JOURNAL

ROYAL ARCHITECTURAL
INSTITUTE OF CANADA

VOL. 15 NOVEMBER, 1938 NO. 11

started with a pencil

A preliminary pencil sketch by Moody and Moore, Architects, Winnipeg, of new retail store of the Hudson's Bay Company in Edmonton. Two stories are now being built . . . the third to be added in the future as needed.

•

ONE of Canada's oldest and greatest retail institutions, Hudson's Bay Company, goes smartly modern in its new Edmonton store. Keeping up with the spirit of the times has been the secret of success of this famous Company which dates back to 1670, when King Charles II granted a charter to "The Governor and Company of Adventurers of England Trading into Hudson's Bay".

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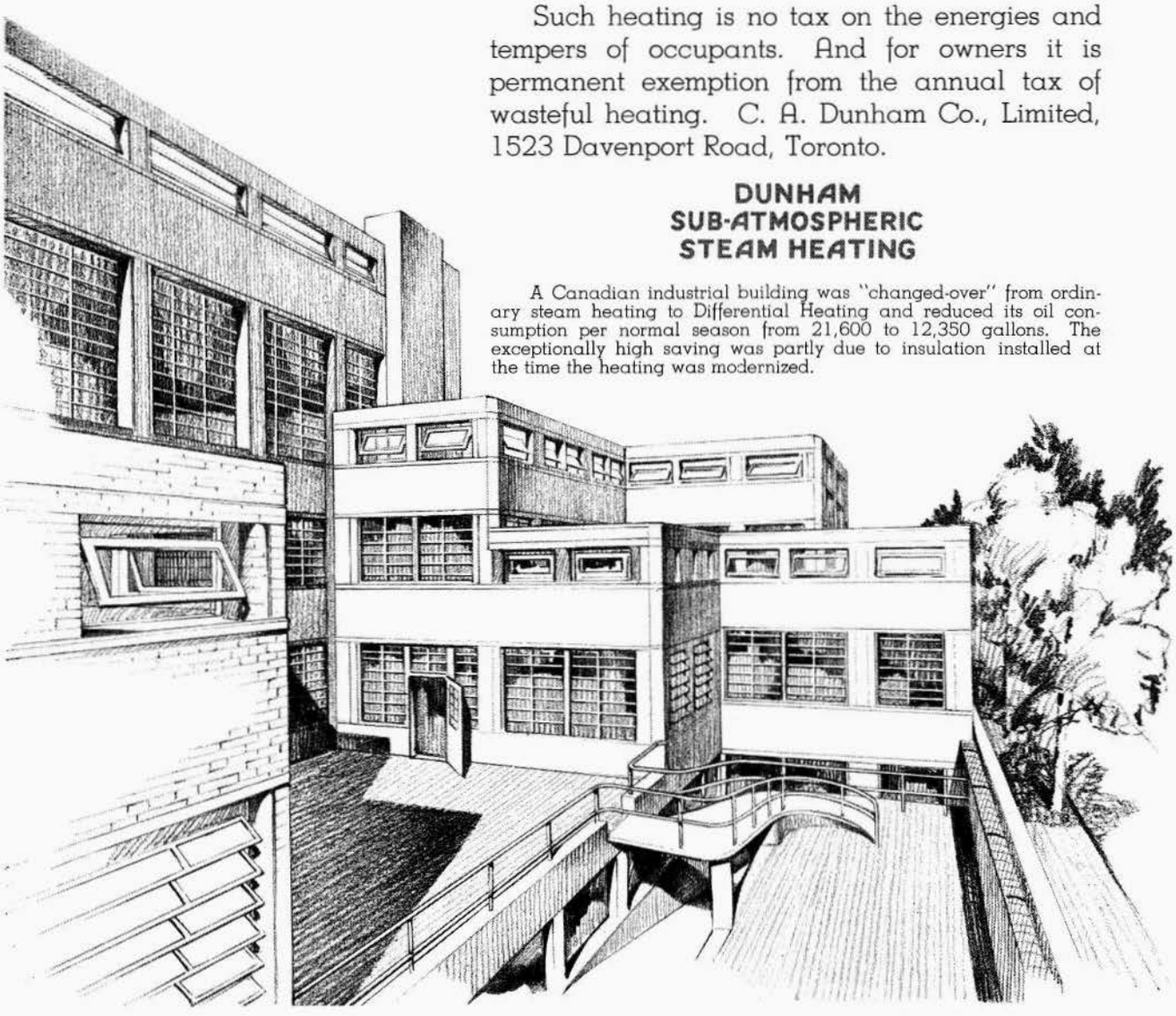

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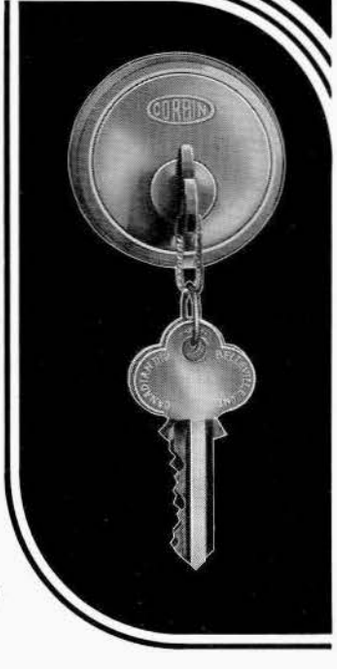

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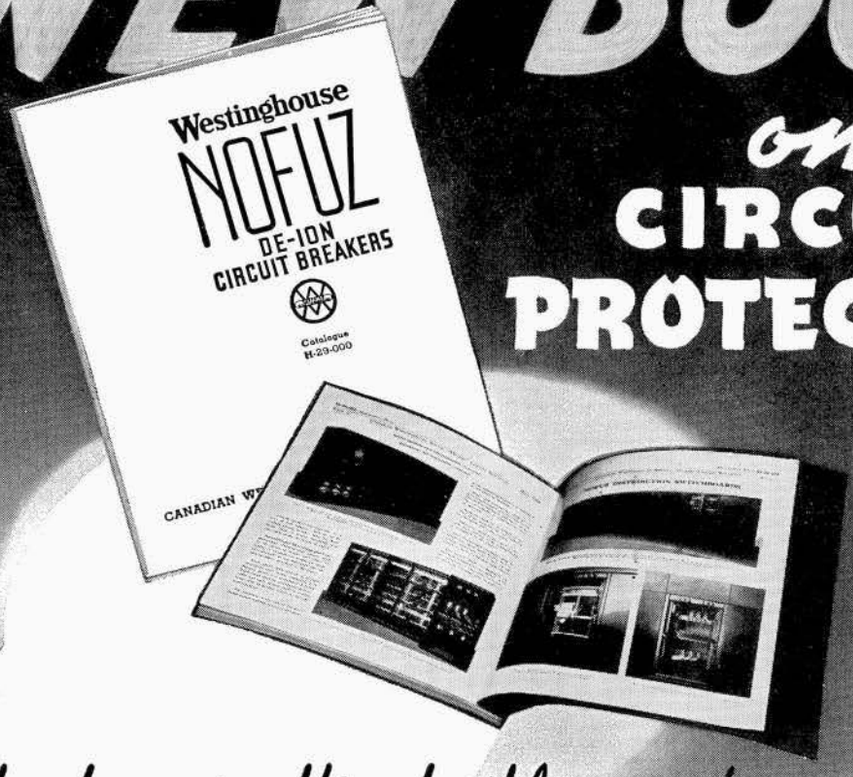

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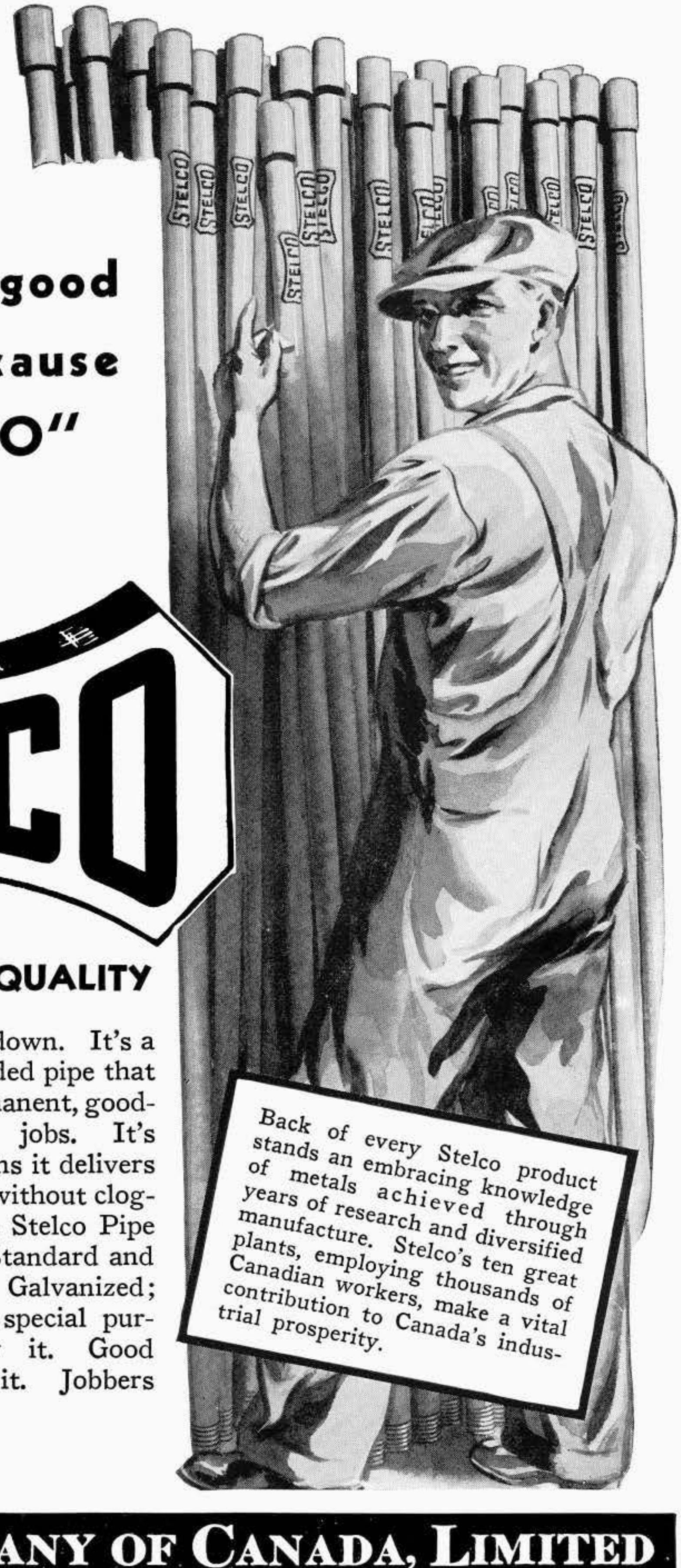

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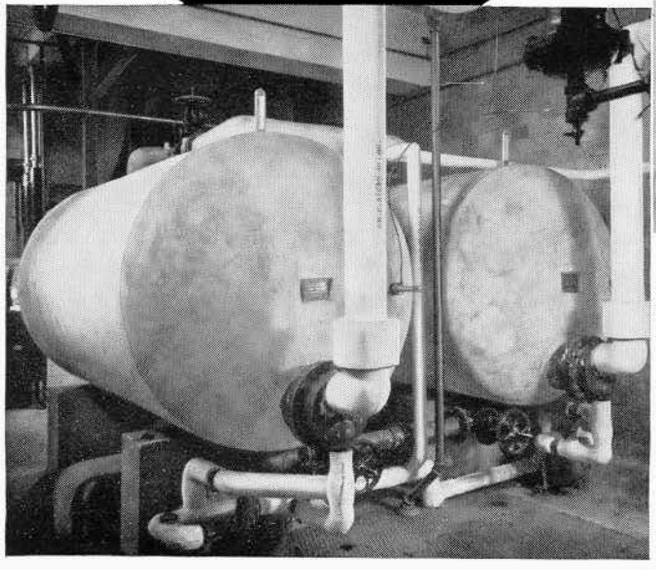

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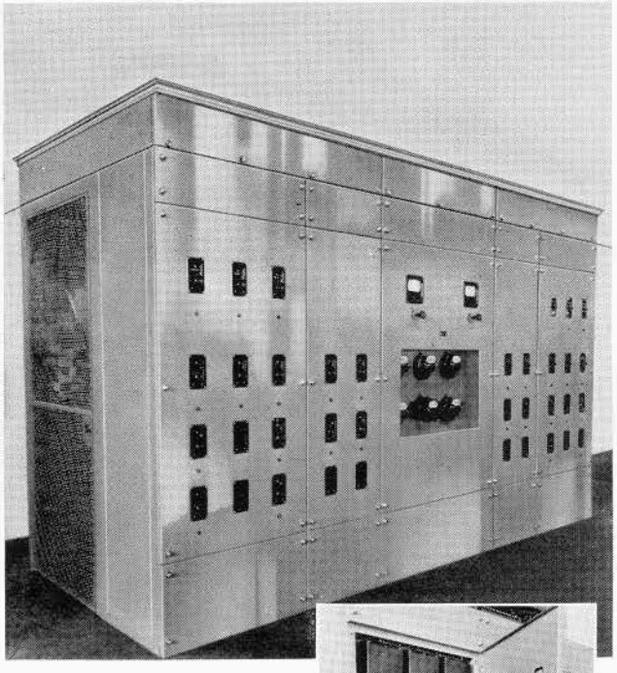

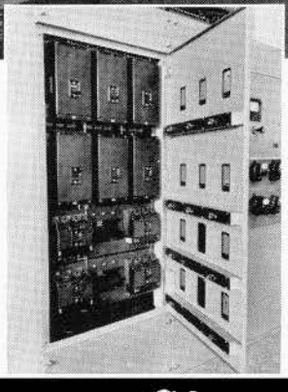

ILLUSTRATIONS: *(Above)* The Amalgamated Electric NOFUZ main switchboard with NOFUZ circuit breakers, controlling light, power and electric heating for new super Woolworth store building, McGill College Avenue and St. Catherine Street West, Montreal. *(Right)* Showing hinged panel construction providing accessibility to breakers.

F. W. WOOLWORTH CO. LIMITED recently opened the doors of their newest and most modern store building at McGill College Avenue and St. Catherine Street West, Montreal, to offer unusual facilities for the convenience of Woolworth customers.

