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JOURNAL R. A. I. C. NOVEMBER 1950

BECAUSE of a happy custom which hands the editorial page over to the Chairman of the Editorial Board and the President of the Institute for the months of December and January, our next occupancy of this page will occur just before the Annual Assembly of the Institute in Quebec. We must have repeated ourself many times in our monthly editorial, but we wonder whether we have ever paid any tribute to the Editorial Boards who, over the last twenty-seven years, have brought the *Journal* to its present state. We have not known all those Boards, but our own arrival in Toronto coincided with the birth of the first *Journal* in 1923. It is perhaps true to say that we have never been completely detached from the inner workings of the *Journal* — certainly we have watched its growth with interest from its inception through part of a depression and a major war.

IT has never ceased to amaze us that always more than fifty per cent of the Toronto members of the Board appear regularly at monthly meetings at 4 o'clock in the afternoon. Three-quarters of the Board is no unusual occurrence, and the architects concerned are among the busiest in Toronto. Their patience with the Editor and the Publisher is such that, in thirteen years of active participation in *Journal* affairs, we do not recall a word of reproach. Not that we haven't as a group had differences among ourselves on matters of policy or principle. Discussions of that kind are settled without heat where the interests of the *Journal* and the profession are in every member's mind. In particular, we should like to give credit to the Board for its constant support of the Editor in the free expression of opinion. We recall one occasion when we rather tactlessly suggested that members be made welcome at all the committee meetings of the Annual Assembly, and that even the meetings of the Fellows be not quite so *sacro-sanct*. In the passage of time, those suggestions have been fulfilled. We make this belated apology for anything we said about the Fellows on that distant day. Like the radical English socialist who was kissed by a duchess and thereafter moderated his views, we have since become a Fellow.

WE have all become amateurs in typography, and a member would be embarrassed if he did not recognize immediately a change from Memphis to Garamont, or Bodoni to Gill. Many such changes have been made over the years, and the Board has awaited, with bated breath, the deluge of expected criticism. None has ever been forthcoming. We have had two covers in thirteen years. The first, with its archaic Ionic column, was designed by the brother of an architect in exchange for a bottle of gin. The second, our present cover, was more expensive.

IT might interest members to know that all photographs of buildings submitted to the Board are discussed at length, and the decision to publish or not to publish is made by the Board. In the same way, articles are read by the Editor, and then given by the Board to an architect, who is an authority in the field of the article, for his recommendation. He may be a member of the Board, or not, so long as his competence to judge the article is unquestioned. The reading of the article first by the Editor has no significance. As he sees his duty, it is to recommend a person for a second reading. The Board quite frequently nominates a more able or, at any rate, a different person. We like to think of the *Journal* as the mouthpiece of the profession in Canada, and, by and large, the members of the R.A.I.C. have treated it as such. More and more frequently unsolicited articles appear for publication. In these post-war days, there is no dearth of buildings as illustrations, but we are in constant need of articles on all topics that would interest the readers of the *Journal*. The hungry maw of the *Journal* which used to be satisfied with five thousand words, requires, today, a minimum of fifteen thousand. The literary efforts of architects in Canada need not make up the total volume of fifteen thousand words per issue, but we would like to think that they would supply seventy-five per cent. The need for written material dealing with a wide range of architectural topics cannot be over stressed.

WE have reserved for the last our praise and thanks to those Editorial Board members who do not sit in Toronto, but hold their separate meetings or conversations in each province. To them we are especially indebted for, without them, there would be no point in meeting in Toronto, and no point in having a *Journal* except as a digest of Institute affairs. That we have accomplished more than that is entirely due to those who have organized special issues, and to those groups in metropolitan areas who have tirelessly solicited material for general or other issues. We would not be frank if we said that such co-operation was equally shared throughout Canada. We make a deep obeisance to one province which holds regular monthly editorial meetings, and keeps minutes which are a constant and healthy irritant to Editor and Publisher. Our job would be easier if there were more such enthusiasts working with us. We are sure the Publisher would wish to join us in signing this page, but he is afflicted with a most charming modesty which he appears to shed only in the offices of our advertisers.

Editor

ARCHITECTURE AND INDUSTRIAL DESIGN

A RELATIVE STUDY

By HENRY FINKEL, A.C.I.D.

ESENTIALLY, an architect is a custom designer, and an industrial designer a production designer. The aesthetic view is the same, but both look in on the scene from different platforms.

One might call an applied art like architecture or industrial design a self-conscious craft. That is to say, a craftsman will think of more than just work in connection with his efforts; he will offer a set of evolved reasons for his methods and attitudes — his work philosophy. It is this work philosophy, in its ultimate and most extended meaning, that forms the real basis for creative applied design, and niceties of difference within the work-philosophy mark the fine boundaries between each of the art professions.

Why not one designer for all visual forms? After all, free modern design has a marked similarity in all its facets. A building and a radio housing, a package and a machine all share forms that have been derived obviously from one parent source. What is so different between the radio housing and the building that the designers must split up into specialist groups? The answer lies in this specialized work-philosophy, on which each specific designer relies to lead him in the right direction for the best solution.

Today's design talk glibly rolls off the words "functional" and "modern," without always adapting the newest meanings to these words. Along with language, the philosophy of aesthetics and design expands constantly, and requires ready vigilance by an emancipated mind to perceive and adopt the new nuances.

An architect's understanding of "function" stands four square: a matter of end use, the user, the material, and the means of construction. The industrial designer faces additional functions: The commercial function of sales, the function of publicity — the peg on which to hang advertising campaigns, the function of a rigidly imposed economy program (practically all products must "cost minimum"), the function of interchangeability, the function of line assembly, the function of tools and tooling and so on far into the depths of industry.

Any architect would bridle with honest indignation if it were implied that he could not design — that is detail — everything in his buildings from the weeping tiles up through to the knob on the flagpole. However, the ability to do architectural detailing does not necessarily imply industrial design talents, and there is little to prove that the specialized products detailed in an architect's office would be examples of first rate product design. The two are hardly mutually exclusive — most industrial designers did go into their profession from

an architectural start — but there is a hurdle of mechanical requirements, and an adaptation to this new mode of thinking — the industrial designer's work-philosophy — that the architect must overcome before his ability as a designer in architecture becomes proficient in industrial design.

If it is true that architecture and industrial design have divergent design-work-philosophies, why then should architects be the best source material for new industrial designers? The answer is not wholly positive. There exist now no widespread educational facilities for industrial design at the highest level; therefore the choice for new blood must come from the minds and bodies best prepared for such rigorous tasks as industrial design imposes. Modern architectural education comes closest to the industrial design ideals by providing the kind if not the detail of the desired background and design approach.

An ideal industrial designer is an agglomeration. His work consists of putting the clothes on the body of the mass product. His sense of design must be imaginative; his understanding of the manipulative limits of the human musculature must be authoritative; his knowledge of mechanisms must be fundamental and his anticipatory powers must be reliable. That is to say, he must add up within himself the best qualities of the artist, the mechanical engineer and the merchandising executive.

When an architect undertakes to detail some building part, he lists the elements controlling his design somewhat as follows: the general building design, the specific detail and its importance to the whole structure, its material, who will make it, and the owner's idiosyncrasies. He designs to the best of his ability, and indicates a good accepted construction. The latter, he realizes, will probably be changed by the shop; but that does not matter, for he is protected in the specifications by such vague but secure phrases as, "to be done in a workmanlike manner", and, "subject to the architect's approval", and, "all work to be guaranteed free from defects, etc., etc." At worst, a small rework or repair can correct an unsatisfactory result; on the average, regular job supervision fills in what the details might omit.

In industrial design the details become all important. The whole design may be for a part that could fit on a dime, but that part will be scrutinized from every angle, considered in many materials and studied for processing by half a dozen methods, colored, uncolored, boxed, wrapped or bottled, discussed, sketched, built in prototype, and generally brought as close to perfection as possible. There is no correction half-way during production.

Of course, the industrial designer does not engineer the entire set-up and production for the product. His work, however, must make these things straightforward and economical. His indications must be specific to the point of tedium. The principle for detailing is: "Anything not covered will be done the wrong way." Thus, in specifying materials, the industrial designer calls for "SAE 1040 steel", or "air hardening tool steel", or even "C.R.S.", instead of just "steel"; calls for "molded acrylic" or "polyester impregnated fibreglas impression moldings" or "P.V.C." or "cast phenolic resin" instead of "plastic."

An architect cannot face industrial design without an intensive training in these specific factors. Even language has its new, variable play. So many words have so many meanings. The word "mill", for example, means grinder or granulator in the plastics industry, but in the tool room it refers to a machine used for cutting steel, where the work is clamped to a flat, movable, horizontal table. A "vertical mill" in the tool room is a mill as above, where the rotating tool is held in a chuck on a vertical spindle or shaft. The same machine in a woodworking shop is called a shaper. A shaper in the tool room is of an entirely different order — the work is clamped on a movable block while the fixed cutting tool moves over it, held in a reciprocating arm.

Why worry about the machines in the tool room? Very few products are made there; they usually come from stamping presses, molding machines and fabrication benches. The truth is that a good product more faithfully represents the tool that made it than anything else. Design for plastic is not just design for a soft flow material that can be drawn out of a cavity, but design for a shape that must be cut into very hard steel by existing techniques. And what if the "techniques" don't go far enough? A competent designer can extend a standard technique far beyond that conceivable by the machinist. Specific techniques can be improved and even invented by the designer with a wide comprehension of industrial processes, and many new designs owe their existence to such a development.

What of design for wood? This wonderful, adaptable, colorful material, so well understood by the architect, so lavishly strewn about our buildings up to fairly recently, has become a scarce and costly commodity with frightening suddenness. Wood substitutes — how our grandfathers would laugh — are showing up almost daily. Laminated wood sandwiches with one good outer face are the standard in an industry which has almost forgotten fully seasoned solid lumber. Design for wood mass production is an exacting business of conserving precious face woods, of using light sections, of new joints, of using other materials for design and cost relief, and of planning far ahead for slow deliveries.

Steel — so versatile, so cheap, so easily worked. Well, the price has gone up, and there is a shortage, but when available, it is a material that industry knows how to handle, and one which the designer must understand thoroughly. Some architects may know that structural steel is a mild, hot rolled, low strength steel, and that some steels are heat-hardened for better wear.

An industrial designer cannot work intelligently without a competent knowledge of most steel formulations and properties, and must be able to think in such terms as deep drawing of steel sheets, automatic lathe turnings, cast parts, forged parts, stamped parts, springs, tools, their heat treatment, and the methods for preventing rusting and corrosion.

A large slice of the industrial designer's metal activity is devoted to the non-ferrous group. Having learned of the various available forms of aluminum and the duraluminum alloys (a commendably straightforward group) as well as of their working techniques — gravity casting, permanent mold casting, die-casting, extrusion, rolling, forging, drawing, stamping, etc.; and knowing that aluminum and certain of its alloys can be color anodized for protection and appearance, one feels that here is Canada's material for light weight metal applications. But magnesium is lighter, is as strong or stronger, and costs the same ultimately, per unit of volume. A seven-pound aluminum chair weighs $4\frac{3}{4}$ pounds in magnesium. Where shall we use the beryllium alloys? They are costly, but have magnificent strength characteristics. What new finishing methods are available for protecting the surface of these new metals? Are they an improvement on plating for zinc die-castings? The industrial designer has many questions to answer readily.

