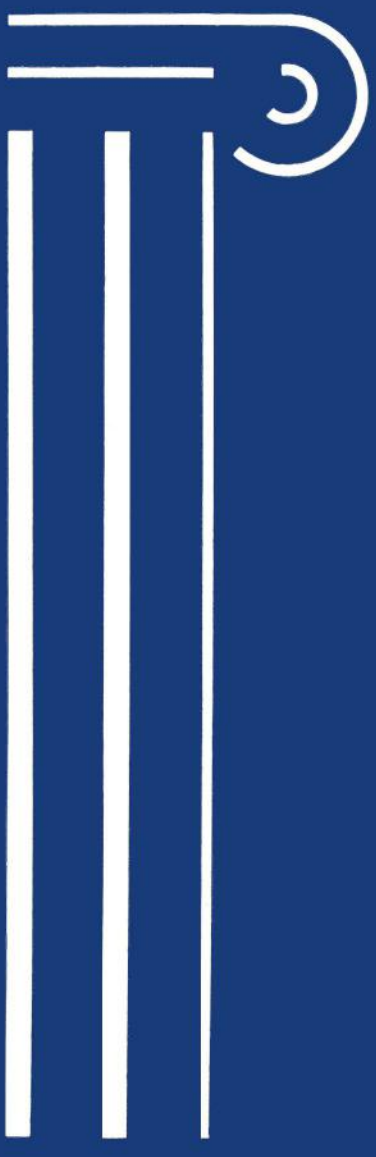
JOURNAL

ROYAL ARCHITECTURAL
INSTITUTE OF CANADA



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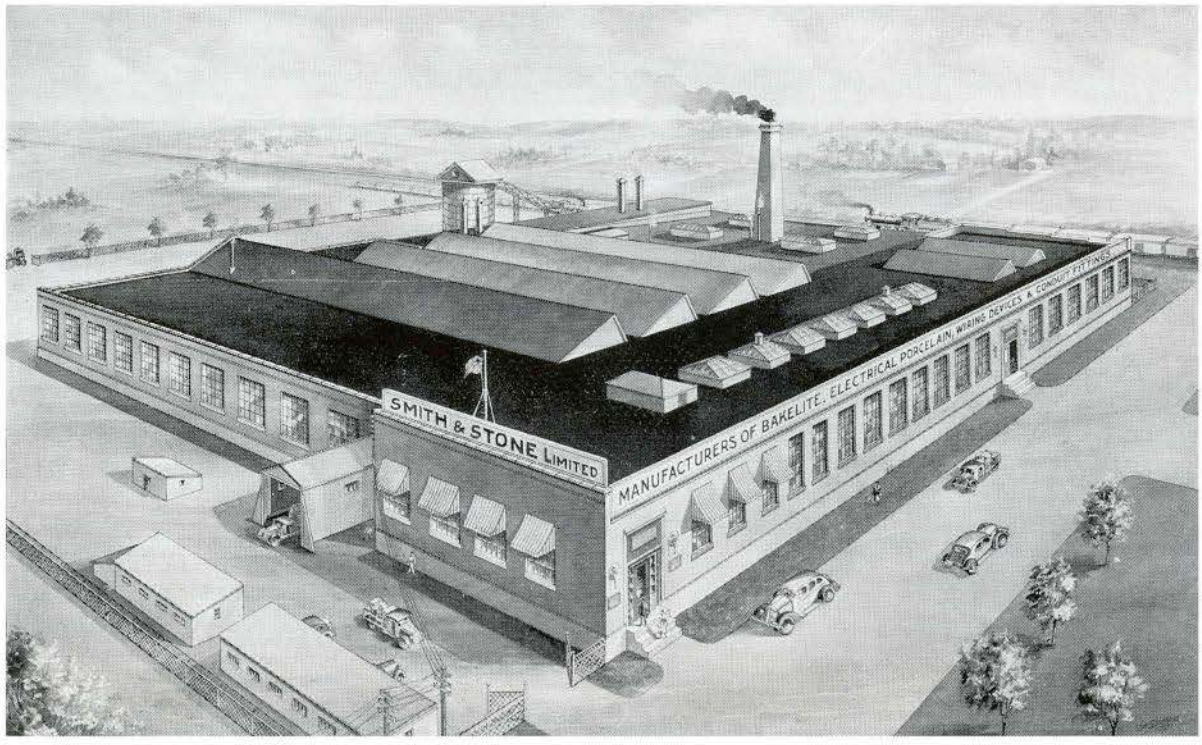

