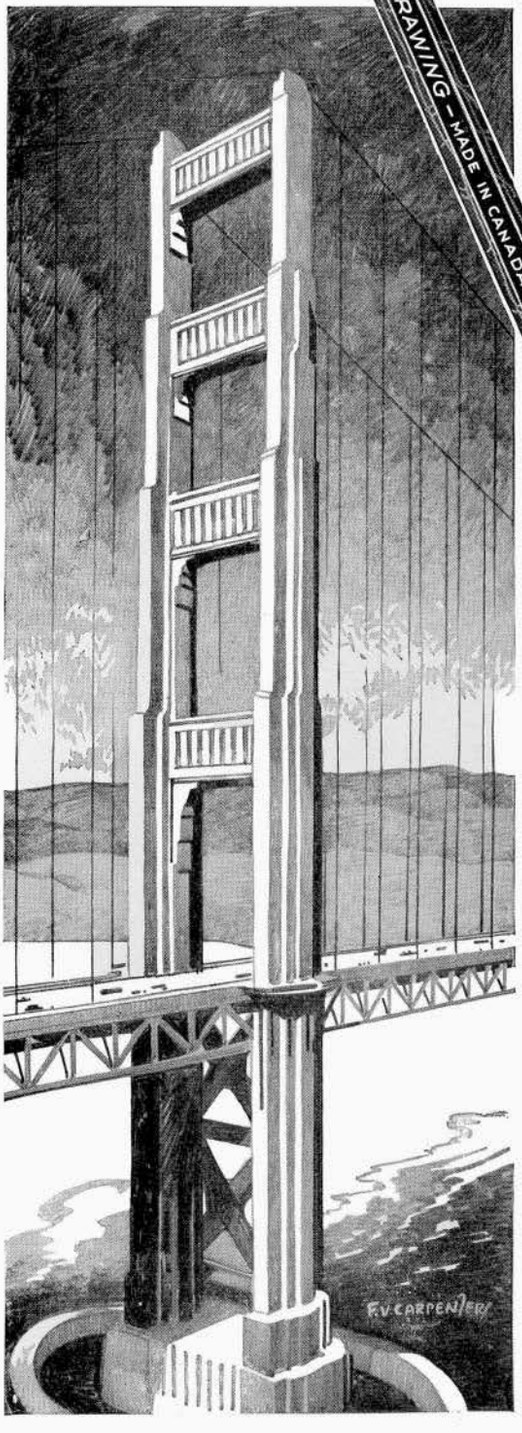
JOURNAL

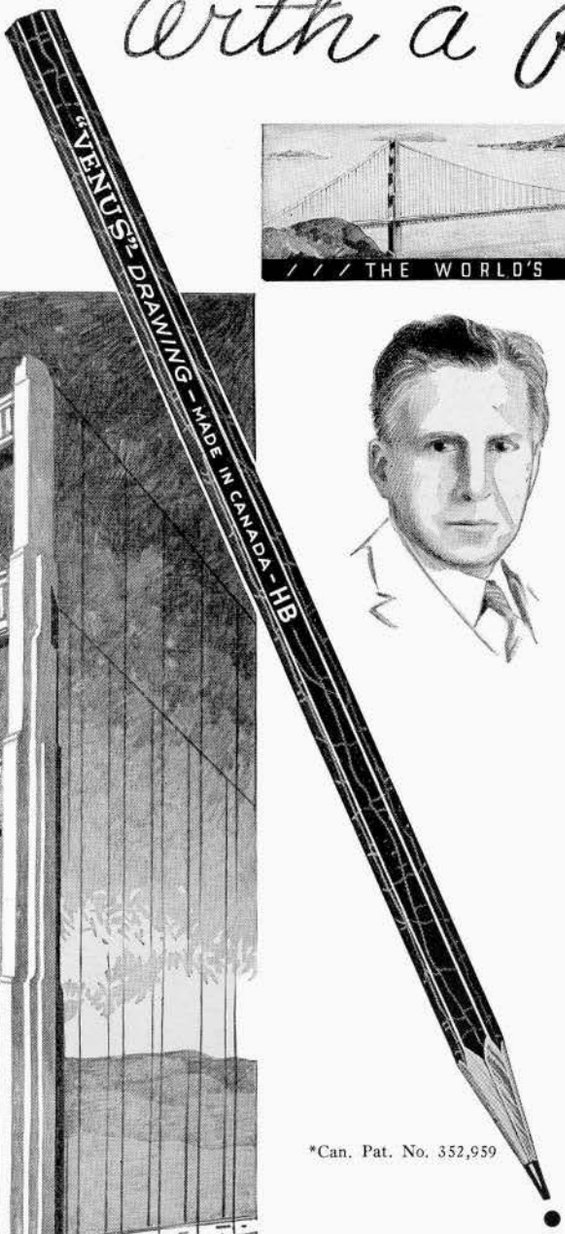
ROYAL ARCHITECTURAL INSTITUTE OF CANADA

VOL. 15 SEPTEMBER, 1938 NO. 9

The Golden Gate Bridge was started

with a pencil





*Can. Pat. No. 352,959

Joseph B. Strauss, C.E., D.Sc., Pres. and Chief Engineer, Strauss Engineering Corp., Chicago; International authority on bridge design; Originator of Strauss trunnion bascule bridge; Chief Engineer, Golden Gate Bridge, San Francisco, Cal.; Co-Designer, Montreal-South Shore Bridge, Montreal, Canada; Chief Engineer Columbia River Bridge, Longview, Washington.

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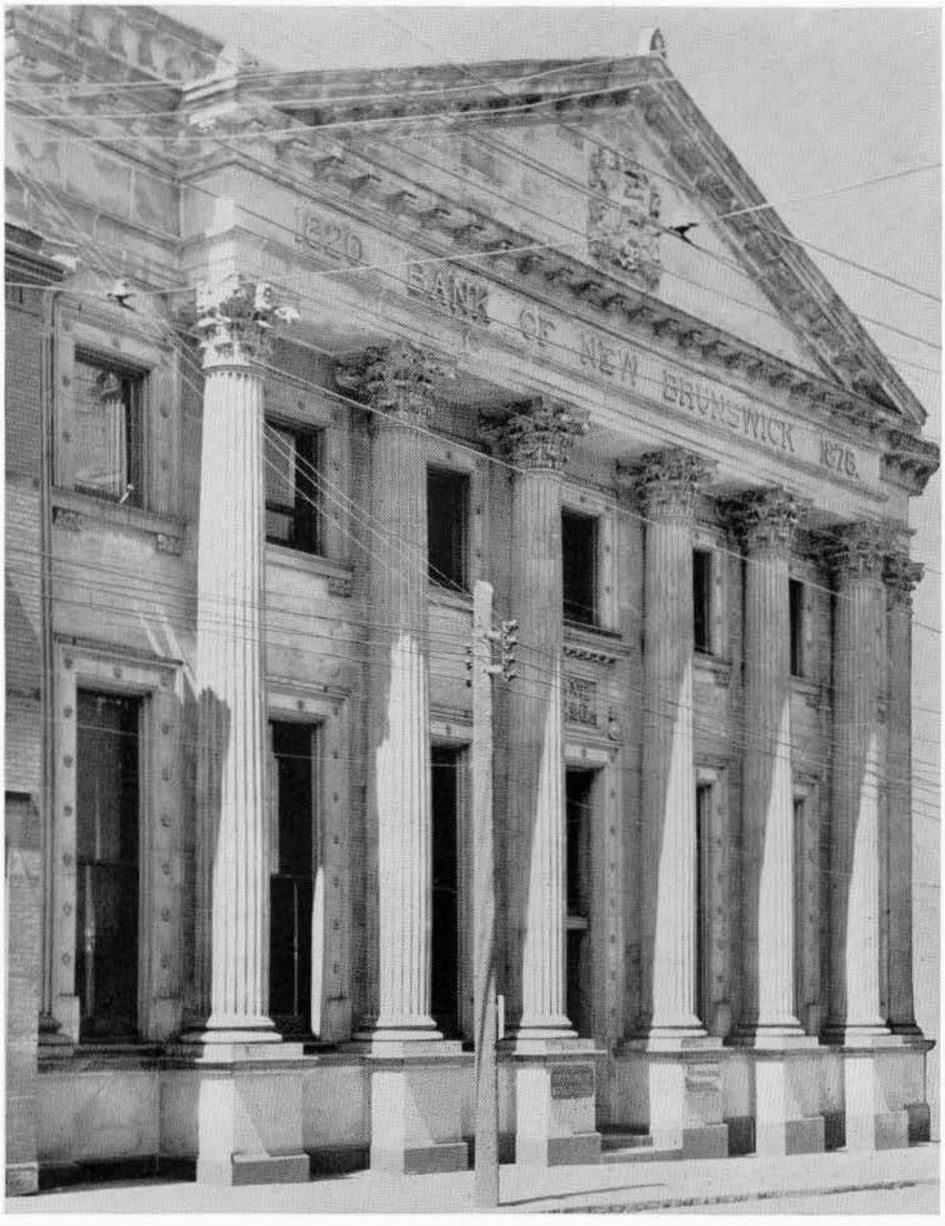

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This is the ninth of a series of advertisements which we believe will be of more than ordinary interest to Canadian Architects. The series will illustrate examples of the older Canadian buildings, constructed of stone, and which by reason of their design and structure have a definite place in the architectural history of the Dominion.

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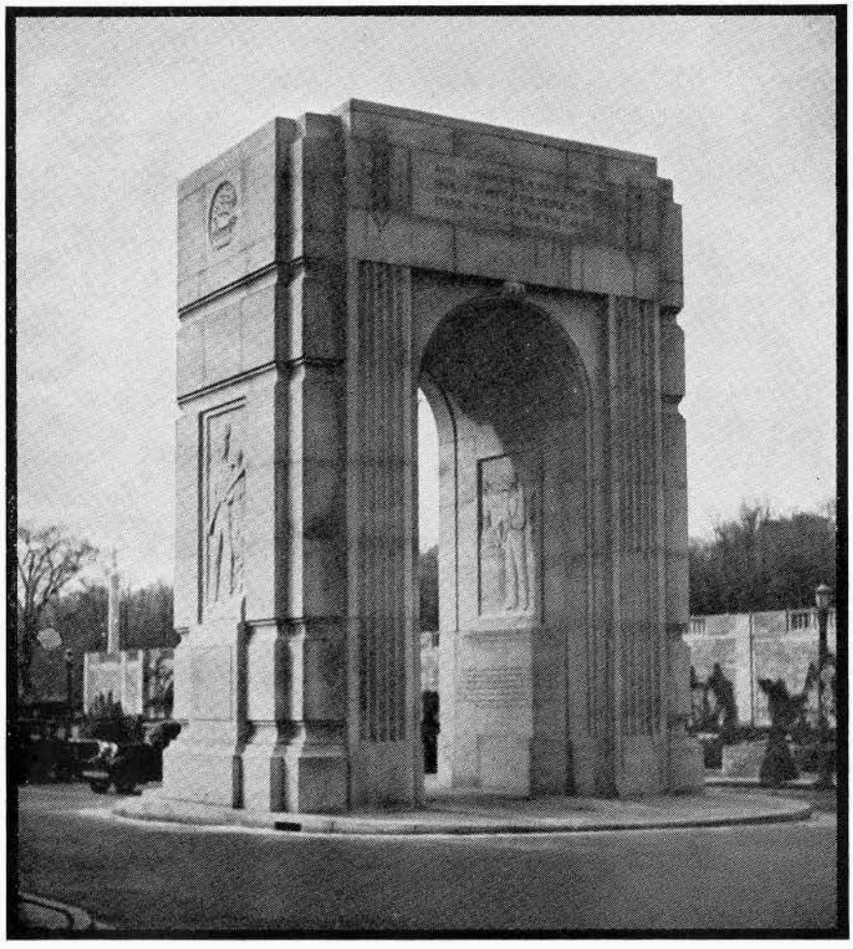

Architect
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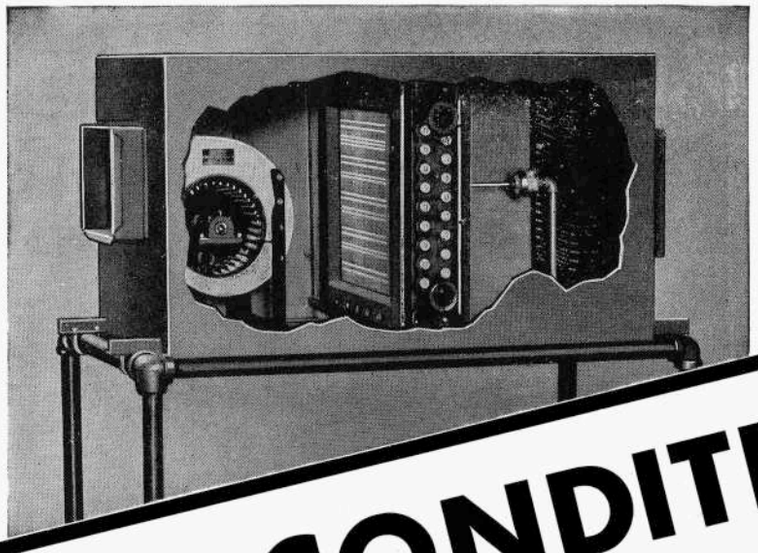

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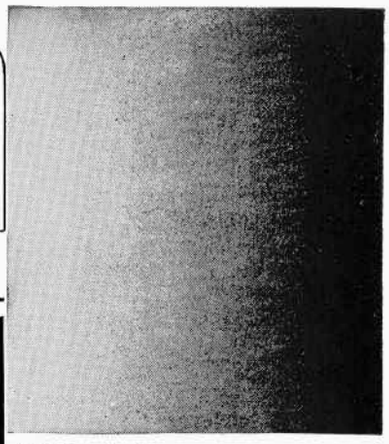
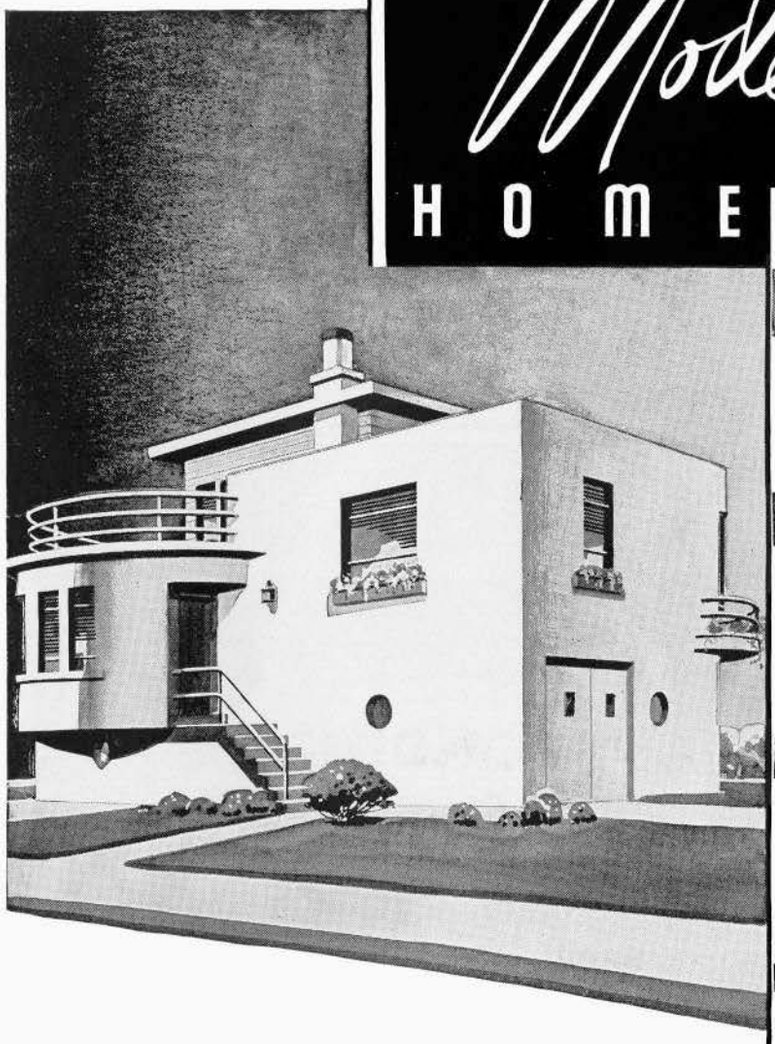
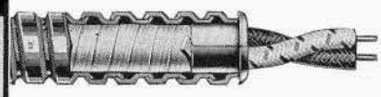


Wiring is the nervous system of the modern home. It supplies light and energy. To assure that this vital system maintains permanently the highest peak of efficiency, specify Northern Electric quality wires for every home requirement.





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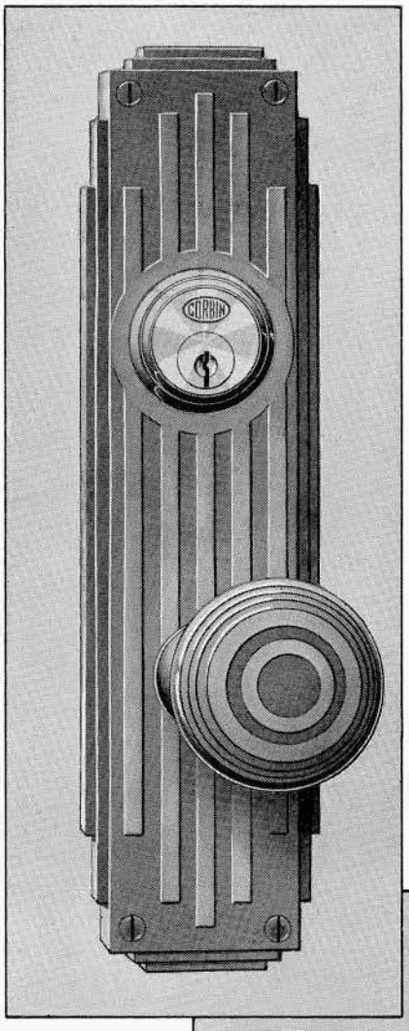

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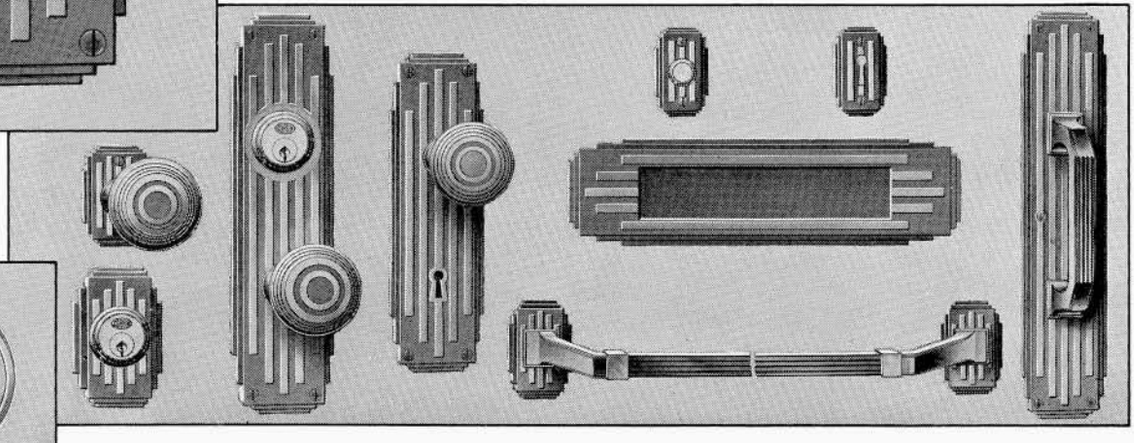

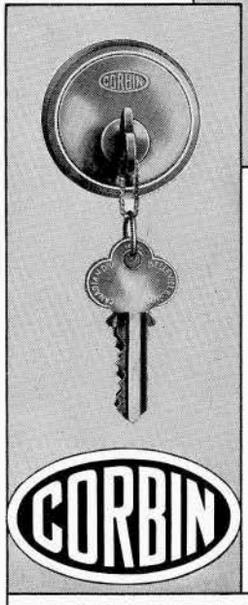

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John S. Archibald, architect John Schofield, associate
Wilson & Kearns, mechanical engineers, Montreal
Leek & Company, Ltd., mechanical contractors, Vancouver

Here, again, is evidence of the versatility of Johnson automatic temperature and air conditioning control. In Canadian National Railway's Hotel in Vancouver, a wide variety of functions is performed by Johnson apparatus. In all public spaces, in several individual suites, and in the radio station, 95 Johnson room thermostats operate 140 valves on direct radiators. Central fan plants, for wintertime ventilation, also are Johnson-controlled. Beyond that, those systems which are fitted to perform year-'round air conditioning (and those now being added) are equipped with Johnson automatic air conditioning control.