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The capping of the bronze balustrade and the handrail on the walls are of Nickel Silver . . . *in the New Carmelite House, London, England.*

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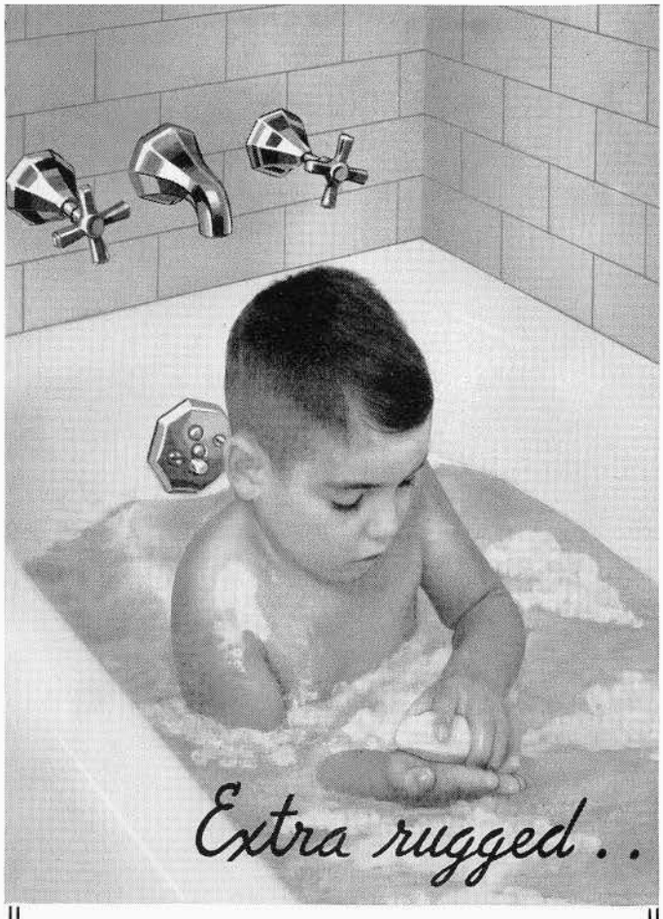

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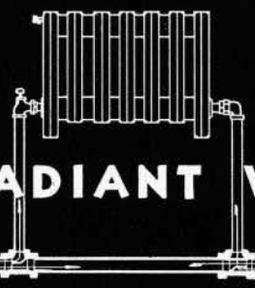

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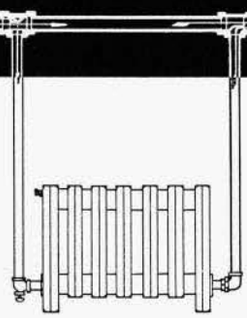

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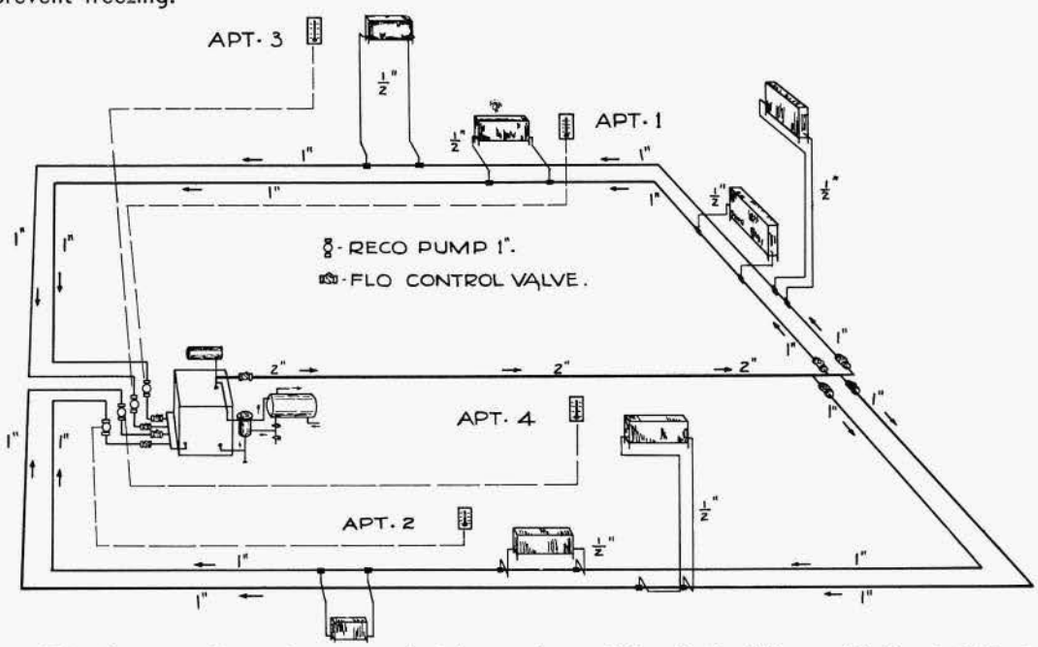

The diagram above shows a typical layout for a 4-family building, with Central Heating Boiler and independent Mono-Flo Heating System for each Apartment. Only 1-inch single mains with ½-inch risers are required for each Apartment.

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The Boiler is equipped with an Indirect Water Heater to furnish year-around Domestic Hot Water for the occupants of the Building.

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Series No. 9 will appear in the December issue of this Journal.

JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 159 TORONTO, NOVEMBER, 1938 Vol. 15, No. 11

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PLATES

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J. F. SULLIVAN, PUBLISHER

SUBSCRIPTION RATES

Canada and Newfoundland—Three Dollars per year. Great Britain, British Possessions, United States and Mexico—Five Dollars per year. All Other Countries—Six Dollars per year. Single Copies—Canada 50 Cents; Other Countries 75 Cents.

AS a loyal subject we look forward with great pleasure to the arrival of their majesties the King and Queen in June. As an architect we expect our enthusiasm to be somewhat dampened by the decoration of Canadian cities from East to West.

In the flood of books like "Britannia waives the Rules", and "Malice Toward Some", we see no reference to two important British characteristics. We refer to our British genius for funerals, and our most lamentable lack of genius for pageantry in moments of national rejoicing. Even the Romans could not put on a show like the funeral of Queen Victoria or of George V, and a British General in a colonial town has a more impressive funeral than a statesman in a European capital. It is true that we have Scottish regiments which cannot but thrill the most Anglican breast, a riderless horse, reversed arms, the Last Post and other things which are as British as cricket, but we have above all a sincerity in spectators and troops which never fails to impress even the foreigner. We remember by contrast with British public funerals the services for Jaurés, the French Socialist. The proceedings to our ungallic eye were wholly theatrical. An actress from the Comédie Français stood above a flight of steps between smoking classic urns and read an address to the assembled multitude of workmen in overalls and representatives of the Government. Ones thoughts constantly strayed from Jaurés to the Beaux Arts which had inspired, if not designed the whole scene, and occasionally to the singularly beautiful creature who was addressing the audience. With us it is instinctive. We have a national flair for funerals and funeral decoration. We require no symbolic workmen, no classic smoke, no tragic actress.

Once upon a time we had an equal gift for pageantry. When Henry VIII visited Francis I, he brought a great deal of the decoration himself on to French soil, and the Field of the Cloth of Gold is in striking contrast with Mr. Chamberlain's suit case on his arrival in Godesberg. In the decoration of streets and public buildings our national and local efforts are pathetic. It is an art at which the Germans and the Russians are past masters. If you haven't thought of it before, imagine for a moment the red square in Moscow being decorated on Stalin's birthday by H.M. Office of Works, or a speech day at Hitler's old school with decorations by the Public Works department of the Canadian Government. Both British departments would do their level best, but the result would be so childish and trifling that the German and Russian governments, not knowing our national shortcomings in these matters, and having very little sense of humour, would assume that we had deliberately insulted them. Herr Hitler is always making speeches, and at different parts of the country. They cannot all be arranged at long notice, yet miraculously and overnight, a town is bedecked for his arrival. Everything is dignified, there is nothing tawdry, nothing cheap, yet nothing wasted. And when he addresses 50,000 to 2,000,000 of his countrymen, the background of banners is breath-taking in its simple grandeur. We cannot even guess at the scale because it is a scale beyond British comprehension.

As a contrast, think for a moment of the awful waste in trivialities in London at the time of the Coronation. There were, of course, exceptions notably in Pall Mall, but generally a million insignificant rags fluttered in the wind. With decoration like that you don't concern yourself about scale, the dignity of the city or the glory of the occasion—there are only two concerns; will they blow away and will the dye run out if it rains?

Are we to rely in June on loyal shop keepers, large and small, to decorate their shops; and are we to rely on our cities to bring their flags and bunting out of moth balls and hang them in the same places that they have hung them on all former gala occasions? We trust not, but we believe that unless the general public can be aroused, that is what will be done. In 1605 when James I visited Oxford, that "incomparable architect", Inigo Jones, arranged the decorations for his reception. In 1939 when George VI visits a Canadian city, will the decorations be directed by persons whose whole experience has been the word "welcome" in neon light and the festooning of bunting for the periodic visits of the Mystic Knights of the Sea?

We believe civic decoration is an architectural problem, and that civic, provincial and federal authorities, if properly approached, would welcome the assistance of architectural chapters. In a city the size of Montreal or Toronto we would like to see the chapters invited to appoint a committee of four adding to it a member of the staff of the College of Art, and a member of the Merchandise display division of a department store. To this committee the Provincial Government and the City would each appoint a representative. With such a combination we would look forward to seeing a display done with dignity and economy that would be a credit to the Province and a surprise to the Royal visitors. It is obviously the duty of the various provincial associations of this Royal Institute to use their influence and the skill of their members to make the "Royal Progress" through Canada "an unique and memorable occasion".

DESIGNING CONCRETE FLOORS TO REDUCE THE TRANSMISSION OF SOUND

By WILLIAM ALLEN

1. Preliminary

THE problem of sound transmission in buildings is recognised by architects in every country as one of the most puzzling things with which they have to deal. Very little authoritative information is available upon the theory of the movement of sound in structures, and practical notes of "every-day" use are almost unknown. The laboratories of the world, however, have not disregarded the problem, and in England the combined efforts of the Building Research Station and the National Physical Laboratory have been turned in this direction for some years. At the moment, the position is that some individual aspects of the problem have been clarified, and a big step forward towards a comprehensive solution has recently been made.

2. A Definition of the Problem

The one aspect which will be dealt with here has mainly to do with noises arising from impacts upon the floor, such as footsteps, furniture movements, or light machinery, rather than with air-borne sound such as that of conversation or radio. The reduction of the latter is governed largely by the weight of the construction, a factor which does not in any material way affect the transmission of impact sounds.

Such a problem as this should not be confused with the problem of the acoustics of rooms. The latter is a thoroughly developed science in itself, but its connection with sound transmission is quite incidental as far as any useful reduction is concerned. Instead, the cure appears to lie in the localisation of the vibrations which are set up by the impact, to prevent their being communicated to the structure. If this can be done successfully no noise nuisance from such a source need be anticipated. It follows that if the wearing surface can be insulated, as far as vibrations are concerned, from the structural floor, the noise of footsteps, furniture movements, and so on, will be restricted to the room in which they are made.

3. The Treatment of the Problem.

The most successful method of reduction so far obtained is known in England as the "floating floor". It is now being exploited commercially with some success, and consists essentially of a raft or slab of some kind, constituting the wearing surface, resting upon a resilient material which in turn is carried by the structural floor. The resilient material acts to restrict the transmission of the vibrations from the wearing surface to the structure, and so forms an insulation.

In the investigations carried out jointly by the Building Research Station and the National Physical Laboratory, the latter being responsible for the physical measurements, four particularly successful treatments of the concrete structure floor to prevent sound transmission have been evolved. Each has certain advantages which may make it particularly applicable in certain cases, and all have high values of insulation, sufficient at least to reduce the noise of normal movements to probably a quarter of their former loudness. These four floors are illustrated in Figure I, and their characteristics and details of construction are as follows:

Type 1:

This design is very simple, consisting of a slab of concrete poured directly upon a resilient quilt of some kind.

Construction Details: A moderate thickness (nominal ½") of resilient quilting is laid upon the bare floor, the joints being well lapped, and the whole covered with a waterproof building paper. 1½"-2" thickness of concrete is then poured upon the quilt, with light reinforcement placed about mid-section. A final wearing surface of any kind normally applied to concrete can then be laid down.

Comment: In general it has been found that the thicker the floating slab the better the insulation will be, although these minima are effective. The waterproof paper is simply a precaution to prevent any leakages of concrete through the quilt, for if these occur rigid bridges will be established which will largely nullify the insulation. The cost of this treatment is not much more than, for instance, preparing a floor and laying linoleum. In effectiveness and economy together it is probably unequalled in floors of this general type.

Type 2:

This floor was developed at the Building Research Station and makes use of rubber cubes as a resilient support. The obvious difficulty in this case was to get the rubber cubes in place beneath the floating slab. A successful method was finally developed in which a number of sockets are cast in with the slab, and into which the rubber cubes could be placed, plugs screwed down upon the cubes, and the entire slab thus lifted out of contact with the structural floor. This system has been patented in England by the Building Research Station.

Construction Details: A cheap paper is first laid over the whole area to be covered by the floating slab, to prevent adhesion of the concrete of which the slab is made. Before pouring this concrete the sockets are located and placed upon the paper at intervals for normal conditions of about 2′ 0″. The sockets are of the banded running type, and in length should equal the proposed thickness of slab, which again may be 1½″-2″ or more. The concrete is then placed, with light reinforcement at mid-section. When the concrete has thoroughly set, wooden cubes are dropped into a *limited* number of the sockets and the plugs are screwed down upon them. In this way the floating floor is gradually raised; when it has been lifted an inch or more, plugs with rubber cubes attached are inserted in the remaining sockets. The wood blocks are then removed and replaced by rubber cubes, and the screws adjusted until the whole slab is evenly carried by the cubes at a distance of about 1″ from the structural floor. Covers can be fitted to the sockets and a wearing finish laid.

Comment: In constructing this floor care should be taken to keep the inside of the sockets free from concrete, slight greasing of the threads being perhaps advisable too. Spacing of the sockets is determined by the strength of the slab, rather than by the load on the individual cubes. Replacement of the rubber cubes may be necessary in from 20-40 years time, and can be done one at a time without lowering the floor.

The cost should not be excessive if the proper sockets can be readily obtained. The insulation value is very high, and by the process of lifting it is practically certain that no rigid bridges can remain to short-circuit the insulation.

Type 3:

Where a resilient boarded floor is desirable, a floating raft, of either types 3 or 4, can be used very successfully. These simply consist of boarding, attached to battens or sleepers, which in turn rest upon a resilient support carried by the structural floor.

Construction Details: Boarding, preferably tongued and grooved, of about 1″ thickness is nailed to the battens or sleepers, recommended to be some 2″ square in sections. These in turn rest upon the resilient element which may consist of rubber cubes (with countersunk holes to permit recessing the fixing nails so that rigid contacts will be avoided), or strips of quilting over the structural floor.