It is rare that an architect designs an object other than a door or drawer for manipulation by the hand or foot. Planning for efficient lever or knob control is one of the basic functions of industrial design. A handle must invite holding, should indicate preferably by its shape which way it should be moved, must be within easy reach of the operator's foot or hand, and should be protected against accidental tripping. The designer's knowledge of mechanisms permits him to eliminate, combine, or add controls, as his design-work-philosophy dictates. Likewise lids, locks, latches, louvres and all the other paraphernalia of small and large product housings must become neat design punctuation marks, rather than awkward stumbling blocks, as they fit into the scheme of using the product. It is a damning commentary on some "streamlined" machines that the sleek housings are removed after a few short days for easier servicing and maintenance to the equipment, and then are *left off*. Design cannot afford to be superfluous. It is part of the philosophy of industrial design that every function of a product gets its fair share of attention, including the service man who dirties his hands inside the mechanism performing his function of maintaining the equipment in operating condition.

A product of reasonable size is such a fantastic collection of function factors that only the strictest adherence to the basic principles of industrial design can permit the designed result any degree of success. The industrial designer has reached his present level of popularity largely through following these tenets, and providing his client with interestingly increased sales for his product. The function of sales is dealt with both deliberately and incidentally. An attractive product that works well, sells well. A new attractive product that works well, sells better.

The maligned public has good taste and an insatiable appetite, gloomy salesmen notwithstanding. That public will buy anything within its comprehension and does not rely on "style" to sway its interest. Style is a salesman's word, because he must say something; he rarely knows anything about the product he sells, and must therefore rely on coercion and snob value. "Everyone is buying this now — it's the latest style" is his most potent argument. This argument therefore extends to the statement that no new style will ever be possible, because no one can ever start buying it, which is absurd!

Simple gadgets and ingenious devices are good product attractions if released on the public gradually, but a superfluity of controls — things to do — is frightening. A product for the living rooms in the home must avoid looking like a machine. The best radio-phono-video combinations close up to look like a cabinet. Anything that simplifies housekeeping will sell or improve sales: a new finish on fabrics to permit cleaning with a damp cloth; the vacuum cleaner with the extra features; larger, self-defrosting refrigerators; cupboard gadgets; deepfreezers for suburban and rural areas; automatic heaters; ash trays with safety features; furniture with fewer frills and a finish easier to maintain; it goes on right through the house, into the garage with its automatic gear-shift cars, and down to the office with its constantly improving bookkeeping, adding, and typing machines.

One famous, annoying sales word is "waterfall". It crops up in many client-designer meetings on furniture and sheet metal products. It is a tiresome description of a design device that is honest — the large rounded corner joint — but it has been used dishonestly again and again for presumed sales advantage. What makes its use an honest one, and when should it be shunned? The answer, as ever, lies in the best satisfactions of the product's manufacturing and end-use functions. The large rounded corner does save one corner joint, does permit easier flow of metal in a deep drawing die, does permit a more complete fill in a plastic mold, does not get chipped easily on the assembly benches, and does finish more readily. If, in addition, it adds to the ultimate appearance, it is obviously legitimate. It is possibly one of the most important functional forms in the design book, and because of this it can neither be a style, nor can it ever "go out of style"; it answers a function.

It might be appropriate to study a borderline job between architecture and industrial design, to clarify more of the implications of the industrial designer's work-philosophy. An obvious job is the prefabricated house. The architect accepts the individuality of his clientele, and immediately thinks of modular units that can be combined in innumerable ingenious ways to give everyone a home of his own. The industrial designer approaches the problem by wondering how much of a publicity and advertising campaign is going to be required to acclimatise the consumer (that homeless man with a thousand dollar down payment) to the new ideas in uniform living that he is about to establish. Industrially, prefabrication is a simple thing; it is B-29's without wings, or liberty ships for land-locked immobile cargoes.

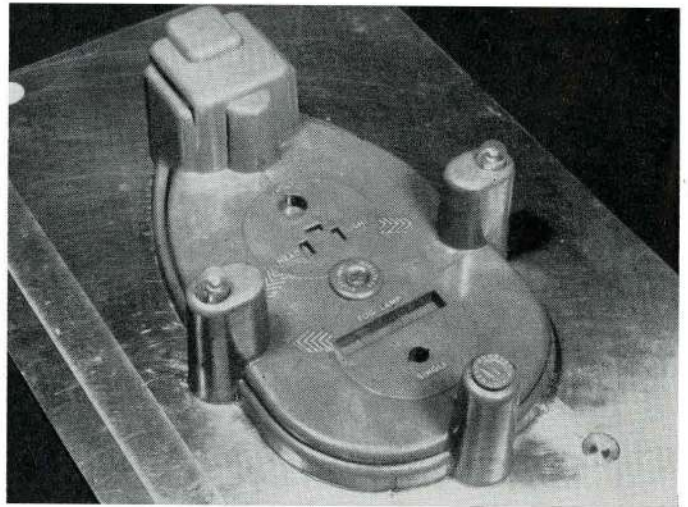
Architecturally, the prefabricated house should consist of a moderate number of man-sized bricks. Industrially,

the house must be made of the largest transportable units, wholly assembled on a production line, including furnishings. An adjusted social and domestic outlook, and tooling based on a minimum production of at least a million identical units, will provide a resultant house with a maximum of efficient domestic facilities for minimum cost. Design for quantity house production is just a larger kind of car, refrigerator, bus, radio or railway coach design, a product in many materials, an assembly line problem, a fitted package for human beings — delivered anywhere, F.O.B. the factory.

A century elapsed between the industrial revolution and the establishment of the profession of industrial design. The practitioner may be a relative newcomer, but he uses the oldest and best proven equipment — a proper philosophy, the reasoned approach.

Illustrations

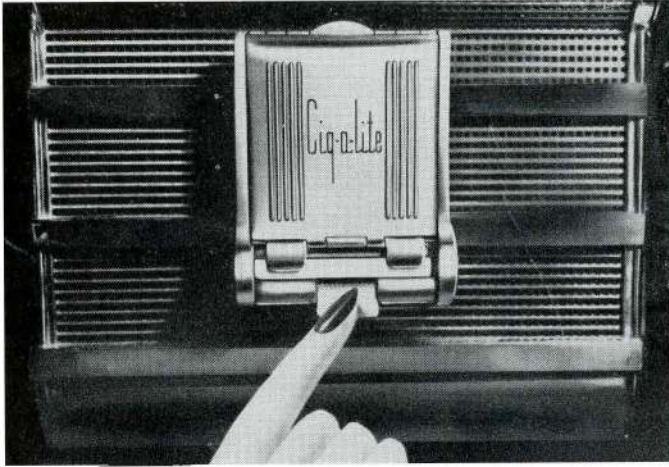
Illustrative of the ideas presented in the text, the following product photographs are elaborated with the functional considerations stressed.



LAMP TESTER

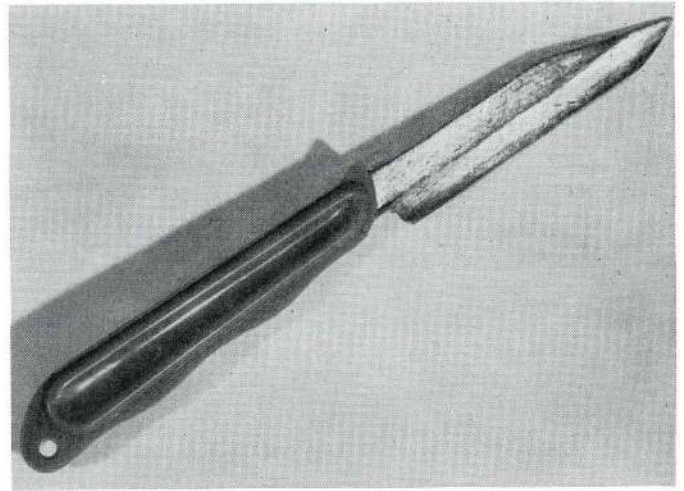
Designed for service station use to check on automobile lamps, this tester must show easily and quickly whether a bulb is defective or still serviceable. It must accommodate four different lamp shapes from beam-headlamps to instrument board lights, with both single and double filaments. As designed, the tester is divided into two sections, according to the number of filaments. The triangle formed by the two side towers and either the back or front tower will support either the headlight or the fog light. All other lamps are small enough to rest securely in their respective sockets. A good two-filament lamp will cause both indicator lamps in the side towers to glow. The left-hand tower light will glow alone for single filament lamps. Molded-in arrows show which indicators to watch. The large block at the rear houses either a transformer or suitable resistors. The tester was molded in polystyrene, a plastic with high electrical insulating characteristics, good physical strength, wide color range and low cost. The large base, approximately five by ten inches, was centre gated off the sprue, that is, the plastic flowed into the mold at the centre of the product cavity. The hole left after cleaning was covered by a molded identification button, produced on the same

mold. Lettering and markings were engraved into the mold, and filled with paint in the finished product. All draft angles were identical, and the design required the use of only two different milling cutters. The underside was ribbed for structural reinforcement, and provided with lugs for attaching the electrical connections. It could be made to operate on any voltage, at any frequency, and, in one treatment, was made to light the bulbs themselves instead of the indicator signals.



C I G - A - L I T E

An automatic cigarette dispenser for the car dashboard, that feeds a lighted cigarette when a button is pressed. It is made of chrome-clad steel on a double hinge principle, so that the number of moving parts is minimized, and operation simplified. The design problem was largely a matter of relating the many mechanical functions to the limited available space. Provision was made for a special element on one side, and for a hammer mechanism on the other side to push the cigarette against the element. Enclosing these and the cigarette chamber, provided the basic container shape. The ribbed cover (criticized by some purists) permitted the use of a lighter gauge of steel than otherwise needed.



K N I F E H A N D L E

The development of a method of producing knife blades by a continuous strip process, including hollow grinding, led to a need for a faster method of applying handles. The obvious answer was to mold plastic handles on to the blades, at the approximate rate of five seconds each. Successful molding of this sort was rare, and involved dimensional tolerances not generally recognized in either the mold-making or blade-making industries. Furthermore, cleaning the parting line from the molded handle would prove a difficult operation. The resultant design moved the parting line to an unconventional position where it could be left as it came from the mold, and where it improved the holding characteristics of the handle. The particular design also eliminated all problems of close tolerance at the parting line, and, by reason of the deep finger grooves on the side, removed any chance of unsightly shrink marks showing on the molded handle. Every manner of holding the knife was studied, and provision made to help the grip in each case. The result is a better and cheaper handle than its wood predecessors.

AGREEMENT BETWEEN ARCHITECT AND CLIENT

The Implied Term

By MEREDITH FLEMING

IN Washington, D.C. in 1922, a patron seated in a moving picture theatre was crushed to death by the collapse of the roof and ceiling. The administrator of his estate sued the owner of the theatre, the contractor who had completed the erection a short time before the accident, and the architect. The American court dismissed the action as against the architect and contractor, and stated that even if those parties had been careless in the design or in the carrying out of the erection, the liability to the patron of the theatre was that of the owner.