"Heating, cooling, humidifying, de-humidifying, cleansing, circulating, and automatic control"—That is "7-point," year-'round air conditioning, an endless chain which can be no stronger than its weakest link. When the installation boasts "Control by Johnson," architects, engineers, contractors, and owners feel that the "automatic control" link has been cast carefully and wisely. They know that, backed by more than fifty years in just one line of business, the Johnson organization is thoroughly awake to the requirements of modern practise. Ask the nearest Johnson engineer, when you have a problem in automatic temperature and air conditioning control . . . Johnson Temperature Regulating Company of Canada, Limited, 113 Simcoe St., Toronto, and Montreal, Winnipeg, Calgary, Vancouver.

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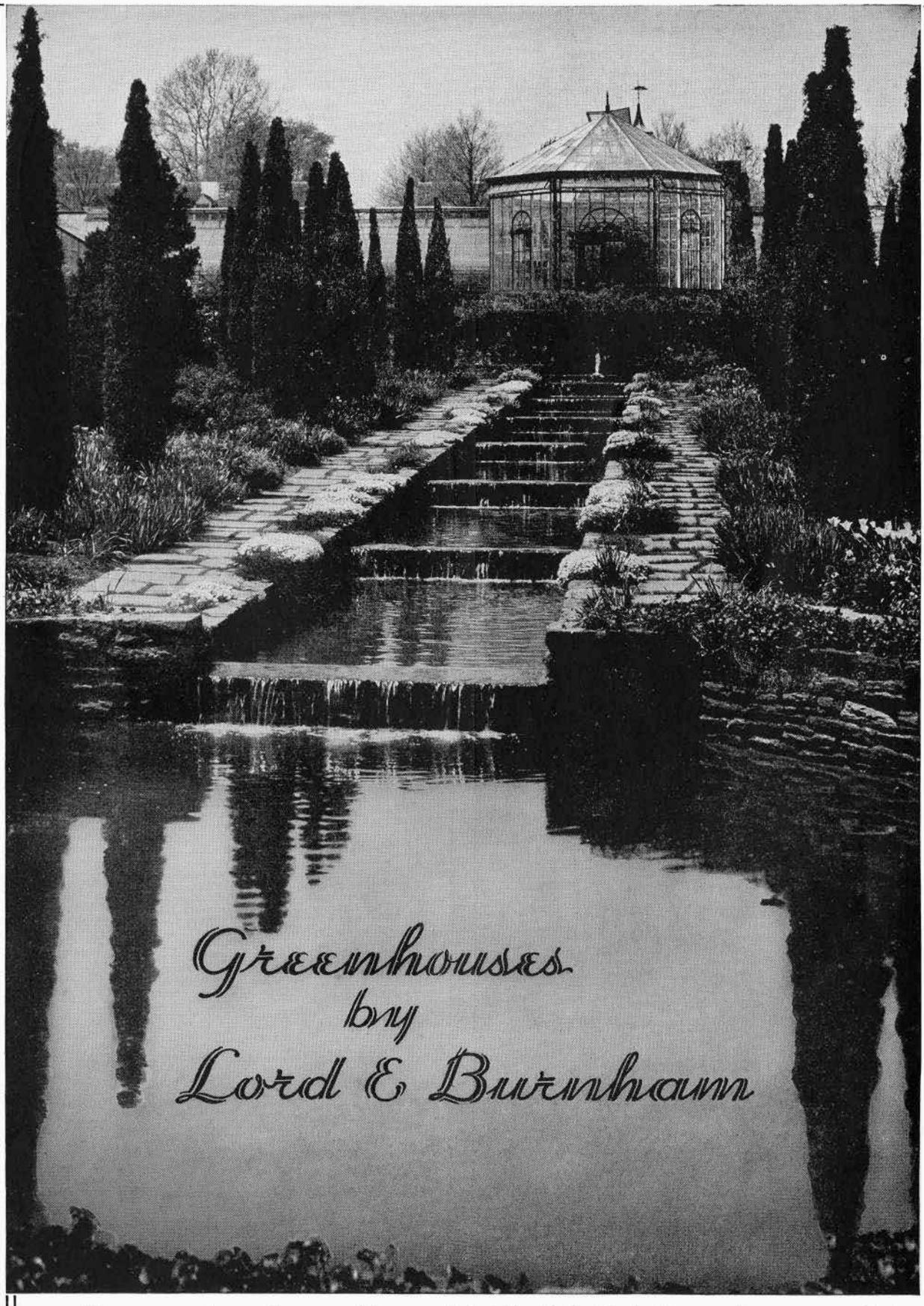
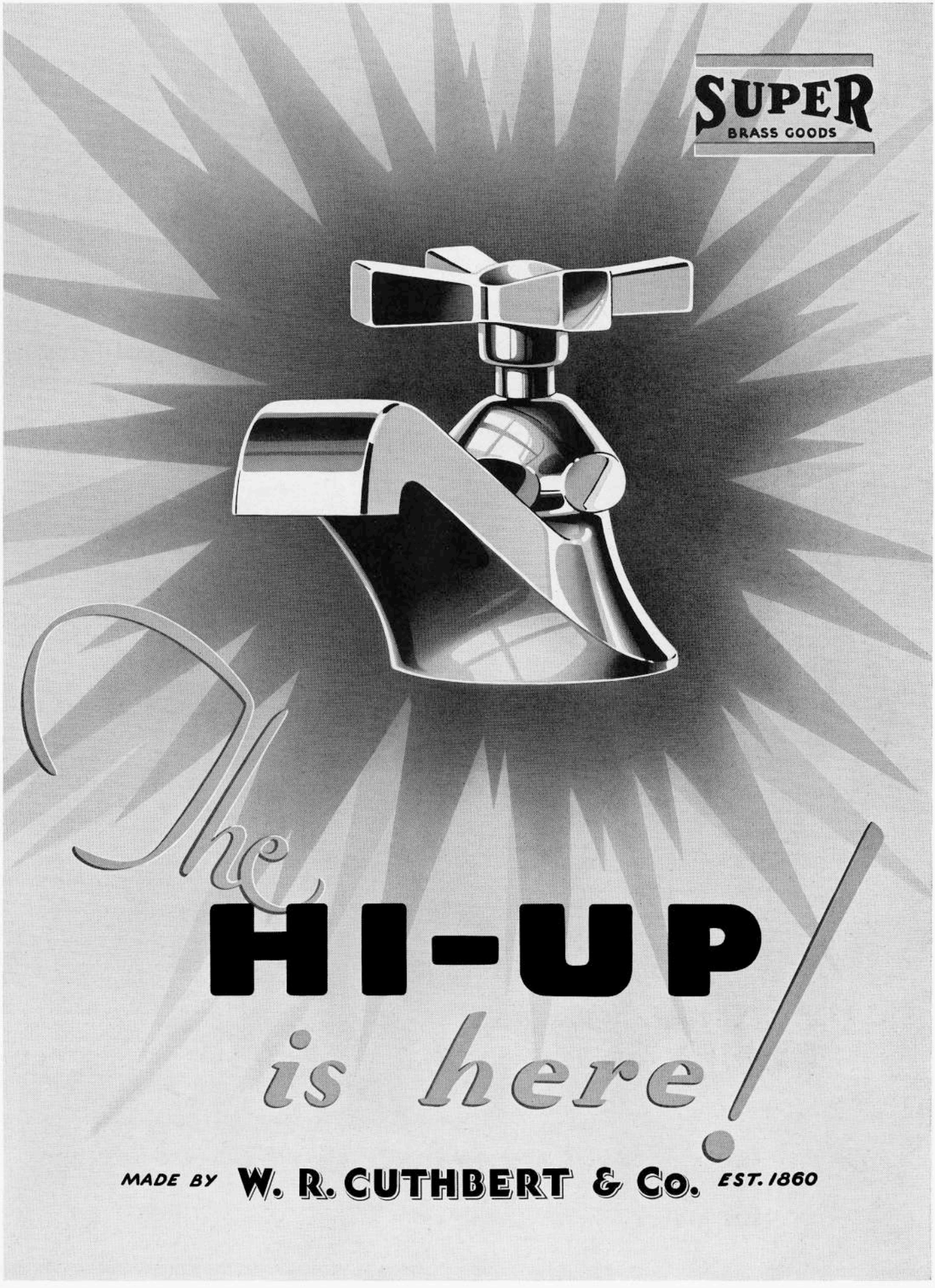


May we send you, for your files, our latest booklets illustrating modern conservatories and greenhouses. Send a postcard to any of our offices, located at St. Catharines, Toronto and Montreal. The architect for the above installation was Horace Trumbauer.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MADE BY W. R. CUTHBERT & Co. EST. 1860

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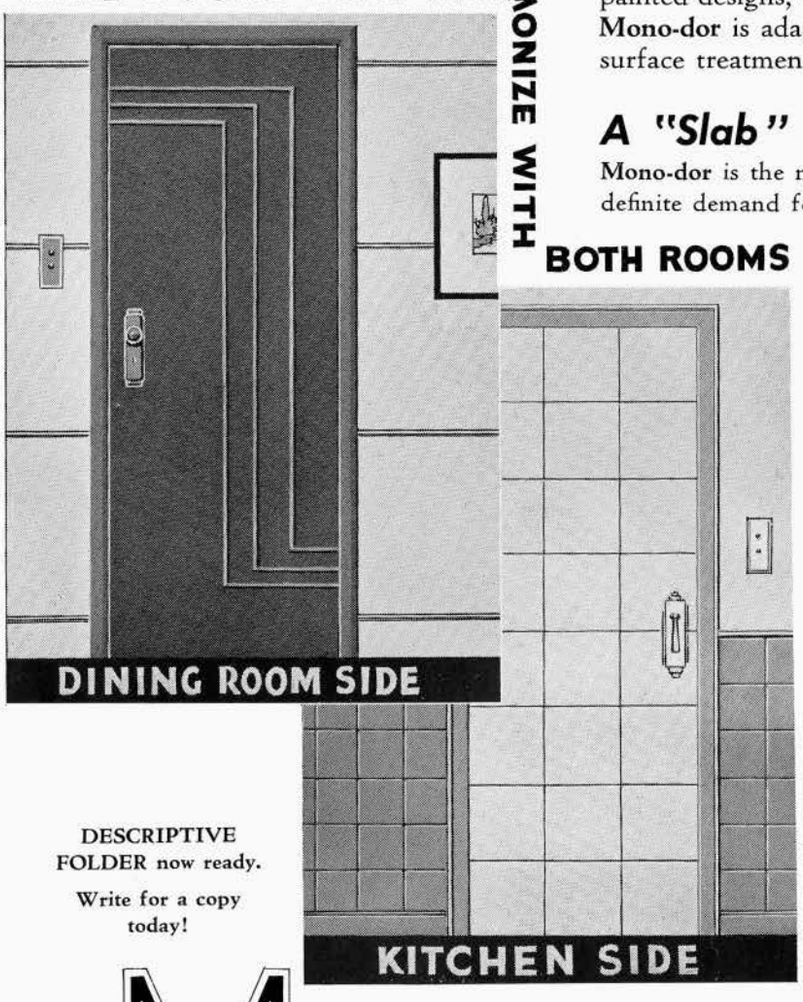
Mono-dor may be finished with both sides different —to harmonize perfectly with any TWO rooms!

HAVE DOORS THAT HARMONIZE WITH BOTH ROOMS



By means of "Vee" grooving, wood or metal mouldings or painted designs, or by finishing in paint, stain, oil or varnish, **Mono-dor** is adaptable to unlimited variations in design and surface treatment.

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Mono-dor is the new "slab" or "flush" door, produced to meet a definite demand for this type of door at a practical price. It will enable thousands of owners of moderate or low cost homes to enjoy the refinement of modern "slab" doors.

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Faced both sides with SYLVAPLY (made with British Columbia Douglas Fir plywood), with reinforced lumber core in scientific grid construction, **Mono-dor** offers the perfect combination of strength with light weight, beauty with economy. Ventilation grooves circulate air inside door, providing insulation against heat, cold and sound.

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Mono-dor is available with Douglas Fir or Western Red Cedar SYLVAPLY Brand faces.

Mono-dor can also be supplied factory Rezite-treated. (Rezite "makes softwood finish like hardwood!")

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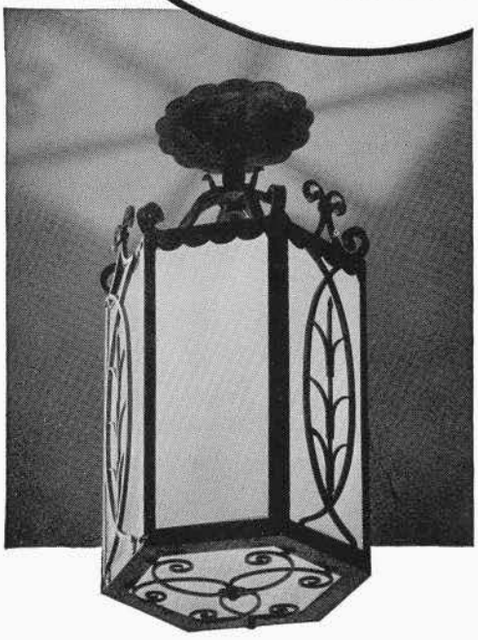

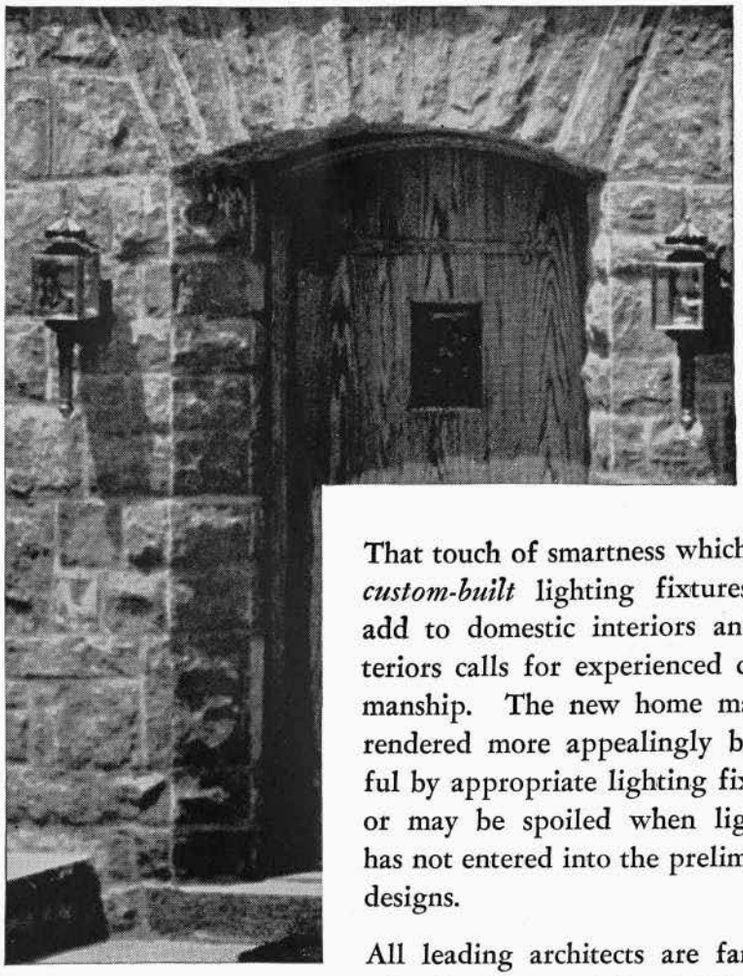

Illustrated is a new residence — showing entrance detail — on Lansdowne Ridge, Westmount, P.Q.—Grattan D. Thompson, Architect.

The entrance hall fixture was specially designed to match the beautiful iron stair-rail decorations, not shown in this picture, and entrance fixtures, authentic old carriage-lamps, adapted for electricity by Electrolier.

That touch of smartness which only *custom-built* lighting fixtures can add to domestic interiors and exteriors calls for experienced craftsmanship. The new home may be rendered more appealingly beautiful by appropriate lighting fixtures or may be spoiled when lighting has not entered into the preliminary designs.

All leading architects are familiar with the Northern Electric Illumination service. Consult the illumination specialist at our nearest branch.

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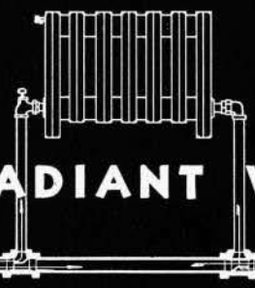
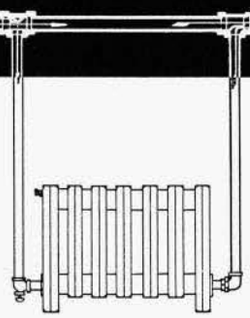


MONO-FLO SYSTEMS

RADIANT WARM WATER HEATING AND CONDITIONING



MONO-FLO SYSTEMS PROVIDE BETTER HEAT FOR LESS MONEY

The diagrams below illustrate three recognized types of Warm Water Heating Systems. The superiority of the Mono-Flo System is obvious—Its simplicity insures perfection in design—installation and operation.

Series No. 6

MONO-FLO SYSTEM

The MONO-FLO SYSTEM (Fig. 1) employs a continuous circuit of main piping. To increase its flexibility, a trunk main (broken line "A") is frequently used from which two or more supply circuits (solid line "B") can be taken. The same size pipe selected for the amount of radiation to be served is used throughout each circuit.

The main is merely run out from the boiler and back to provide connections to each radiator with the minimum of pipe. Because the single main provides but a single course for the water to follow throughout the system, there can be no short-circuiting, or unbalanced operation. As long as there is an opening in the main through which the water can flow, each radiator **must** receive its correct proportion of warm water.