Comment: The insulation value in this case does not seem to be materially affected by the type of quilting, as long as it is reasonably resilient. Double thicknesses are usually more effective but seem rather too springy. Rubber cubes are very efficient. The additional cost of this floor over and above the same finish applied directly to a structural floor appears to be negligible. Traffic and furniture, together with the skirting, will apparently be sufficient to keep the floor in place, and rigid fixing is, of course, to be avoided.

Type 4:

This floor differs from type 3 only in that the finish is intended to be a thin layer of hard wood laid over a rough underboarding, a floor more typically Canadian than English. Between the two layers of boarding is placed, as usual in Canadian practice, a thickness of stout building paper. The one test that has been made of a floor of this nature showed a distinct improvement over the single boarding, and was a very pleasant floor in every way.

4. Materials for Insulation

The most successful quilting for the purposes discussed here appears to be that which consists of long strands of glass silk, laid parallel, to a nominal thickness of quilt of ½″ or so. Next to this in effectiveness is the quilt of eel grass, or moss, usually quite cheap and very nearly as good as the glass silk. Slag or rock wool has not come up to either of the former in the many tests which have been made, but is nevertheless distinctly effective, and again usually quite cheap. Felt, cork, cork granules, sand, fibre-board and asbestos do not appear to be as adequate for this purpose as the three materials first mentioned.

The life expectancy and efficiency of these materials under load is now being investigated, and although no clear statement is available it is thought that the inorganic materials will be more successful under these conditions than the organic.

Rubber requires a special note. If protected from oils, greases, light and other deteriorating agents, rubber can be made which can probably be counted upon to act efficiently for from 20-40 years.

5. Skirtings

If floating floors are to act efficiently no rigid contacts with the structure can be permitted. Skirtings have been devised, therefore, which perform their normal functions without being attached solidly to both independent and structural elements. Some of these are shown in connection with the illustration of the four floating floor types. Others can be devised by the designer and must largely depend upon the type of wearing finish to be employed.

Type A in the drawing is perhaps the simplest of the group. The essential point about this skirting is that the bottom face is chamfered to a sharp edge, for to some degree the transmission of the vibrations appears to be a function of the area of contact. No tests have been made in England of this skirting, and for the time being continental statements will have to be accepted regarding its efficiency.

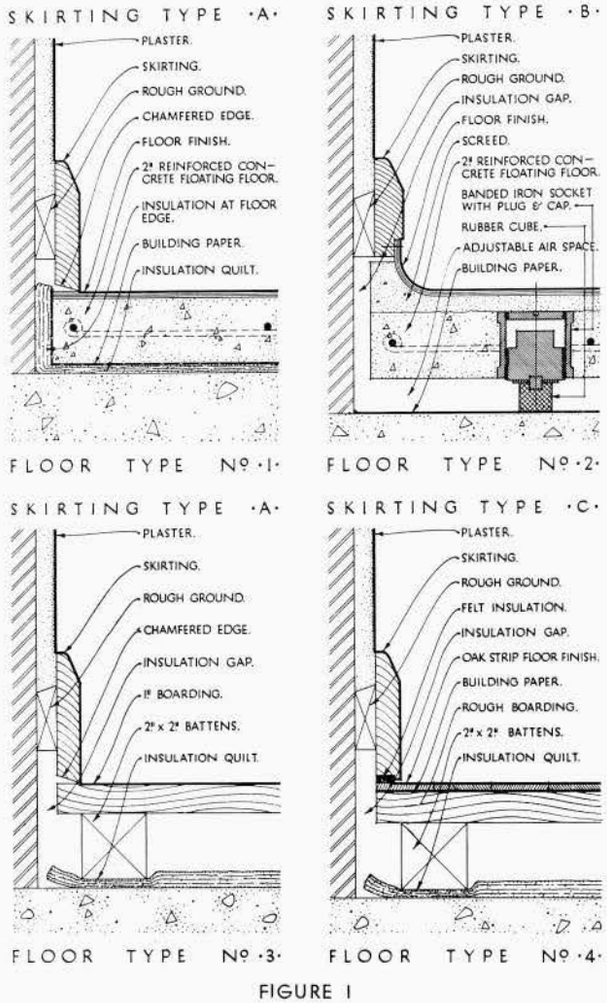


FIGURE 1

Reproduced by permission of the Director of Building Research.

Type B is a cove skirting, and was developed to be used with lino floors on concrete slabs in buildings where cleanliness was a particular factor. The gap which is essential between independent slab and structure is here sealed from access of vermin by the lino, which is itself, of course, reasonably resilient.

Type C has a small recess along the bottom face of the skirting into which a rubber or felt strip can be placed. Such a skirting is particularly useful for wood raft floors, for it can be clamped down hard upon the floor edge without much loss of efficiency, and will then act to restrain any possible floor movements.

In the latter connection it should be stated that although the materials used for insulation with these floors are technically resilient, it should not be inferred that the floors have much movement. They are, in fact, very steady, and no undue vibration or motion of any kind is normally to be expected from them.

6. *Large Areas of Floating Floor*

No limit is known to the extent over which either the concrete or the timber raft floors can be laid successfully. With the former, however, work stopped for the night should be finished against a board with a generous rebate. Before resuming work next day the joint should be wire-brushed, and painted with a thin cement-sand slurry. Such a joint should be no weaker than the remainder of the work.

7. *A Summary of Other Sound Reduction Treatments for Floors*

It is often thought that wearing surfaces alone, of special types, will be adequate in reducing impact noise transmission. In the laboratories the general experience has been that linoleum, rubber, and carpet in thin layers have only a barely noticeable effect, although the character of the noise is usually improved. The best cork, the more expensive types of carpeting, and sponge rubber-cork compositions are probably no more than half as effective as an average floating floor such as has been described, while their prices are often very much higher.

Placed on top of a floating floor, the values of insulation for the wearing surface alone can roughly be added to that of the floating floors as described.

An independent ceiling may in certain cases appear to be a more attractive proposition than a floating floor. Such a treatment is, however, fundamentally wrong as a protection against overhead contact noises for this reason: vibrations arising in the floor structure are immediately communicated to the remainder of the structure in the region of the source, including, usually, the walls of the room below, where the listener is. The sounds that he hears probably come about equally from walls and ceiling overhead. Protection of the ceiling alone is clearly, then, not likely to improve things to the same degree that a floating floor can, in which the vibrations are distinctly localised.

In cases where every possible degree of insulation must be obtained, and a floating floor alone may be inadequate, an independent ceiling will undoubtedly provide a small additional protection. The most effective ceiling for this purpose is one which is entirely independent of the floor structure, consisting of separate joists carried on corbels on the side walls. A suspended ceiling, of metal lath and plaster carried by metal hangers, can be very nearly as efficient as an entirely independent ceiling, however, and is probably very much cheaper, as well as taking up less space. Such a ceiling should not be hung too close beneath the structural floor; about 4″ appears to be a desirable depth for the air space.

8. *Conclusion*

No mention has been made of air-borne sound, such as radio, singing, piano playing and so on. Floating floors are not likely to have any great effect on the reduction of these. This is due to the fact that the relatively small addition of weight to an already very

heavy floor is insufficient to produce much effect. In any case, it has been found that the indirect paths traversed by sound in moving from one part of a building to another are so often the limiting factor of overall efficiency that until a comprehensive treatment of these is undertaken no great improvement in sound proofing air-borne sound is likely to be possible. The Building Research Station has in preparation at the moment a publication describing a simple and adequate treatment for this problem which it is hoped can be reviewed for Canadian architects in some future article. The present description of "floating floors" will form, however, a useful introduction to the more comprehensive scheme, since they form one of the indispensable elements.

THE BUILDING RESEARCH STATION

The Building Research Station in England is, no doubt, little known in Canada. It is true that the climatic conditions in Canada are so different from those of England that Canadian architects are faced with problems outside the range of English practice, and therefore outside the normal scope of the work of The Building Research Station. But even so, there is little doubt that the general run of the work is directly useful in Canada as elsewhere, for the fundamental principles of building must be the same the world over. Differences arise only in the application of these principles having regard to differences in conditions and material used.

A word about the station itself. It has now been in existence for some 17 years. Its establishment was brought about by the recognition in England of the importance of the building industry economically and the importance of good building from the standpoint of the health and well-being of the community. It was natural, therefore, that with the development in England during and in the years immediately after the war of the movement for fostering the application of scientific research to all phases of national life, there should be established a national organisation for building research. Since its establishment, it has won a reputation for reliability and efficiency, and many thousands of English architects, and manufacturers make use of its service annually.

— William Allen.

Mr. William Allen is a graduate of the Manitoba School of Architecture. We are pleased to state that this is the first of a series of articles by Mr. Allen written from The Building Research Station, where he is at present engaged.

—E. R. A.

A MINIATURE HISTORY OF THE ENGLISH HOUSE

By J. M. RICHARDS

The Architectural Press, 9 Queen Anne's Gate, London, S.W. 1. Price 3/6.

This little volume has been specially prepared for those who feel the need of a small and inexpensive handbook on the history of the English house. The illustrations are carefully selected and, with the splendid running commentary at the foot of each page, tell the story concisely and logically of the evolution of British domestic architecture. Most of the illustrations are taken from Nathaniel Lloyd's scholarly compilation "History of the English House". The book, pocket size, 70 pages, contains 90 illustrations of exterior and interior views with some plans and details.

Many lengthy discussions with clients (and even partners) might be avoided if there were two or three volumes of this handbook in the office to lend or give away. The cost is only 3/6.

F. H. Marani.

LION AMONG SHEEP

By ANTHONY ADAMSON

WHEN we arrived the lion was in the basement. Those that remained upstairs were not the intellectuals and they chatted and drank sensually. He had been taken down to the bar because it was the hostess' modernistic room and as we arrived there we interrupted a monologue on bricks. "Take one," he was saying, "hold it in your hand. Feel it. Keep it by you. Live with it. Then and only then . . . "

"Excuse me, Mr. Wright, this is Mr. er . . . " I gave my name. "He is an architect, too." The lion turned slowly and looked. After a long moment he pursed his eyes into a most effective shape. "When Greek meets Greek," he said, "neither of them bring gifts." I opened my mouth hoping for a *bon mot,* but it did not come and I sat down unobtrusively on a steel chair.

"But, Mr. Wright," said a woman, continuing the conversation we had interrupted, "how can you live with a brick? I know what a brick is perfectly well." "Do you?" he asked. "Your house should be a part of you. If you have a brick house, each brick is a part of you. Have you ever thought of that?" There were gasps. She hadn't. Someone said something about gall stones. He shrugged his shoulders gracefully.

"What do you think of this house, Mr. Wright?" "Is this a house?" he asked blandly, hoping, perhaps, that it was not his hostess who had asked him. "Quite an iconoclast, isn't he?" my neighbour whispered to me. "I would like you to see my house," said a man. "Part of it is log, one of the oldest houses in the district, nothing very worthwhile about it architecturally, you know —just simple and intimate, inside a bit of maple here and there." "Nothing that is intimate is quite worthless," he replied.

They gave him another whiskey and soda. My neighbour asked me if I had ever been to Tokio and for a moment it looked as if conversation might become general, but Mr. Wright began to talk about Architecture. I have never been to Tokio. He explained that true architecture grew from the inside out. This had been his dominating theory throughout his career. He said he had thought this had been his own original idea and we were to imagine his surprise when he read in the works of a Chinese philosopher with a long name that this man, too, had had this idea three thousand years before Christ. Had anyone read any of his works, perhaps his book on tea would be known to us? One intellectual said it was. We all looked at him. He said he had never finished it, quite.

Mr. Wright then told us what he thought about the classical orders. They were very, very wrong. He explained at some length how wrong they were. We sat stricken. Many architects, he told us, did not use the orders today. Some of the so-called modern architects, influenced perhaps by him, were building practically. But they had failed also. Their buildings were mechanical, not attuned to a basic human module, they were hard at their edges, they were hard in their souls. A building to be human must be friendly and personal, if it were friendly and personal inside, it must be friendly and personal outside. The curse of American, or as he preferred it "Usonian", arts today was eclecticism. He talked of his buildings and with delicate hands drew them for us in the air. As he sat weaving the air the musical timbre of his voice seemed to hypnotize us all. The hard mustard yellow of the walls seemed to fade into a more human wall of little limestone blocks, the blue concrete floor with its red and yellow motifs became tiled and the chromium and linoleum bar vanished into friendly oaken shelves. A telephone mechanically jangled upstairs. But it did not interrupt us. We sat on in a faint aroma of peacock feathers.

"Telephone for Mr. Wright—wanted on long distance—New York." Mr. Wright left us and we came back to earth. Someone said they had been to Tokio and it looked like Hell. Did anyone read what Lewis Mumford had said about Wright and the New York World's Fair? No? Well, he had said that the Fair would be chiefly remembered for the fact that Frank Lloyd Wright had not been asked to design it. Had anyone been to either of his lectures at the Fine Arts Convention? Why had he not liked the hat of the poor woman on the platform? Had anyone heard of the hexagonal house he had built in California? Someone had heard that you slept in hexagonal beds and there were no chairs.

The sound of Mr. Wright's footsteps were heard on the stair that entered onto the bar. Conversation languished. He came in tapping his glasses. "Why should I come here?" he asked us. "People only come to my lectures because they hope I will say something startling. The papers always misquote me. I can never open my mouth without somebody making a fool of me. I have got better work to do than lecturing to school marms. That was a man then, on the phone, a rich man, an aristocrat, he wanted me to build him a house in Connecticut." He went on to say how odd it was that he had come to a Fine Arts Convention of Mid-Western States' teachers and that he got nothing for doing it. But he could not, he said, fail to go on preaching his gospel. Soon he was going to preach it in Eng-

land. He had been offered a lecturing fellowship and was to give four lectures in any university he chose.

Someone told him that I had been to Oxford. He asked what university I thought would be the best for him. I said London and added that he might be interested in the new buildings there, the main tower of which . . . He said he liked Edinburgh. I went to Cambridge.

After a while Frank Lloyd Wright rose and progressed upstairs through solid eclecticism, past the two Goya etchings and the 17th century Mexican statuette on the stairs, past the gilt English mirror above the Italian ornaments on the living room mantel, past the copy of Schlieman's Mycenaean gold cup in the hall and out through the multi-panelled Spanish door to the earth outside. As he got into a car and slammed the door that I was trying to shut he gazed at the high skies and rolling tumbleweed of Colorado and an only half mute expression decorated his mobile features. "Why? Why do I go to parties like that?" I could have told him.

THE DESIGN OF NURSERY AND ELEMENTARY SCHOOLS

By H. MYLES WRIGHT and R. GARDNER-MEDWIN

The Architectural Press, 9 Queen Anne's Gate, London, S.W. 1. Price 10/6.

The first impression that one receives after examining this book is that the authors show a good understanding of the main principles of present-day educational practice in elementary schools as set forth particularly in the Hadow Report and as shown in the newer programmes of study, whether written in older lands or on this continent.