With due respect to the learned American court, we are inclined to the view that a Canadian court might impose some liability on the architect under such circumstances if it could find that the collapse occurred through his carelessness.

A case of negligence by an architect involving less dramatic circumstances than in the Washington theatre accident but worthy of notice from a practical view, came before the Court of King's Bench in England nearly half a century ago. The architect was engaged to prepare drawings for a building to be erected upon a certain site owned by his client. The architect failed to accurately measure the site or to have his client provide him with a sketch of survey, and as result the building for which plans were prepared was of too large an area to be erected on the client's plot. The error was discovered only after the client had gone to considerable trouble and expense in an abortive effort to raise funds for the proposed building. The Court awarded the client damages against the architect for his negligence.

Whenever an architect undertakes to provide his professional services to a client, the law imposes upon the architect an obligation to use care and skill in carrying out his work. This is an implied condition in every agreement between client and architect whether the contract be in the R.A.I.C. "Standard Form" or whether it be the most informal verbal undertaking to do certain architectural work.

The obligation by the architect to use due care and skill is owed to his client upon pain of forfeiting his right to be paid for his work, and moreover of being held liable for damages suffered by the client as the result of his incompetence. The incompetent architect might also be liable to others who suffered damage from his default.

The standard of "due care and skill" is difficult to define in precise terms. The architect is deemed at law to have a capacity and intelligence befitting his profession. He is bound to make a proper investigation of the task he undertakes and to apply his knowledge with care and diligence. However, the law does not require absolute perfection from an architect in his work. Nor does the circumstance that an architect of greater ability or experience could have produced a better result on the same job, deprive another architect of payment for his services or attach liability to him on the ground of negligence.

The degree of care and skill required of an architect is that which is regarded as necessary and sufficient by those conversant with the profession. In cases where an architect's competence is in question, other architects are usually called as witnesses to give opinions as to whether or not the particular work was competently done. It is the function of the judge or jury to finally decide the matter, guided by the expert opinions so expressed in the witness box.

Recently, an architect was employed in Ontario to prepare plans and specifications for and to supervise certain alterations and additions to a building. The waterproofing of the basement walls proved to be faulty and water seeped into the basement. The Supreme Court of Ontario found the architect to have been negligent in his supervision by passing the waterproofing job without checking it upon completion.

It also appeared that, after the plans and specifications had been drawn and the work commenced, the client instructed the architect to raise the height of the front part of the building. Upon the request of the client to estimate the cost of the work brought about by this change, the architect stated that the extra masonry work would be about \$1,500.00 and said nothing more. In fact, the change increased the final cost by \$20,000.00. The court held that the architect was negligent in giving his client the misleading figure of \$1,500.00.

The court also found the architect to have been negligent in the preparation of his certificate of extras as he had made no attempt to check the contractor's records of the cost of the extra work as it proceeded. The court held, especially in view of the fact that the architect did not obtain and render an accurate estimate of the cost of the extra work when it was ordered, that he should have insisted that the contractor keep accurate records of the extras, and that he should have carefully examined the records so kept. The contractor had in fact kept no time-sheets of the extra work.

In the result, this Ontario architect was disallowed a substantial proportion of his fees and the client was awarded a sum in damages.

We understand that the editors of many current periodicals demand that their contributors submit only happy endings for their pieces, and so we will conclude with a cheerful note for the careless architect! In provinces other than Quebec an architect is only liable for damages attributable to his lack of care and skill during the period of six years directly following his act or omission. In Quebec, the Civil Code provides that if a building perish in whole or in part within five years, from a defect in construction, or even from the unfavourable nature of the ground, the architect superintending the work, and the builder are jointly and severally liable for the loss. An architect, however, cannot hope to hide a reputation for carelessness in the remote refuge of a statute of limitations.

ARCHITECT, CRITIC AND PUBLIC

By J. M. RICHARDS

THE trouble about architecture is that the second of the three parties in the title, whose relationship it is the purpose of this essay to discuss, is missing altogether. There is no regular criticism of current architecture comparable with art criticism, dramatic criticism or music criticism. Whether the critics are not forthcoming because there is too little public interest in buildings, or whether the absence of public interest is due to there being no critical writing to stimulate it, would be difficult to say. The fact remains that the man in the street, be he ever so intelligent and discriminating about books and plays, has no habit of looking at architecture intelligently; for him it is either a professional mystery beyond his power to understand or an act of God — like the weather — beyond his capacity to control.

There used to be popular discrimination about architecture, if only among well educated people. In the eighteenth century to know something about the art was part of every gentleman's stock in trade. The change since then is due to a number of causes besides the gradual disappearance of a leisured class; it is partly due, for example, to the increasing complexity of building technique. If the eighteenth-century gentleman had an eye for proportion and a taste for the niceties of scholarship, which his successors seem to have lost, both he and the ordinary man in the street also had a working knowledge of building materials sufficient to enable them to understand at a glance the structural basis of any building they looked at. They knew instinctively when a timber beam or a stone wall was strong enough to do its job because of their life-long familiarity with the properties of wood and stone, and this gave a practical basis to their interest in architecture. But now wooden beams have given place to reinforced concrete or patent floor-slabs of some kind, and stone walling to steel framing. Their proportions are based on elaborate mathematical calculations, and they have thus lifted architectural technique out of the range of direct human experience.

Nevertheless, habits of the eye change like other habits, and it is by no means necessary that technical complexity should put architecture beyond the grasp of the ordinary man. He has a passionate interest in motor cars, about which he readily becomes a connoisseur without necessarily understanding everything that goes on beneath the bonnet. With motor cars, he knows how to strike a nice balance in his mind between looks and performance, and there is nothing in their technical complexity to prevent his doing the same with buildings; so we must look elsewhere for the main cause of his lack of interest in the latter.

Perhaps we should blame the complications of planning rather than of technique. There are many more types of building than there used to be, each the result

of a study of some highly specialised procedure — like the routine of a general hospital or the sequence of processes that takes place in a factory — and each strongly influenced in its appearance by planning considerations. The ordinary man, realising this, feels that judgment needs more inside knowledge than he possesses, and prefers to leave the whole business to the experts. The result is the present unhealthy state of affairs whereby the only people considered capable of criticising architecture are practising architects or others similarly qualified.

This is not only in itself unsatisfactory, because without an informed body of lay opinion no art can develop properly, but to limit the critics to those engaged in the practice of architecture inhibits free criticism by posing problems of professional ethics. In the other arts — painting, say, or literature — there is no disadvantage, and several obvious advantages, in the critic being also a performer. Many good art-critics are themselves painters, and literary critics (since the medium of criticism is the written word) are by definition writers. But they are not, like architects, rivals for each other's jobs. When one architect allows himself to sit in judgment on another architect's work there is always the possible inference that next time a similar commission comes along it ought to be given to him.

But freer criticism of one architect by another is not enough. Some way has to be found of getting the ordinary man habituated to looking at the buildings around him and feeling that their quality is his concern. However much it is necessary to emphasise that a good building must work well in addition to looking well, the fact remains that architecture is a visual art. In discussing the public's ability to apprehend it as such we come up against the same difficulties that Mr. Raymond Mortimer has already analysed in these pages in relation to painting. Like painting, architecture once had rules which it has now lost. This is not the place to discuss the degree to which modern architecture is itself becoming another style with its own set of rules, or how much the mechanisation of architectural technique is driving it towards a largely diagrammatic form of expression, so that the urge to stylise must find another outlet. But, accepting the principle that the use of the historic styles, when it is not functionally impractical, is in any case culturally meaningless, we are left with the vacuum created by their gradual disappearance and the consequent absence of any valid criteria of criticism.

Mr. Mortimer suggested that most people's interest in painting began by being an interest in subject, and that only on the basis of that interest were they able to train their eye to make a full and discriminating aesthetic response. The place of subject in painting might be said to be taken in architecture by that connoisseurship about

the styles in which the amateur of architecture has specialised since the eighteenth century, and, for the less educated, by a sentimental appreciation of antiquity and all the overtones it possesses. Architecture, that is to say, has, like painting, depended for its effect much more on emotional (or associative) values than on strictly aesthetic ones. The historic styles have provided, in a sense, a short cut to architectural appreciation that has made the exercise of active visual discrimination unnecessary; but now, pending the establishment of a new idiom, culturally and technically more relevant to our time, a high standard can only be set by learning the use of the eye afresh.

Architectural appreciation, however, is confused by the presence of subject in another sense: of the purpose of the building which, as noted already, the spectator knows he must take into account without feeling confident that he has the inside knowledge to do so. Yet this is an asset to architecture as well as a cause of complication. It means that architecture, setting as it does the tone of his environment, is clearly a matter that concerns the ordinary man for many practical reasons even if he has got into the habit of regarding it as none of his concern as an art. Indeed his lack of interest in the design of buildings may well be due to a suspicion that an art which ought to be based on his own needs too often puts other considerations first. He reads about housing in the newspapers, but only as a statistical answer to an administrative problem, and he sees grandiose government buildings that only seem designed to create another barrier between the officials they house and himself. It may be, therefore, that architecture must draw closer to him as a utility before it can claim his interest aesthetically. It is, fortunately, in a strong position to do both at the same time. For architecture is itself an educative medium. It can fulfil the purpose of advertising the potential of the modern world, and thus help to create a demand for that rational application of means to ends from which what is called modern architecture takes much of its inspiration.

It is wasted energy to try to wean the public away from its sentimental attachment to period architecture and architecture rich in romantic associations, with the idea of instilling into it a liking for good taste for its own sake.

Its attachment to the styles of the past is quite natural and is due, among other things, to the sense of security they give in a world increasingly dominated by the unknown. But as soon as this very unknown — the new world of science — is shown to be an ally not an enemy, the suspicion born of its novelty will disappear and with it this clinging to the familiar and the traditional. The man who has made sure that the motor car is not going to run away with him is not going to demand that it should model its appearance and its rate of progress on the horse carriage.

It is not his taste that wants educating, but first his understanding of what architecture could do for him and then, simply, his eye. His present preferences — or prejudices — are not themselves visual; he has got so out of the habit of looking at buildings critically, whether they are period or modern, that he is just not aware whether proportion is pleasing, materials well used or scale appropriate. To remedy this is a long process, but that is where the necessity for criticism comes in.

There is, however, one practical difficulty to be overcome: the law of libel, which applies more stringently to architecture than to the other arts because of the large amount of someone else's money involved. To put up a building is not only to commission a work of architecture, but also to invest money in property, and in criticising an architect's work it is often difficult to draw the line between what is merely an opinion on his merits as a designer and what is an opinion on his competence to handle — or incompetence to mishandle — a client's or a company's funds.

Whether critics could speak their minds more freely if they were specifically invited to a private view of every important new building — for the same reason that a ticket for a first night or a review copy of a book represents an invitation to express an opinion on it — is a matter for the legal experts. What the critic is most aware of is that in the absence of routine press criticism any attempt at seriously criticising buildings, since it takes on the character of an unwarranted attack, creates a resentful critical climate in which reasonable discussion is most difficult. As elsewhere, the law of libel chiefly operates not when it is really applicable but through the atmosphere of caution it engenders.