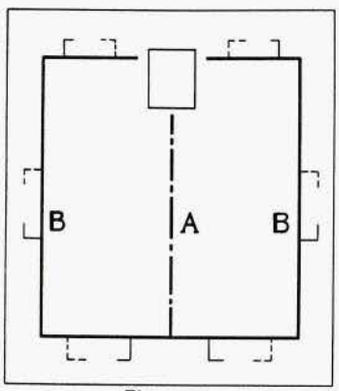


Figure 1

DIRECT RETURN SYSTEM

This type (Fig. 2) of Two-Pipe Systems is usually the least expensive, and invariably the most unsatisfactory. The difficulty, if not the impossibility, of balancing this System properly even with orifice plates or adjustable valves, is recognized. Each radiator offers a separate course for the water to follow in returning to the boiler—naturally the nearest radiators are favored. This unbalanced circulation results in overheated and underheated rooms, high fuel cost and discomfort.

The solid lines in Fig. 2 show supply circuits requiring almost the same length of pipe as for the Single Circuit MONO-FLO SYSTEM. The dotted return lines then represent additional pipe, with attendant labour required for this inefficient installation.

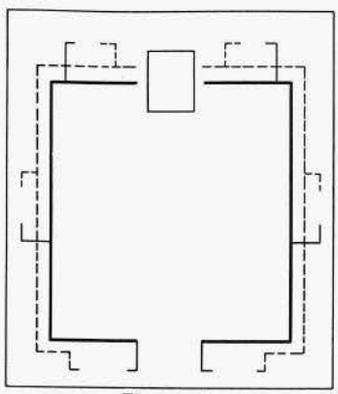


Figure 2

REVERSE RETURN SYSTEM

This type of system (Fig. 3) offers improvements over the Direct Return System but is more costly and therefore less frequently used. The radiators, however, are a part of the return system, and unless great care is exercised in design and installation, short-circuiting and unbalanced heating will result.

The solid supply lines in Fig. 3 are almost as long as the double circuit MONO-FLO SYSTEM ("A-BB" in Fig. 1). The dotted lines again illustrate the extra material to be furnished and installed.

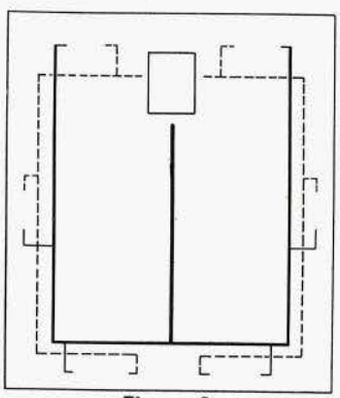


Figure 3

Series No. 7 will appear in the October issue of this Journal.

Write for further information on MONO-FLO RADIANT SYSTEMS.

JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 157 TORONTO, SEPTEMBER, 1938 Vol. 15, No. 9

CONTENTS

PLATES

ONE of the amazing things about contemporary politics in Canada is the vigour with which governments grapple with abstract philosophies.

The Federal Government treats "sovereignty" as a real and concrete thing; a western premier has a concrete solution for the problem of that intangible thing called Credit, and the mayor of a large Canadian city thinks money is bookkeeping and is prepared to create it, using only his fountain pen and an adding machine.

Nothing in the realm of pure science or metaphysics, including Einstein's Theory, is to our leading politicians other than something to be dealt with swiftly and surely by direct action.

Conversely, such real and urgent problems such as the National Railways and their debts, unemployment and slums, are regarded as abstract hallucinations and, therefore, fit subjects for academic discussion and speculation only.

As new low cost housing is the only solution to the problem of the slum, it is interesting to consider the devious circumvolutions by which governments have side-stepped the issue.

The Federal Government has gone into the Mortgage Loan business and has made it possible for any person with a moderate income and a few hundred dollars to involve himself in a larger debt for a longer period than formerly.

Municipal governments can't afford to provide housing for the poor, nor do they want to, being largely composed of politicians either directly or indirectly interested in speculation in land or buildings. Their technique consists in appointing Committees of Prominent Citizens and pigeon holing the reports made by the committees.

The provincial governments make no pretence at a solution of the problem at all, but actually really do a great deal about it. As Dr. Herbert Bruce, formerly Lieut. Governor of Ontario, pointed out in his now famous and well pigeon-holed report, the public is going to pay for the housing of the slum dweller without a doubt. The question is whether that housing is going to be in decent sanitary dwellings or in the mental and penal institutions and hospitals of the country.

An insane asylum, reputed to be costing six million dollars is now being built by the Ontario Government and, by a strange coincidence, in the riding of the Premier. A government which has no money for housing the poor, but still sane, part of our population in simple brick or plaster, fulfils the prophecy of Dr. Bruce, sooner than expected and with a cut stone facade to boot.

Decent housing for those economically unable to provide it for themselves is a public responsibility, which so far no government either federal, provincial or municipal has accepted. It is a much more pressing problem than sovereignty, provincial rights, the C.I.O. or any of the other great political issues of the day. Democracies are notorious in their tardiness in facing realities, and that failure has in some other countries paved the way for forms of government which, in spite of their ruthlessness, are realistic in their outlook.

A. S. MATHERS.

PREFABRICATION

By JOHN ELY BURCHARD

A paper read by John Ely Burchard, Vice-President of Bemis Industries and authority on Housing Research, at the Massachusetts Institute of Technology.

IN the guise of housing literature we of the United States have been dazzled the last many months by class propaganda wearing no more veils than Gypsy Rose Lee. Workers are urged to arise, to demand a housing theirs by right, are told that high wages for the building trades are just but that high interest for the moneylender is unjust. We hear with more reason unceasing plaints against the risks responsible for high financing costs, the wasteful methods of distributing materials, the failure to use and value land rationally, the high cost of our subcontracting system, the terrible burden of real estate taxes caused in large part by a moribund municipal conscience.

Under all of this smoke of conflicting testimony he would be slow-witted indeed who did not suspect some fire. On this day in this year 1937 he would, in fact, be a veritable Bourbon who would dare affirm that we have no housing problem. It is also self-evident that it is a complex problem. One step forward we have, perhaps, made. Whatever our thought as to possible solution we will now agree with some unanimity in stating what the problem is. This is my conception of it: In every society there are families which do not earn enough to occupy shelter of a quality which that society deems necessary. We know the penalties of letting very many people burrow in the Nibelungen warrens of substandard shelter. We are certain that indecent housing definitely breeds pestilence, economic, physical and moral; that this pestilence will attack rich and poor alike. Without a Faubourg St. Antoine there might never have been a French Revolution.

Confronted with this problem, the first thing a scientist might ask would be: "What is this minimum standard of which you speak? Assign me a value for this x and perhaps I may solve you a y." That, gentlemen, has scarcely been the method in the Cloud-Cuckooland of Housing. More characteristic is the student of standards who explores the housing of Europe, admires and lauds the accomplishments of Socialist Vienna, of pre-Nazi Germany, of the London County Council, but, returning to our shores, is stung somewhere east of Ambrose Lightship by the mosquito of American advertising, goes mad with the sting, and setting foot on 14th Street, rushes to the publisher to raise the housing ante. In this unobjective shifting of standards, which might proclaim, for example, that it is all right for a German but all wrong for an American to walk up five stories, we have one of the reasons why we have so many minimum housing specifications incapable of fulfillment and so proved in time-worn after time-worn experiment.

So our first task must be to set a true and objective standard for minimum shelter x. We might understand it as long as it can be described in terms of so many square feet of space, so many cubic feet of air, so many energy units of heat and light, such sanitation as would restrict the growth of specified bacteria to a specified rate. But soon we find we are called upon to decide whether every householder shall be freed from the burden of coal stoking, whether every person must have a private stall shower, whether each child must have opportunity to harden his class-conscious buttocks on a public slide. Small wonder we then cry, "Hold." The standards have not yet been properly defined; they will not be properly defined until engineers and natural scientists approach the problem with their objective attitudes.

For the sake of argument, let us now assume, however, that a reasonable minimum has been established and accepted. We shall then find, and we need not indulge in any quantitative debate about it, that under any existing culture too many families do not earn (and notice I say earn and not acquire) enough to justify their living in that standard of shelter which society has called minimum. If the residue which, logically speaking, does not deserve to live in such housing — but which we think must so live for the protection of the rest of us—if that residue be small, sentimental capitalism will, as in the past, support it, logical communism will, as in the past, liquidate it. But when the residue is large, it may become too expensive for capitalism to support, too powerful for communism to liquidate. That is the immediate dilemma. Current thinking sees only two ways to resolve it: to lower the amount of human effort required to produce the shelter minimum or to subsidize a very large group.

No prefabricator, I am none the less here in the rôle of the prefabricator. Sympathetic to his point of view, I have no hesitation in proclaiming his philosophy: friendly to the individuals in the work, I have equally little hesitation in criticizing what seem to me to be their errors. The prefabricator, then, rejects formal subsidy, though he recognizes that probably for many years to come it will be impossible to eliminate the concealed subsidy which now exists. He has good reason from American record to fear political machination, good reason from European record to fear national bankruptcy, good reason from record of all history to fear the damage done to the moral fibre of a worth-while population. He knows that bread and circuses are easier than thinking; he knows that the first American reaction to anything is to pass a law, but he has seen abroad that government builds no more cheaply than the individual and that subsidies clearly tend to preserve bad features of the *status quo* rather than to eliminate or reform them. He believes that a government honestly interested in the housing problem would prefer a five million dollar a year housing research council to a five billion dollar a year housing programme. And being poor himself and unable to afford the research he knows he ought to carry on, he would welcome such a council. He rejects subsidy.

With subsidy abandoned, the only alternative is to reduce the cost of the shelter unit. There are many ways to do this and some of the others you will hear from other speakers. The prefabricator recognizes the savings which can be made through reform of any element in a thoroughly unregenerate situation. But he has concluded that if he can save 25% of the cost of the building or 20% of the capital cost of shelter—no very dramatic achievement as compared with others of American industry — he will accomplish more. In reducing capital cost, he will reduce most of the annual charges; his house, a better risk, will justify a lower interest rate; better built, will cost less to maintain; planned with more foresight, will be less early obsolete. His approach permits him to ignore the otherwise vital housing questions of home ownership versus rental, of group versus detached housing, for the savings he can make may be credited to owner or to renter, to individual or to community alike. Why do we doubt his statement?

We doubt it because, despite ballyhoo, despite eager public interest, he has now been building houses for years but has

yet to build a cheap house. The unvarnished facts are that prefabrication studies have been made at least since the turn of the century, that they have cost their students untold worry and measurably large sums of money, that the money spent rang true on the counter, while the brains employed were no mean brains, and that there still is no evidence of tangible and positive accomplishment. Such a result makes us question the very hypotheses of prefabrication. Let us so question them.

First hypothesis is that the annual demand for new houses is large enough. Disregarding shortage, the present demand in the United States can conservatively be set at 750,000 units a year and the demand will increase. Suppose now that a prefabricator gets 10% of that market, certainly no trust-making assumption. This will mean 75,000 houses a year, or 250 a day. True,. this does not suggest the large-scale daily production of the automobile industry. But production must here be estimated on a parts basis. This much business, for example, would mean the daily production of 6,000 essentially identical wall panels and 12,500 essentially identical floor panels at a minimum. That begins to look like large production. It is difficult for a fair-minded person to quarrel with this hypothesis.

Second premise is that building practises can be improved by concerted study. The prefabricator does not think the operative builder a dolt. But he knows that the present builder must deal with the materials and the labour he has, that he may be thoughtful enough though not powerful enough to force any changes in the materials and tools given to his hand. Consequently, his methods are not in harmony with those of other phases of American industry. Of the disabilities of the building industry we need scarcely discourse here.

Finally, the prefabricator believes that his carefully-planned factory production, field erection and skilful distribution can produce a better and cheaper house. He looks at the record of change in the years 1914 to 1936. He sees that a workman of 1914 had to labour 709 hours to clothe a family of four, now 349; 187 hours to buy the crude washing machine of that day, today 71; 3,000 hours to buy the 1914 motor car, 859 to buy today's; 105 minutes to buy an electric light bulb of 1914 which was so short-lived it was regularly sold in packages of 50, today 12 minutes. Meanwhile, at best he can hope to buy the average house of today for not less than 5,200 hours, while in 1914 it might have taken him 6,400 hours. The relation of house costs to these other things is clearer if we correct the man-hours of 1914 by introducing a factor which would take care of the 92% increase in average wages up to 1936. On such a basis we find that the clothes of today have actually improved in price (as opposed to better buying power) so that they cost 92% of the price of 1914, washing machines are 73%, automobiles, 54%, electric light bulbs, 22%, while houses are now 157% of what they were then. The prefabricator does not believe that the house has improved more than the electric washing machine, the motor car, the light bulb. Even the paint which now goes on the house cost 59 hours of work in 1914, 25 now, but the house stands there like the Rock of Gibraltar, except that my simile is poor, for mountains get smaller, not bigger. When seeing this, the prefabricator concludes that perhaps something similar could happen to housing. Does that qualify him for Bedlam?

He goes a little further with this part of the hypothesis. He thinks that more shop work will reduce costs of labour, that he can buy and use materials more cheaply and more efficiently, that he can reduce field costs, that he can buy equipment more cheaply and install it more efficiently, that he can reduce maintenance costs through the use of better-wearing materials, that he can cut financing costs because of the assignable and standard value of a trade-marked article of any given age. This part of the hypothesis is, of course, to be tested only in the crucible of business experience. It sounds sufficiently plausible so that the small failures of the past scarcely disprove it.

We must then, however, seek to discover reasons for failure outside possible fallacy in the hypotheses themselves. If we can discover such reasons, we may well bolster our faith in the basic truth of the hypotheses. In enumerating some of these reasons I shall assume that I am speaking to a group many of whom are not familiar with the specific details of specific prefabricators. I shall, therefore, not cite chapter and verse. I am sure you will be able to fit some of the cloth to some of the prefabrication you know. For, of course, no individual prefabricator can wear the complete suit of clothes I shall now set out to cut. I shall not have time to cover all the many and complex causes of failure. So from a much longer outline, I have abstracted the shorter one which you will have found. This will let me discuss some of the more spectacular and annoying causes of failure to the neglect of others in the guidebook.

Full 90% of the pubic discouragement with prefabrication lies in stupid approaches which have had nothing to do with the real thesis of the real prefabricator. Their progenitors have been three. By far the biggest group have been the housing amateurs who have preferred to build a $5,000 house for $25,000 than study what they were doing. There have been, and still are, swarms of these amateurs in housing. Why?

I think I know why. The amateur prefabricator lives in a world where almost everything, even the motor car he used to get out and get under, has become too complex for his feeble tinkering. Confronted with a problem in spectroscopy, he yells for a spectroscopist. But over the house, primal instinct tells him he still has the power of knowledge. So, confronted with a problem in housebuilding, he puts on the armour of his own expertness, hoists himself on Rosinante, and takes the road. Every architect is familiar with this phenomenon.

It is possible to be tolerant of small boys' play. But it is not so easy to be cheerful about the executive of the large corporation who has a vision and sees in housing a market for tonnage. This executive has no difficulty in obtaining a small-ish appropriation, and with this in his pocket he sneaks furtively by his own research laboratories, for in them he has found men of candour, and somewhere out in the woods he finds someone who, never having built a house, is inhibition-free, and together they contrive a shelter unit with tons of this or that growing where no ton ever grew before, and every ton made by the company, tons wherever it is convenient and perhaps a short ton where it isn't, and often they build this building, usually these days, somewhere near Washington where the right people can see it and that is usually the end of that.

But sometimes, unfortunately, the matter goes further and the company invests in dies and inventory and even buys some full-page advertising beginning: "And Now." Later, of course, there is a tough scene at the directors' board on which we may draw a charitable curtain. What prefabrication doesn't like about this is calling something prefabrication research which isn't research at all, because the worker is told what the values of a and b must be and his answer to c hasn't a very good probability of being valid. But the greater tragedy is that big corporations have dignity to maintain and word gets around, oh, most pontifical word, that the corporation has closely examined the whole subject of prefabrication, which of course it hasn't, and that there is nothing in it. When a lot of corporate gods begin to whisper this way, sometimes the public forms a false conclusion or two as well. How much happier we would all be if only these people would realize that there is gold in the prefabrication hills for every

honest maker of an honest building material, that no one material is going to enjoy any monopoly whatsoever when the great day dawns, and that no successful prefabrication will ever be achieved by anyone who has a major motive other than the achievement of prefabrication.

The third big nuisance in prefabrication is the *blaguer,* the business man, the scientist, or just the fellow who rushes into print, usually by quotation only but sometimes with diagrams, to describe his design for the radically new house of radically new cost and then is heard no more. He never builds the house and as soon as the clipping files begin to fill up again, he loses interest. His wild statements hurt him not at all, but they do hurt the confidence of the public in the honest workers. Fortunately today, magazine editors have steeled themselves against this kind of news, and city editors have their bright young men off on the trail of the trailer, so there is less space for prefabrication vapours. Maybe there won't be any more prefabrication news. It would be a good thing.

But what of the gallant thin line of serious prefabricators —those serious, sincere, and on the whole well-equipped men of today, those men who now have been in business for several years, who have shown tenacity and courage, most of whose pockets are none too well lined but who, tight-lipped, are continuing to work towards a goal they are sure is there if only they can hold out to reach it. That they have sufficient resources to overcome the difficulties and rise to success is by no means certain, but if they fail it will not have been for lack of an honest try. Nonetheless they have been, and still are, guilty of some errors. Their major failure is that they have not attained the low costs they seek. Insofar as this has been contingent on large-scale production, the reason is clear. There have not been large sales, there has not been large production. This need not concern us. It does concern us whether today's prefabrication is such that it can be readily transferred to large-scale operations when the time comes or whether the present designs must be then so modified that we might as well start all over again. For the most part they would have to be so changed. The prefabricator has not paid enough attention to the strength and the weakness of the machine.

We well know by now what operations are immediately translatable to the machine. Skilful production men may, of course, succeed in performing any operation mechanically. But the road to prefabrication would be smoother and the proof of possible manufacturing costs which would justify expansion would be easier had the designers developed sections which could utilize present well-established manufacturing technology. For example, while precast concretes have always fascinated a large part of the prefabricating world, concrete cannot in the present state of the art be precast with such precision and speed as to result in low factory cost. The scene shifts rapidly and arsenic cements or vacuum processes might change this picture. But the prefabricator has all too often been guilty of complicating his already involved problem with speculation over some production method still in the embryo or indeed not even conceived.

In the selection of high-cost materials, designers have often been guilty of wishful thinking. Having found normally cheap materials not exactly amenable to their preconceived purposes, instead of altering the purposes to the material, they have tried to alter the material to the purpose and at greater cost. The prefabricator must always deal with the prices of today and of a tomorrow which is not over five years long. He has no right to assume, let us say, that his larger use of a synthetic resin will necessarily bring its cost down to that of Douglas fir. The criterion which ought always to be applied in turning to a more expensive material is whether its use will bring other economies. Minimum steel frames cost more than wood frames of adequate properties. However, steel has some characteristics which might be so employed as to produce subsequent savings. Thus its use might be justified. Current uses of steel have, with rare exceptions, not sought to exploit these characteristics and, consequently, have not been economically justified. Glass bricks, porcelain enamels, some synthetic boards, each good in its place, do not belong in prefabrication because they cost the prefabricator more than the conventional materials, the operative builder quietly continues to use while saving the prefabricator no money at any other point. This way no salvation lies. Almost worse as an example of research thought is that which finds no possibility in any known material and tries at once to develop new ones. If successful prefabrication must wait for some scientist to lay the golden touch on a revolutionary new material, by all means let us cease this discussion.