The rigid uniformity of the classroom of the past is giving way, although somewhat slowly, to the class-room which will readily lend itself to adaptation for the many different activities of the modern school. Architects as well as teachers are recognizing that the keystone to the educational arch is the child to be trained, and that the school accommodation as well as the text books, the programmes of study and the methods of teaching must serve the main purpose as fully as possible. The designs in this book make provision for ample playgrounds, playrooms, gardens, movable class-room furniture, medical inspection room, elementary handicrafts and household science rooms, moderate assembly halls, library rooms, etc., as well as the regular classrooms. These provisions are in keeping with the best present-day trends.

The simplicity of the buildings, as to structure and equipment, is noticeable throughout. One notes that the nursery, infant and junior schools show constantly the atmosphere of the home and at the same time those appointments best suited to the community interests and group activities of the children.

Many of the illustrations represent one-storey schools spread over considerable area. These would not be well suited to Canadian requirements because of difficulties of heating in the winter season. The one-storey school may serve the many purposes of the elementary school in a better manner, but in Canada school architecture will have to take into account the need for central heating systems, and therefore the two-storey and even the three-storey building will be the best type in many cases.

The designs of senior schools show shops and home economics rooms comparable with those of Ontario elementary schools. The lack of formality in the arrangement of equipment and general layout of these rooms is noticeable. In general, it is felt that this book in these two special fields does not give as satisfactory designs as may be found in many urban elementary schools in Canada.

In Canada there are still many thousands of rural one-teacher elementary schools, and this will continue to be the case. Any book on school designs for Canada will require, therefore, to recognize the rural school-building problem. It is possible to construct rural one-teacher schools to suit modern school programmes and practices, and school architects may render a valuable service by designing schools to meet rural needs.

This book is intensely interesting and offers many valuable suggestions. The authors have undoubtedly caught the spirit of and the needs of the modern school building. No other book on school design has been as free from outworn traditional features, and this work may be the means of stirring Canadian experts in school design to produce an up-to-date book suited particularly to the needs of a country with wide ranges of temperature and thousands of communities requiring only one, two or three-roomed schools.

V. K. Greer,

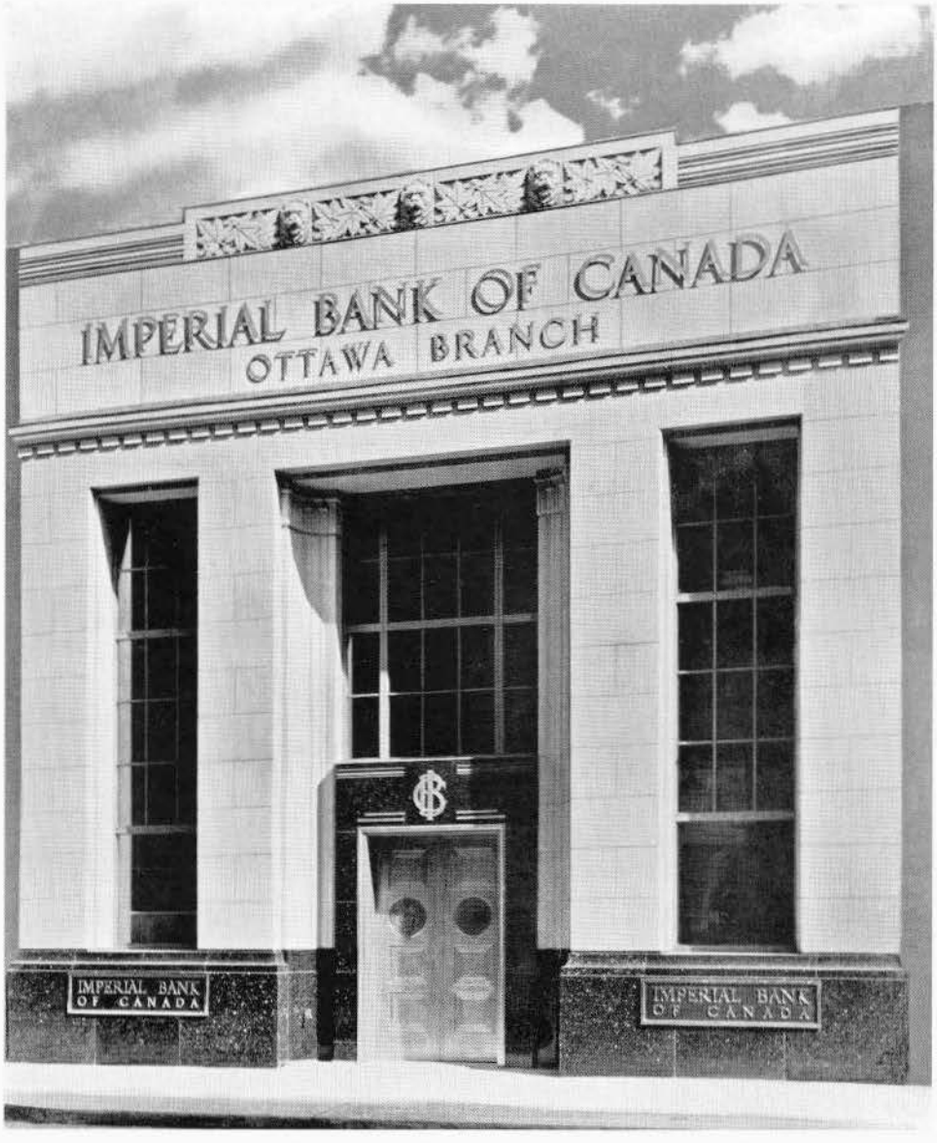
Chief Inspector of Public and Separate Schools in Ontario.

ENTRANCE DETAIL

ALTERATION TO HOTEL GIBSON, OAKVILLE

GEORGE AND MOORHOUSE, ARCHITECTS

BANKING ROOM



IMPERIAL BANK OF CANADA, OTTAWA

ARTHUR J. EVERETT,

ARCHITECT OF THE

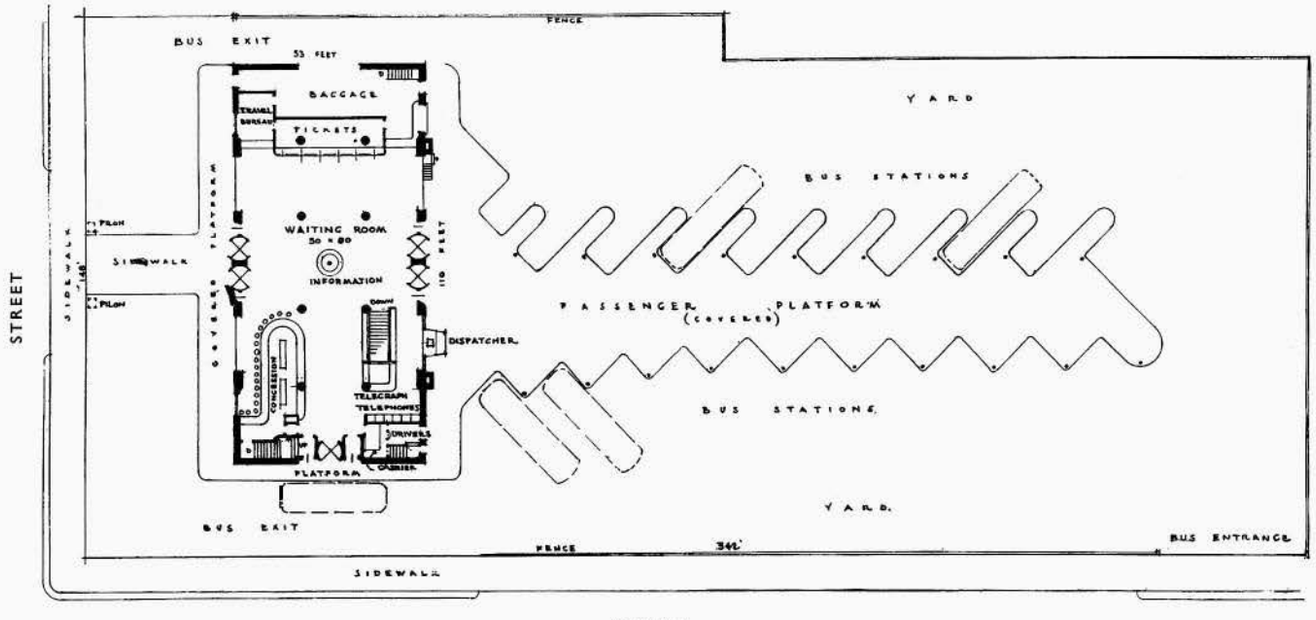
OWNERS' STAFF

SAVINGS BANK, CHRISTIANSSANDS

VILHELM REINHARDT, ARCHITECT

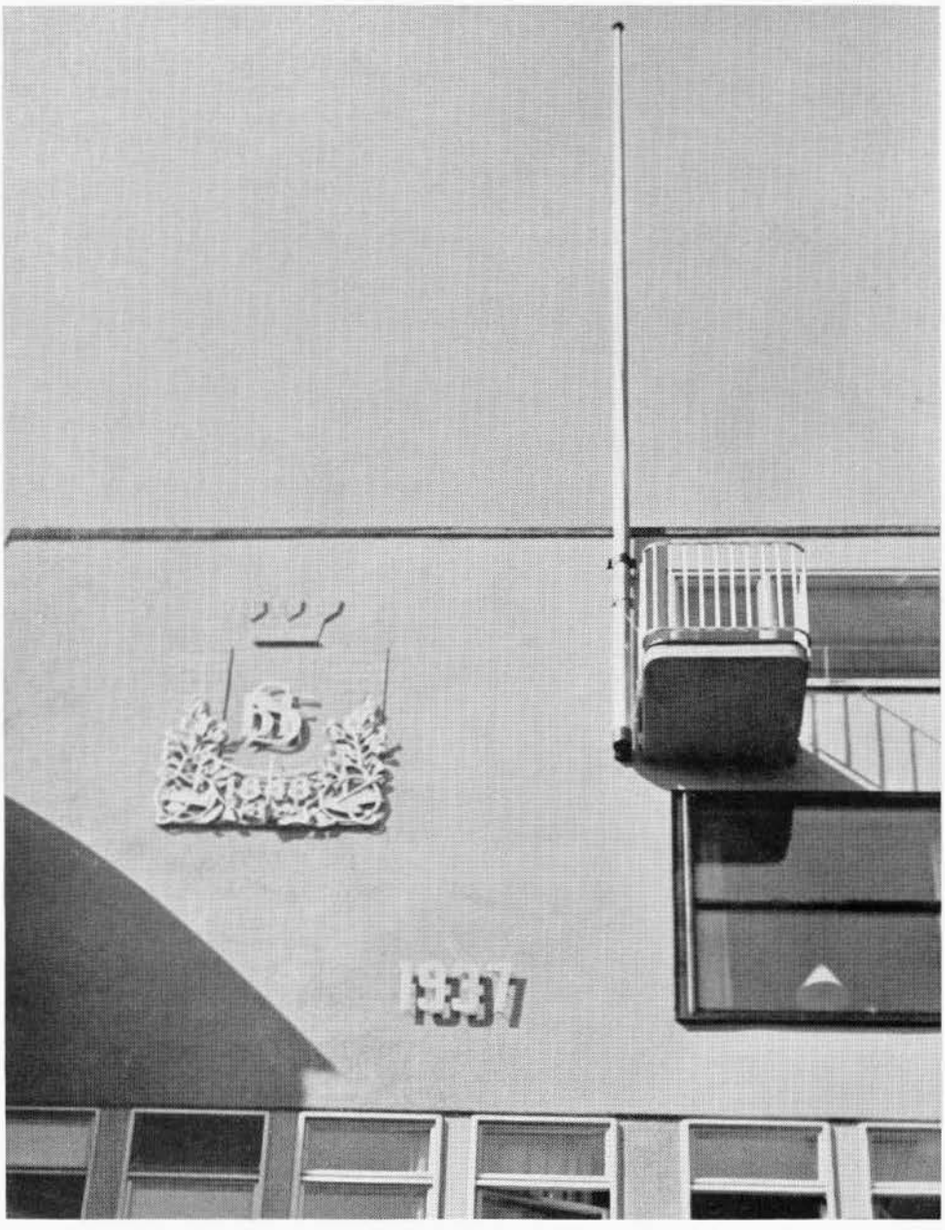
PROVINCIAL TRANSPORT COMPANY'S BUS TERMINAL, MONTREAL

