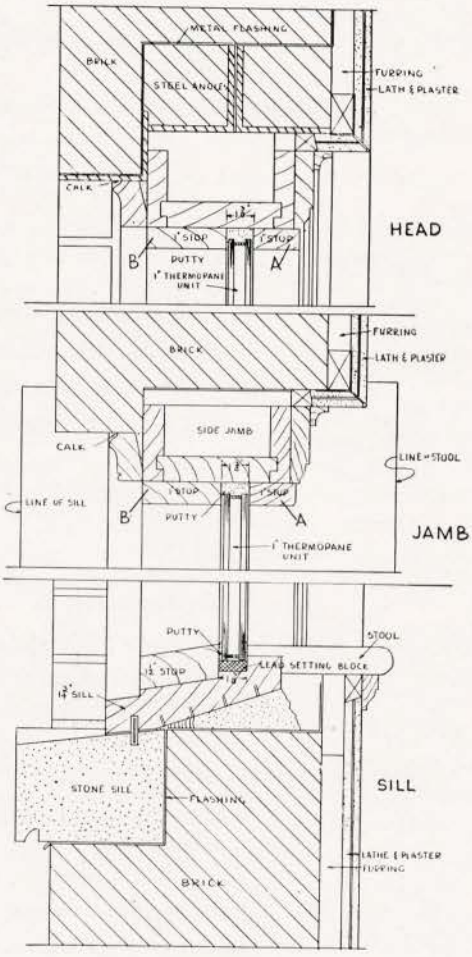
Figure 1 — Shows in cross section a typical double-hung window unit.



How to convert an ordinary double-hung single-glazed window to a fixed picture-window.

1. Remove inner trim (A — Fig. 1).
2. Remove double-hung sash.
3. Plane off guides (B—Fig. 1) flush with jambs.
4. Level off sill ¼ inch to line of stool to ensure square bed for *Thermopane* unit.
5. Stool now becomes back stop at sill.
6. Replace inner trim (A—Fig. 1) with 1-inch dressed lumber (A—Fig. 2) to act as back stops for head and side jambs.
7. Provide movable stops of 1-inch dressed lumber (B—Fig. 2) to the necessary widths for sill, head and side jambs.
8. Frame is now ready for installation of *Thermopane*.

Figure 2 — Shows 1-inch *Thermopane* glazed into the existing frame.



*Reg'd. T.M.

GLAZING THERMOPANE IN STEEL SASH

24 oz. *Thermopane* with ¼" air space can be installed in most sash with a rabbet width of ⅞" to 1". For ease in installing we recommend that *Thermopane* glazing clips be used. These clips act as a resilient and permanent setting block, providing equal spacing between the edge of the glass and the sash frame. They allow ample clearance between the back and face stops, which affords a uniform glazing-compound bed. Sharp points punctured in the metal act as a frictional grip and keep the unit from shifting.

Glazing clip used with steel sash