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JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 174 TORONTO, FEBRUARY, 1940 Vol. 17, No. 2

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Editorial and Advertising Offices - - - - - - - - - 57 Queen Street West, Toronto

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SUBSCRIPTION RATES

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

WE have just received Arquitectura, which comes to us in exchange for the *Journal*, the "organo oficial de la sociedad de Arquitectos del Uruguay", of which Mr. Alcide Chaussé is a corresponding member. That in itself would endear the profession in Uruguay to us, but in addition we find the President of the Republic, his Ministers of National Defense, Public Works and Public Institutions are all architects. It is true we have read their Journal somewhat haltingly, and lurking somewhere may be a phrase which would suggest that these distinguished members of the Cabinet in Uruguay were all honorary members. It is of slight importance whether they are all architects or whether they allowed themselves to be called "Arquitecto" during their period in office. The point is that their interest in architecture is such that they were willing to identify themselves closely with the architects in Uruguay and to attend their Annual Meeting. We know of no country where such a phenomenon exists, or is likely to occur in this century, and we would like to see Mr. Chaussé instructed to brush up his Uruguayan and send a note of congratulation from the architects of Canada in annual conference to their highly civilized and worthy brethren in that happy South American Republic.

We have as yet been unable to fulfil a promise to obtain articles from England in connexion with temporary structures. The articles which we expected have been published, but were not of a kind suited to Canadian conditions. So far they have all dealt with air raid precautions, and are anything but temporary in appearance, or with hastily erected temporary shelters. We read recently how annoyed the Germans were at the seemingly distinterested tone of the British Broadcasters. Things which would arouse the Germans to a pitch of fury like the announcement of the sinking of a battleship would be followed in the same even voice by the news of the early arrival of crocuses in Devon. The enemy must be equally annoyed to find Englishmen erecting in their gardens quite beautiful A.R.P. shelters that can be enjoyed as arbours between air raids. Pictures of such shelters in *Country Life* show a circular building with a concrete core and dome and exposed wattle in basket weave on the exterior.

We still receive the Journals of Architectural Societies from the British Empire, with their advertising unimpaired, and from most of the neutral countries. The South American Journals, Uruguay and Argentina are lively papers with a good deal of local news liberally sprinkled with photographs of local architects. The Italian Journals come regularly and are profusely illustrated with photographs of buildings and drawings of contemplated work, and are of a high standard. The casual reader has the feeling that the architect in Italy is a person respected in the community, and his buildings are works of public interest and national pride. The Russian Journal is handsomely dressed in a chaste white cover with extremely good lettering, but the plates and photographs are poor. It is rather astonishing that the Russians have made no advance on their own Royalist 18th. and 19th. century architecture and so many issues are devoted to measured drawings of palaces. Considerable space is given to town planning schemes on a large scale, but few photographs appear of actual executed work. Our particular pleasure is always the Journal of the South African Architects. It is extraordinarily fat with much advertising in colour on expensive papers, and is able to hold its readers on a diet of unadulterated le Corbusier, and the modern French Painters. It is true that South African work shown does not always come up to the lofty aesthetic peaks on which the Editors have so securely established themselves, and wide margins and generous spacing add a good deal to the bulk, but the South African Record, by and large, is a most impressive paper, and the architects of South Africa, who receive it, are a remarkable body of men.

For those who are disappointed to find us babbling of crocuses and wattle and Czarist Palaces restored to house Russian labourers, we can only say that our kite of last week fell on a stoney and arid soil. Moreover, political events of the month have left us without a target. We are still not without hope that the Annual Meeting will let loose a flood of eloquence that was denied us in the letters which we expected to get from members. Architects are notoriously poor correspondents, Professor Philip Turner and Sir Christopher Wren notwithstanding.

PRINCIPAL HANDICAPS ON BUILDING INDUSTRIES

AUSTRALIAN AND NEW ZEALAND METHOD OF REMOVING THEM

By H. BRONSON COWAN*

THERE is a growing volume of authoritative opinion that the depressed condition of the building and allied industries on this continent is due to well-defined causes that are capable of adjustment. Similar conclusions were reached in Australia and New Zealand forty years ago. As a result their municipalities and governments have obtained a long start in the application of solutions that only now are beginning to receive serious consideration on this continent.