In the field, most of the current prefabricators furnish too little of the final product. It is quite understandable that they cannot at once jump to a completely integrated manufacture and perfectly permissible that they act in part as jobbers for shell and equipment. But after they have shipped to the site all they have to ship, the dealer has too much to do. Under his present setup, one of the outstanding prefabricators calls upon his distributor to invest 60% of the selling price himself. It is possible for this distributor-erector to change the profitable price by as much as 15%, depending upon whether or not he can employ his labour full time and eliminate subcontracts. To achieve such a major economy, however, he must employ men by the year, must have a large working capital, must be prepared to build houses for inventory if sales are slow. Imagine a motor industry based on the theory of shipping parts to centres and making local dealers own and operate the assembly plants. Nor is this practice unique: a second leader in the field receives but $1,200 for every $5,000 house that goes to a consumer. Most of this difficulty arises because the prefabricator has not reduced field operations much. I know there have been spectacular accounts of the erection of a house in a single day, but these demonstrations prove almost nothing. What were the costs of that day's work? There lies the rub.

Some proposals require derricks or other expensive machinery. Others have designs requiring such precision that, not attained in manufacture, the prefabricator goes to the site armed with driftpins and acetylene torches. Others use elements of too little precision. For example, in some of the first splined houses, the joints crept until on the fourth or closure side the wall dimensions were out nearly one foot. Later this difficulty was corrected, but only by a supervisory care on the erection of every unit which is commercially out of the question. One leader supplies his erectors with no formal erection schedule, leaving all to their whims and ingenuity. Almost without exception plumbing and wiring are done just about as in the conventional house, but it is essential for successful prefabrication that prefabricated plumbing stacks, wire chases, and the like be used. It is in the field, a laboratory where no large-scale experiment is necessary to prove a point, that the prefabricator has failed most noticeably. If his field operations are not fast and cheap, he has failed utterly to make his case.

Let us now look at the product from the buyer's point of view. Whatever points he may have missed in shop and field, one would expect the prefabricator to have a good marketable product. It is quite probable he has not known exactly what the public did want nor has there been anyone to tell him. No individual real estate man could speak with confidence and the consensus of real estate thought would be most confusing. Other industries confronted with similar problems have resorted to market analysis. I know of no market analysis for prefabrication.

In equipping the house the prefabricator began by providing a palace of gadgets. The machinery of the house was awe-inspiring and so was the cost. Recoiling from this recognized error, he now suffers from a tendency to equip below the competition. Ultimately he will come to rest, no doubt, at dead centre, but meanwhile it would seem that he might be giving some study to making modern equipment more efficient from the point of view of installation—for that is his job—rather than trying, as try too often he has, to improve its operating efficiency which is a job for the equipment manufacturer.

Structurally the prefabricated house has been, on the whole, sound. Prefabricators as a group have been, if anything, too conscientious in their construction, though there has been the perfectly good reason that the buying public demands they correct every fault, however slight. They have, to be sure, been guilty of spots of ignorance, such as lack of knowledge of the conditions which might cause condensation, but so, too, have been the orthodox builders and even the manufacturers of insulation. On the whole they have up to now been a group of high integrity while their methods have often eliminated some of the conventional troubles, such as the effect of wet plaster on prematurely-installed wood finish. That the new models can be so highly praised is not so certain. The prefabricator has had desperately to find lower cost and has naturally been subject to temptation on the score of structural quality. All the weeds, moreover, cannot be kept out of the garden. Structural failures of any prefabricated house would be a disaster to all prefabricators, responsible and irresponsible. I feel that I perform a favor to prefabrication when I ask anyone interested in buying a current offering to look carefully at any details which he may doubt. Of the good intentions of most of the prefabricators he need have no doubt.

In looks the prefabricator has again, until recently, missed his mark. He has too long neglected the American sentiment for the Dream House — our one quaint refuge from grim modern reality. There is no doubt that the flat roof lends itself best to the factory plans of the prefabricator. Walter Gropius has, moreover, drawn an utterly convincing picture of its utility and beauty. I can well remember a meeting about two years ago in New York where, after an excellent dinner, most of the leading prefabricators gave their views on style. Among other things they held that their modern style was an asset not a liability, that the public was coming to want it, that few architects in America were equipped to satisfy the want, that the honest organic prefabricated house would be more popular for its flat roofs and uncompromising battens. Logical as they were, they failed to reckon with sentiment. The retreat from Moscow has now begun; today you can find several, nay most, prefabricated houses looking like Cape Cod cottages. As purists we must bemoan the compromise; as students of merchandising we must applaud it; as adherents of prefabrication we must be disturbed to find that it has involved changes which reduce the already slender amount of prefabrication.

However it arises, there will some day be a corporation of mental and financial power. Its only goal will be to provide good houses at a profit. Marketing studies will have told it what it needs to offer. Objective studies of materials, manufacturing methods and the requirements of the building will have yielded a design susceptible of inexpensive repetitive factory production, rapid field erection. Its powers will be such as to let it obtain commodities at the lowest going prices; its integration sufficient so that it supplies all of the house; its experience in advertising and its contact with the best designers will enable it to sell the product easily and cheaply; it will be able, if necessary, to operate a refinancing corporation. At the beginning its plans and elevations will run with the current of public taste, but its power of knowledge and its power of publicity and its power of prestige will soon permit it to mold public taste towards something more logical. It will gladly place its proudest trade-mark on every house it sells and it will never be half-hearted in its endeavour. It will be proud of that trade-mark and so will the owner of the goods. hen that day comes, you and I will be able to buy a prefabricated house and will want to buy a prefabricated house and will pay for it, perhaps, one-half what we would pay for the same shelter unit today. The strong mansion of this corporation will have been built on the rock of research. This is not nonsense.

If the prophecy does not come true in this guise, there is still another ray of hope. There is, as a matter of fact, even now a rather high degree of prefabrication in all the elements of a house except the structure and the finish. Windows, doors, furnaces, all equipment, switches, and so on *ad infinitum,* roll on the mass-production line today. Prefabrication can, therefore, arrive even without the existence of the Gargantuan corporation I have just described. In this case, however, it must come through co-operation. This is a much harder road to follow to the goal, for a single management can, within reason, enforce departmental co-operation while the type of integration of which I now speak must be largely voluntary.

Any such co-operative movement on the scale almost of a crusade is not like to be self-generating. One cannot blame manufacturers, with distribution methods which they know to be archaic, but which do yield favourable balance sheets, for not risking the large losses which might come from failure in trying to alter them. The way of co-operation is arduous, but not impossible. It will be easier to attain by the growth of a body with power to force that co-operation and we may all hope that such a body will come from individual and not from communal effort.

One thing must be clear. Such a development is going to require unremitting research—research far more serious than the building industry has yet felt like doing. We need, first, objective study of what our housing minima really are; then, objective consideration of how to build to produce those minima cheaply. Improvement, if any, will come through evolution, not revolution. Suspended houses, houses on stilts, mobile houses, all the phantasmagoria of unrestrained fancy may enliven an evening's discussion; they will not furnish the answer to our riddle. We need hard work and not imaginative excursions into the housing stratosphere.

OUTLINE OF REASONS FOR PAST FAILURES IN PREFABRICATION

I. *Failures inherent in the broad approach:*
   1. Building only a wall, or floor, and so on.
   2. Designs fundamentally impossible to transfer to a factory.
   3. Superficial suggestion based on wishful thinking or desire for publicity.
   4. Prime purpose not achievement of a prefabricated house, but obtaining a larger market for specific materials or equipment.
   5. Prefabricator not a business man at all, but only a designer, doing no manufacturing himself.

II. *Failure through insufficiently low cost:*
   1. In the factory:
      A. Not enough purchasing power, involving:
         (*a*) No low-cost commodities,
         (*b*) No mass production,
         (*c*) No control of production at all.

B. Inadequate or no engineering study from the factory point of view; designs not suitable to high-speed production.
C. Use of fundamentally costly materials or processes.

2. In the field:
A. Too little of the building a product of the manufacturer.
B. Too much field work.
C. Too great precision of erection required.
D. Insufficient precision of erection afforded.
E. No scheduled manner of erection.
F. Too much equipment required for erection.
G. Insufficient or no provision for easy installation of wiring and piping.

3. Transport:
A. Failure to use materials that can be delivered to the factory at low freight charges.
B. Finish units too large to be shipped and handled economically.

4. Excessive marketing costs due to insufficient capital or inexperience.

III. *Failure because product non-marketable:*

1. Architectural failure:
A. Poor plans:
(*a*) Plans dictated by apartment thinking,
(*b*) Plans dictated by ultra-modern logic not yet acceptable,
(*c*) Lack of flexibility to normal family patterns,
(*d*) Lack of studied equipment.
B. Poor arrangement of equipment:
(*a*) Under-equipped,
(b) Inadequate provision for installation of piping and wiring,
(*c*) Over-equipped.
C. No fundamental study of the house as a machine.
D. However attractive by pure esthetics, not keyed to popular taste.

2. Structural failure:
A. Dubious use of new materials.
B. Dubious use of flat roof.
C. Dubious flimsiness (*i.e.*, though the thing may really be strong enough, if people can push against it or rap on it or do anything that makes it behave differently from what they are accustomed to, they are worried about it).

3. Financing failure:
A. Due to the thesis of prefabrication, inability to obtain enough percentage loan from permanent financing institutions requiring too much down payment.
B. No corporate possibility of bridging the financing gap:
(*a*) Insufficient financial power,
(*b*) Inability to do any marketing until price nearer the final price,
(*c*) Efforts to apply the fallacious renting thesis.

4. Premature ballyhoo.

IV. *Failure because of insufficient quality (such as unscientific or unsound use of existing materials—rare):*

1. Wood:
A. Dry wood next moist materials.
B. Green, unseasoned wood.

2. Steel:
A. So used as to cause condensation.

3. Miscellaneous:
A. Insufficient heat insulation.
B. Cold floors.
C. Use of unbalanced units.

BOOK REVIEWS

Continued from Page 210

the playing fields of Eton". It sounds so like Ripley or the subject of a Ph.D. thesis in a lesser American college. He finds that "most of her soldiers on that field had never gone to Eton" and in spite of oneself one wants to know how many did go to Eton, how many to Harrow, Rugby or Borstal. But all that is by the way. Even when the temperature was 83 and the humidity 70 something, and one began to doze, the eye would catch a wholly unexpected line like "Love making and home making, eroticism and domesticity, sexual delight and the assiduous nurture of children—these are among the highest human goals of genuine biotechnic planning"—and one is suddenly wide awake.

We propose giving ourself the pleasure of reading this book twice with the first frost, and can quite safely urge every other Canadian architect to do the same.

—*E. R. A.*

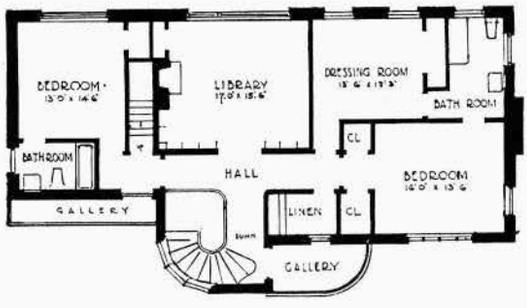
"WHAT IS ART?"

As an experiment in popular education, the Canadian Broadcasting Corporation is planning to present on Thursday evening, at 11.15 p.m., E.S.T., beginning on September 27th and continuing throughout October, a series of five talks on the subject, "What is Art?" The speaker will be A. F. B. Clark, of the faculty of the University of British Columbia. He will concentrate on the approach to modern art in all its aspects—literature, music, painting and architecture.

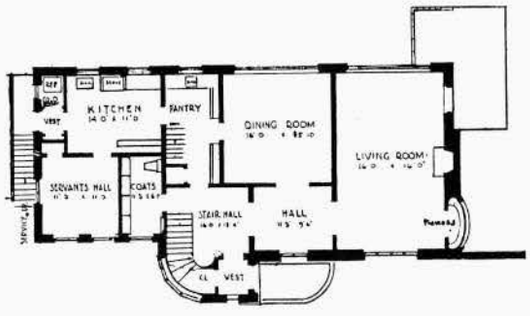
Prof. Clark, an author and lecturer of versatility, is a keen student of aesthetics. He has been heard before in broadcast talks in such subjects as travel and poetry. Articles by him on modern art have appeared in the University of Toronto Quarterly. For the convenience of listeners, this series will be available, afterwards, in mimeograph form.

HOUSE OF MR. C. G. GREENSHIELDS, MONTREAL

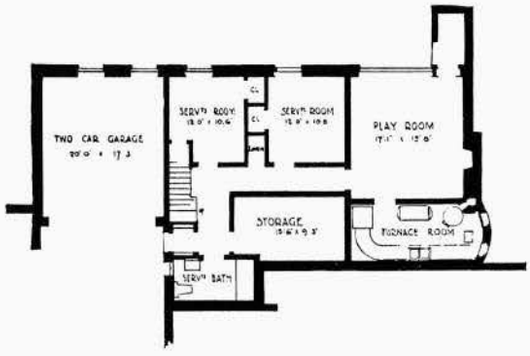
ERNEST I. BAROTT
ARCHITECT



SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT PLAN

LIVING ROOM

ENTRANCE DETAIL

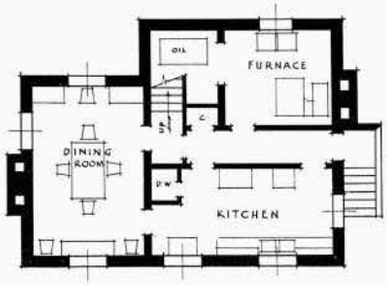
ONTARIO

HOUSE OF MR. JAMES W. WALKER, TORONTO

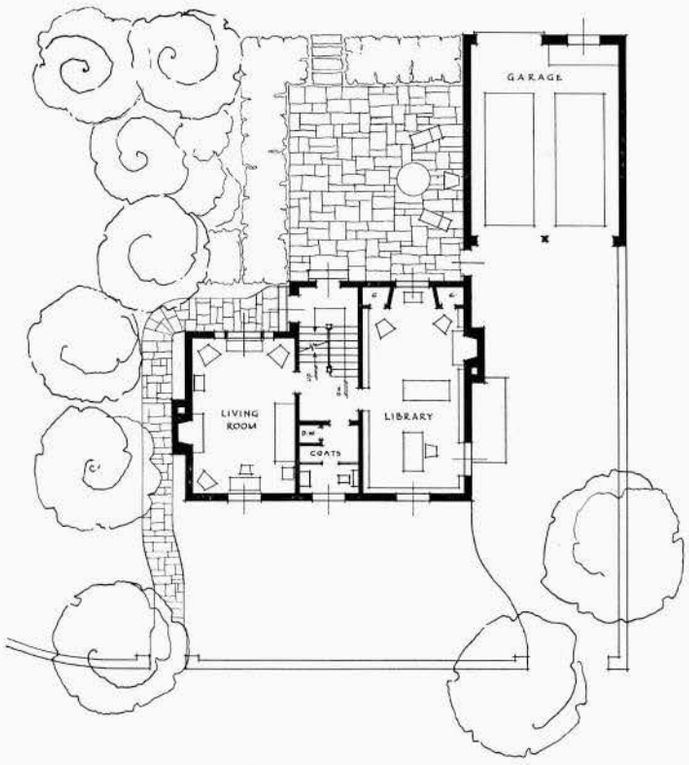
SAUNDERS AND RYRIE, ARCHITECTS

THIRD FLOOR PLAN

SECOND FLOOR PLAN



BASEMENT PLAN



FIRST FLOOR AND PLOT PLAN

GERMAN YOUTH CENTRES

By Dipl. Ing. F. G. WINTER, Berlin

YOUTH HOSTEL IN HANOVER;
GABLE-FRONT IN SGRAFITTO.

AMONG the many tasks being started at this time in Germany, the establishment of Youth Centres does not seem the largest or the most spectacular. Nor is it a problem which can be solved by the erection of one or two great monumental buildings. The programme for the building of Youth Centres is based on the principle that there shall be a Hitler Youth Centre in every town or village in the country. The building plans for the Youth Centres are not uniform, but are carried out on individual lines in different parts of the country, in order that these new homes of education may fit into the surrounding landscape.

Systematic education is facilitated by systematic building. The interior decoration, although on simple lines, fulfils the requirements of art and good taste, and impresses the boys and girls with the principles of form and design in the home and in the whole way of living. Design is thus of primary importance in the construction of the Centres, and the whole problem is removed beyond considerations of mere utility, which could not do justice to the educational task of moulding the taste and outlook of the future adult. Baldur von Schirach, Youth leader of the German Reich, therefore, had the right to say that with our new Centres the educational power of Architecture becomes a factor in the training of this youth.

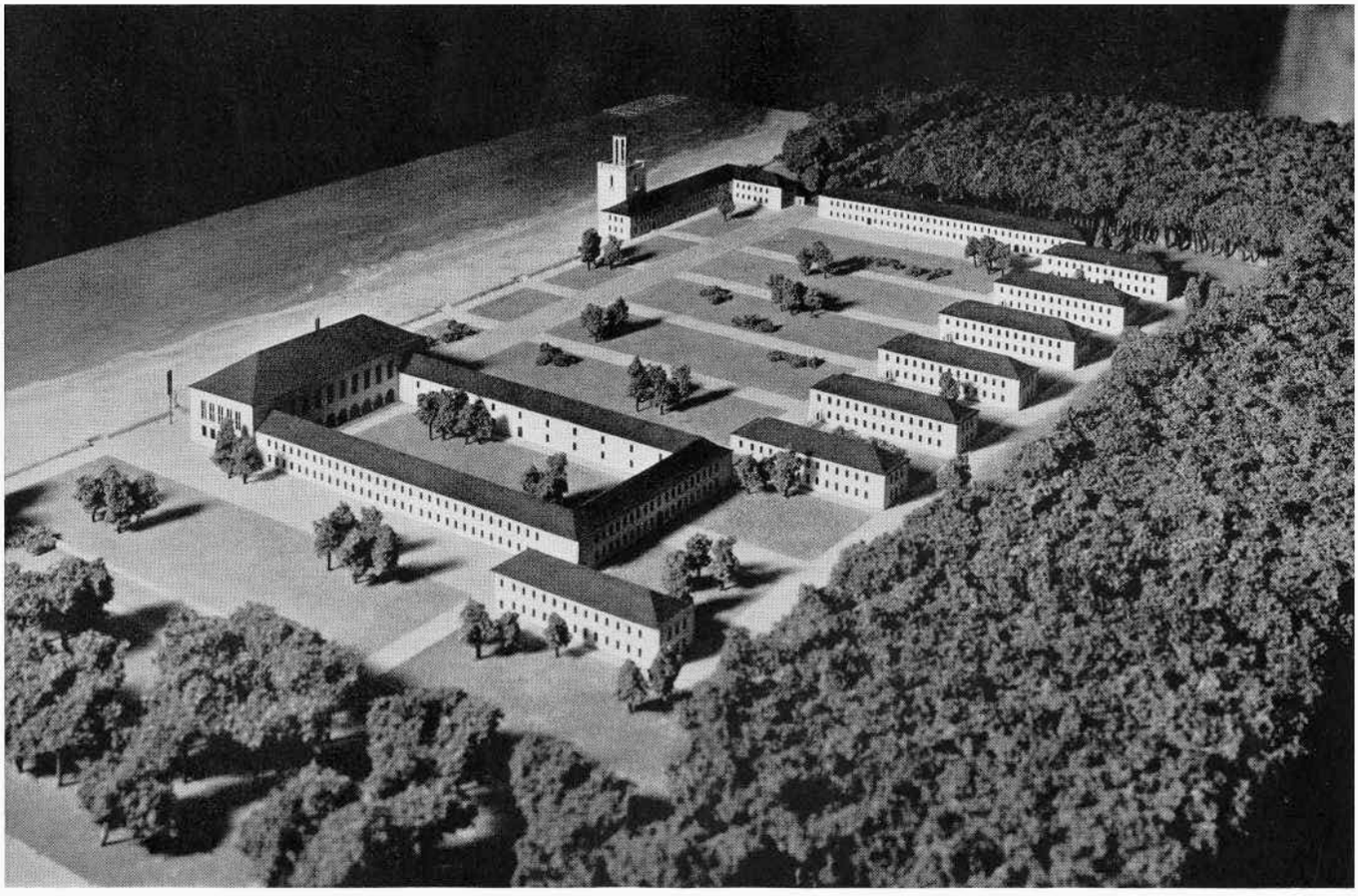
The German landscape varies very greatly, owing to its geological structure and historical development. The vast plains in the north ask for a quite different way of building from the mountains in the south. The buildings of the Bavarian Mountains have for centuries shown a quite different style from those in the Black Forest or the Franconian Mountains. It is simply impossible that the same architect could master the architectural traditions of all the many and different landscapes in Germany. Our Centres are, therefore, planned by architects who are quite familiar with the landscape in which the Centre is to be built. But in spite of the many and different architects who are charged with the planning; in spite of the various peculiarities of the landscapes which have to be considered, we may speak of a uniform spirit that has inspired the different designs. And if today some of these Centres strike us by their calm beauty and dignity, this is due to the laws of simplicity, clearness and loyalty that characterize the architecture of our homes. These are also the principal laws of the life of the Hitler-Youth. To reach this special aim it was necessary to make the selected architects familiar with the life and the ideas of our youth. We have, therefore, arranged architect-camps, where young architects learn the most important ideas by attending lectures, discussion, and friendly criticism of their designs and models.