SHOREY AND RITCHIE, ARCHITECTS

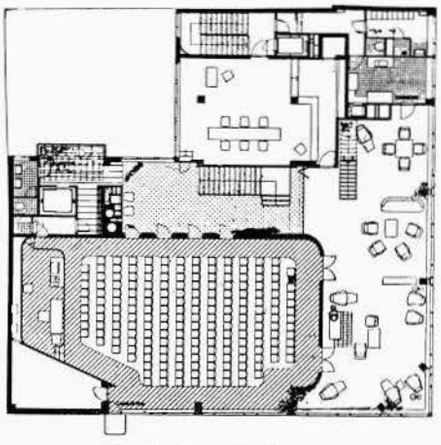


WAITING ROOM

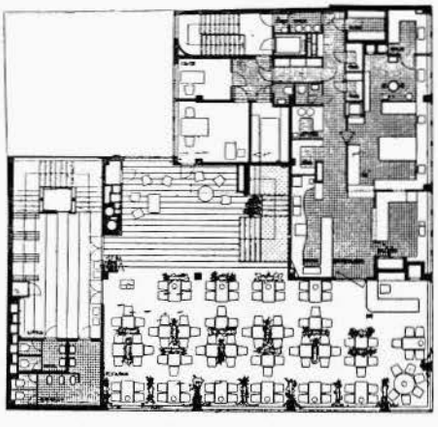
TICKET OFFICE



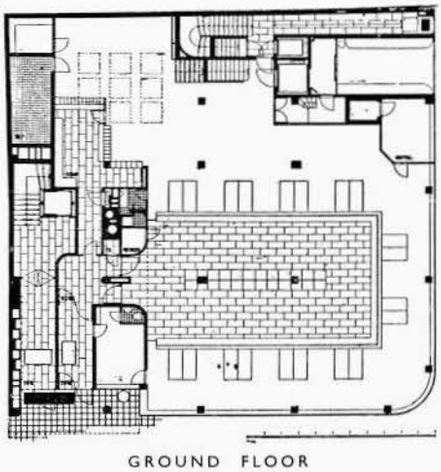
DETAIL OVER ENTRANCE



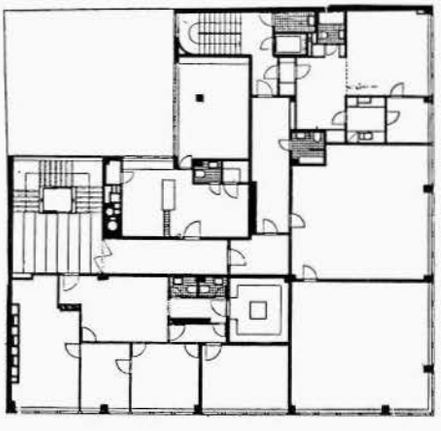
FIFTH FLOOR



FOURTH FLOOR



GROUND FLOOR

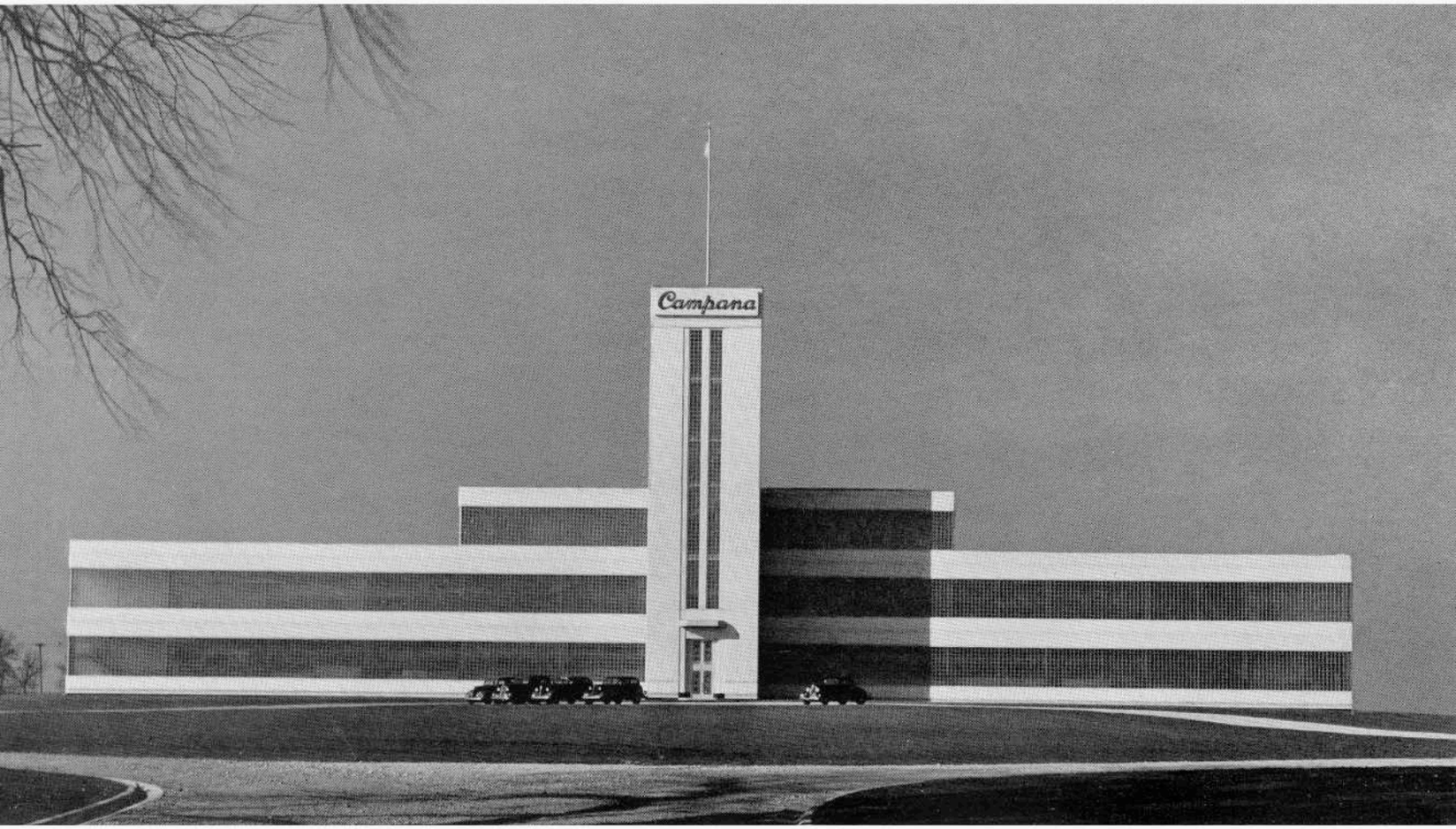


FIRST FLOOR

STOCKHOLM BUILDING TRADES CLUB, STOCKHOLM
SVEN MARKELIUS, ARCHITECT

THE LARGER CLUB-ROOM

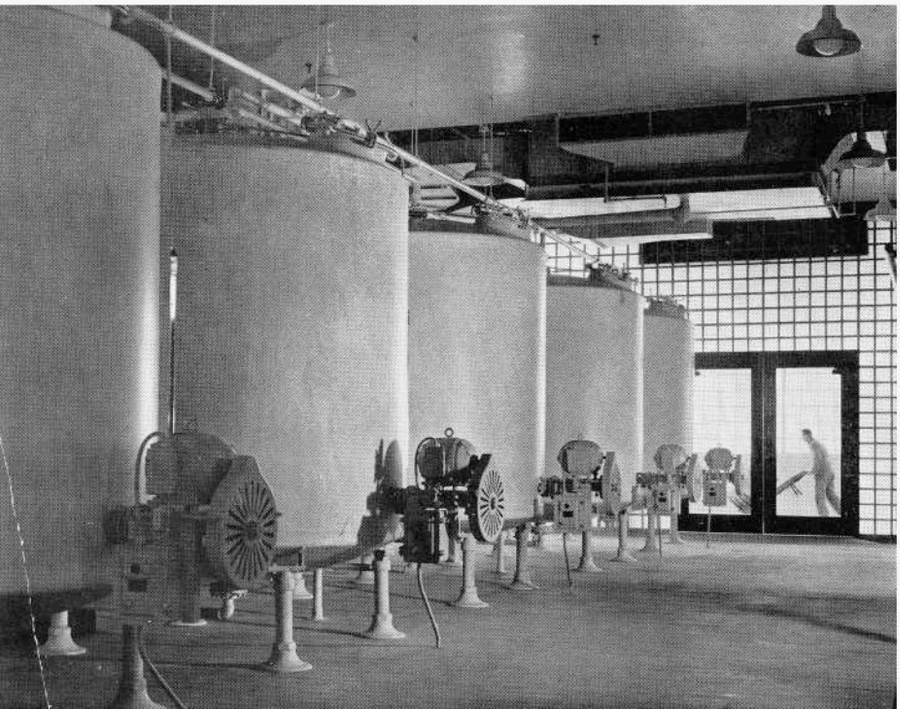
STAIRCASE TO THE CLUB-ROOMS



CAMPANA FACTORY, BATAVIA, ILLINOIS

FRANK D. CHASE AND CHILDS & SMITH,
ASSOCIATED ARCHITECTS AND ENGINEERS

STORAGE TANKS



THE ALBERTA ASSOCIATION OF ARCHITECTS

PRESIDENT'S REPORT TO ANNUAL MEETING, SEPT. 23, 1938

To the members of the Alberta Association of Architects:—

We are once again met together for an annual meeting of our Association after a period of some eighteen months. This period has been an eventful one for our Association, having marked the eventual passing of our new bill "The Architect's Bill of 1938".

At our last annual meeting in January of 1936, we were discussing the first draft of the proposed bill and now, after two sessions of the legislature, we have secured our bill modified in some respects from the first draft, but retaining the main principles.

The passing of this bill is, I believe, the most important achievement of our Association since its formation in 1906.

It is hardly necessary for me to enlarge on the features of the new bill as you all have copies of it and have no doubt made yourselves familiar with it. I would merely remind you that the new bill has given to members of our Association and to future members a definite amount of protection which was entirely lacking previous to the passing of this bill.

It should be hardly necessary to remind you that the privileges obtained carry with them the responsibility of ensuring the public that the members, present and future, of this Association are responsible practitioners in all respects.

The passage of this act has made it necessary to consider a revision of our by-laws in order to conform with the new bill. A considerable amount of work has been done on this and, as a result, a draft of the by-laws as proposed are in your hands for discussion at this meeting.

The membership of our Association has been increased by a number of new and younger members. To these, on behalf of the Association, it is my privilege to extend a cordial welcome and best wishes for their success in their chosen profession. I am particularly pleased to welcome these new members at this time as I feel that now our Association has something worthwhile to offer its members and also because the time is rapidly approaching when the older members who have carried on the traditions of the Association and the profession will be glad to pass over to a younger generation the burden of the administration of the Association.

It has been usual for Presidents in the past to review conditions as they are and to make some prophecy as to the future. The conditions generally during my expiring term of office have merely been a continuation of the depressing conditions for some years past. We all know only too well the depressed state of the building industry in this province. During recent months there has been some improvement, particularly in Edmonton, where a number of larger projects are now under way or are contemplated. Unfortunately, in most cases the architects on these schemes are not members of our Association, but fortunately for some of our members the new bill enables some to benefit by collaboration.

To prophesy as to the future is not so simple. There are apparently no precedents for guidance. Municipal, Provincial and Dominion authorities are apparently at a loss to bring about any improvement, but it must be obvious that conditions cannot be allowed to drift much longer.

Some drastic changes in our system must take place before long. What these changes may be I will not undertake to prophesy.

There is, however, one particular reason, I believe, for the continued stagnation in the building industry. Speaking generally, there is money available for any commercial undertaking that will make profits. Unfortunately it cannot be said, generally speaking, that building ownership is profitable and this for two reasons, high cost and high taxes.

I realize that this is not an original statement, but that I am merely endorsing the opinion of many others that real property should not be expected to carry the whole burden of taxation.

I hope that the future may show some improvement. I have some reason to believe that this may be so. For some time past I have referred to myself as the depression President of this Association. Some of you may remember that I was President during the war and post-war year 1915-20, at a time when it was impossible to secure a quorum to elect new officers. Now I am concluding a term of three years or so during a depression period. So perhaps as in 1920 my release from office may be an omen of return to better conditions.

To the retiring officers and Council I should like to express my personal thanks for their faithful and ready attention to the affairs of this Association and would bespeak for my successor the same kindness and consideration that I have always met with from the officers and members of this Association.

R. P. Blakey,

President, Alberta Association.

OFFICERS AND MEMBERS OF THE COUNCIL OF THE ALBERTA ASSOCIATION OF ARCHITECTS, 1938 AND 1939

President.....J. MARTLAND, Edmonton
First Vice-President.....J. M. STEVENSON, Calgary
Second Vice-President.....PROF. C. S. BURGESS (F), Edmonton
Honorary Secretary.....M. C. DEWAR, Edmonton

Honorary Treasurer.....W. G. BLAKEY, Edmonton

Representative on the Senate of the University of Alberta.....PROF. C. S. BURGESS (F), Edmonton
Council Members.....R. P. BLAKEY, Edmonton; H. W. MEECH, Lethbridge

THE DOMESTIC SCENE: CONTEMPORARY TRENDS

By HOWARD M. ROBERTSON, F.R.I.B.A.

A LADY client of mine recently went over to the United States and took with her plans for a medium size house which our office had prepared. The design, at her request, had something of the American Colonial flavour: painted brick, shingles, shutters.

It has just come back to these shores, with the client. But now the house is to be expressed in terms of Greece via Pompeii via Malmaison via Bermuda via Noel Coward via an unnamed American decorator. In other words, while the plan remains substantially the same, the body of the structure is to wear another suit of clothes, because the lady now sees in that way, and is, temporarily at any rate, tired of the other ways.

Curiously enough, the functional part of the scheme is not affected. The glass area of the windows is as big as required; the kitchen and services as convenient; the bathrooms as ample and as well fitted. Functionally, therefore, the house is modern, in the sense of being convenient, serviceable, and economical. And as regards expression, it will probably end up as a pleasant enough contemporary home with Directoire leanings.

This little story is used as an illustration of what, in very many cases, seems to be happening today in domestic work, namely, an acceptance of modern technique coupled with a mild eclecticism, being an expression of the client's personality, or at least of the client's mood of the moment and, if the client has no real personal convictions, then an expression of that very fluid and intangible thing, the current fashion.

To right, and to left, of this main stream of eclecticism, lie the extremes which spring from more deep-seated motives, sometimes on the part of the client, and very often, too, on the part of the architect, who is able, through his very sincerity, to influence his client towards accepting his own way of thinking.

Single-Track Minds

Into the character of such convinced designers enters the fervour of the proselytiser, willing and able to convert others to his faith; a faith springing from an almost fanatical belief in his own æsthetic rightness, or else heightened by the sense of a social duty to make others see the light. To such an architect the relation between architecture and the study of sociology is very close, and — by extension — the connection between design and politics. Such a man has generally single-track convictions, and will refuse jobs which do not satisfy them. He regards architectural design as service with a mission. But, curiously enough, he will sometimes indulge in unsocial — or shall we say purely fantastic — bits of design in a way which cannot be justified on grounds of service or function. He will not only practise, preach and convert, but he will tyrannise in so doing, and impose elements which have no basis beyond that of being associated, through the pioneering of other designers of the same school, with work of the particular character which he affects. Such elements of design are frequently on a par with other stock, elements of traditional design; they are clichés, originated by pioneers, but now vulgarised by more extensive adoption minus their *raison d'être.* They have, however, a certain prestige of novelty, and can often be quite well defended on the score of possibly leading somewhere, whereas the older clichés are frequently worn out; and well most of us know it.

Architectural Intolerance

The modern architects of the last two or three decades have purified design, and, whatever their personal idiosyncrasies, have pointed out the errors of traditionalists who were nothing more than that. They have enormously stimulated imaginative thinking on constructive lines, and have developed a building technique employing many new materials and many old ones in a fresh way. To them is due great honour. But much less honour is due to their followers who think that they have found the formula, and despise others who do not employ it. Architectural progress is not made on such a basis of intolerance, nor in such a mood of self-satisfaction. The expression of the designer remains as his individual prerogative, one of the few liberties left nowadays; and whether one likes it or not, evolution with its series of "booms and slumps" will continue.

The architectural picture as regards domestic work at this moment seems to portray a reaction away from the work of the pioneers of the last few years, largely because of the strength of their influence and the resultant and subsequent vulgarisation of their vital themes which become obscured and utilised purely as "features". Many good architects of the thatch and elm boarding persuasion will now run you off a "modern" house while you wait. They have all the recognised hallmarks at their fingertips, and produce them as easily as a French Grand-Prix man will knock together a big plan for anything from a naval dockyard to a Garden of Eden, without opening a book. Not only that, but the speculating builder is hot behind, with his little bag of tricks, generally, however, too transparent to deceive the élite.