An imposing list of findings by Canadian and United States commissions, and of statements by municipal and other authorities, could be quoted to show that there are two principal causes of existing conditions. These are, first, speculation in urban land, with consequent inflated prices, booms and depressions, and, second, heavy taxes upon buildings which discourage their erection. These matters are discussed, and methods of dealing with them suggested, in an excellent report entitled, "Our Cities", issued in 1937 by the Urbanism Committee of the National Resources Committee, a body set up by the Federal Government of the United States.

The Committee emphasized the importance of recognizing:

The injurious results of speculation in urban land,

The necessity for obtaining and using a portion of increasing urban land values for the benefit of the public, and,

Reducing municipal taxes on improvements and increasing taxes on land values.

Urbanism Committee's Findings

The following statements are taken from the report of the Urbanism Committee:

"Gambling in land values has contributed to alternate booms and depressions, raising false hopes, encouraging overambitious structures, wiping out private investors, and, all in all, has been one of the major tragedies of American urban life.

"The dispersive developments of recent years have left blighted vacuums in the interiors of our cities and have themselves been vitiated by land prices at a level too high to permit a desirable standard of urban development." (Page 59)

"A real property inventory of 64 cities made in 1934 by the Department of Commerce and the Civil Works Administrations showed that more than one-sixth of 1,500,000 residential dwellings were substandard, about four-fifths of the dwelling units are made of wood, about one-third are over 30 years old, a large proportion are in a state of serious disrepair. Even at their most reasonable figures rentals are so high that they exclude vast blocks of urban families from housing facilities of minimum standard.

"We are now faced with the problem of arriving at a rational urban land policy which, while affording private owners and developers adequate opportunity for wise and profitable land uses, will curb the forms of speculation that prove calamitous to the investing and the taxpaying public." (Page IX)

"A study should be made of the increment tax on real estate in lieu of special assessments, to see whether such a tax would make possible the financing of public improvements more nearly through tax revenue derived from the increased values which these improvements create, and whether such a tax would aid in combatting speculation in land." (Page 81)

"In order that a large proportion of American urban families should not continue to live in unfit dwellings, and in order to supply the urgent need for housing facilities conforming to an acceptable minimum standard for the low-income groups and thus to attack the serious problems of health, welfare and order, which are directly related to inadequate housing, the Committee recommends that:

"State and local authorities should consider the reduction of the rate of taxation on buildings and the corresponding increase of such rates on land, in order to lower the tax burden on home owners and the occupants of low-rent houses, and to stimulate rehabilitation of blighted areas and slums." (Page 76)

Canadian Findings

The foregoing conclusion agrees with Canadian findings on the same subject. As far back as 1916 the Ontario Government appointed a Commission on Unemployment. The chairman was the late Sir John Willison. Included on this commission were Ven. Archdeacon Henry J. Cody (now Hon. Dr. H. J. Cody), W. K. McNaught, C.M.G., and other prominent men. In its report to the Government, the Commission said:

"The question of a change in the present method of taxing land, especially vacant land, is, in the opinion of your Commission, deserving of consideration. It is evident that speculation in land and the witholding from use and monopolizing of land suitable for housing and gardening involve conditions detrimental alike to the community and to persons with small means.

"Further, land values are particularly the result of growth of population and public expenditures, while social problems greatly increase in proportion as population centralizes. The relief of urban poverty calls for large expenditures from public and private sources.

"It appears both just and desirable that land values resulting from the growth of communities should be available for community responsibilities. Wisely followed, such a policy involves no injustice to owners of land held for legitimate purposes, and the benefits which would follow the ownership and greater use of land by wage-earners justify the adoption of measures necessary to secure these objects as quickly as possible.

"Your Commissioners are of opinion that a reform of the present system of taxing vacant lands appears indispensable to lessen the evils arising from speculation in land which contributed to the recent industrial depression, and which makes more difficult any satisfactory dealing with unemployment in industrial centres."