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INTERNATIONAL AVIATION BUILDING

MONTREAL, QUEBEC

By G. F. DRUMMOND

Chief Architect, Canadian National Railways

THE International Aviation Building, recently completed, forms the first unit of a group of three buildings designed to dominate the Montreal Terminal area of the Canadian National Railways. The group will have its main facade on Dorchester Street and will extend on its east boundary along widened University Street (which will absorb present St. Genevieve Street) and on the west along Mansfield Street, as far as Belmont Street, which will be continued through from University Street to Mansfield Street.

The three buildings, International Aviation Building, C.N.R. Office Building and Hotel, are each designed to express their separate identity but at the same time the composition will appear as one co-ordinated group and each building will be connected to the other. For this reason, study of the design of the entire group had to be carried far enough to ensure that the first unit to be built, the International Aviation Building, is properly integrated in the matter of exterior design, massing and planning, with the project as a whole.

The character of the occupancy, the proximity of the railroad station and proposed hotel made the location ideal for a city air lines terminal and the two street levels provided the opportunity for a development to suit their methods of operation.

The general space distribution of the building gives the ground floor primarily to the ticket offices of the various air lines, both domestic and international, and ancillary facilities — branch bank, news stand, gift shop, check room, telephone and telegraph facilities, soda bar, restaurant on the floor above and cocktail lounge on the floor below.

On the lower level (East Street), connected to the air lines concourse by escalator and stairs, is the departure concourse, separated by a ceiling height glazed partition from the driveway where, under cover, the passengers board limousines for the airport. On this level are baggage and air cargo rooms and at the Belmont Street end the cocktail lounge. Connection to the C.N.R. Central Station is provided from this level by stair.

The next level below, nominally the basement, houses the mechanical room, transformer room, stores and

workshops for the maintenance of the building, and is also the concourse level of the Central Station. The waiting room end of the station concourse extends under the Aviation Building and a bank of four elevators provide service to all levels.

The top six floors accommodate the headquarters of I.C.A.O., the top floor (the tenth) being devoted principally to conference and committee rooms with interpreters' booths and equipment for simultaneous interpretation and delegates' lounge.

The ninth floor is fully occupied by the offices of the delegates from 26 countries. On the fifth, sixth and seventh floors are the registry office, library and the many sections of the I.C.A.O., such as air navigation, map and language sections, etc.

On the fourth, third and part of the second floors are the headquarters offices of Trans-Canada Air Lines. The balance of the second floor contains the headquarters of the International Air Transport Association (I.A.T.A.), a world association of air line companies regulating international procedures and having close association with I.C.A.O. A cafeteria and restaurant is also provided on this floor.

The main entrance to the offices is on University Street, which, on account of the grade, is 12'-0" below the ground floor (Dorchester Street) level. The public entrance to the air lines concourse and ticket offices is from Dorchester Street, while passengers' limousine and taxi service enters and leaves the terminal on East Street.

The design of the structural steel frame was more involved than in the normal structure, by reason of building over existing railway tracks, making provision for future tracks, taking some stresses of a future 27-storey office building and separation of the building structure from streets on steel structure and train vibration. Added to these considerations, the occupied part of the structure is supported on free standing columns, the bracing of which must allow train clearances and calls for insulation of the floors over tracks and streets. The problems called for close collaboration between the structural, mechanical and electrical engineers and the architect.

Conditions called for a light type of floor construction and steel cellular floor type was adopted.

The exterior walls are Queenston limestone and Quebec blue pearl granite. Windows and entrance doors of the ground floor, office and station entrances on University Street are of bronze. Office windows above the ground floor are aluminum, double glazed.

Interior finishes are as follows:

Offices: Floors are of asphalt tile and linoleum, corridor floors of rubber tile; walls are of plaster, painted and asphalt tile base; ceilings are mostly acoustic tile.

Toilets: Terrazzo floors and walls in situ; hanging steel toilet stalls and wall hung W.C.'s.

Elevator lobbies: Terrazzo floors and walls in situ and acoustic tile ceilings.

Office entrance lobby floor is of serpentine green marble; walls of Aurisino Fiorito marble, blue pearl granite and Belgian black marble; ceiling of plaster with cove lighted panels. The elevator alcove on this level has flush lighting and the whole end wall of the elevator alcove is of fluted glass, illuminated.

I.C.A.O.'s main conference room (tenth floor) has carpeted floor; walls of plaster and walnut flexwood; ceiling of Travertone acoustic tile and flush lighting. Interpreters' booths have linoleum floors and acoustic walls and ceilings.

Conference corridor and lounge floors are carpeted; walls of oak panelling and ceiling of plaster with cove lighting in panels in the corridor and suspended troughs in the lounge.

The building, with the exception of the departure concourse level, is heated with forced circulation hot water and concealed convectors. Four heating zones are used, each equipped with steam to hot water convertors and automatic temperature controls.

The departure concourse level is equipped with a forced hot air system which provides the area with both heating and ventilation.

Cafeteria, soda bar and cocktail lounge areas are fully air conditioned and ventilation and winter air conditioning are installed on the ground and tenth floors.

Steam for all services, including cafeteria and soda bar kitchens, is supplied from a central steam plant which serves the whole railway terminal area and is located approximately three-quarters of a mile to the south, adjacent to the railway right-of-way.

The elevator installation consists of four high speed passenger elevators, using variable voltage full signal selectomatic control. This control system provides for automatic despatching which keeps all cars operating in their proper sequence, thus adding materially to the elevator capacity.

One of the four cars is specially designed for the handling of freight such as office furniture and has doors on two sides of the car.

In addition to the main passenger elevators, a freight elevator is installed for carrying supplies to the cafeteria. A dumbwaiter operated with push button control operates between the fifth and tenth floors for the transferring of office files, documents, etc., from floor to floor.

Power, received at 12,000 volts, 60 cycles, at transformer vault in basement, is distributed radially at 550 volts, 3 phase, 3 wires to electric motors, etc., and by means of two 1,000 ampere buses at 208/120 volts, 3 phase, 4 wires to lighting equipment.

All electrical services, including emergency lighting system, telephone system, private intercommunication systems, public address systems, clock system, fire alarm system and watchmen's tour system are distributed vertically by means of two electrical shafts located at the quarter points of the building. Electrical rooms contain all power and lighting panels, telephone panels and special equipment and provide easy access for maintenance without inconvenience to occupants.

General office lighting system consists of continuous rows of surface mounted, twin 40-watt, hot cathode, shielded type, fluorescent units and provides a lighting intensity of approximately 35 foot candles.

A combination of cove lighting and flush recessed units of 15 millimeter cold cathode fluorescent tubing was used for the lighting of the main concourse.

The cellular steel floor was used for the distribution of (1) power for business machines, (2) telephone service and (3) private intercommunication services as required, at desks, by the occupants. Each of the three services is isolated in an individual cell of the floor and is available on 18 inch centres throughout the building.

The building was designed by the Office of the Chief Architect, Canadian National Railways, G. F. Drummond, Chief Architect, with N. S. B. Watson, Electrical and Mechanical Engineer; R. O. Stewart, Structural Engineer, and Anglin-Norcross Quebec Limited, General Contractors.



**INTERNATIONAL AVIATION BUILDING,
MONTREAL, QUEBEC**

OFFICE OF THE CHIEF ARCHITECT,
CANADIAN NATIONAL RAILWAYS,

G. F. DRUMMOND, CHIEF ARCHITECT

CANADIAN NATIONAL RAILWAYS,
STRUCTURAL ENGINEERS

CANADIAN NATIONAL RAILWAYS,
MECHANICAL ENGINEERS

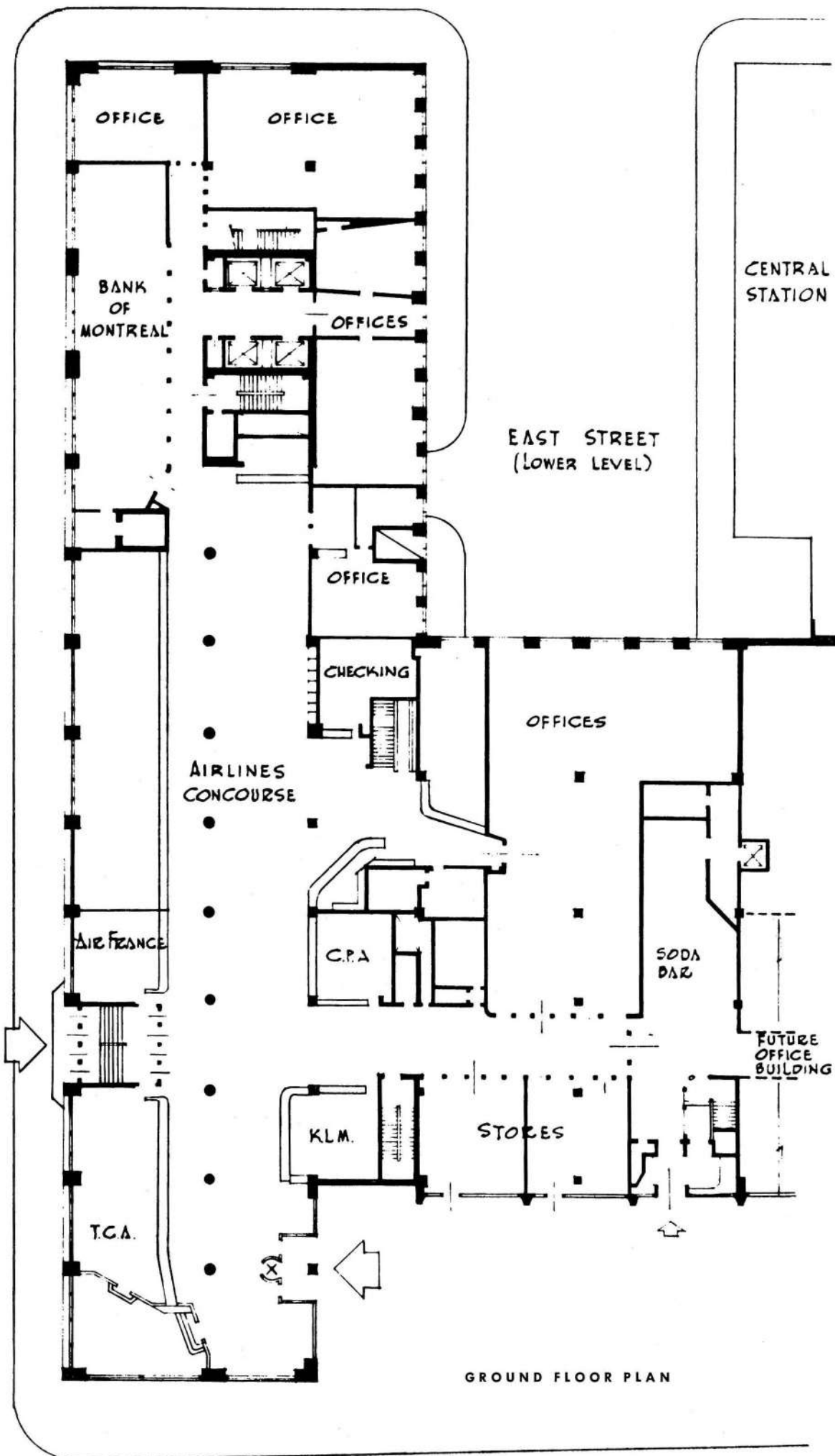
ANGLIN-NORCROSS QUEBEC LIMITED, CONTRACTORS