However, the result is that the fashion leaders with money are becoming a little wary of the functional modernism as such. Firstly, having fewer real convic-

tions, they have seen, tasted, and become bored. And, secondly, fashion in the broader sense is turning to something else, and the wealthy keep a keen eye on fashion. The pages of *Vogue, Harper's Bazaar, Fortune, You* and the French decoration magazines, all tell a story. It is of something happening, of a leaning towards the baroque, the bizarre, a very sophisticated decadence, and occasionally towards design which is just good and not much else.

The Flight From Isms

This latter type is the one on which I personally would put my money as regards the future of domestic design. I believe that there will be more and more clients, in the medium expenditure class, who will want, for their house, just "house". They will list their accommodation, their whims as to bed-placing, towel rails, and bedroom basins. They will say that they want ample windows which they can look out of when sitting down. They will not want to be identified with any "ism", firstly because of modesty, and, secondly, because of the bogey of one day having to sell. They will probably express a preference for some particular feature, such as a copper door-hood; but they will list a considerable number of features which they do not like.

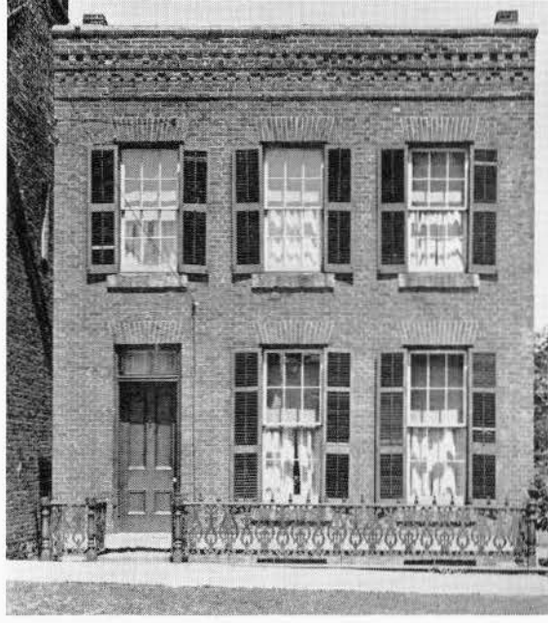
The result will probably be, in the hands of a good designer, a fairly satisfactory one. Architects will produce houses in which the materials selected dictate the colour and texture; in which flat roofs will be combined at will with pitched each as appropriate, and neither used because of either snobbishness or political leanings; in which æsthetic effects will not be farfetched and consequently tiresome; in which everyone will see out, and see in, to the precise degree required by the climate, aspect, and personal desires; in which utilities will be shown when good-looking, and concealed when ugly, pending their general improvement; in which sham Tudor and sham modern will find it hard to escape an automatic elimination.

The "Just House"

Curiously enough, the "just-house" house will not be easy for the jerry builders to imitate. It will be too much the outcome of its particular conditions to be readily standardised; yet it can easily have harmony with its neighbours and that sort of personality which is not aggressively conspicuous; and which is the most satisfying in the long run.

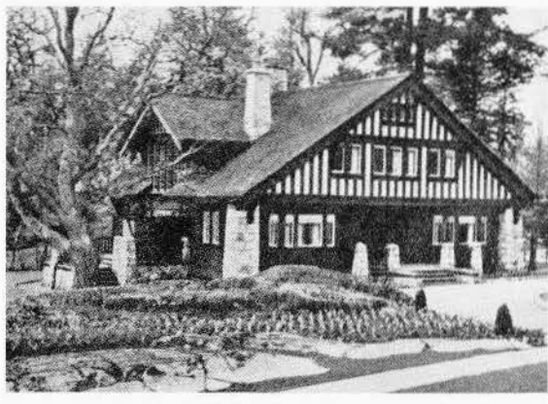
A probable source of danger, not easily eliminated, will remain in the form of the control exercised by the large estates. The control has value; but it is so often in the hands of unimaginative or limited individuals, and punishes the good while the bad go scot-free. Such a situation, however, is susceptible to remedial treatment, and is partly the result of our own past sins.

Courtesy of Architectural Design and Construction.

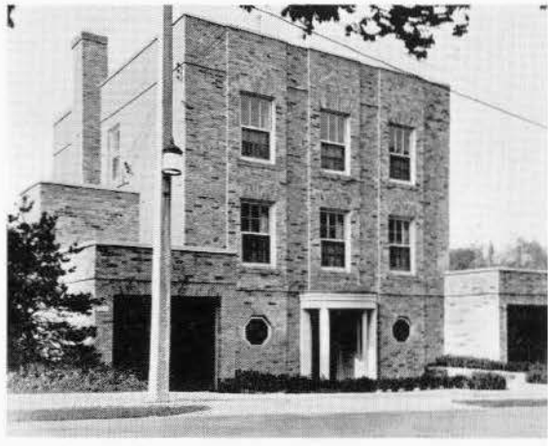


CHASTITY
PORT HOPE
1834

FRIVOLITY
SAINTE MARIE
DE LA BEAUCE
1890



DOMESTICITY
VICTORIA
1920



NEO CHASTITY
TORONTO
1934

MODERNITY
HAMILTON
1938

PROVINCIAL PAGE

ALBERTA

The report on page 253 takes the place of the monthly letter of Mr. Cecil S. Burgess from Alberta.

BRITISH COLUMBIA

Improvement of building standards in all classes of work is receiving considerable attention in Vancouver.

The directors of the Building and Construction Industries Exchange are dealing with the subject of price cutting and bid peddling and are considering provincial licensing of contractors also the creation of a closer spirit of co-operation between contractors, sub-contractors and material and supply houses.

A new Building Contractors' Association, formed recently by a number of better-class contractors active in Vancouver, was commented on in the daily newspaper by our Institute President, William Frederick Gardiner, as follows:—

"The purposes for which the organization were formed," stated Mr. Gardiner, "are extremely laudable, having as their objective the promotion of higher ethical standards, and the advancement of the building industry through co-operative efforts. It is certainly a move in the right direction," he added, "for co-operative effort can accomplish much for the industry as a whole, and will result in more stable conditions for its members, as well as in better values to those who are building. Research and study of materials and methods can be effective through organized effort, where it may be difficult or impossible for the individual. Interest in improving the standards of construction, and in creating the desire for improved planning in residential or in commercial building, is a prime moving force in the architect's life. Architects individually, and the Architectural Institute of British Columbia, are particularly anxious to co-operate with any organization which will improve conditions in the trade, and provide better designed and constructed homes."

Residential building in Vancouver and Victoria shows increased activity helped, no doubt, to a large extent by the Dominion Housing Act. The majority of the houses are of moderate cost as evidenced by the figures for Vancouver to date this year which are 1,404 dwellings valued at $3,669,235, being an average of about $2,600 per house.

— David Colville.

MANITOBA

It is always interesting to visit architects in other countries to see what they are doing and how they are doing it. The English architects were as concerned about new materials as we are here in Canada and there is more enthusiasm about central heating, especially in private houses, than there was ten years ago. It will take some time to convince the English people that they really need such a thing, and after all, if a client looks upon a heating plant as an unnecessary toy that is both expensive in installation and operation, the architects can be forgiven a certain amount of hesitancy. The experiments in electrical heating were the most fascinating to me because there should be a future for just that sort of heating in Canada, where power is plentiful and cheap. Mr. Charles Holden took me through the fine plant for the new University of London, where power is utilized off the peak hours and the radiators heat the marble sides and top of the radiator enclosures. This modern plant, in a building whose solid masonry construction harks back to the Middle Ages, might be incongruous if the rest of the building were not up to the minute in design. A great deal could be said about this building which will undoubtedly be the landmark of the city for some time to come. It will be a fine tribute to the architect, to his painstaking regard for every detail and his artistic sense, for he has spared himself no effort to have everything just as it should be.

I met several of the architects in Bergen, Norway, and one, Architect Lund, had lived in the United States for several months and had, fortunately for me, been shown the hospitality we hope is typical of this western world. To say that he and his friends and family were kind and friendly and generous of their time does not tell a half of the story. I was shown the old and the new, and there are charming examples of each. I thought, as I examined the lovely little wooden church at Fantoft, only a few miles from Bergen, how foolish we are to consider wood a temporary material, as many of us do. Here is a building in perfect state of preservation after almost eight hundred years. The dragon motif is apparent everywhere, in the cresting of the roof, the shingles that resemble dragon's scales, and the detail around the eaves and doorway. The only logical explanation seems to be that of a trade route from the Orient through the Baltic Sea during the Romanesque period.

In Oslo I was entertained as Norwegians alone know how to entertain. Everyone is "Architect So-and-So"; the title is always used. There are certain advantages to such a custom for the architect has a professional status like that of the doctor or lawyer, and the repetition of the name tends to keep it before the notice of the general public. But I felt my serious lack of proper education in the courtesies of drinking, for although they do not drink much they drink with great ceremony. Their toasts are delightful and although you often feel that their courtesy exceeds their honesty, they nevertheless warm the blood as much as the liquor itself.

Oslo belongs to the West. It is modern to the last word. The people seem to think and almost to talk as we do; they are pioneers certainly in their architecture. They seem to consider no limitations whatever except those of materials, which must be considered by all of us. The new Odd Fellows' Building by Architect Blakstad has a plan with revolutionary ideas of construction and exterior design that would make many of our so-called modern buildings look extremely old-fashioned.

I was disappointed with the new City Hall. I may be speaking too soon, for it is not complete, but the two towers seem very heavy and unrelated to anything in the neighbourhood. A single great tower with a magnificent entrance from the harbour side would have been a dominant feature from both land and sea.

— Milton S. Osborne.

ONTARIO

Work has now begun in earnest on one of the most important buildings to be erected in this province in recent years —the Supreme Court Building at Ottawa. The experiences of recent years have engendered extraordinary caution with regard to large projects; but as the contract for this building has now been signed we feel safe in stating that it is definitely "in the bag". We hope that our Quebec confrère will

not feel that we are poaching in his territory, on account of the fact that the architect is Ernest Cormier; for although the design may have been created out of the lambent air of Montreal, its physical fulfilment will remain solidly on the rock of Ontario.

In Toronto, another change at King and Bay Streets is being planned, and soon the Cawthra house will be the last remaining link, at that spot, with the more spacious and leisurely days that are gone.

The last meeting of the Council and Registration Board of the Ontario Association was held at Hamilton, where the members were the guests of the local Chapter. We learn on good authority that the party returned safely from a very enjoyable trip.

The Public Relations Committee of the Association has arranged with the publishers of the *Canadian Educational Pictorial* to assist them with material and suggestions for their architectural section. The magazine is a new venture, designed to give teachers throughout the province a sound working basis for the instruction of their pupils in the arts, and offers a very welcome opportunity for work in a field hitherto almost impossible to enter.

The monthly luncheons of the Toronto Chapter are to be resumed this month. These meetings were very much appreciated by those who attended them; and we hope that only those who cannot possibly come will be absent this season.

In conclusion, we offer a word of cheer to architects who may be suffering from a sense of frustration. If they will beg, borrow or steal a copy of Warwick Deeping's "The Malice of Men" they can learn a new technique of vengeance, with real estate, bricks and mortar as its weapons!

— *Gladstone Evans.*

QUEBEC

The Entertainment Committee are making arrangements for an interesting programme this winter, starting with the Annual Dinner which is to be held at some date around the beginning of December. An outstanding outside architect is being invited to be the special speaker on that occasion.

A series of monthly luncheon meetings of an informal nature are also being planned. These will be held at a restaurant contingent to P.Q.A.A. headquarters.

To see Sherbrooke Street at the present time one would think that Montreal was experiencing a building boom. Three important building contracts are under way within a stone's throw of one another. No. 1 is the much-needed additions to the Art Gallery from the designs of Fetherstonhaugh and Durnford. Directly opposite, on Ontario Avenue, Nobbs and Hyde are completely remodelling the interior and at the same time making an addition to the recently combined Erskine and American Churches at a cost of some $150,000.

The sanctuary is being entirely altered and placed in a new position and when completed the interior which, in the past has been anything but beautiful, will probably be one of the finest in the country. Opposite the church again, on Sherbrooke Street, the new city headquarters of the Associated Screen News is under way. This building almost adjoins the new Holt Renfrew store which obtained the medal award at the last exhibition.

The heart of the Laurentian Mountain district, which has in recent winters become so popular with skiers, is also busy just now in providing additional and much-needed accommodation for the followers of this winter sport. Within four or five miles of the Domaine d'Esterel, referred to in the last letter, there has been opened this year the "Far Hills Inn", situated on Mount Gilbert, one and one-half miles from Val Morin Station. Commanding one of the finest views of the Laurentians, this inn, which is planned as three sides of an octagan, has all the comforts of a city home with a present accommodation for 35 to 40. It was designed by Mr. P. Roy Wilson.

At St. Sauveur a delightful ski club for girls is being completed just now by Mr. Galt Durnford. It is to be known as the Penguin Club and is close to the famous Hill 70. It has accommodation also for 35 to 40 members, all of whom are keen devotees of this particular sport.

Perry, Luke and Little are finishing an attractive looking hotel at St. Adele en Haut called the "Chanteceler". It is designed in the French-Canadian fashion with rubble stone, large lime mortar joints, with a portion of the walls of square logs. The Mansard roof is broken by a couple of towers reminiscent of the old block houses. The building, which will be the headquarters of the St. Adele Ski Club, has an accommodation of 22 bedrooms.

Chrystie Douglas has the plans completed for a Swiss Chalet at St. Sauveur which is to be erected next Spring for a New York Syndicate. On a smaller scale the "North Star" Ski Camp at Piedmont has recently been opened. This is a somewhat unique place as the whole of the furnishings have been made and the building designed by the representatives of that craftshop well known now as The Iron Cat, Reg'd.

One regrets to have to report the death of Mr. A. Dennis Thacker, a well-known and very popular member of the profession, on September 26th. Mr. Thacker came to this country about thirty years ago, and after being associated with MacVicar and Heriot practised for himself. Amongst his best-known works are the Christian Science Church on Coté des Neiges Road, the United Church at Hampstead and Caughnawaga. One of the last things Mr. Thacker designed are the beautiful new stalls and chancel fittings at the Cathedral at Halifax.

These were carried out by the Bromsgrove Guild, and are executed in the true spirit of Mr. Goodhue's work, whose building they adorn. The stalls represent probably some of the finest modern Gothic church work in the country.

— *Philip J. Turner.*

THE ANNUAL MEETING, 1939

Until the meeting in February next, members of the Institute may look for insistent reminder that the venue is Ottawa. The meeting affords exceptional opportunity to do one's duty by the Institute and at the same time keep in touch with the transformation now being wrought in the Capital of Canada.