The Repressive Tax on Improvements

A year and a half ago the Dominion Government called attention to the repressive effect of taxes on buildings when it induced Parliament to enact The National Housing Act, described as "an Act to assist in the Construction of Houses". In the preamble of this Act it is stated:

"Whereas, high real estate taxes have been a factor retarding the construction of new houses and it is therefore desirable to encourage prospective home owners to construct houses for their own occupation by paying a proportion of the municipal taxes on such houses for a limited period:"

*Mr. Cowan, in 1938, visited the principal cities of Australia and New Zealand, where he made first-hand enquiries into the matters dealt with in this article.

The fact that since the provisions of this Act came into force the Dominion Government has assumed the responsibility for paying 100 percent the first year, 50 percent the second year and 25 percent the third year, of all municipal taxes on buildings, erected under the Act, costing $4,000 or less, shows how clearly it is recognized that taxes on buildings interfere with their construction. It is of interest, therefore, to note that, whereas, only 12 percent of the number of single-family houses built for owner occupancy in 1936 were valued at $4,000 or less, and 30 percent in 1937, these percentages, after this provision of the act came into force in July, 1938, jumped for the first full year to 56.5 percent. Such an increase raises the question what the increase might have been had it been announced that all municipal taxes on buildings were to be removed permanently.

The Australian and New Zealand System

Forty years ago municipalities in Australia and New Zealand began to realize the injurious effects of having land held out of use for speculative purposes and of taxing buildings. In 1901 in New Zealand they began to remove all taxes from improvements and to increase them on land values. The results proved beneficial. Other municipalities soon followed the example thus set. Today 67 percent of the people living in cities in New Zealand, and about the same percentage in Australia, live in municipalities where there are no taxes upon buildings and where the bulk of the revenue is raised from a tax on land values.

The Sydney Harbour Bridge in Sydney, Australia, affords a striking example of the benefits derived from retaining for public uses a large share of increases in land values created by the expenditure of public monies. It was realized from the start that the erection of the bridge, one of the largest in the world, which cost $45,000,000, would enormously increase land values in the territories which it would serve. A special tax of one cent a pound ($4.80) of unimproved land values was imposed in nine municipalities which would be benefited the most. This tax, which was reduced gradually, was in effect from 1923 until 1937. Small as it was, it produced a revenue of $10,000,000 which was applied upon the cost of the bridge. In spite of the tax, land values increased. Thus no injustice was imposed on the land owners concerned, while the public benefited by escaping the heavy taxes which otherwise would have been imposed. The tax had the further effect of checking speculation in the land enhanced in value by the erection of the bridge.

Other examples of the same kind could be cited. For example, in New South Wales, the development of motor traffic necessitated expenditures upon main roads, which were beyond the means of local municipal bodies to meet. It was realized that these improved roads would increase land values in the territories served. A Main Roads Board was appointed. Part of the revenue of the board was drawn from a tax of one-half cent on each pound ($4.80) of unimproved land values in the City of Sydney, the adjoining County of Cumberland and the Blue Mountains Shire. In one year $1,158,273 was raised from this tax and the following year $1,300,630. This tax was in addition to the bridge tax and the regular municipal taxes on land values.

No Tax Upon Buildings

The building industries received a great impetus when all taxes were removed from improvements and placed on land values. The immediate effect was that land values were decreased through speculators relinquishing their holdings. This made it easier for those desiring to build to secure land for that purpose. Ultimately the demand for land for building purposes was so great it restored and finally greatly increased the former land values. The new values were actual as they lacked the former speculative element. The following statements by authorities speak for themselves.

Sydney, Australia, Roy Hendy, City Clerk: "Notwithstanding, the municipal revenue is derived entirely from land values, land tends to increase in value; having increased, during the past 22 years, from $155,000,000 to $235,000,000 —51%."

Brisbane, Australia, City Assessor's Department: "Land tends to increase in value. As far as we can judge, the system has come to stay."

State of Victoria, Australia, Frank A. Henry, American Consul, referring to fourteen municipalities: "The incidence is to bring idle land into use. It tends to increase land values."

Wellington, New Zealand, E. P. Norman, City Clerk: "There is no difficulty in getting revenue by this system."

Extensive Building Developments

The effect of the new system of taxation was to create a building boom that was based on a legitimate demand for buildings as well as on sound values. The metropolis of Greater Sydney affords an example. It comprises over 50 municipalities. All these municipalities, except Sydney, adopted the new system of taxation in 1908. The municipality of Sydney, which comprises the central business area of the metropolis, did not adopt it until 1916.