Out of the close connexion between the ideals of the Hitler-Youth and the architectural designs, the layout of a Hitler-Youth Centre developed. It contains the common rooms, the leaders' rooms and rooms for festivities, and next after these in importance, the work rooms. By the crafts practised here, by means of play, the creative faculties latent in the boy or girl are awakened and developed in such a way as to link up with creative effort in later years.

The community idea, which has given the New Germany its characteristic stamp, is also the fundamental principle of the Hitler-Youth. And, therefore, the common room, where the meetings of the "Schar", the fundamental unit in the structure of the Hitler-Youth, are held, is the main room in the Centre building. We realize that a room can in itself exert a considerable educational influence, and that it is important for the formation of the character and quality of feeling of the boys and girls that they should be given rooms of noble proportions.

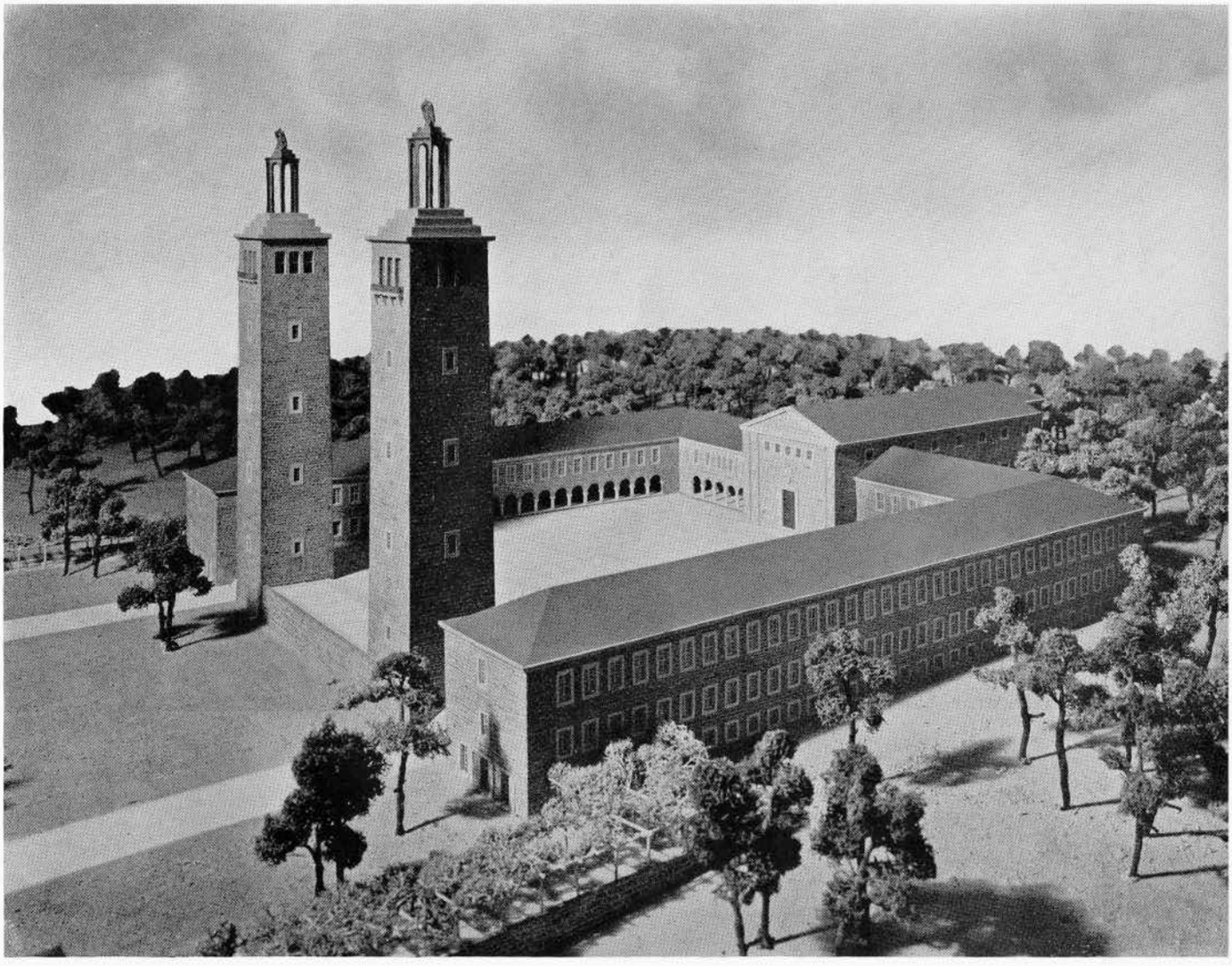
(Continued on page 209)

GERMANY



ADOLF HITLER-SCHOOL IN HEILIGENDAMM

ARCHITECT: DIPL. ING. HANS DUSTMANN



ADOLF HITLER-SCHOOL IN PLAUEN

ARCHITECT: DIPL. ING. F. G. WINTER

LIVING-ROOM IN YOUTH-HOSTEL IN URFELD, BAVARIA

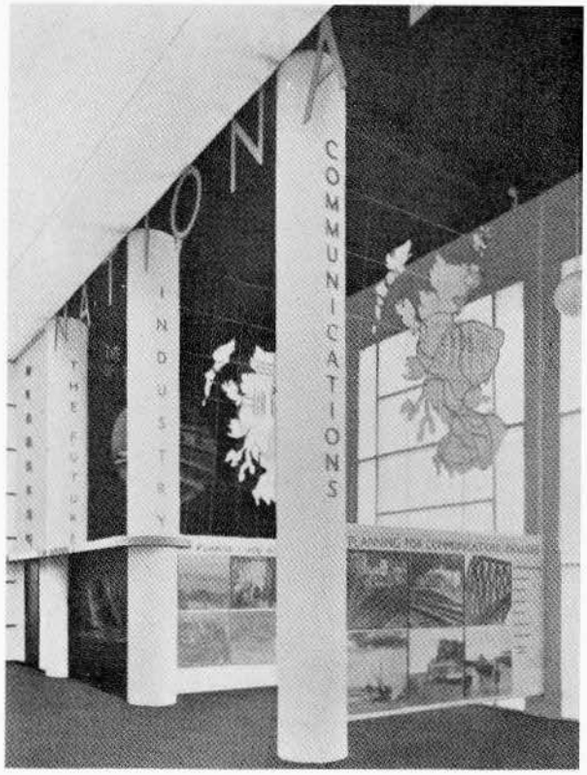
ARCHITECT: VESSAR, MUNICH

COMMON-ROOM IN THE YOUTH-CENTRE IN MELLE, HANOVER

GLASGOW

LETTERING

Upper right, a contrast between the crudely formed lettering on the equally crudely detailed front of the Canadian pavilion and the well-studied lettering, designed to give scale to the wall it is placed on, of the Women's pavilion (architect, Thomas S. Tait, associated with Margaret Brodie). The mannered forms of the letters are probably justified by the occasion, and the decorations over attract attention and add gaiety though they employ a motif from the Paris Exhibition that is used rather frequently in Glasgow.



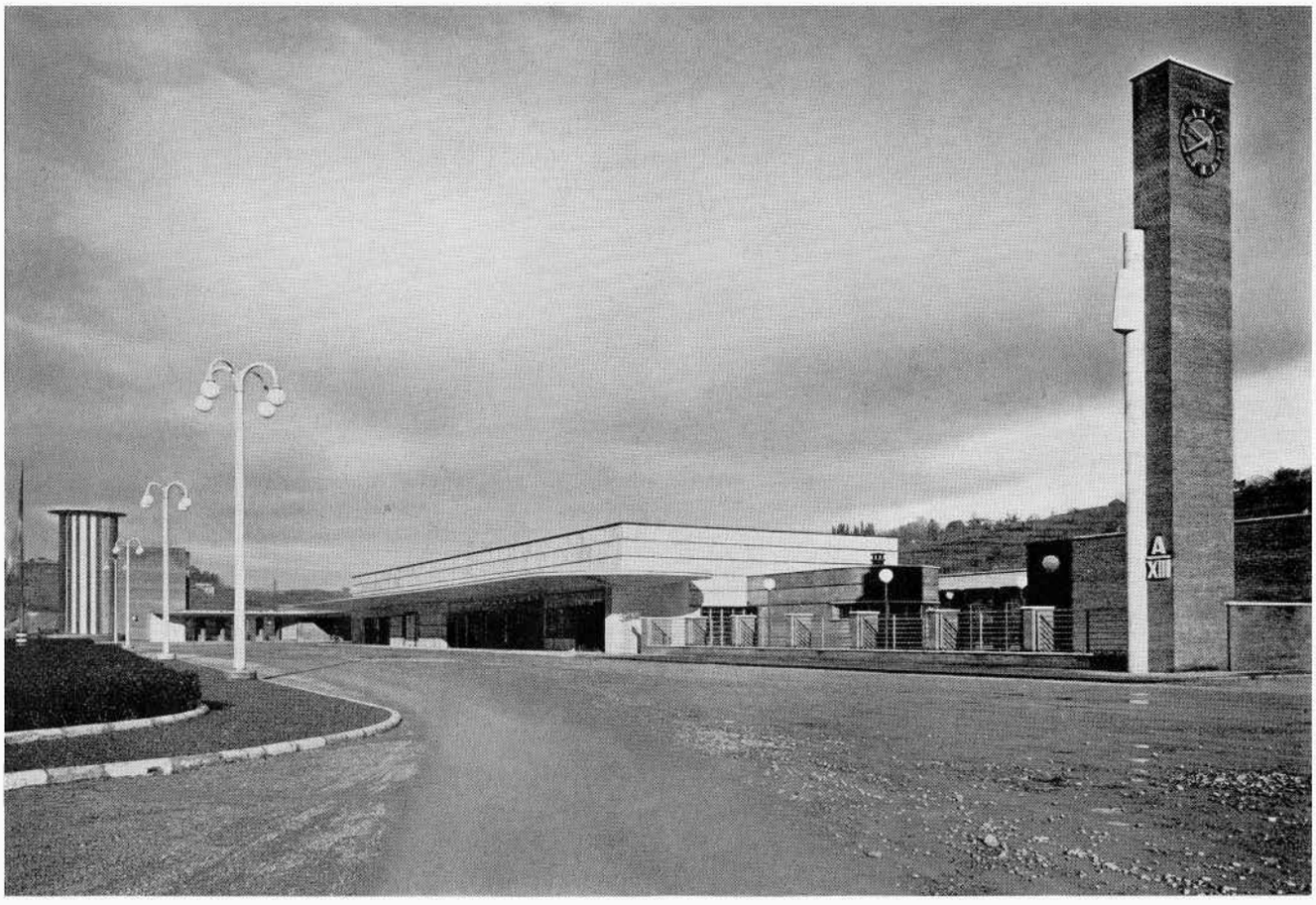
GEOGRAPHY

Canada has a magnificent National Park system about which an enthralling story might have been told, but below is the National Parks exhibit in the Canadian pavilion, consisting of a row of highly coloured oil paintings in flashy gilt frames hung on the wall together with a few stuffed animals placed on a shelf below: probably the most inept piece of display in the whole Exhibition. Canada has learnt nothing since Paris. On the right is a contrast from the Scottish pavilion in which Mr. Basil Spence has designed for the Scottish Development Council a lively exhibit giving about Scotland the real territorial information that Canada fails to give, and at the same time, presenting an attractive modern display.

This page is reproduced from the July issue of The Architectural Review (England). The charge of "ineptitude" has been made of Canada's displays at both Paris and Glasgow. Those who arrange our displays abroad seem not to realize that the "cute" and the homely, which may (doubtfully) have a place in a country fair, have no place at all in competition with the great nations of the world. We are made to look ridiculous, and it was not for that purpose that we exhibited in either Paris or Glasgow.

Let us hope that the government of Canada may see fit to give its architect some control over the inside as well as the outside of its building in New York.

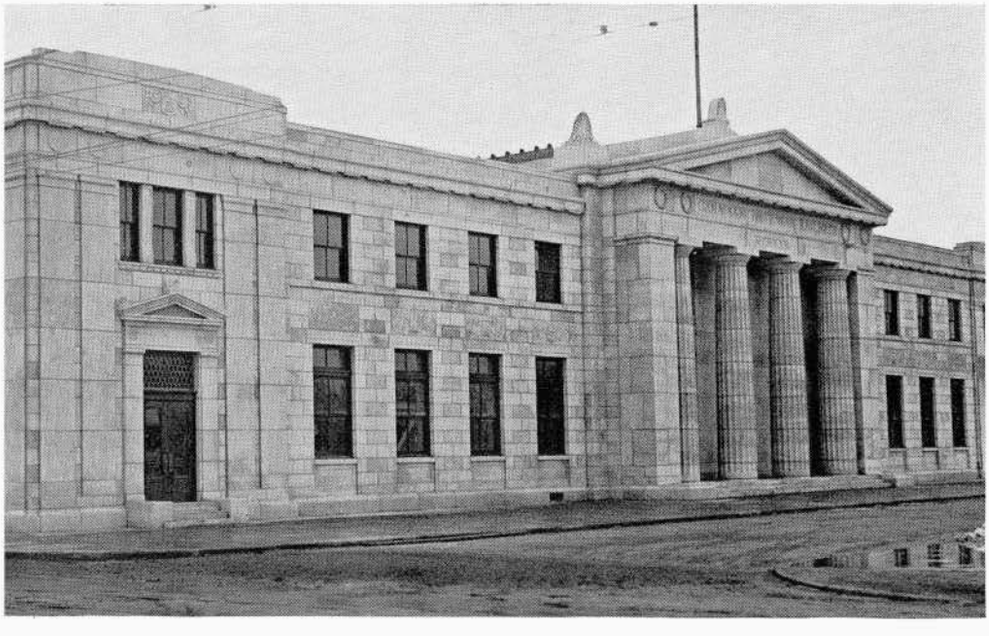
ITALY



COMBINED RAILWAY STATION FOR SIENA AND REGGIO EMILIA

ANGIOLO MAZZONI, ARCHITECT

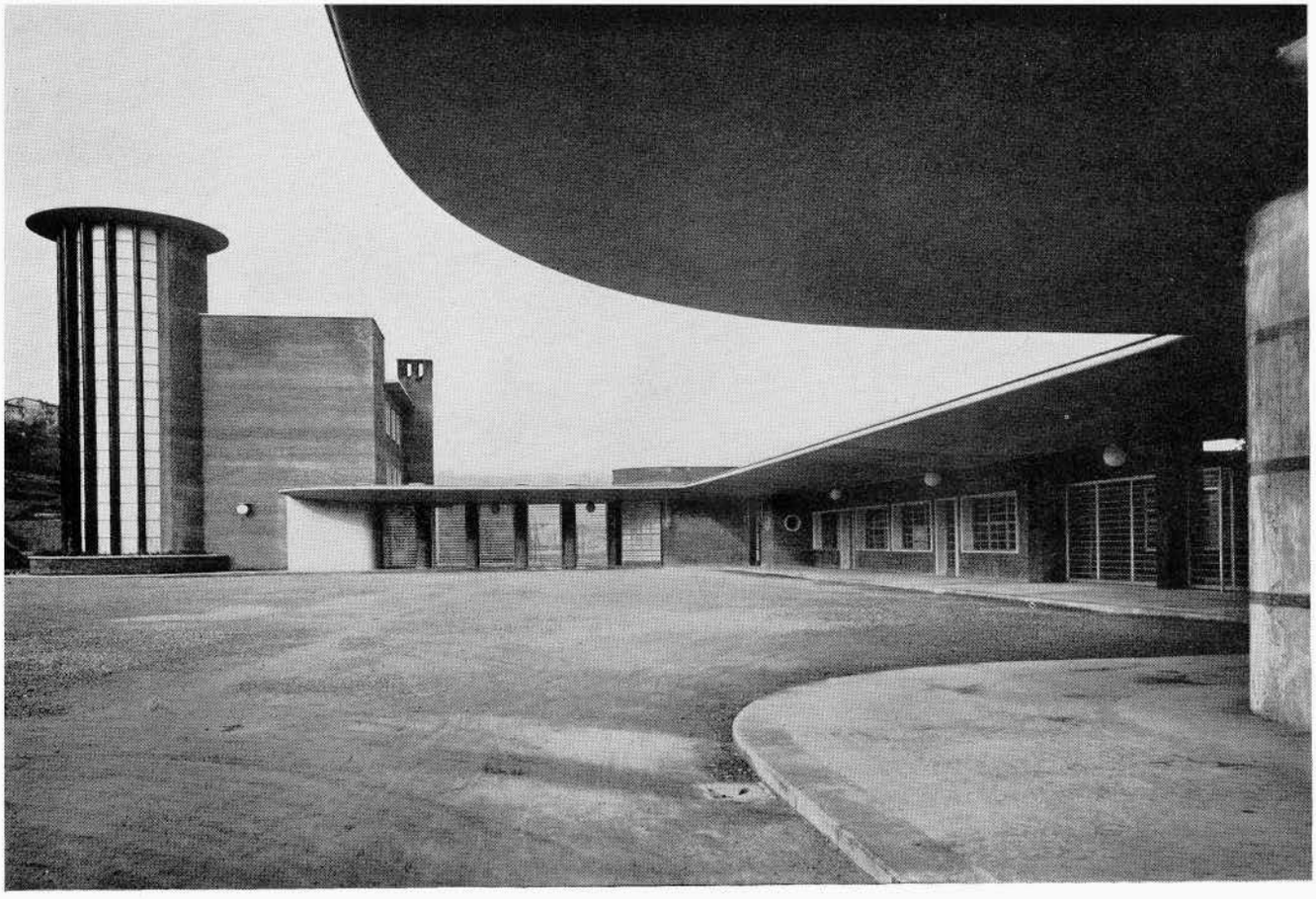
ONTARIO



CANADIAN NATIONAL RAILWAYS' STATION, HAMILTON

The modern European station is an efficient building designed to handle incoming and outgoing crowds. Ample canopies are used to protect people from the weather. The modern Canadian station takes the Field Museum as a model—is built of expensive materials, suggests no movement of people and does nothing to protect them from the elements. It is usually cramped in its site and makes the parking of vehicles an increasingly difficult problem.