VIEW FROM NORTH-EAST ON DORCHESTER STREET

INTERNATIONAL AVIATION BUILDING AND CENTRAL STATION LOOKING SOUTH



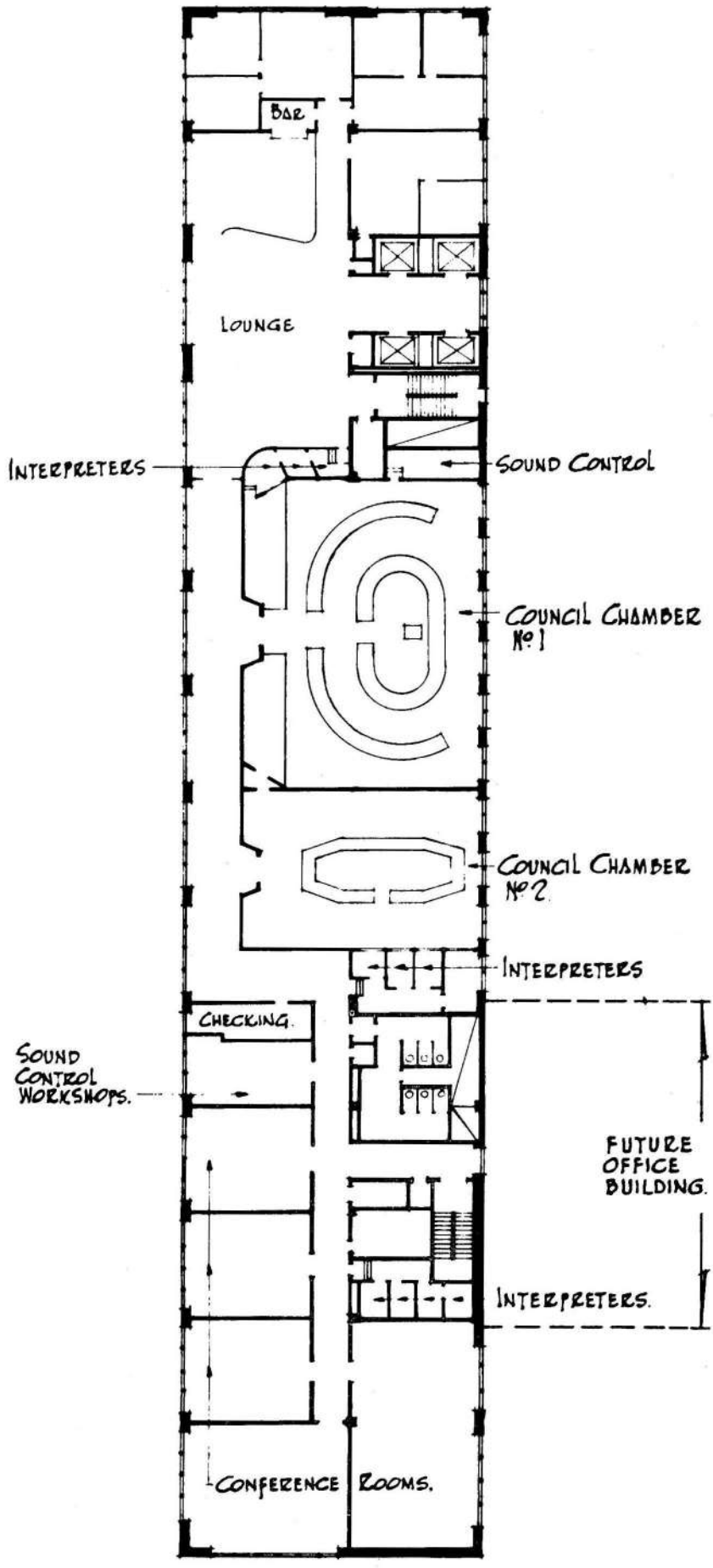




I. C. A. O. COUNCIL ROOM, LOOKING SOUTH

I. C. A. O. LOUNGE FROM COUNCIL ROOM CORRIDOR





TENTH FLOOR PLAN

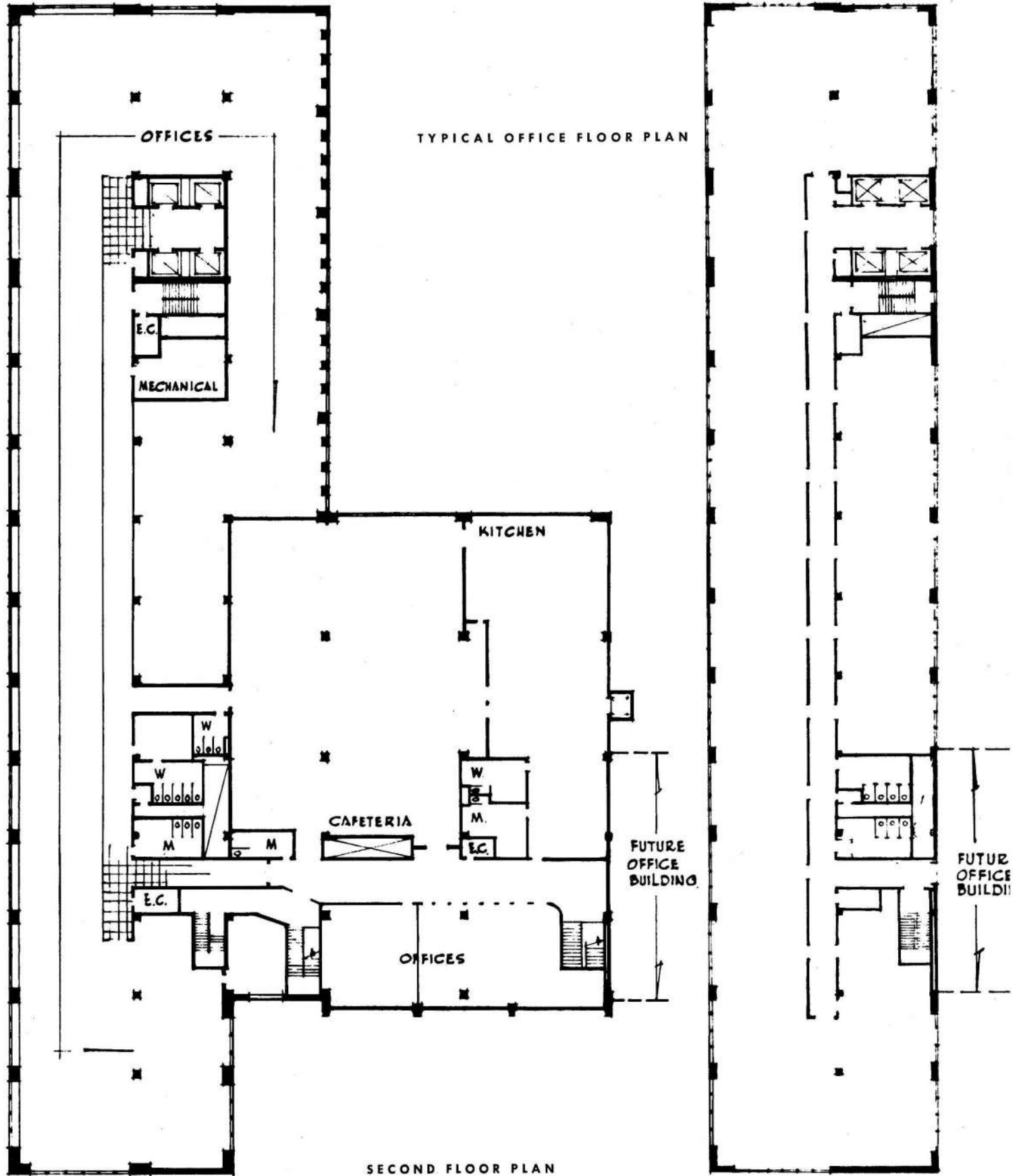


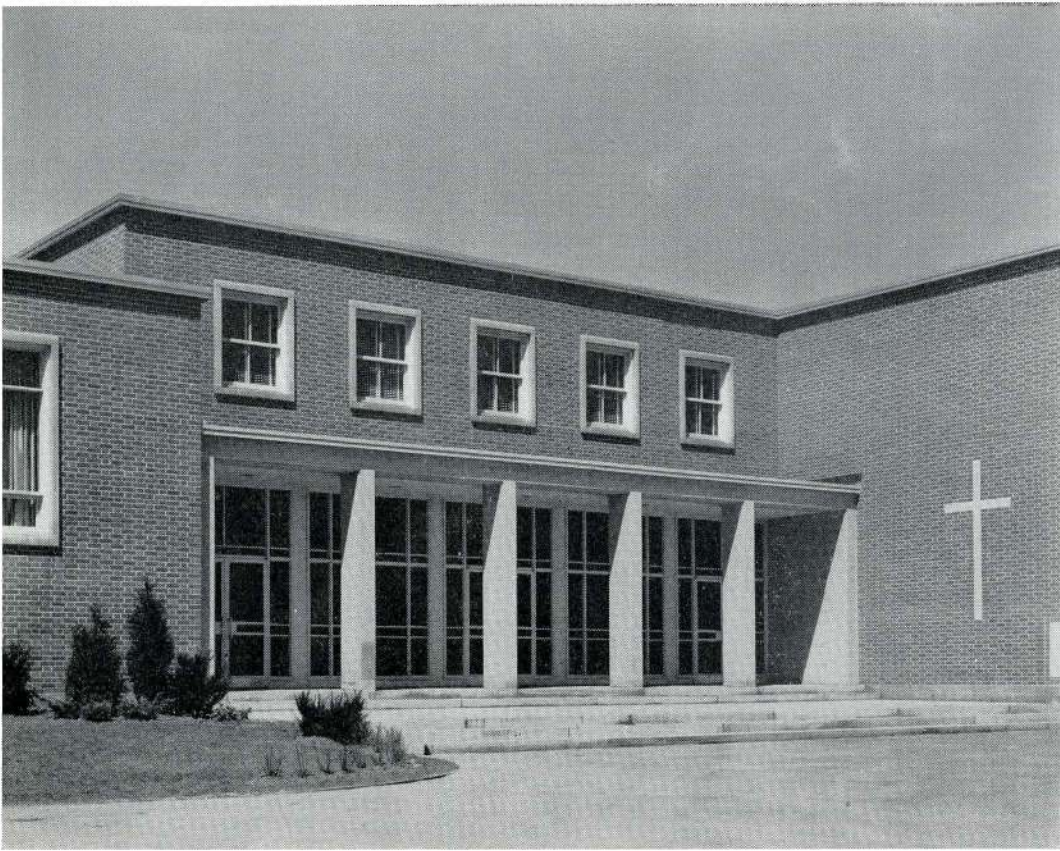
AIR LINES CONCOURSE LOOKING SOUTH, SHOWING ENTRANCE FROM UNIVERSITY STREET

AIR LINES DEPARTURE CONCOURSE, LOOKING SOUTH



Photographs by Canadian National Railways





MAIN ENTRANCE

CHAPEL

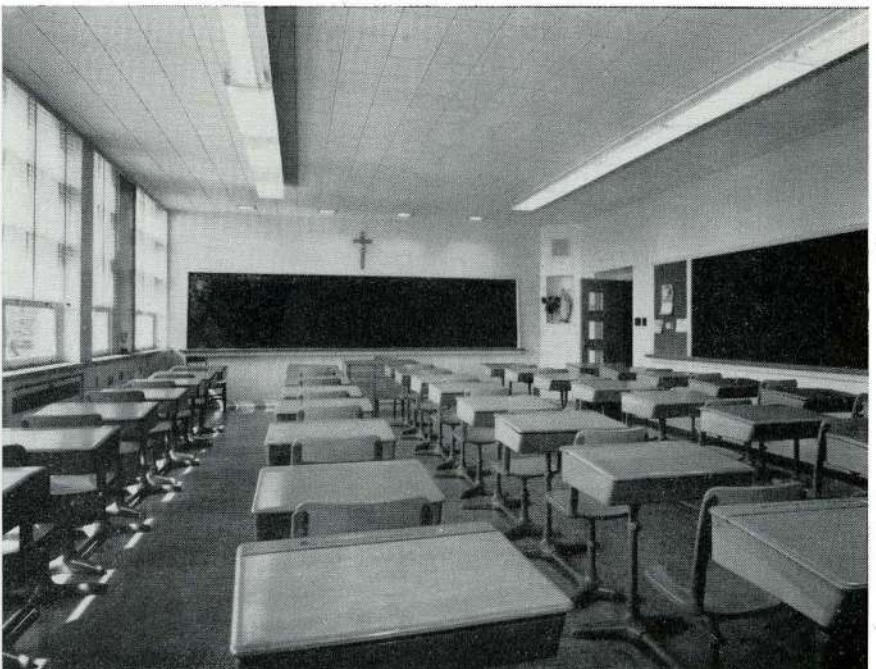




HOME ECONOMICS ROOM



LIBRARY



TYPICAL CLASS ROOM

UNIVERSITY OF TORONTO BOOKSHOP, TORONTO, ONTARIO

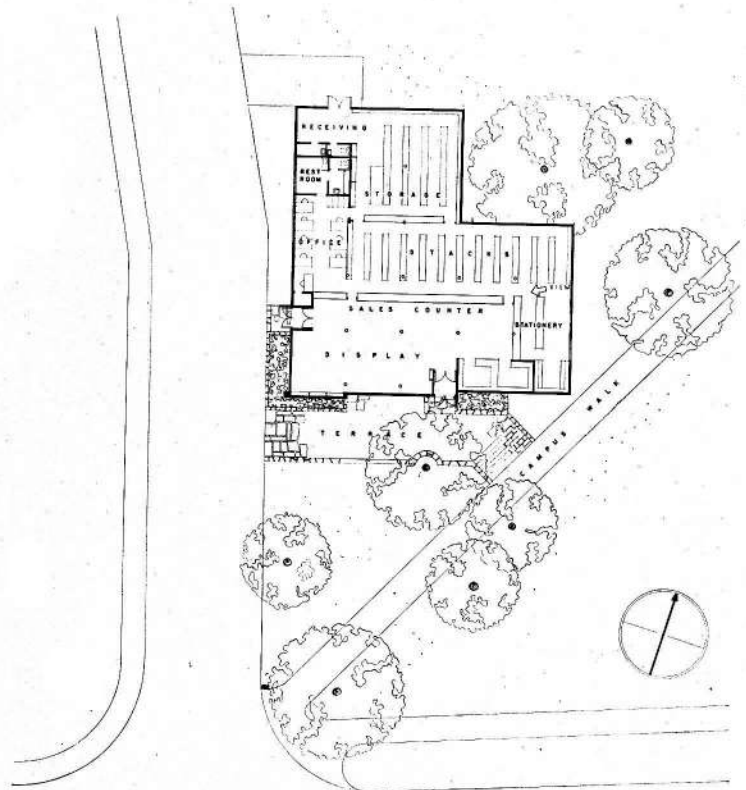
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SOUTH ELEVATION





INTERIOR VIEW SHOWING SPECIAL BOOK DISPLAY UNITS

VIEW FROM CAMPUS WALK

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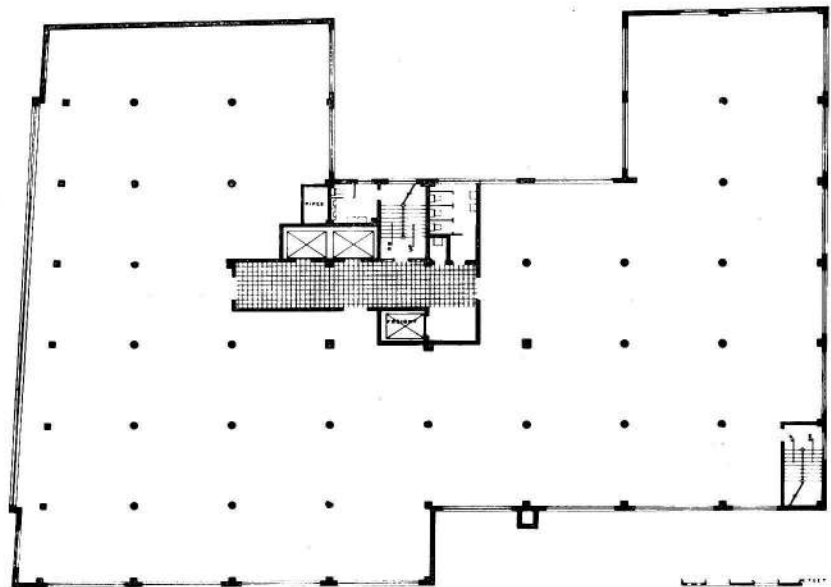
STERNTHAL BUILDING, MONTREAL, QUEBEC

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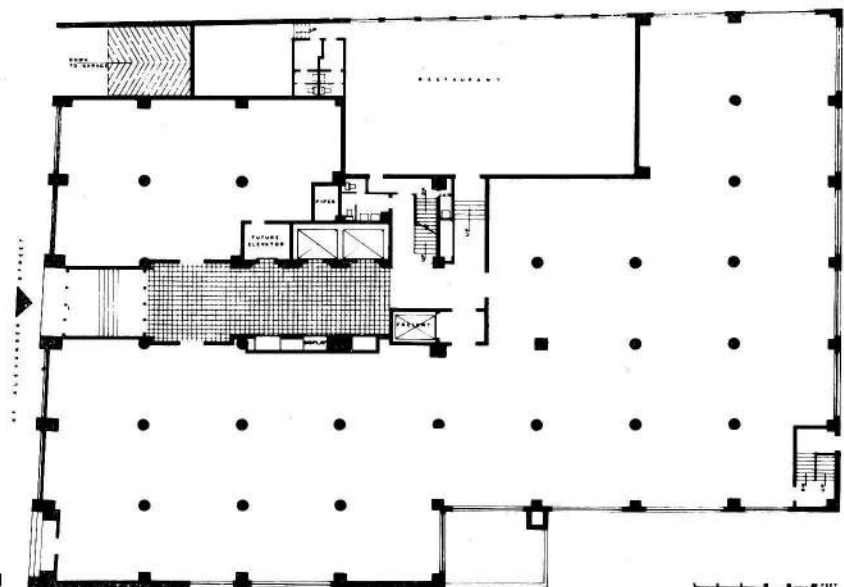
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LOBBY



TYPICAL FLOOR PLAN



GROUND FLOOR PLAN

THE ARCHITECT AND PUBLIC RELATIONS

By ROBERT R. MCKEE

MONTAGUE Norman once said, "Never explain . . . never apologize". A fair enough motto for Mr. Norman in the lush nineteen twenties. But the days of such insolent mottos are done. The tragedies of war and all the complexities of a world peopled by humans who insist upon moving faster and faster as the years go by; a world which is daily becoming more complicated to live in; a world where every new labor saving invention, makes a restless people still more restless and dissatisfied; where every new healing drug discovered, only serves to turn attention to newly discovered diseases . . . all these things have made Montague Norman's attitude as hopelessly outdated as a knight in armour.

But the basic problem of human relations goes back much further than our century.

The long story of the human race is soured with the all too frequent record of mutual human distrust, and is, more often than not, highlighted by the constantly recurring restless struggle between individuals, groups or classes. The oldest fight in recorded history is the fight for men's immortal souls. The second oldest is the fight for men's minds. Both have been carried on through history with unabated vigour and have often been confused and carelessly identified. Men have fought for each other's minds in order to save or ruin the souls of other men in order to influence their thinking. Though details have changed as frequently as the centuries, the main issue has remained extraordinarily constant. That issue is whether men are to be considered as masses or individuals.