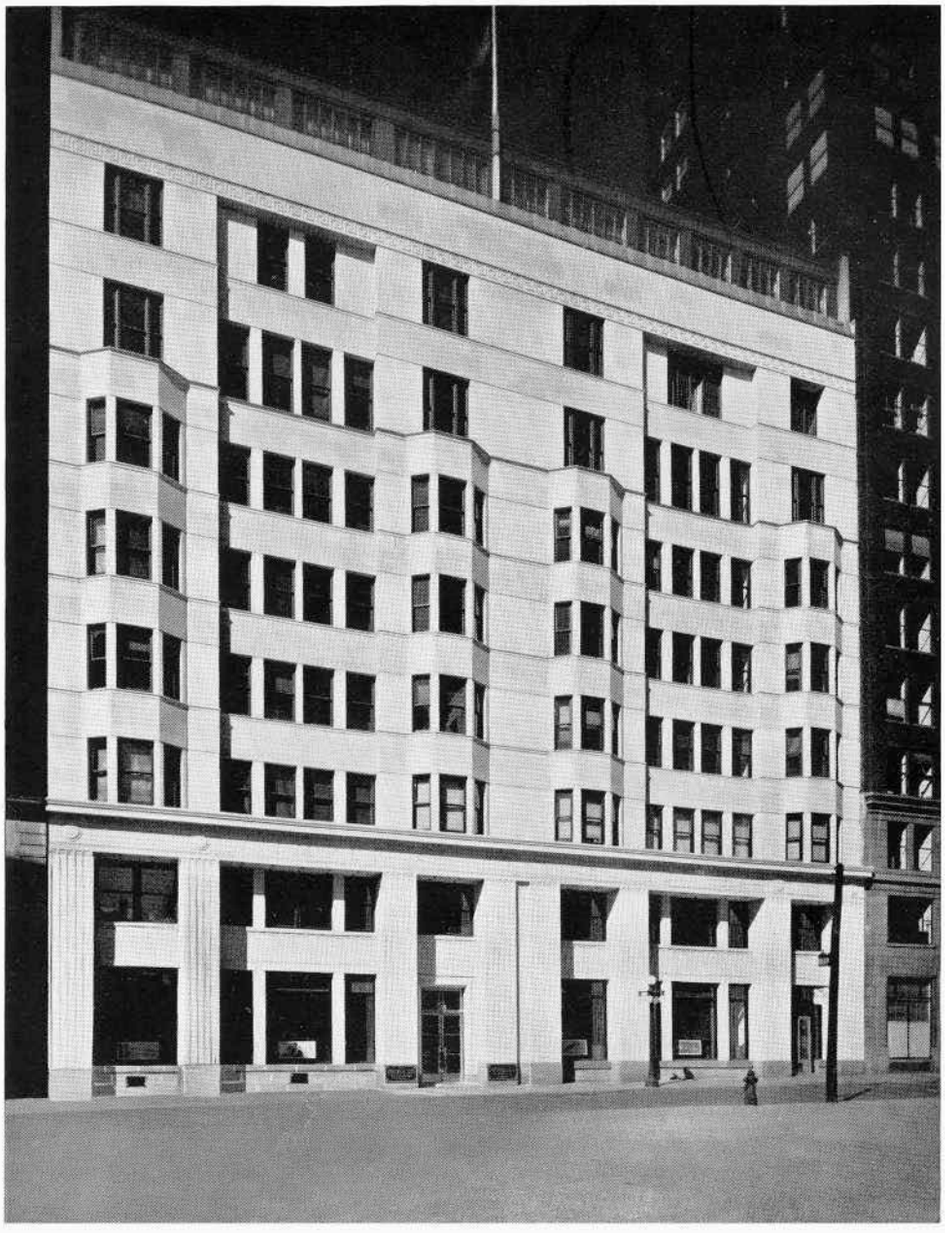
The National War Memorial (war of 1914-1918) is now rearing its multiple head above a forest of twelve by twelves. The reconstruction of the central area according to the plans of M. Jacques Greber is in full swing. Mr. Noffke's new Post Office should be visible in part, by February. Among the recent buildings, the Bank of Canada, the Bank of Montreal, the French Legation, the recent Government Buildings, the National Research Building, and many others, afford an exemplar, if not a blend, of architectural style.

The Ottawa Chapter of the Ontario Association of Architects is in charge of the local arrangements, which are already planned and in the hands of working committees.

Finally, let it be known that by special invitation of the Ottawa Chapter, members are requested and urged to bring their ladies. Not since Lucerne, has the annual meeting been graced by the presence of the fair sex. It is perhaps too much to say that the meetings have suffered. Nevertheless, memories of the enthusiastic meetings at Lucerne still persist. It is well that the members should demonstrate, in a corporate manner, that the profession is not overwhelmingly celibate.

More next month, if the Editor permits.

— *A. J. Hazelgrove.*



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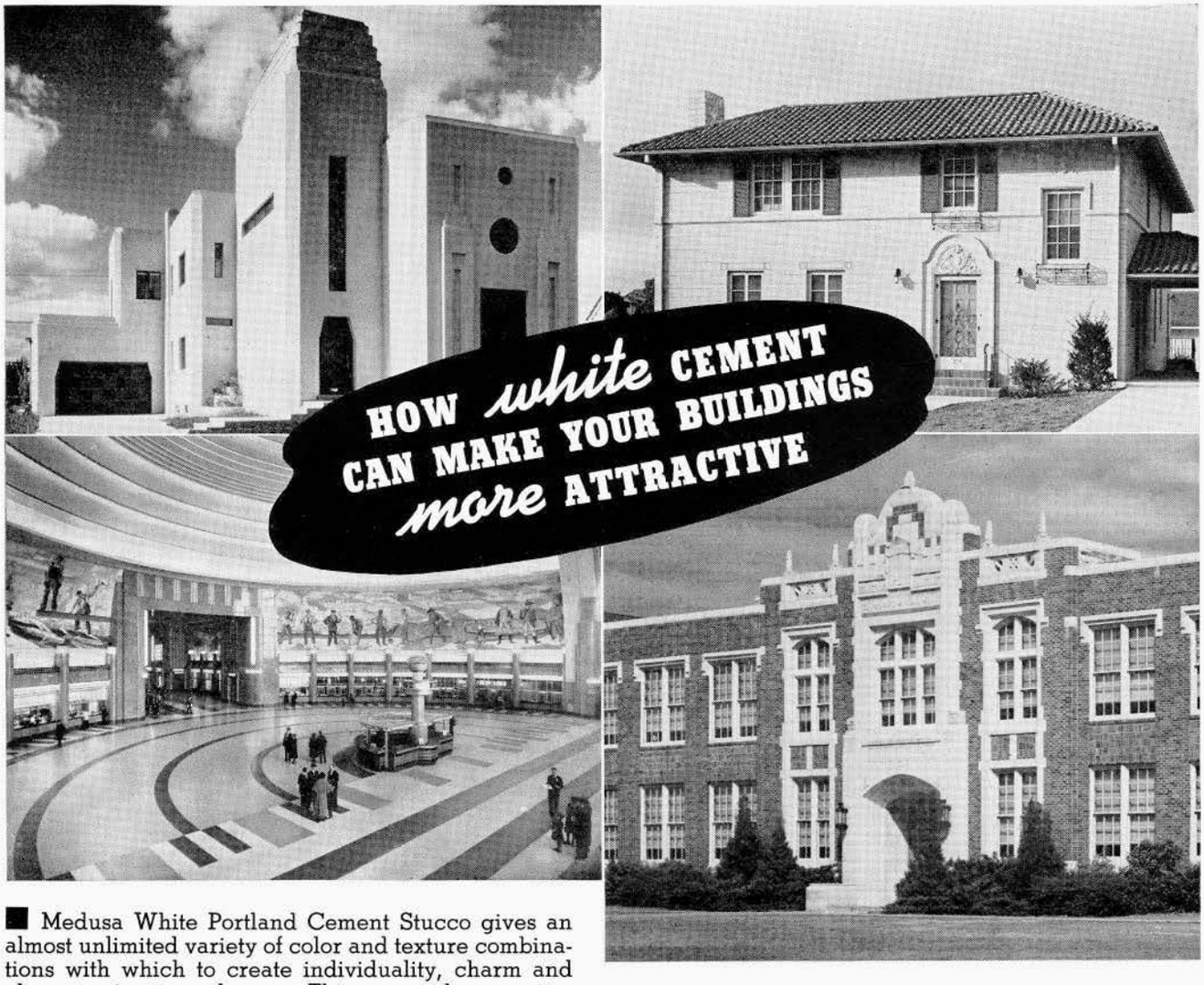

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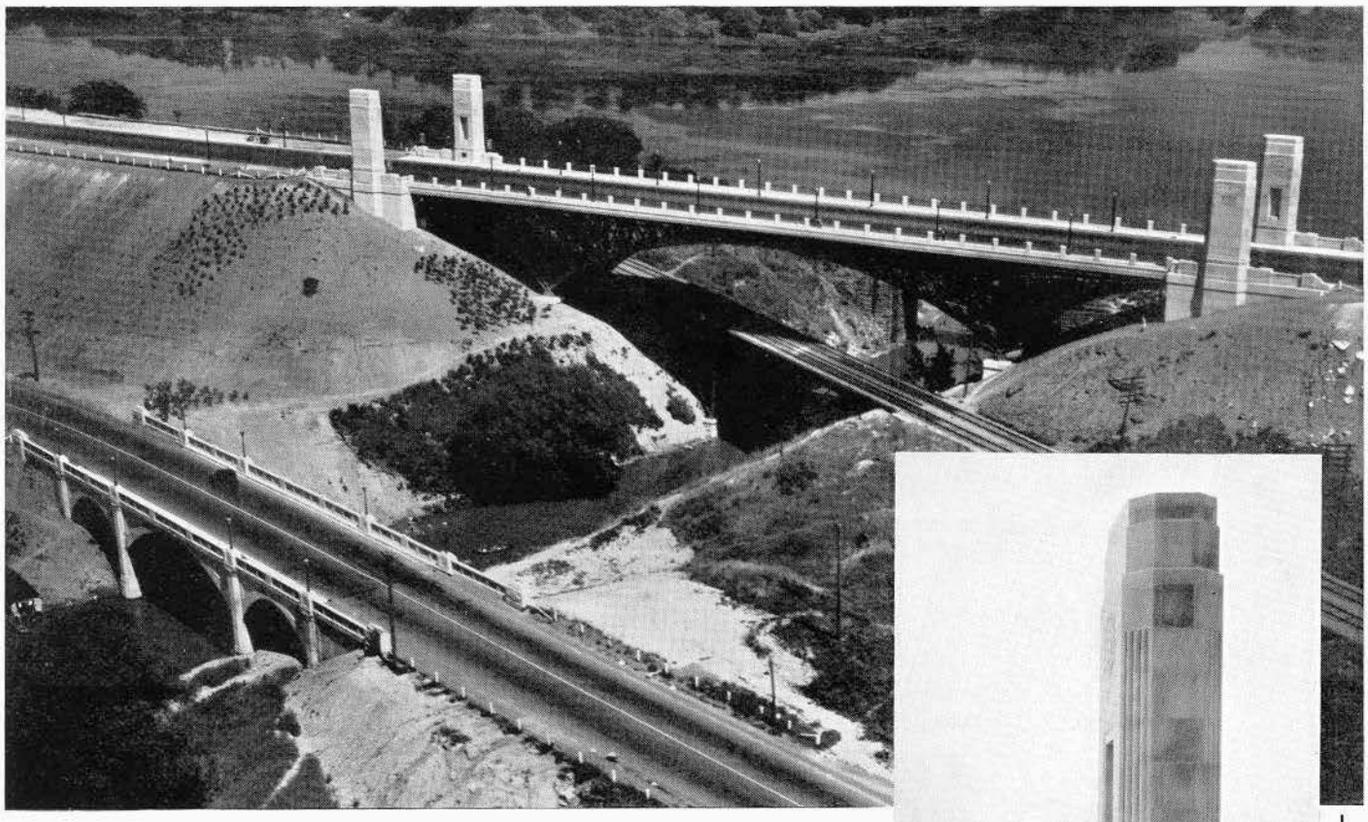

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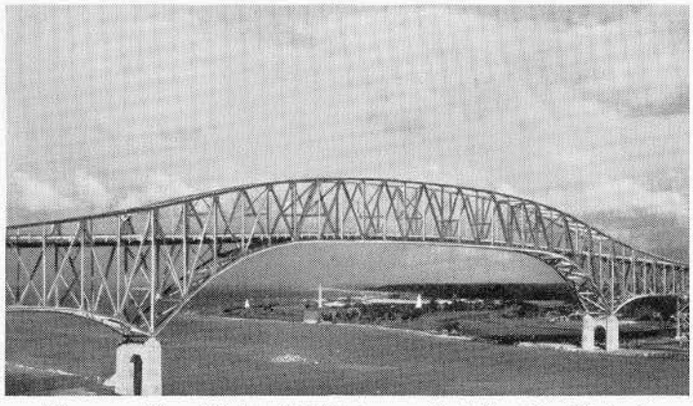
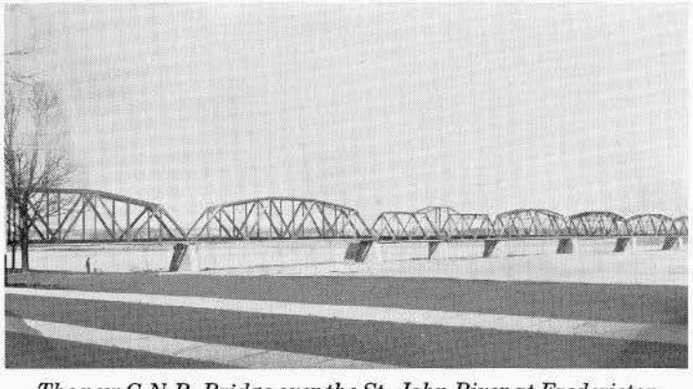


The new Blue Water Bridge connecting Sarnia, Ontario, with Port Huron, Michigan. This giant structure, reaching across the St. Clair River, is 1¼ miles in length. Sarnia Bridge Company, Limited, and Hamilton Bridge Company, Limited, contractors for Canadian approach superstructure.



The new C.N.R. Bridge over the St. John River at Fredericton. This bridge is 2,000 ft. in length and contains approximately 3,000 tons of steel. Hamilton Bridge Company, Ltd., contractor.