ITALY



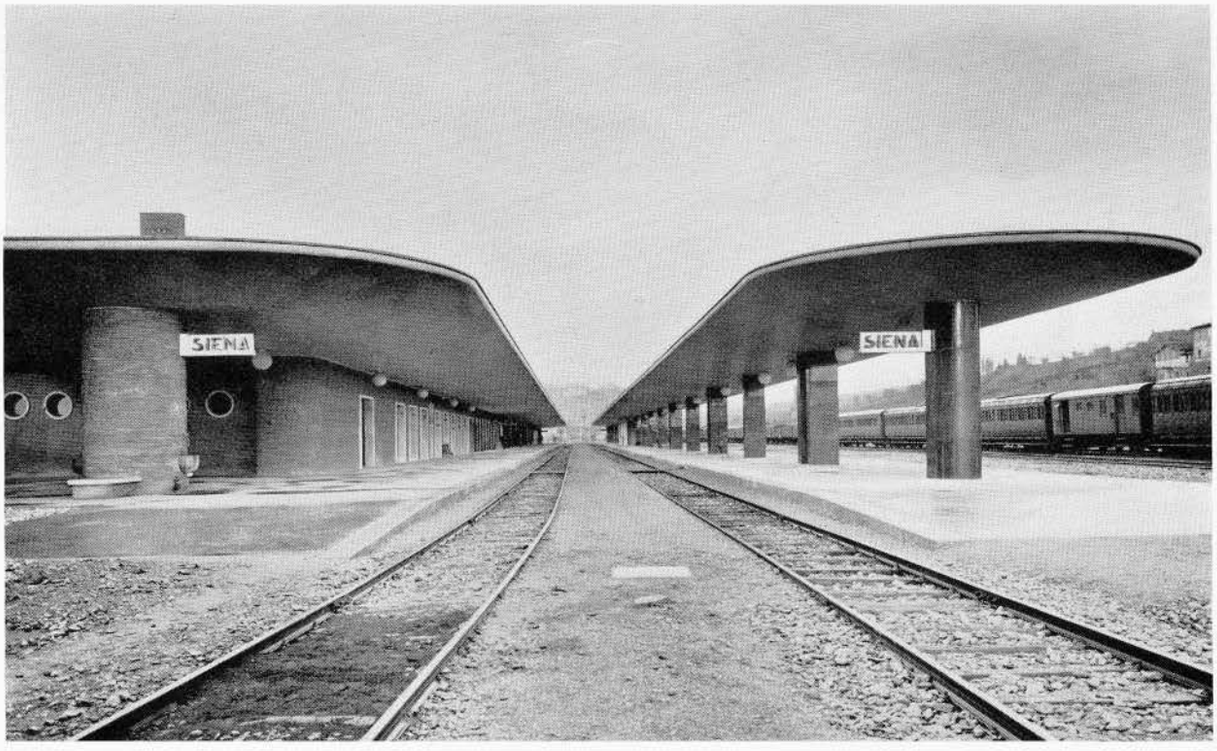
ENTRANCE TO STATION

ONTARIO

CANADIAN NATIONAL RAILWAYS' STATION, LONDON

Population of Siena and Reggio Emilia, 128,000
Population of Hamilton, 155,547
Population of London, 71,148

ITALY



VIEW OF PLATFORM

Rose Coloured Glass Canopy and Stone Columns

WAITING ROOM

ART VERSUS "FINE ART"

By ERIC GILL
in Journal of the Royal Society of Arts

The distinction between art and "fine art" is, in every sense but one, a superstition, and many superstitions have given rise to "vested" interests, so the existence of "art" galleries, "art" magazines and "art" critics need not worry us except as all superstitious products are a worry.

For the idea that the distinction between art and fine art is that art is skill applied to the making of useful things, and fine art is skill applied to the making of things of beauty, is clearly unreasonable — because there is no reason why useful things should not be beautiful and there is no reason to suppose that beautiful things have no use. Are tables and chairs and houses and pottery necessarily ugly? Are portraits and statues and church paintings and wall decorations necessarily useless?

And the idea that the beauty of useful things is accidental, whereas, in the fine arts, it is the usefulness that is accidental, is equally unreasonable, for you cannot have beauty by itself, any more than you can have art or culture by themselves.

Beauty is a quality of things. Beautiful things are those which please when seen (using the word "seen" in both a wide and narrow sense), and nothing can be pleasing except that which is as it ought to be. The beautiful thing, therefore, is that thing which we recognize as being as it should be—whether drain pipe or musical tune—and to make a thing as it should be by accident is absurd.

But there is one sense in which the distinction between art and fine art is a possible one, and that is when we distinguish between the necessary arts, the arts necessary to the business of living and the arts of *recreation,* the arts whose purpose is mental and physical recuperation—so that we return again to the arts of living, revived and refreshed.

What is called abstract painting is of this kind. It stimulates and rejuvenates the mind through the eye. A lot of music, and today most music, is of that kind. It stimulates the mind through the ear. And poetry, when it is not simply the best way of saying anything —and that is what poetry primarily is—is the game of playing about with words and the meaning of words, so that the mind is stimulated by means of sound and sense combined.

— Courtesy of "Parade".

GERMAN YOUTH CENTRES

(Continued from page 201)

The Centre, with its festival hall, is set in grounds laid out as playing fields, etc., which are used chiefly for recreational and training purposes. A Youth Centre with four common rooms will have a sport ground with a running track, soccer field, a gymnastic ground and a swimming pool. The Youth Centre, with its grounds, thus takes part in the planning of parks and green spaces in the village or town, and so our Centres are a part of the recreation grounds which today every town and village endeavours to establish. Young people living in the big cities must naturally have their buildings right in the centre of the town; opportunities have been provided in town-planning to build those Youth Centres within easy reach of the grounds.

Besides these special Centres for the meetings of the youth of the place itself, several "Youth Hostels" have been published in this *Journal.* Their purpose is quite a different one. They give the boys and girls hiking or bicycling through Germany a cheap, but clean and friendly shelter. Many young people from England, Canada and America have taken advantage of these Youth Hostels on their way through Germany. As they fulfil a quite different purpose from the Youth Centres, their plan is correspondingly different. It consists of bedrooms, shower and washrooms, living rooms, self-cookers, kitchens and dining rooms, the necessary kitchen accommodation and the apartment of the "Heimvater".

Rising above the practical problems is one governing aim; that the Youth Centres shall provide real homes for our boys and girls, inspired not only by the practical and functional aspects of the problem but by the knowledge that living beings have heart and soul, and that a sympathetic architectural environment is essential if these are to develop with freedom and unaffectedness.

Fritz Winter came from Germany to the School of Architecture, University of Toronto, in 1934, through the Gertrud Davis Exchange Fellowship. He was in Toronto for one University Session, but during that time both staff and students found him a stimulating and charming companion, enthusiastic about his profession. Since then many students have called on him in Germany and enjoyed his hospitality. While in Toronto he published (with E. R. Arthur) a brochure, "Old Forts in Upper Canada", which is still available (free). We look forward to a visit from Mr. Winter next month.

E. R. A.

BOOK REVIEWS

THE EARLY BUILDINGS OF ONTARIO

By ERIC R. ARTHUR

Published by the University of Toronto Press. Price, 50 cents.

A MOST welcome addition to the few publications we have on Architecture in Ontario has come to hand. This brochure compiled by Eric R. Arthur, with a foreword by John Alford, proves, quite naturally, of great interest to architects, members of the Architectural Conservancy, and members of historical societies throughout the country.

What seems to me of far greater importance is that the text, written in the manner of "The History of Every Day Things in England" by the Quennells, should prove most valuable to laymen, students in our secondary schools, and public libraries. The description of types are so direct and to the point that no practising architect, unfamiliar with this work, should fail to profit by them.

The selection of subjects is good, the photographs are excellent as are the measured drawings which show the effort that is behind this movement, which has been sponsored by Mr. Arthur, and we sincerely hope that this is only the forerunner of a more complete publication.

— *M. W.*

A HISTORY OF ARCHITECTURE ON THE COMPARATIVE METHOD

By SIR BANISTER FLETCHER, M. Arch. F. S. A.

Tenth Edition. B. T. Batsford Ltd., London. Price, £2, 2s. net.

WE suppose there are few books in the English language as dull as Sir Banister Fletcher's monumental work. We read it eighteen years ago and contented ourself, on this occasion of the tenth edition, with reading only the section on the British Isles, British Dominions and the United States. About midnight we asked ourself the following disturbing question: "If he can be so utterly wrong in his critical estimation of things that we know, how far has he misled us in his estimation of buildings in countries we have never seen?" He begins with great tact to say "the following typical examples must not be considered superior to others, but are given as having come within the author's notice". Among these are Birmingham University and the Bank of England, by Sir Herbert Baker. In the British Dominions "as in the Mother Country, a modified Renaissance style is general for civic and secular buildings and Gothic for ecclesiastical buildings". Among the nine outstanding Canadian buildings we are proud to note the Canada Life Building in Toronto. In South Africa "who does not know, if only in pictures, 'Groote Schuur' on Table Mountain?" When we last saw it, it was at the foot of the mountain.

In the United States "The author has experienced considerable difficulty in selecting a representative list of buildings and it must be understood that those mentioned are not necessarily more representative than many others not included". Even after so timid a start, Sir Banister does not lose his grip, but goes on to say that "The Unity Temple, Oak Park, by Frank Lloyd Wright, is remarkable for its avoidance of historic precedent" and "Gothic retains its hold on church architecture, but has been linked with the remarkable ingenuity of Ralph Adams Cram (b. A.D. 1863)". The ingenuity is explained by his work on St. John the Divine, which from being Romanesque in 1892 is being transformed by Cram "into a late Gothic building with an exterior combining late French and English Gothic — a monumental testimony to architectural tradition". This is a long review, but we are dealing with a book of 1,033 pages. It is fortunate that there are many little histories which, like Drake, can run all round this Armada. We have fired a few shots, but a careful reader could riddle it with a broadside. Sir Banister's tenth edition is quite invaluable as a storehouse for slides but, as a history, will turn many a good lad into the bond business.

— *E. R. A.*

THE STYLES OF ENGLISH ARCHITECTURE

By ARTHUR STRATTON

B. T. Batsford Ltd., London. Price, 1s. 6d. for each handbook, 25s. set of plates.

THE publishers' note explains the purpose of these two handbooks, with their accompanying wall diagrams, as designed "to encourage the increasing interest and attention devoted in recent years to the study of English Architecture in elementary and secondary schools and other educational institutions".

The booklets are extremely concise, having only some thirty-odd pages each (of which about half are devoted to illustrations), and are most straightforward in style.

Part One—"The Middle Ages"—is remarkably complete in its brevity and the illustrations good and well chosen. The second part—"Tudor and Renaissance"—through the necessity of introducing architects by name, and through the greater complications of the time, becomes rather involved and tends to assume a wider knowledge on the part of the reader than is perhaps justified.

They are, notwithstanding, unusually good summaries for school work and the twenty-five wall diagrams should be a vast improvement over the usual type of classroom decoration.

— *W. E. F.*

THE STONES OF SCOTLAND

Edited by GEORGE SCOTT-MONCRIEFF

163 Photographs. B. T. Batsford Ltd., London. Price, 10s. 6d.

THIS book should give great pleasure to every architect, especially if he is a lover of Scotland. The Editor and his five collaborators deal with such phases of Scottish Architecture as The Early Stones, The Church in Medieval Scotland, Castles and Towers — The Scottish Burgh, and Triumphant Classism.

We read the book from cover to cover and had only one regret—there was no chapter on the Scottish cottage or the small house. Mr. Scott-Moncrieff is well fitted to write a book on the Scottish house and it should have as wide a sale as the present volume deserves.

— *E. R. A.*

THE CULTURE OF CITIES

By LEWIS MUMFORD

Harcourt Brace & Co., New York. Price, $5.00.

WE hope soon to review this book properly. No conscientious reviewer could read and review the Bible in four weeks of Canadian summer, and we are quite incapable of reading, let alone reviewing, "The Culture of Cities" till it gets cool. However, we owe the publishers something for a fine book of which this is merely a notice advising all Canadian architects who read and think to buy it. It is both exciting and stimulating, and these in themselves are rare qualities in either architectural or town-planning literature. It does not matter that you disagree with the author in spots or that he is as verbose as Mr. Frank Lloyd Wright. (It is a pity that basic planners show not the slightest interest in basic English.) It does not matter that you feel you would violently dislike a man who would investigate "Waterloo was won on

(Continued on Page 197)

PROVINCIAL PAGE

ALBERTA

At present there is a considerable amount of work, either in progress or in prospect in the city of Edmonton.

The Hudson's Bay Company is proceeding with a portion of their new building in Jasper Avenue. The whole project is to cost $800,000. The eastern part of the building, now nearing completion, is expected to be ready for occupation in October. The T. Eaton Company proposes to vacate the premises they at present occupy in the Tegler Building and have purchased a large site in 101st Street. Demolition of the old buildings on the site is proceeding rapidly. It is understood that this scheme will cost about $800,000. The architects are Messrs. Northwood and Chivers of Winnipeg, associated with Mr. W. G. Blakey of Edmonton. A new Kresge building in 101st Street is now well advanced and will cost in the neighbourhood of $150,000.

A new theatre, the Dreamland, designed by Blankstein, Green, Ham and Russell, with Messrs. Rule and Wynn as local associates, is also in progress.

Other projects for which building permits have not yet been obtained are: The extension of the General Hospital, on which $250,000 is expected to be spent, Messrs. MacDonald and Magoon, architects; the Empress and Capitol theatres to be reconditioned, Messrs. Kaplan and Sprachman of Winnipeg, architects, Messrs. MacDonald and Magoon associate architects.

From the above it would appear as if Edmonton were experiencing somewhat of a building boom. This is greatly aiding employment in the building trades. The fact that three of the important buildings are of the large store class, however, does not improve prospects for the small storekeepers with a more personal interest in the city.

The following have recently been admitted to membership of the Alberta Association of Architects and of the Royal Architectural Institute of Canada: Mr. John U. Rule, Mr. Gordon Wynn, Miss Margaret Buchanan of Edmonton and Mr. Victor Meech of Lethbridge. All of these are Bachelors of Science in Architecture of the University of Alberta.

— *Cecil S. Burgess.*

BRITISH COLUMBIA

After a lapse of some years, the Institute held a revival of their annual golf tournament which was a highly successful affair and very much enjoyed by the members. It was played over the new British Pacific Properties Golf Course in brilliant sunshine and enlivened with the spirit of fun and humour.

J. Y. McCarter presented the prizes—John Porter walking away with the low gross, while a guest, Carl Pendray from Victoria, won the low net. The prize for the "hidden hole" went to Andrew Mercer, and Percy Underwood earned the "water-hole" for his ducking which he claimed was a "real refresher". Sam Collins deserved the prize he won for most strokes on the 17th hole, considering the competition he had. President William Frederick Gardiner carried off honours as the best dressed golfer.

At the dinner which followed the afternoon's golf, William Frederick Gardiner, President of the Institute, performed the very pleasant task of presenting certificates of life membership to Major C. B. Fowler, who is in his 90th year, and to Joseph H. Bowman—both of whom are retired from practice. He expressed the appreciation of the Institute for their work in the past, and their keen interest in the welfare of the profession. He stated the regrets of the membership at the inability of J. C. M. Keith to come from Victoria for the occasion to receive the third certificate of life membership authorized by the annual meeting of the Institute early this year.

— *David Colville.*

ONTARIO

We hope that the profession as a whole is made of sterner stuff, but with us, at any rate, a holiday—even a brief one—seriously undermines our enthusiasm for work; from which it may be inferred that the enthusiasm is reduced pretty well to zero. Having just got back from an all-too-short trip around the Bay of Quinte in a small cabin-cruiser, we find our thoughts still occupied with decks, companion-ladders, galleys and scuppers, to the complete exclusion of floors, stairs, kitchens and drains; though it may well be, of course, that our ability to solve the problems of the one-room apartment has been measurably increased by the experience.

From the little we have seen there must be a great deal of architectural interest in this district, where some of the earliest settlements of United Empire Loyalists were established. At the village of Bath, for instance, there are many colonial buildings in wood and stone which would be very charming indeed if given a few coats of paint, and there is also a curious two-decker wooden church, which was at one time used by the Anglicans and Presbyterians; one congregation upstairs, the other on the ground floor. While the architecture of the upper floor is distinctly Gothic, the entrance is anything but; and we wonder whether the sounds of worship were as conflicting as the architectural styles.

At Adolphustown there is—or was, when we saw it last, five years ago—a colonial church, plain as a barn outside, but very interesting inside, with an iron-bound wooden lock of imposing proportions on the door.

It is a great pity that so many of these little waterside places have fallen upon evil days, since the old schooners lost the fight with trains and trucks. Everywhere one sees ruined cribs and jagged piling, sticking out of the water like broken fangs, where once were sturdy piers and wharfs laden with barrels, bulging sacks and kegs filled with—well, certainly not Coca-Cola. Now the entrances to creeks and inlets are silting up, lighthouses are abandoned and storage sheds topple into the water. Where there is still some activity, waterfronts are hideous with industrial ugliness and the water itself polluted with all manner of waste.

If this is the price we must pay for "progress", it seems to us altogether too high. A judicious policy of subsidization for small local industries and water-borne freight, coupled with carefully controlled development of holiday facilities, might yet save some of these charming little spots for posterity and, in the long run, pay for itself by reducing the demand for lunatic asylums.

— *Gladstone Evans.*

QUEBEC

It may be of interest to architects in other parts of Canada to learn that the tropics moved up to the Province of Quebec in the latter part of June and is (or should it be are?) still here as this is being written. In spite of the unusual hot weather, regular meetings of the Council have been held and also a few committee meetings.

Steady progress has been made by this and preceding Councils in polishing up and revising portions of our By-laws. Regulations covering advice to candidates for admission are being expanded and, after a further study, will be published for the benefit of those interested. The following most recent changes to our By-laws may be of interest to architects in the other provinces:

"Article 17: A member shall not use in the practice of his profession the name of an architect which has been removed from the Register either by death or from any other cause.

"Article 18: The name of a firm of architects shall be composed only of the names of architects who are members of that firm."

By-laws of the Association Numbers 25, 30, 33, 37 and 102 covering registration and examination fees have been revised as per authority of the Annual Meeting of January 22nd, 1938, and these revisions have been issued to the membership.

Mr. Turner, in his last letter for the Provincial Page, referred to the presentation of the new diploma designed by Mr. Maxwell, which was distributed to the members at an "At Home" in the Association rooms on June 27th. We are still talking of the beauty of this diploma and Mr. Maxwell's skill and untiring efforts in producing it, and believing that not many of our members realize the amount of work involved, the writer feels impelled to give some details in connection with the production of the diplomas.