Today the struggle is as fierce as ever, the issue even more sharply defined. Depending upon the point of view, people speak of it as the struggle between spirituality and materialism; Christianity and paganism; democracy and totalitarianism.

That the fight is continuous and furious, surely no one can doubt who follows even superficially, the swiftly changing events of the world.

How devastating its effects can be is perhaps most clearly illustrated in the case of Great Britain. For who would have believed twenty years ago that Great Britain and particularly England, the very birthplace of individual freedom could have been propagandized into socialism? Who would have thought twenty years ago that the world would be divided into two bitterly opposing camps as it is today? Worse still, who would have believed that even in democratic countries operating under the free enterprise system, collectivism would have made such inroads, or that democratic governments could suddenly have developed into monsters of bureaucracy?

Yes, these things have happened. They are cold, bitter truths of today. And they have happened because the forces of materialism, of collectivist thought, have been

better propagandists than the forces of democracy. They have happened because those who believe in the superiority of the state over individual human rights have done a better job of public relations than we have. Or to be exact because we who believe in the sanctity of human rights, in democracy and in free enterprise, have failed to realize the force and importance of public relations.

But there is a realization of this shortcoming in business and the professions today, and a determined effort is being made to recover lost ground. There is at last, in the realm of business, an effort being made to gain greater public favour — by making good conduct known to the public in a sincere manner without boasting . . . by telling business's story simply, honestly, forcefully and repeatedly. Not all business has yet realized the importance of this development . . . not all business is approaching this grave problem with the gravity which it merits. But more and more of the body commercial are waking up to the fact that they must fight this fight forcefully and continuously, if they are not to find themselves swallowed in the maw of nationalization . . . their freedom of action gone, and their personnel mere civil servants . . . without initiative, without ambition, without life.