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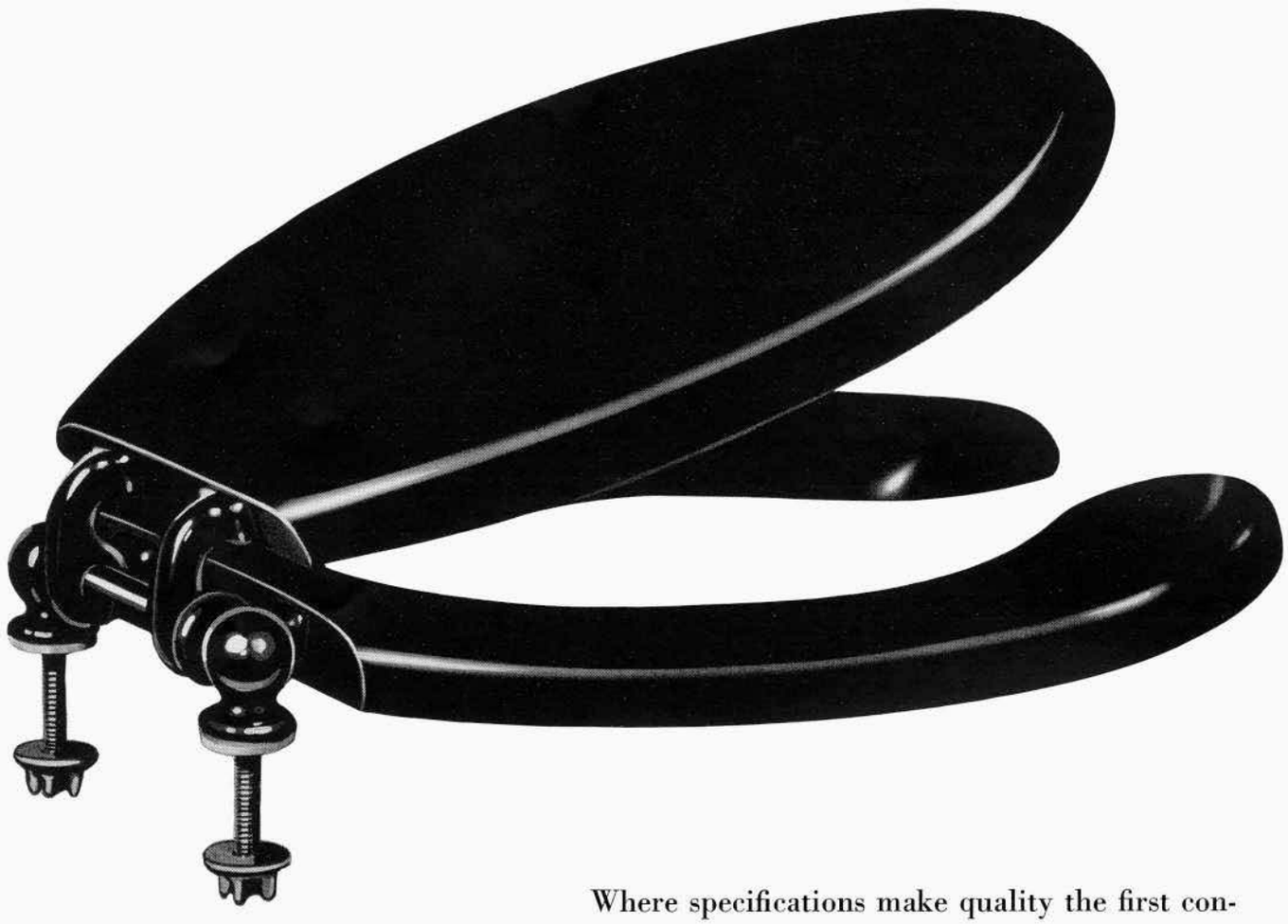

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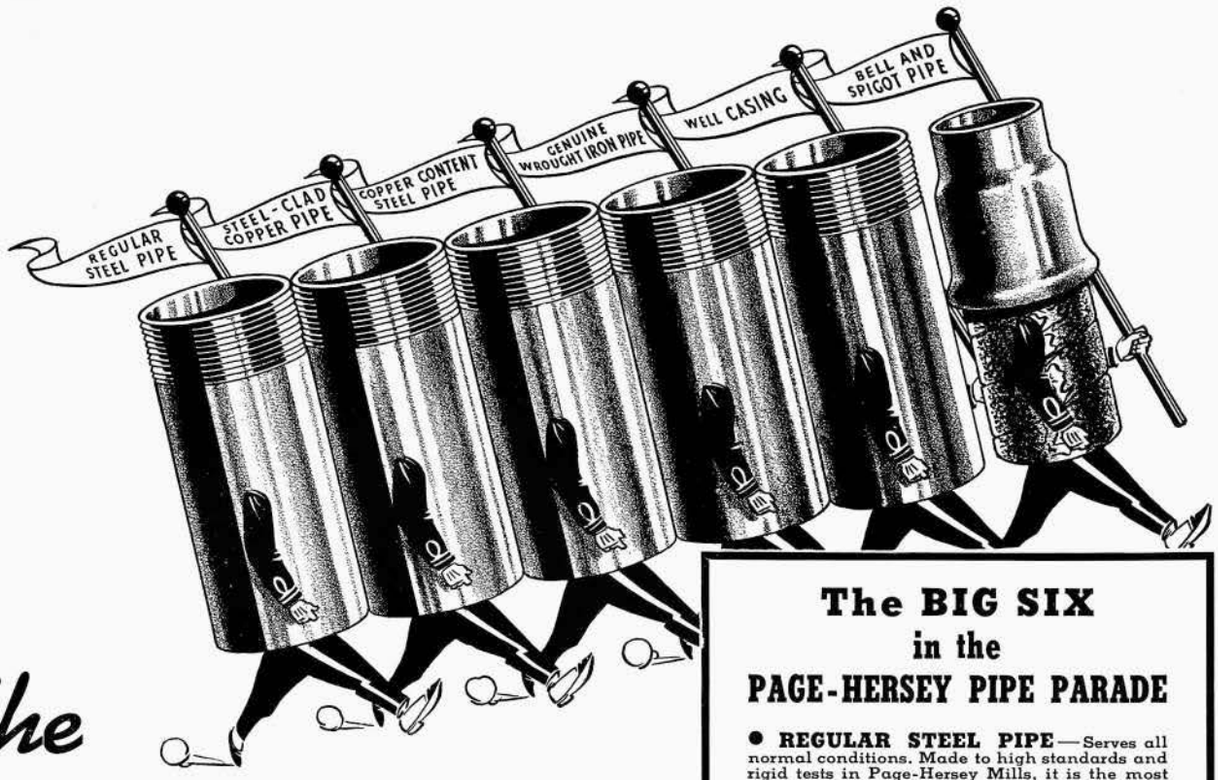

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BONDEX NOW APPLICABLE TO ANY MASONRY SURFACE

New Bondex-Primer Prepares Non-Porous Masonry for Finish Coat... Opens Up Vast New Field!

A sensational new product, known as *Bondex-Primer* has been announced by the Reardon Company, manufacturers of Bondex Waterproof Cement Paint, Modex Casein Paint (in concentrated powder form), Reardon's Washable Kalsomine and other popular water paint specialties.

Bondex-Primer is a revolutionary development as it successfully treats painted or unpainted non-porous masonry, tile, metal, asbestos shingles and prepares them for a single finish coat of Bondex Waterproof Cement Paint (previously limited to porous surfaces).

The world-famous waterproofing and weatherproofing qualities of Bondex are extended to a host of new applications through the perfection of *Bondex-Primer*— many of them hitherto almost impossible to treat satisfactorily with any type of paint.

The painting industry, together with architects and others interested in the preservation and maintenance of exposed masonry surfaces will, no doubt, hail the coming of *Bondex-Primer* as an important achievement. 151

Send for Folder Giving Complete Information on **BONDEX-PRIMER**

THE REARDON COMPANY, Limited
146 ST. PETER ST. • MONTREAL, QUEBEC

Please Send Folder on Your New Product — BONDEX-PRIMER

Name _____

Address _____

J.R.A. 11-38

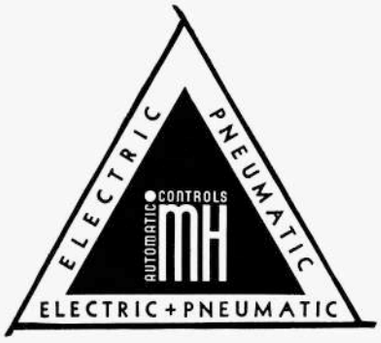
INDEX OF ADVERTISERS

New Standards of Pneumatic Temperature Control with the *Gradutrol* System

TRUE GRADUATION means accurate positioning. The new Gradutrol Relay eliminates the uneven action and drift in position with changing load frequently found on conventional pneumatic systems.

INFINITE POSITIONS means hair-line control. Sticky valves and jumpy motors—an inherent result of friction in conventional pneumatic systems—are impossible with the Gradutrol system. The number of positions which may be assumed by valves or dampers is limitless between full open and full closed on the Gradutrol system.

INSTANT POWER means definite movement for the smallest control impulse. For even a slight change of as little as ½ of 1% of total range, the Gradutrol motor will produce the maximum power that the motor or valve can attain.



SIMPLE CONSTRUCTION means low cost and easy installation. The Gradutrol Relay may be installed on any National control valve or damper motor whether on new or existing installations. Its simplicity makes its advantages available on every installation at nominal cost.

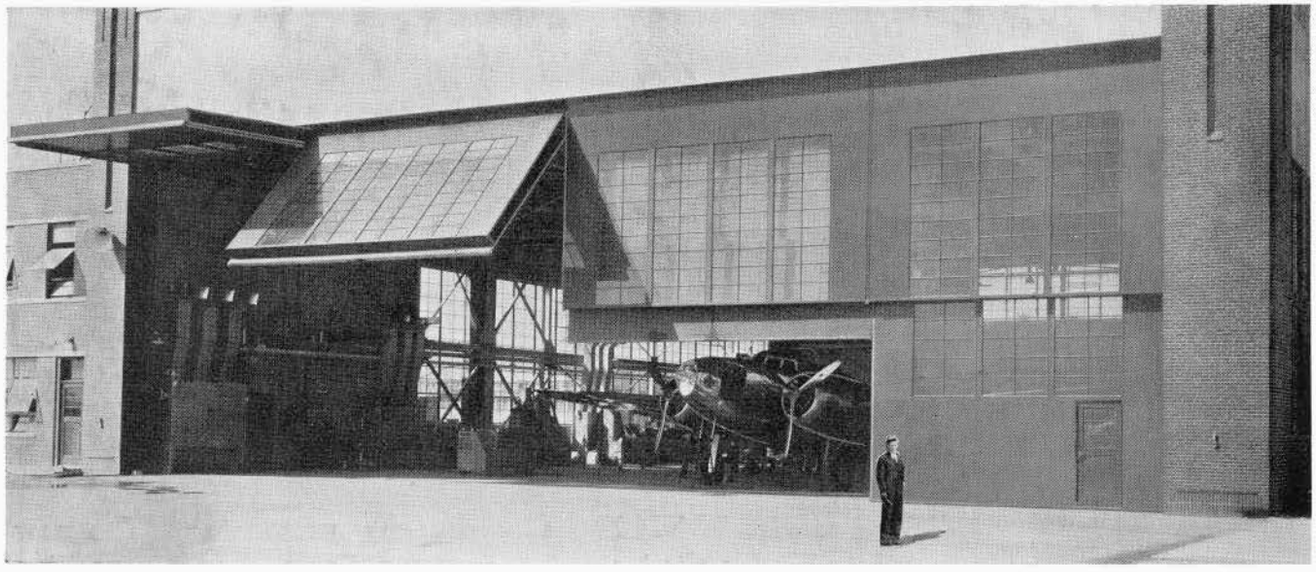
Write for complete information to Minneapolis-Honeywell Regulator Co. Limited, 117 Peter Street, Toronto, Ontario. Branches: Montreal, Winnipeg, Calgary, Vancouver.

MINNEAPOLIS-HONEYWELL

BROWN INDUSTRIAL INSTRUMENTS

NATIONAL PNEUMATIC CONTROLS

AUTOMATIC CONTROLS MH *Control Systems*



33 Tons of Doors

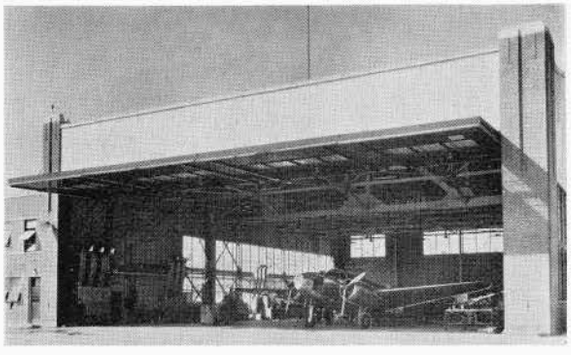
—on one opening

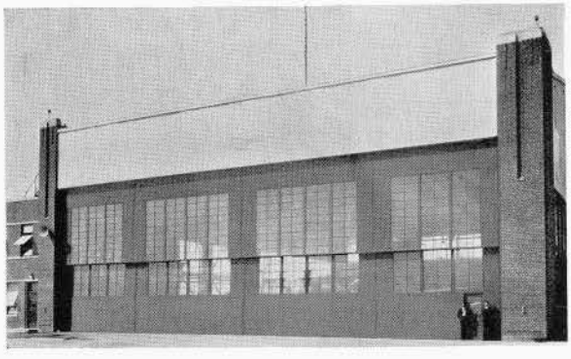
THE new T.C.A. Hangar at Stevenson Field, Winnipeg, has an opening 90 feet wide by 29 feet high. The opening is closed by four R-W Canopy Doors of new and improved design.

Each door is a self-contained unit and carries its own operating mechanism and counterbalance. Cumbersome weights and cables are eliminated. Doors may be operated individually or in unison and the operating speed is 45 seconds.

R-W Canopy Doors were fully designed by our own engineers here at London—built from Canadian materials in our own factory—and installed by our service men.

A duplicate installation was made at Lethbridge and we are now working on a similar job for Ottawa.

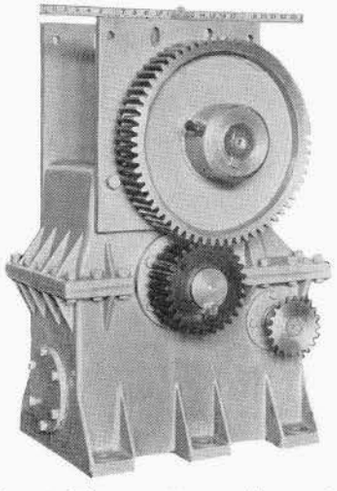




R-W

This publicity is issued simply as an item of interest and to remind those in the building industry that Richards-Wilcox is completely prepared and equipped to handle every type of door problem.

Whether your problem means ten dollars or ten thousand, our organization is here to offer information and suggestions gathered during 25 years intensive work with doors and door hardware.



A part of the operating mechanism to indicate size of equipment

CANADA'S DOOR ENGINEERS

Richards-Wilcox

Canadian Company, Ltd.

25 YEARS IN CANADA

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