Mr. Maxwell was responsible for the drawing of the modified design of the seal (originally designed by P. L. Regal of Paris) to make it suitable for reproduction at a small scale. This entailed a very considerable amount of detailed work in photographing and re-photographing the design and amending the same that it might reproduce perfectly. He was also responsible for the design and engraving of the embossing die forming the official seal of the Association on the diploma. He selected the paper, selected the type and designed its arrangement in the diploma. He obtained the prices and supervised the printing.

Whereas he did the actual work entailed in the above operations, the various steps were submitted to and approved by his committee, Messrs. Cormier and Durnford.

The modern character of Mr. Regal's bas-relief which served as motif for the Association's seal on the diploma, indicated the necessity of using type of recent design, and after some consideration, a decision was made to use Eric Gill's Sans-serif. This type had to be imported by the Association.

We have dilated a bit on the above in the event that other Associations may wish to follow suit at some future time.

The appearance of the diploma places it as a product of today. A degree of unity has been achieved between Mr. Gill's distinguished type and the more ornate work in the seal.

As is well known, the Province of Quebec has many fine old farm houses, and as these are built rather near the road, some of them are in danger of destruction because of the recent road-building programme in the Province. The Association has written a number of letters to the Quebec Government asking them to preserve as far as possible historic buildings or those having distinct architectural merit, and where this is not feasible to have records made for the benefit of future generations.

—Harold Lawson.

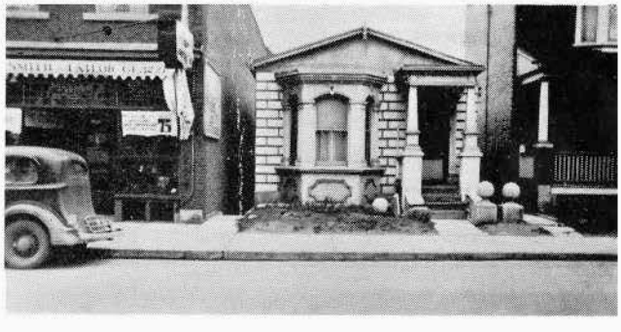
"O, CANADA"

"NEITHER SNOW NOR RAIN NOR HEAT NOR GLOOM OF NIGHT STAYS THESE COURIERS FROM THE SWIFT COMPLETION OF THEIR APPOINTED ROUNDS."

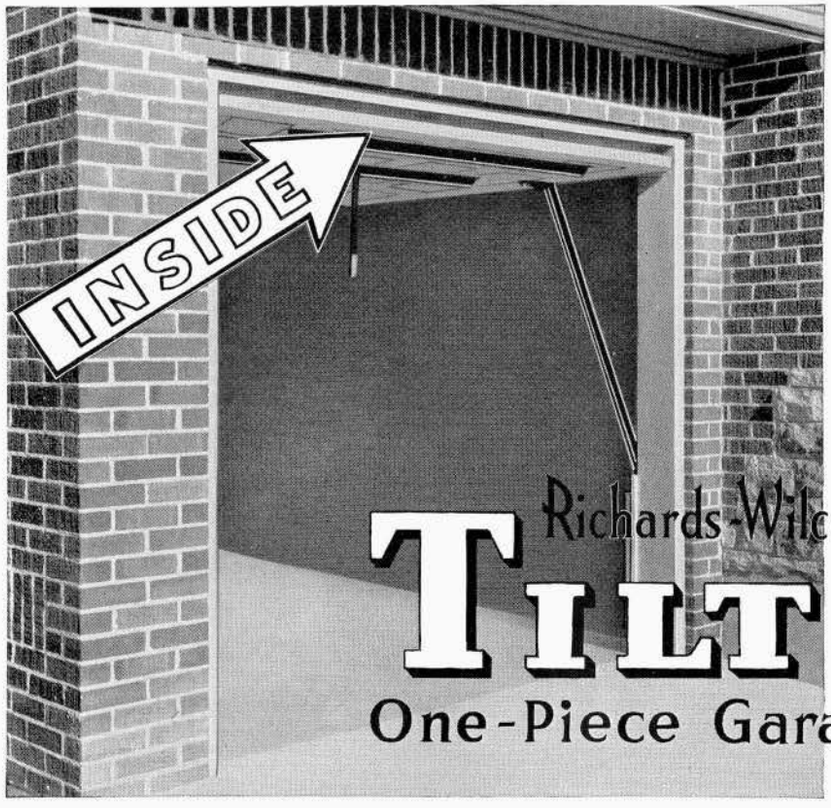
FROM TORONTO NOTES
"DAILY COMMERCIAL NEWS"

"National Battlefields Commission to build Comfort Station on the Plains of Abraham."

No further evidence is necessary of our desire to be at peace with the world. The Comfort Station transcends bridges and even peace gardens as a symbol of peace and contentment, goodwill toward men.



PALLADIO IN SUBURBIA.



New Hardware for One-piece Garage Doors

●

The door is all inside when open - - - no projection!

Richards-Wilcox TILT-IN One-Piece Garage Door

THE NEW R-W "TILT-IN" DOOR has made an immediate hit since its introduction this Spring.

• • •

OWNERS like it because:

- It operates easily, *without lifting.* A slight pull from inside or a push from outside and the door literally "floats" open.
- Takes no room inside the garage.
- Hardware is strong and well finished—looks neat and is so simple there is *nothing to get out of order.*
- INEXPENSIVE.

• • •

CONTRACTORS like it because:

- It is *easy to install* and get perfect operation.
- Standard set easily adjustable for various sizes.
- Packed completely with clear direction sheet.

• • •

and ARCHITECTS like it because:

- It *pleases* the client!

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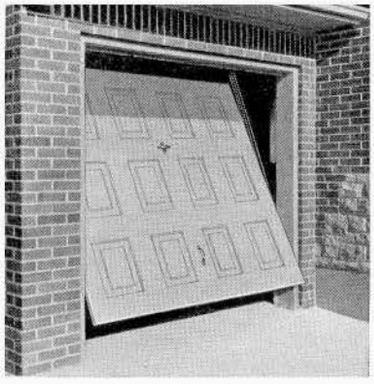

Space requirements for standard "single-car" opening:

Headroom—Six inches.

Sidewall room—Ten inches each side or weights can be hung at back.

No. 80—for single openings.

No. 80D—for "double-width" openings.

No. 80-2—for doors up to 10′ x 10′.

No. 80-3—for doors up to 12′ x 12′.

Richards-Wilcox Canadian Co. Ltd.

Montreal - Toronto - LONDON - Winnipeg - Vancouver

Annex to Provincial Parliament Buildings, Quebec

Architects:
J. S. Bergeron & Wilfrid Lacroix, Quebec

Contractors:
Frs. Jobin, Inc., Quebec

Heating Contractor:
J. B. Dugas, Quebec

Again WEBSTER MODERATOR SYSTEM of STEAM HEATING gives complete satisfaction

● The New Annex to the Provincial Parliament Buildings at Quebec is equipped with the Webster Moderator System of Steam Heating, with outdoor thermostats providing "Control-by-the-Weather". The new building is divided into two zones, each zone being controlled by a separate thermostat.

Installed two winter seasons ago, the Webster Moderator system has fully demonstrated the efficiency and economy claimed for it. Well balanced heat distribution ensures perfect comfort in the coldest weather with no overheating during sudden mild spells.

The advantages of Webster Heating Systems for new buildings or for modernizing existing installations are receiving wider recognition every day. Let us send you complete information.

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FOR LOW-COST, NON-RUST PIPING...

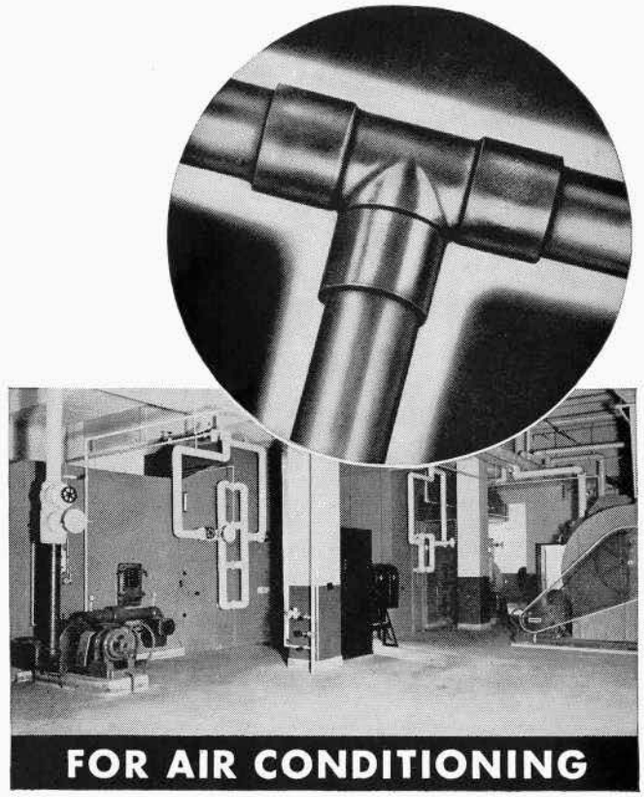
Use Anaconda Copper Tubes

WHEN you specify Anaconda Copper Tubes instead of rustable piping, you give your client a combination of advantages. *For water lines*, these modern, light-weight tubes eliminate rust and consequent maintenance expense. *For heating lines,* they cut heat losses, permit faster circulation. *In air conditioning*, their non-rust feature is of prime importance.

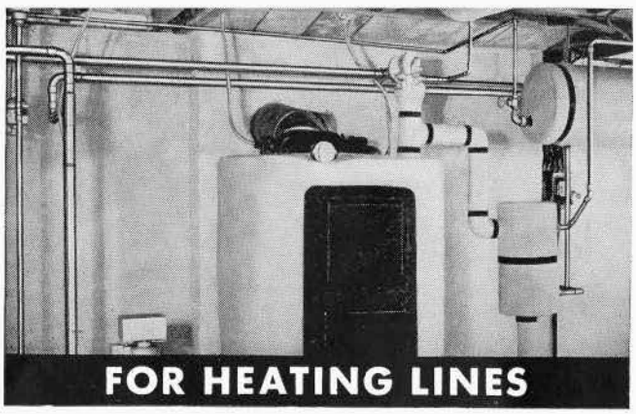
These copper tubes require no threading. Joints can be made quickly and easily with solder-type fittings. That is why an installation of rustless copper tubes costs little, if any, more than one of ordinary pipe.

Solder-type fittings are precision-made to close tolerance. These fittings and the complete Anaconda line of tubes are readily available from leading supply houses.

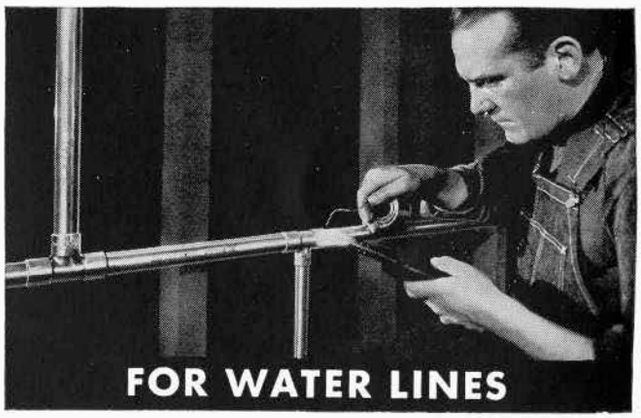
Where standard-size pipe and "screw-type" joints are desired, Anaconda "85" Red-Brass is offered as the highest quality pipe commercially obtainable at reasonable cost.



FOR AIR CONDITIONING



FOR HEATING LINES



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ANACONDA AMERICAN BRASS LIMITED (Made-in-Canada Products)

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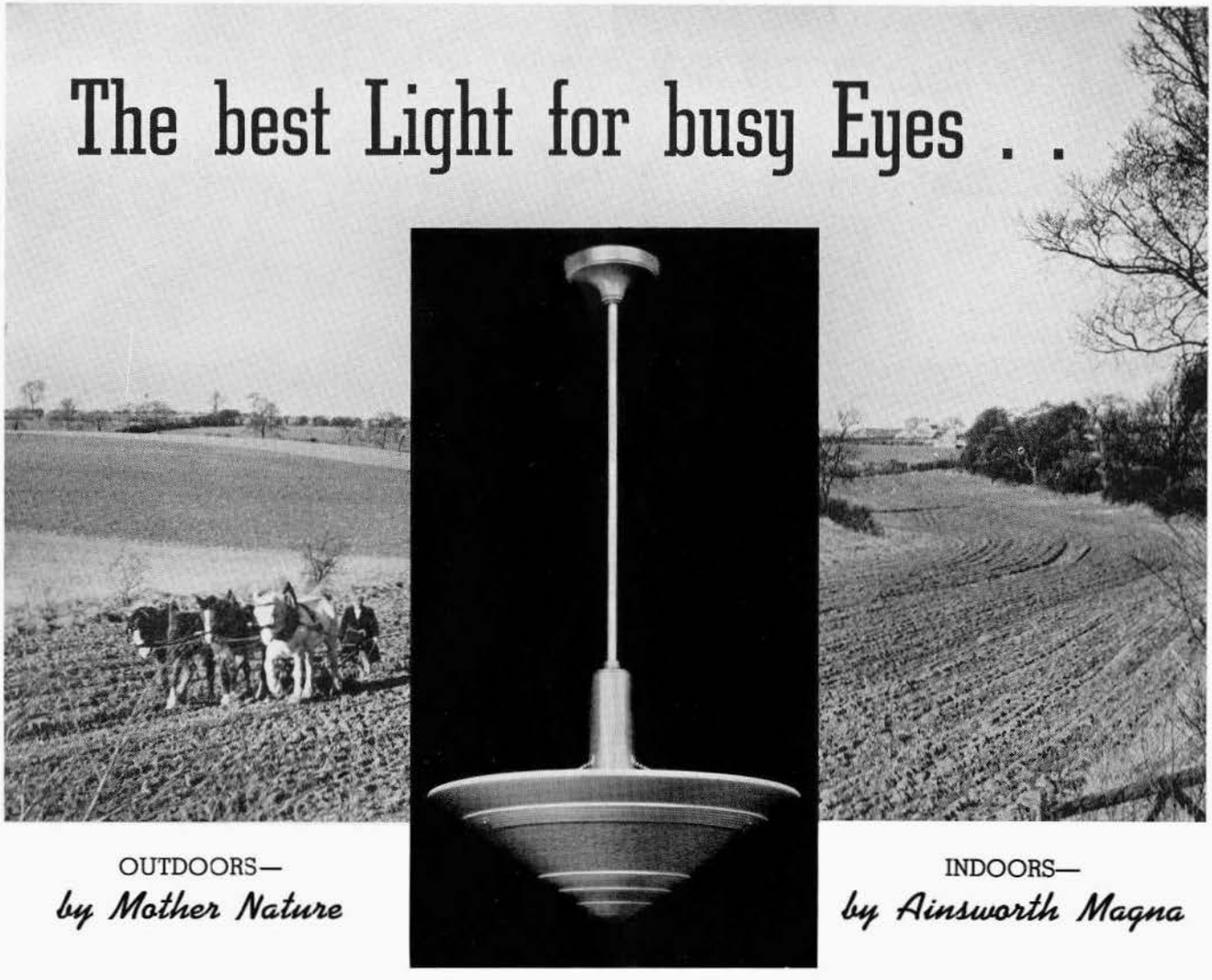

OUTDOORS—
by Mother Nature

INDOORS—
by Ainsworth Magna

DESIGNED to bring "Nature's Lighting" indoors, Ainsworth Magna Luminaires provide new ease of vision for busy employees, new natural beauty for modern interiors. The absence of shadow spots or visible light sources in a natural daytime sky make outdoors light the perfect illumination for human eyes. The absence of ceiling shadows or glare, the blending of the Ainsworth Magna Luminaire against the ceiling background make this different type of lighting the *nearest approach to Nature's own lighting yet produced!*

Before you modernize any lighting plan investigate the Ainsworth Magna. Its luminous bowl of special glass "alloy" gently diffuses the light and renders the light source practically invisible against the reflecting background. Illuminating engineers in any of our branch offices will be pleased to give you complete information on Ainsworth Magna lighting equipment—and show you how you can bring "Nature's Lighting" indoors!

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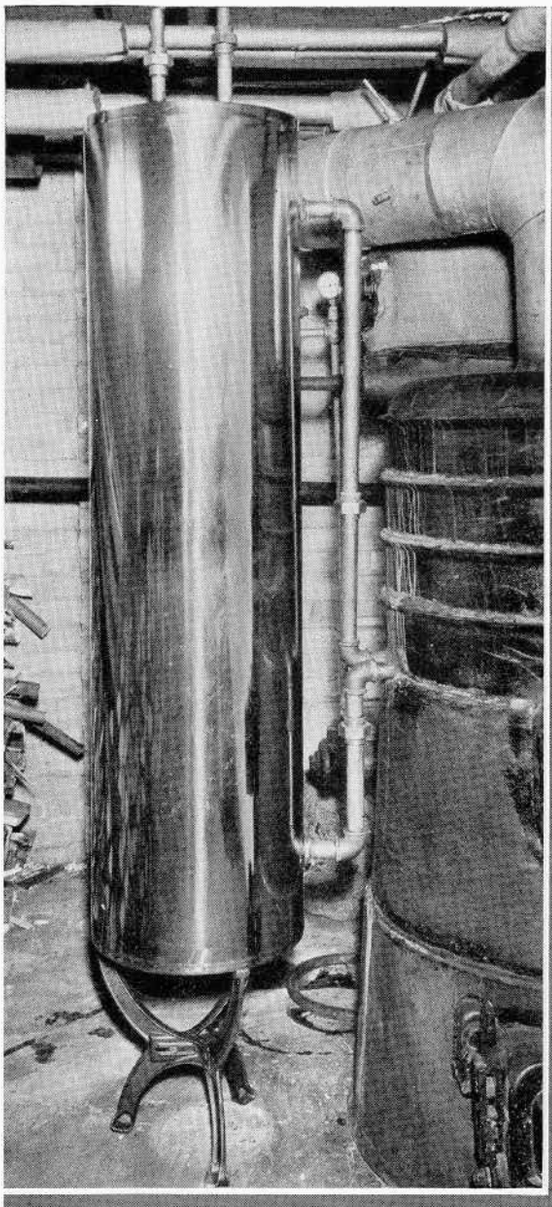

"Monel" tanks like this in capacities of 20 to 80 Imperial Gallons.

MONEL

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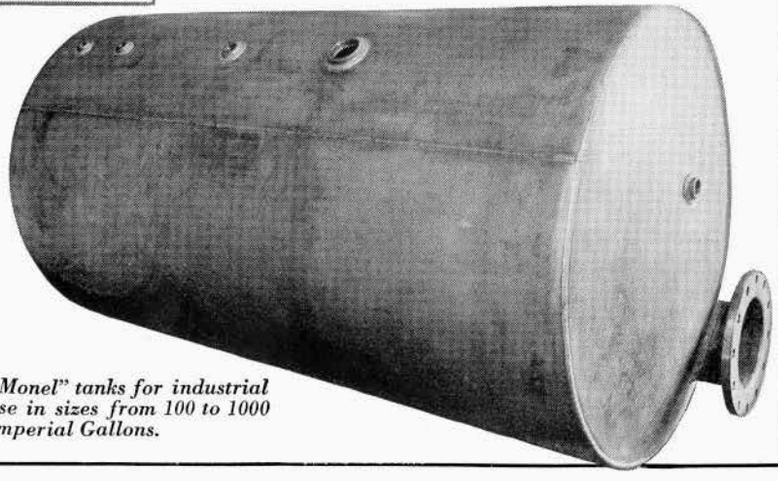
FOR LASTING ECONOMY IN BUILDINGS LARGE OR SMALL . . . . . .