Why do I tell you, who are members of the Architectural Institute, of this conflict? Why do I tell you of the battle between democracy and totalitarianism, and the fight for survival of free business enterprise and the independent profession. I tell you, because we ourselves are in the very front line of a battle for existence and unless and until we begin to fight with the weapons of public enlightenment and public confidence we will find ourselves deprived of our ancient honours, our independence, and ultimately our very livelihood. Our profession is threatened with extinction — not by the force of collectivism but by the appalling force of ignorance and apathy. How many people today realize what essential work the Architect can do for his community — and how many years of sacrifice and struggle he has endured to attain the learning and skills demanded by his profession? How many individuals and business firms alike think of the new homes, the club houses and the office buildings they are planning only in terms of the rough construction plans submitted with estimates by a contractor? On every side the various branches of the building trade have encroached upon the rightful sphere of the Architect. But it is not the men in those trades and occupations whom we must blame — the fault is our own — we as Architects have lacked initiative.

Too many people in Canada today are satisfied with the ugly — the badly designed building — solely because they do not realize that design is as essential to a house as it is to an automobile. We know that "a home is more

than four square walls" — but is the full implication of that quotation understood by those who are building and buying houses?

It is a sad indictment of our civilization that the consumer knows more about the principles of design as applied to household utensils than he does about the architecture of the buildings of his city. But it is not the fault of the public that they know little or nothing of the advantages of a well designed building — the responsibility is with the Architects. Surely it is as much the function of the Architect to assist in the education of the public — to assist in raising the standards of taste — as it is to design buildings. Just as bad money drives out good money — so is bad taste cumulative in its effect. It has been well said that "buildings are the books that everybody unconsciously reads, and if they are a libel on the laws of architecture, they will surely vitiate in time the taste of those who become familiarized with their deformity." Only the Architects can halt this trend — for in the final analysis — they are the only group in society competent to discharge that responsibility.

We have a proud and distinguished profession. Through the centuries architecture has lifted man from the level of cave dwellers little better than animals to the dignity of a race no longer oppressed by the hardships of weather and the sickness which decimated those who lived in dark, damp hovels. We have saved lives and what is more — we have aided the onward evolution of men's minds by the improvement of their physical surroundings — by making beautiful the cities of the world. The contribution of architecture to the onward march of civilization has been aptly assessed by Prescott, the great American historian. "The surest test of the civilization of a people — at least as sure as any afforded by mechanical art is to be found in their architecture, which presents so noble a field for the display of the grand and beautiful, and which at the same time is so intimately connected with the essential comforts of life."

But in the course of social evolution we have drawn apart and away from the very men and women whom we have served and are serving so faithfully. There have been many contributing factors . . . physical material changes, wars, political upheavals, and our own failure to realize that we ourselves have entered the business field, and must therefore act not only as professional men and women, but also as business men and women.

During an earlier phase of our history the architect was the man who translated into stone and timber the aspirations of the people — expressing in his plans for cathedral or village church the religious faith of the community of which he was a respected member. He was known to the masons and builders of the town; he was intimately associated with the actual construction of the building which he had designed. While the projects on which he was engaged may not have been so varied, he was dealing with a far less complex life. With the exception of a sheltered minority . . . the wealthy and the aristocratic, most people worked hard and received far less in material returns for their labour. But though they earned less, their wants were fewer. Their entire life was simple but adequate.

Then, with the advance of science and the march of technology, life became more complicated. The invention of electric light, telephones, central heating, electric irons, motion pictures, automobiles, radio, washing machines and a host of other amazing labour-saving devices and forms of entertainment, created a strange paradox. It is true that they gave us more leisure, more pleasure, more ease, and a more hygienic life. But they also caused us to be dissatisfied with the simpler ways of living. The more inventions to save work . . . to bring comfort and entertainment . . . the more we wanted. The simpler farm life, the quiet slow pace of small communities were no longer attractive to the majority of our people. The pace of life became faster and more hectic. More and more of us desired the bright lights, the big money and the wider pleasures of the great modern city. And as we advance still further, as we seize more inventions for the satisfaction of our appetites, as we make more money, we find ourselves still more restless. For the plain truth is that the more we get both monetarily and materially, the more there is to want. Our desires are outpacing our possessions and our actions — and all too frequently our sense of good taste. At one time very few people owned pianos or carriages or fine clothes. The vast majority knew of these things only as the possessions of the very wealthy. Many people had never even seen them. Some had seen only pictures of them. But today, because of the enormous development of communication and transportation; when a word can flash around the earth in the drawing of a breath and we can cross this vast continent in a matter of hours, everybody wants to own a radio, a car, a home, an electric washing machine and a thousand other material comforts and labour-saving devices. In other words, just as the days of isolationism on the part of nations are gone, so are the days of the isolated individual, family, or community.

And in exactly the same way, the existence of the community Architect is threatened with extinction. With the Industrial Revolution and the application of the mass production methods of modern technology to the building industry, the function of the Architect was often ignored. The contractor thought he could be his own architect and the results have disfigured the country with a rash of "railway station Gothic" and "Hansel and Gretel bungalow" and other equally unpleasant bastard styles.

The services of the Architect have become the prerogative of a small fraction of the population — the wealthy individual, the far-sighted corporation and occasionally the government department. The Architect has lost touch with the people he serves, and what is important, with the people he could and should serve. The skills and learning of the Architect must be more widely understood and more widely appreciated if the profession is to retain its independent status. Government recognition of the important role of the Architect in society is only a partial solution of the problem. For Ruskin's advice is still good today: "It is chiefly by private not by public, effort that your city must be adorned." What is more fundamental is the informed

(Continued on page 392)



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NEWS FROM THE INSTITUTE

ANNOUNCEMENT OF THE 44TH ANNUAL ASSEMBLY OF THE R.A.I.C.

The Forty-Fourth Annual Assembly of the Royal Architectural Institute of Canada is to be held in Quebec City at the Chateau Frontenac on the 1st, 2nd and 3rd of March, 1951.

A local Committee of Arrangements, under the joint chairmanship of Messrs. Leopold Fontaine and Gerard Venne of Quebec City, has been appointed to assist the R.A.I.C. Council in carrying out the many preliminary arrangements involved.

Further information regarding the forthcoming Annual Assembly of the Institute will be forwarded to all members at a later date, together with details of the programme being planned. In the meantime, it is hoped that all members will give consideration to this announcement, and if possible, plan to attend the Forty-Fourth Annual Assembly of the R.A.I.C. which is to take place in a city famous for its beauty and historic background.

ANNOUNCEMENT OF A SCHOLARSHIP FOR GRADUATE STUDY IN LANDSCAPE ARCHITECTURE AT HARVARD UNIVERSITY, SEPTEMBER, 1951.

The Department of Landscape Architecture, Graduate School of Design, Harvard University, offers to those eligible for admission as regular students a scholarship for the next academic year with an income of six hundred dollars (\$600.00), equal to the tuition fee.

Candidates must have received their Bachelor's degree, or equivalent, within the past four years; students who are candidates for the degree in June, 1951, are also eligible.

The Scholarship will be awarded on the basis of scholastic standing and evidence of interest in the field of landscape architecture. The Department reserves the right to make no award if such a decision is deemed advisable.

Further information will be furnished on request; all inquiries should be received before January 1, 1951, and should be addressed to: The Chairman, Department of Landscape Architecture, Robinson Hall, Harvard University, Cambridge 38, Massachusetts, U.S.A.

ALBERTA

At this time our Albertan cities are not only rapidly increasing in population but are correspondingly changing their whole physical aspect and one is inevitably tempted to speculate as to what their general appearance may be in a few years time. At the moment, scattered here and there throughout our cities there are many of what appear to be tall metal cages, destined to be the nesting places of strange species of birds and also to be dressed in some waterproof, though maybe rather scanty and diaphanous, clothing. Our business streets, especially, will probably take on an appearance

very different from what they have worn in the past. We hear the man in the street — or, more correctly, the man who comes into business by the "street transit system," commenting on the merits or demerits of the newer buildings. There are, broadly, two angles of criticism, often enough occupying inconsistently the same mind. These may be called the classical and the modern views, between which terms there may be no necessary inconsistency.

On the one hand the fact that a building, adorned with large substantial classical columns is being demolished is obviously deeply deplored by many. On the other hand the erection of a many storied steel structure, more window than wall, imposing itself on the public view is felt by many, and some of these the same individuals who deplored the downfall of ancient grandeur, as an exhilarating and most welcome experience tempered only by the regrettable fact of its screening from view a work of early renaissance or late medieval picturesqueness and charm.

To architects it must be a matter for serious thought whether the old order is being replaced by something better. Probably many merely content themselves by thinking that such is the inevitable trend and that they must swim with the prevailing current towards whatever shores, or none, it may be setting.

The whole atmosphere of our day is charged with the idea that change is not only an inevitable but a necessarily good thing. The essential idea of civilization is that change must be under control. This permeating desire for change as an essential good fathers a brood of buildings that will serve their immediate occasion with the expectation that other occasions must soon arise and claim the place of these erections for others of different form and purpose. The man on the bus, whom I have above referred to, subscribes to these ideas, but, at the same time, he has some stirring of consciousness that those banks and insurance companies' buildings which present to him some spark of the glory that was Greece and of the grandeur that was Rome are the only buildings that really command his respect. The others are well enough as a passing show, a few years entertainment, after which the garbage-can will be their fitting repository.

It is natural that the architect should meet the same split personality in some of his clients — the hankering after stability and the appetite for the latest thing. When a man is building a house for his own occupation he may well prefer enclosure, quiet and privacy and yet feel that he ought to keep up with his neighbours the Joneses, who, of course, are not all Inigo Joneses. I once got as part of my instructions "no glass bricks please". We are in this day besieged with glass bricks, plywoods, plastics, asphalt tiles etc. that it is not surprising to be told now and then that a client prefers clean maple lumber to the whole boiling. Oh sweet content.

Cecil S. Burgess

THE ARCHITECT AND PUBLIC RELATIONS

(Continued from page 389)

interest of the general public — of the individual citizen. That interest can only be gained and retained if the Architect is prepared to accept his responsibility to the public, to his profession and to himself. The Architect must once again be intimately associated with the life of the community — he must know the people and be known.

For our own survival as one of the great professions of the civilized world, we must do as business is learning to do — we must tell our story simply, honestly, forcefully and repeatedly. We must make our good works known to the public in a sincere manner without boasting. We must be prepared to undertake our educational responsibilities — we must be sure that the public is informed about our profession. If we neglect to do so — we shall have failed to play our part in the community — and we shall not survive. This is the time for action — before we are abandoned by the restless tide. Only through a continuous program of public relations initiated immediately can we hope to retain our standing in the community as an independent profession — of service to all men.

The foregoing was an address prepared by Mr. Robert R. McKee for the Annual Meeting in Winnipeg.

Editor

CONTRIBUTORS TO THIS ISSUE

G. F. Drummond

Born Glasgow, Scotland, in 1891. Education: Shawland's Academy, Glasgow, Royal Technical College and Glasgow School of Art. Came to Canada in 1913 and apart from war service was associated continuously with the Montreal architectural firm of Kenneth G. Rea. Joined Canadian National Railways in 1928 as Assistant Architect and became Chief Architect in 1948.

Henry Finkel

Born in London, England, in 1910 — in Canada since 1920. Studies pertinent to industrial design; Quebec Provincial Art School (1926 prize winner), Ecole des Beaux Arts, Montreal, and architecture at McGill University. Did photography, advertising copy and layout, and publicity in the mid thirties, then back to architecture and into mechanical design during the war years. Specialized in industrial design since 1944. Married to well-known concert pianist.