It's just sound business to specify "Monel" Tanks for a six room house or a mighty industrial building. They're now available in Canada at very moderate cost. And because of their unusual durability they practically eliminate replacement costs. Every Whitehead "Monel" tank carries a 20-year guarantee, and is positively proof against rust.

Replacement is an item to be reckoned with, even with a small tank. Replacement of a large tank may cost much more than the original installation. Plan your buildings for permanence. Specify "Monel" tanks.

White metals are being used more and more to conform with the spirit of modern architecture. Among the white metals, "Monel" stands supreme, not only because of its beauty and resistance to corrosion, but also because it has the structural strength so often essential.

THE TREND TO WHITE METAL



"Monel" tanks for industrial use in sizes from 100 to 1000 Imperial Gallons.

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COMPENSATED CONTROL ASSURES COMFORTABLE AIR CONDITIONED TEMPERATURES

FIXED indoor temperatures on air conditioning installations do not give satisfactory results during the summer cooling cycle.

For example, if the outside temperature is 90° and the inside temperature is kept at 70°, the wide difference in temperature on entering or leaving the building results in positive discomfort. Air conditioning has proven its advantages, but to give thorough satisfaction it must be properly controlled. Minneapolis-Honeywell is the ideal system for summer cooling. As the outside temperature rises, Minneapolis-Honeywell Compensated Control raises the inside temperature at any desired ratio automatically. Thus comfortable indoor temperatures are maintained; not too cool, but just correct in relation to the outside temperature.

You can assure maximum customer satisfaction by equipping compensated controls on existing or new summer cooling systems. For complete information write: MINNEAPOLIS-HONEYWELL REGULATOR COMPANY LIMITED, 117 PETER STREET, TORONTO. BRANCHES—MONTREAL, WINNIPEG, CALGARY, VANCOUVER.

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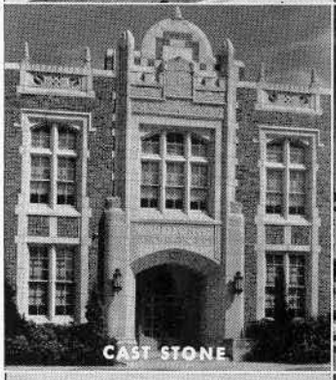

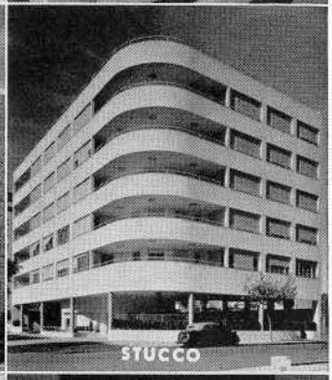

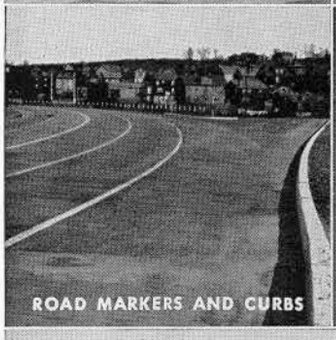

At the left are shown seven ways in which Medusa White Portland Cement (Plain or Waterproofed) can be used to improve construction.

STUCCO Medusa White Portland Cement stucco gives an almost unlimited variety of color and texture combinations with which to create individuality, charm and character in stucco homes. Waterproofed Medusa White Portland Cement repels all moisture, protecting the stucco against staining and the deteriorating action of frost and freezing of absorbed water.

CAST STONE Medusa White is internationally used in cast stone building trim. This use of Medusa White gives the architect or builder almost unlimited possibilities for ornamenting brick, stone, concrete or stucco buildings because it can be cast to meet specifications. Medusa White cast stone is also used as a veneer for houses or buildings.

TERRAZZO Many of the most colorful and magnificent terrazzo floors in this and other countries are made with Medusa White Portland Cement (Plain or Waterproofed) white or tinted, used as a matrix for beautiful colored marble chips. No matter how colorful or how intricate the design, a terrazzo contractor using Medusa White, Plain or Waterproofed, can meet the requirements.

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Medusa White is widely used for making magnificent pieces of sculpturing, for white road markers and curbs and for the finishing coat in outdoor swimming pools.

MEDUSA "STONESET" . . . another outstanding Medusa product . . . is a non-staining, non-shrinking mortar cement that ASSURES AN ABSOLUTELY WATER-TIGHT WALL. The perfect mortar cement for setting, pargeting and pointing of cut stone. The light color and great plasticity makes it ideal for laying face brick. Because of its low cost, STONESET is also used for the back-up masonry. Delivered ready for mixing with sand on the job.

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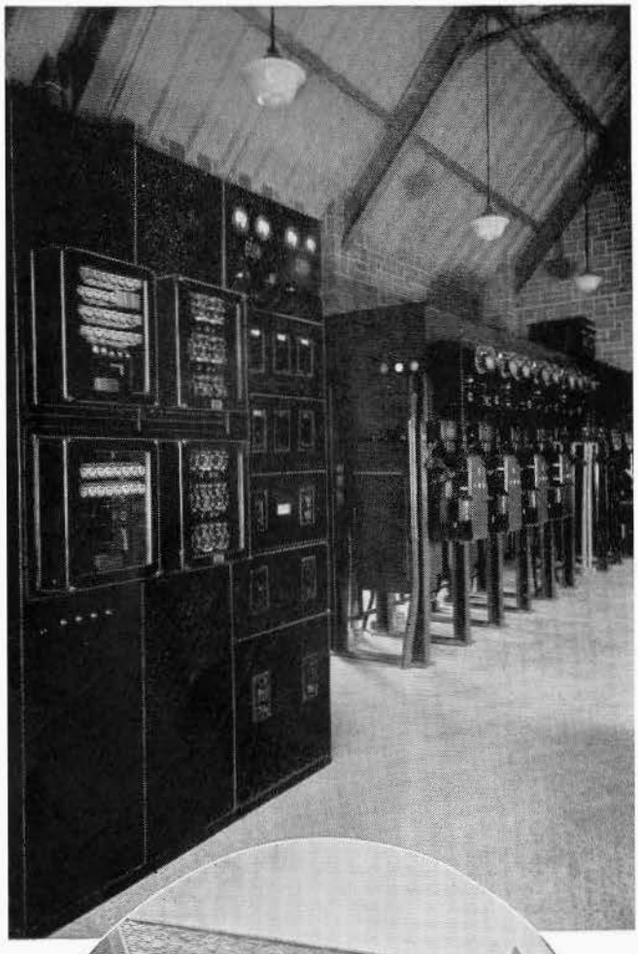
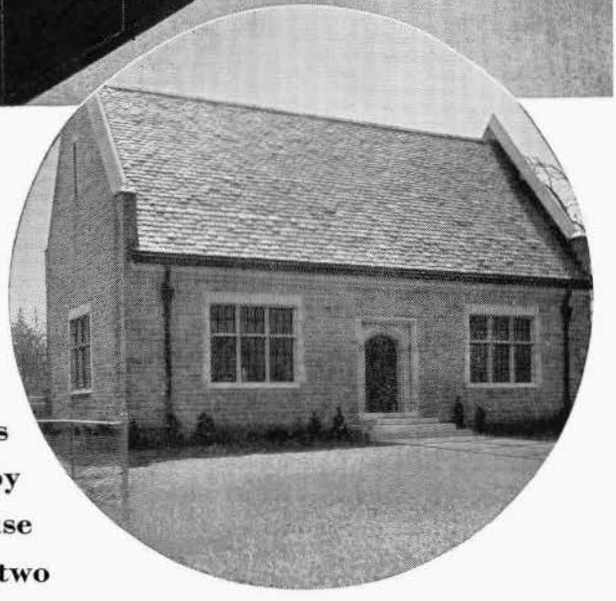


● This is an interesting example of modern substation construction. The building lends itself to residential and scholastic locations (being near McMaster University, Hamilton, Ontario) Westinghouse Metal Clad Switching Equipment was the natural choice for this station because of its total absence of of hazard to the operator.

● This station is one of three recently built by the Hamilton Hydro Electric System who now have five substations equipped with Westinghouse Metal Clad Switchgear. These five stations are all supervisory controlled by the latest type Westinghouse Supervisory Control from two Master Stations strategically located in different parts of the city.



Architect: Herbert E. Murton, Hamilton, Ontario

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- **Colorful**
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The new Globe and Mail Building at Toronto is floored with J-M Asphalt Tile. The pleasing effect shown in corridor above is typical of its modern beauty.

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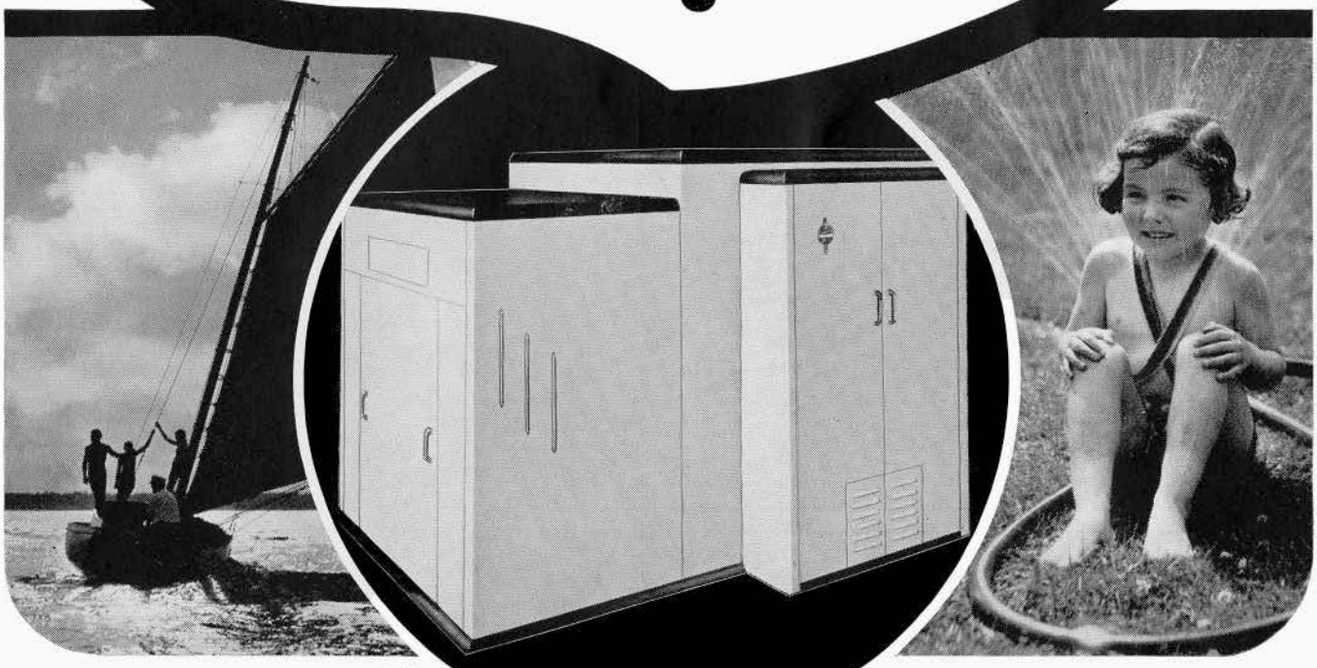

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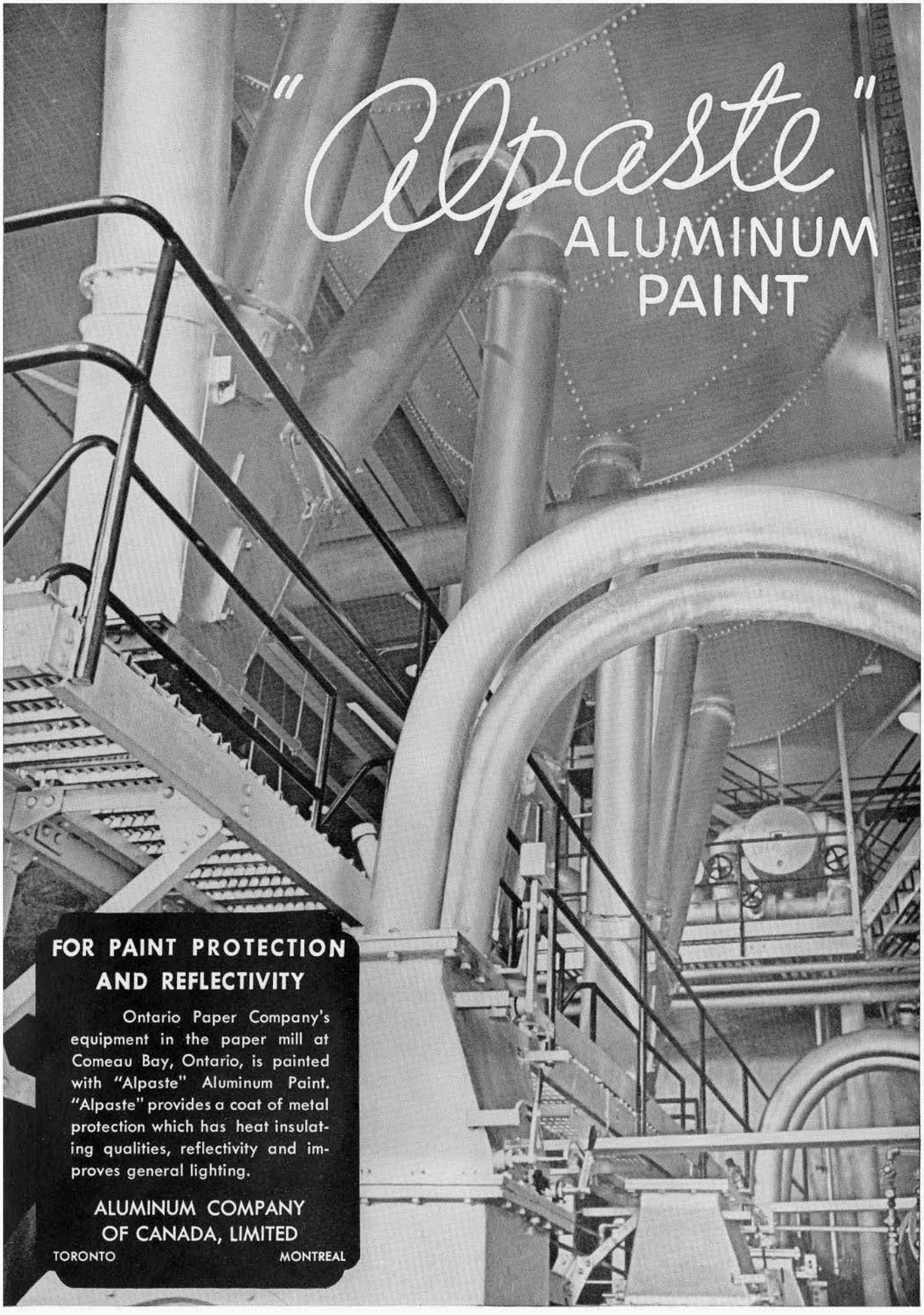
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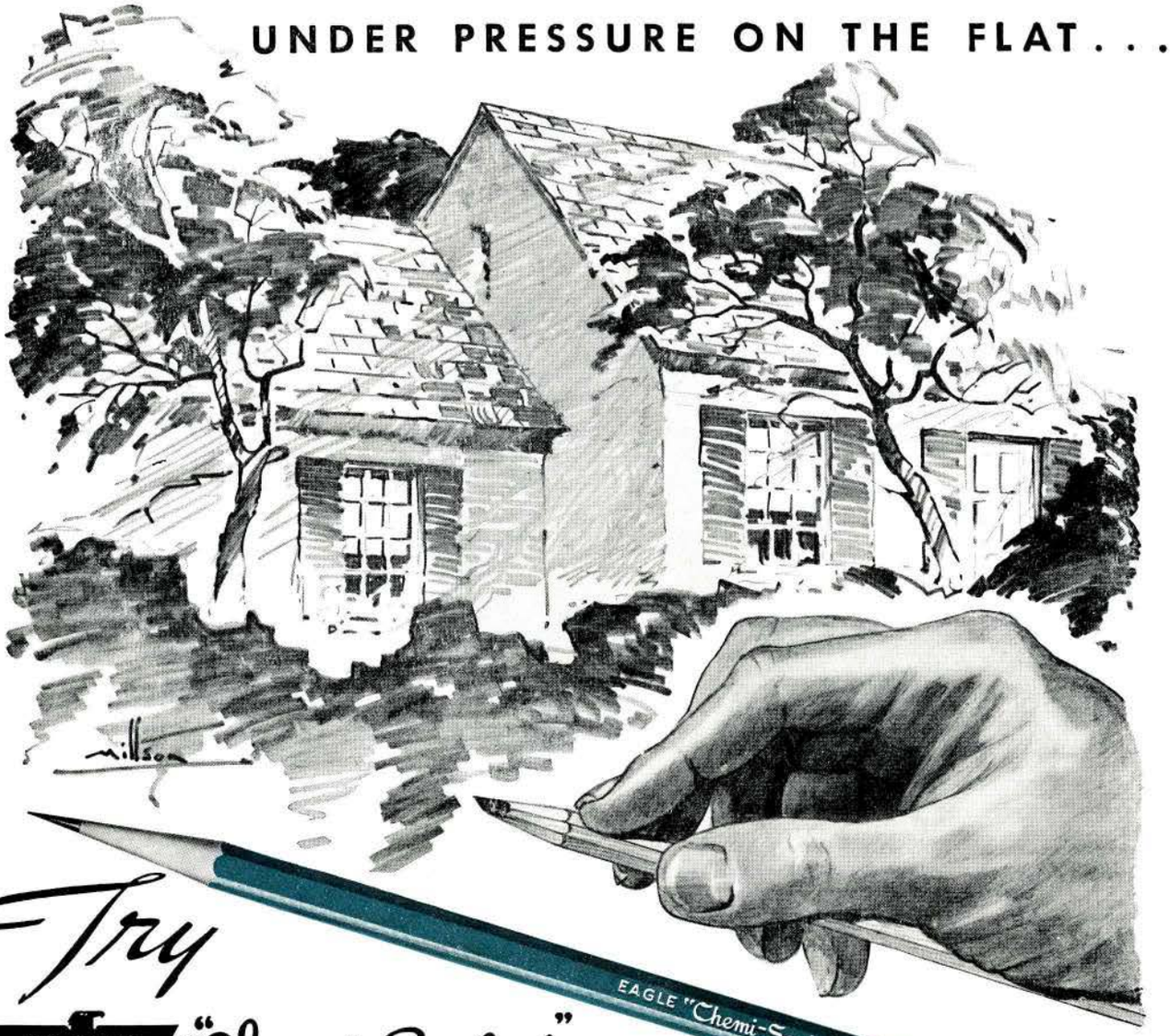

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