Meredith Fleming

Son of Arthur L. Fleming, K.C., Counsel for the Royal Architectural Institute of Canada, and practises law in Toronto in partnership with Arthur L. Smoke, K.C., A. Campbell Burgess and his father. He was graduated from the University of Toronto in 1939 and served overseas with the Royal Canadian Artillery before commencing to practice.

Robert Ross McKee

Architect, born in Vancouver, B.C., in 1913; graduated in Architecture, University of Washington, Seattle, Washington; and practised three years prior to the war. He was on Active Service Overseas serving as an Officer with the Royal Canadian Engineers (Bridging), after which he resumed practice in 1945. Practice is primarily light industry, commercial, housing (domestic and otherwise).

J. M. Richards

Trained as an architect at the Architectural Association School, London, and studied afterwards in Canada and the U.S.A. and with an engineer in London, but became a journalist and writer instead. Assistant Editor of *The Architects' Journal* in 1933 and of *The Architectural Review* in 1935. Since the war, one of the Editors of *The Architectural Review* and the *Architects' Journal*. Author of a number of books, including "A Miniature History of the English House", the Penguin "Modern Architecture", "The Castles on the Ground".

NOTICE

The Board has adopted the policy of publishing with each illustration the names of the structural, mechanical engineer and the contractor, below that of the architect. The *Journal* office would be obliged, therefore, if members sending in photographs would include the above information.

BOOK REVIEWS

HOUSES FOR CANADIANS

By Humphrey Carver

Published by University of Toronto Press—Saunders, Toronto 5. Price \$2.50.

This book, and the "Curtis Report" of 1944 are the two indispensable reference works for the student of Canadian housing.

The title is misleading; it should obviously read "Housing for Canadians". We speculate on the number of people who have opened the book, and closed it with a snap when they discovered that it contains no plans nor perspectives nor hints for the prospective homeowner.

The author, Mr. Humphrey Carver, has moved in and about the housing scene for a number of years, stopping now and again to make a fresh appraisal from a different point of view. In his various disguises, as architect, town planner and research director, he has persistently hunted the key to the housing problem, much as another Englishman might stalk big game.

His prey is more elusive and less sporting than the quarry of any orthodox huntsman.

For there is not one single problem, but many. Inefficiency within the building industry is one. Lack of adequate planning is another. Closely related to this, is the difficulty of formulating a rational housing program within a metropolitan region plagued by the jealousies and conflicting ambitions of urban and suburban com-

munities. Above all, there is the stark economic fact that housing is too expensive.

For a very large segment of our population the cost of decent shelter is much too high in relation to family income. In order to make any headway toward a general betterment of housing conditions, some effective means must be found to bridge this tremendous gap. Either the cost of housing must be brought down, or the average family income substantially raised, or both. The "housing problem" cannot be isolated. It is part and parcel of our national economy. It follows that any serious attack on the chronic housing problem must be made on a national scale. There can be no hope for any housing program except on the basis of full co-operation between Federal and Provincial governments.

Mr. Carver marshals his arguments in orderly sequence. He analyzes the nature of the beast, and then proceeds to dissect its component parts. He makes a case for subsidized public housing that scarcely admits of argument, provided one accepts his initial premise. For, as the author admits, if it is not considered important that every Canadian should enjoy healthy and adequate shelter, then there is no "housing problem".

The result of three years' intensive research, the book is a gold mine of meaty information. The text itself bristles with facts and figures, while the XXVI tables of the Appendix cover just about everything pertaining to the subject, from juvenile delinquency to the cost of field tile. In spite of this it is fairly readable, if somewhat depressing.

Kent Barker

ACOUSTICAL DESIGNING IN ARCHITECTURE

By Vern O. Knudsen and Cyril M. Harris

Published by John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N.Y. Price \$7.50.

This book is a valuable addition to the literature dealing with architectural acoustics. Dr. Knudsen is Dean of Graduate Studies, University of Southern California, Hollywood. Dr. Harris, a former student of Dr. Knudsen is now on the staff of the Bell Telephone Laboratories, New York. The authority of the authors is beyond dispute.

The context is well organized, comprehensive and readable. It is divided into two sections — principles of architectural acoustics, and applications to building types.

The first five chapters deal with the physics of sound as applied to speech and music, indoors and out, its measurement, and its effect on the ear. Many of the graphs and charts are new, and a section on the masking effects of noise is unique.

Absorptive materials and their mountings are covered in two chapters, and include in the discussion not only the usual plasters, prefabricated porous materials, and resonant panels, but also the properties of variable absorbers, Helmholtz resonators, and suspended absorbers, the latter incidentally, having effective absorption coefficients greater than 1.0. There is an interesting section on a simple method for the approximate comparison of the effect of paints on porous acoustical absorbents.

Chapter 8 is devoted to the "Principles of Room Acoustics". The concept of normal modes is used to illustrate the phenomenon of room resonance, and the resultant pattern of intensity obtained with variations in size and shape. Diffusion of sound follows logically, noting the benefit to be gained by distributing rather than concentrating acoustical absorbing material.

Reverberation time, its use and limitations as a design tool are carefully discussed along with a section on reverberation in coupled spaces. A nomogram is included for easy computation of reverberation time. Whispering galleries, focusing, flutter and other special effects complete this chapter.

Chapter 9 on the "Acoustical Design of Rooms" outlines the requirements for good acoustics in a building, and then proceeds to show how to obtain them in terms of shape and size, reverberation time and absorption. The use of scale models for checking, and the final testing of rooms by listening tests are described in some detail.

Chapters 10, 11, 12 and 13 are named respectively "Noise Control", "Reduction of Air Borne Sound", "Reduction of Solid Borne Sound", and "Control of Noise in Ventilating Systems". In these chapters the general principles relating to the production of noise and its control are set forth. "Noise Control" outlines sources of noise, results of noise surveys and tables of the effectiveness of sources of noise, and acceptable values of noise in rooms with regard to their use. Consideration is given to the effect of building sites, landscaping, and layout on the problem of noise from outside sources.

The chapter on the reduction of air borne noise shows the relation between the three variables — noise level outside the room, the use of the room, and the required insulation. The problem of obtaining this insulation is considered from the standpoint of the types of material available and modes of construction permissible.

The control of noise from impact and vibrational sources by the use of discontinuous construction and resilient isolation is studied under solid borne noise.

Ventilation systems, a troublesome sound problem wherever noise — or a lack of it — is important, are considered with reference to sound control and the part played by the machinery, ducts and grills.

A very brief and sketchy outline of sound amplification systems is given in chapter 14.

Chapters 15 to 20 inclusive compose the second section of the book. It deals with the acoustic problems peculiar to auditoria, schools, churches, administrative buildings, hospitals, residences, factories and radio studios; and describes "practical aspects of designing that lead to good acoustics". Here the data and principles presented in part 1 are applied to specific building types.

Appendices 1 and 2 are rather complete and useful lists of absorption and transmission data.

Your reviewer is left with the feeling that this book is a happy cross between a textbook on fundamentals, and a designer's handbook.

V. L. Henderson,

*Assistant Professor of Applied Physics,
University of Toronto.*

Facts by Pilkington about Glass FOR ARCHITECTURAL STUDENTS

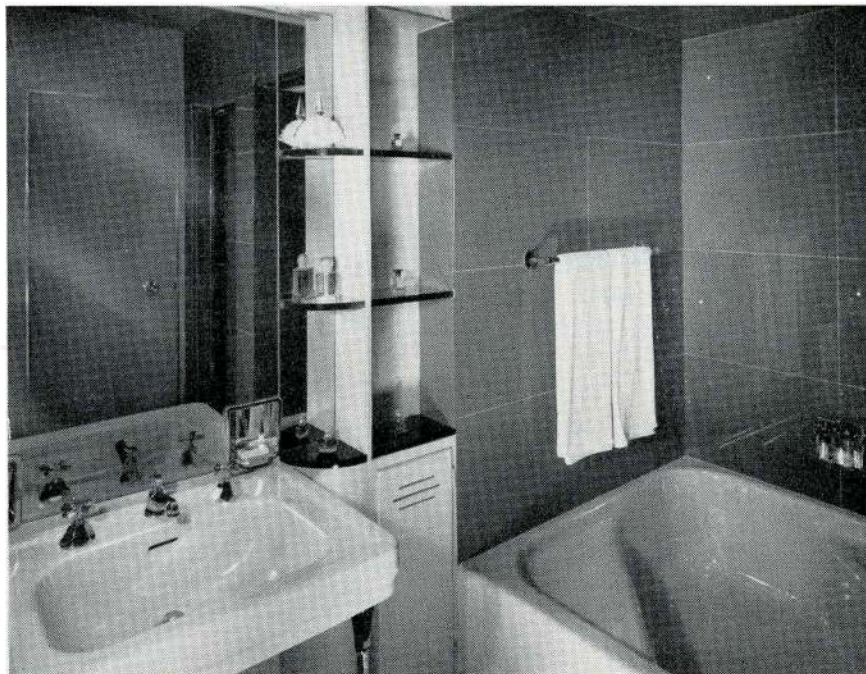
NO.
47 INSTALLATIONS
"VITROLITE"

AN EXAMPLE OF "VITROLITE" IN A CANADIAN HOME

"VITROLITE" Structural Glass is ideally suited to bathroom walls. From the wide range of vivid and pastel shades now available many beautiful colour schemes can be chosen.

Installation presents no peculiar difficulties, but there are of course certain fundamental principles to be known and understood. There are numerous qualified installation contractors whose experience with "Vitrolite" will take care of all problems the architect may have in this regard.

As a guide to students, and in our belief that a thorough knowledge of his contractor's problems is most helpful to the architect, we offer the following basic principles of Structural Glass Interior Installation.



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1. Location of all accessories, closets, etc., should be ascertained, and the necessary drilling and cutting completed, before the "Vitrolite" is applied.
2. Since floors are rarely exactly level, the "Vitrolite" should be applied first at the highest spot adjacent to the wall. Base openings can be quite satisfactorily filled in with putty and dressed off with pointing the same colour as the base.
3. Walls are sometimes out of plumb, or may have a "wavy" perpendicular. The "Vitrolite" facing, for best appearance, should be always true — therefore, if the wall leans away it will be necessary to set the base as close to it as possible. The closer the base is set, the nearer the cap will be to the finished plaster at the top of the wainscot. If the wall leans forward it will be necessary to set the base out a corresponding distance.
4. Before setting the base, place a roll of mastic in the angle created by the floor and the wall, as it will serve to stop leakage should the floor settle.
5. Great care must be taken to see that the base is set exactly level, because if it is not the whole setting of the "Vitrolite" will be a most disheartening job and the result far from satisfactory.
6. All "Vitrolite" around pipes should have a layer of water-putty or plaster of Paris placed around the hole or notch before installing the glass. A quarter inch clearance must be left around all such openings.

These are just a few basic principles of installation. For further technical details, refer to Nos. 10 & 36 of this series, or write to our nearest branch.



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