In 1925, Alderman J. R. Firth, who still is a strong advocate of the system, described the results of the first 17 years' experience under the new method of taxation. On that occasion he said:

"In Sydney there has been an enormous development. In the seventeen years from 1908 to 1924 our population has grown from 550,000 to just over 1,100,000 and by Sydney I mean the City and the surrounding forty metropolitan municipalities" (now over 50). "There has been an extraordinary building boom, interrupted in some degree only during the years of the war. The returns for 1924 show that the number of new buildings brought to completion and connected with the water supply is the largest on record.

" 'The official figures,' says the Sydney *Daily Telegraph* of 24th December last, 'indicate that the building boom has been more than maintained, as the building trades are busier than ever. The result is that the City is being transformed day by day, and as the old landmarks disappear modern and palatial premises fill their places.' The 'old landmarks' referred to mean shanties and antiquated tumble-down buildings.

"Here are the official figures of new buildings in the metropolitan area as published in the Sydney *Morning Herald* of 24th December, 1924, showing the results for the last eleven years:

	Buildings Completed	Cost
1914	10,546	£ 6,775,548
1915	7,632	5,124,464
1916	6,283	4,479,118
1917	5,401	3,595,992
1918	4,998	3,726,896
1919	5,830	4,788,804
1920	10,015	9,273,569
1921	8,537	9,655,163
1922	9,084	9,917,963
1923	10,450	10,133,116
1924	12,180	14,346,071

"The increased population, all but a fraction of the half-million we have added, has settled in the suburbs where land had been 'held for a rise'. The vacant areas have been peopled and the houses have spread themselves out, because the inhabitants have not been held in by a ring fence of monopoly prices for land. I could give many examples to illustrate this spread of population where room was awaiting it. Thus the municipality of Canterbury, five miles from the central area, had a population of 4,000 people in 1901; today, it has over 50,000 people and I think it would be correct in saying

that every one of the houses there has sunlight all round it. In my own borough of Strathfield we have made use of our powers under the law to limit houses five to the acre and we have neither terrace houses nor semi-detached houses. Each is a detached house. The growing population has got land cheaper than it otherwise would, and this has ensured liberal space for each house, larger than was provided before the new system came into operation."

Better Buildings Erected

The following statements, made early last year, by municipal and other authorities, concerning the general effects of the Australian and New Zealand system of taxation (it is in use, also, in the Transvaal, South Africa), afford an interesting contrast to the results obtained under the system of taxation followed on this continent:

Sydney, Australia (Population 1,360,000), Roy Hendy, Town Clerk: "It has brought idle land into use, improved housing, and old buildings have been replaced by new buildings."

Brisbane, Australia (Population 360,000), The City Assessor's Department: "It has brought idle land into use, with fewer houses per acre. It has not created congestion. We have no slum areas. It has been advantageous to householders, industry and the public welfare.

Napier, New Zealand (Population 18,500), F. R. Watters, Town Clerk: "It has brought idle land into use, improved housing, and reduced slums. There is very little slum area. It has encouraged more houses per acre. In my opinion, it has been advantageous to householders, industry and public welfare. Value of improvements greatly exceeds that of land values."

Witbank, Transvaal, British South Africa, J. J. Turnbull, Town Clerk: "The system has tended to bring idle land into use for the reason that a man pays the same tax for a vacant piece of ground as he does for a similar site with a valuable rent-producing building thereon. Generally, better buildings are erected now than prior to the introduction of the system. Improvement values are more than four times the land."

Comparison of Building Statistics

The April issue of *The Municipal Review of Canada* contained a table giving a comparison of the building activities in eighteen countries. The following figures are derived from that table. The year 1929 is used as an index year.

	1929	1932	1935	1937
Canada	100.0	16.8	18.6	24.0
United States	100.0	17.7	26.9	47.9
New Zealand	100.0	22.3	49.5	81.8
Australia	100.0	22.7	80.0	99.5

After the war Canada once more will be faced with the necessity of providing gainful employment for thousands of her soldiers as well as for other thousands now engaged in wartime industries. Might not the adoption of the Australian and New Zealand system of municipal taxation provide a solution for this problem and at the same time place our building trades on a sound basis?

33RD ANNUAL MEETING R.A.I.C.

50TH ANNUAL MEETING O.A.A.

TORONTO

FEBRUARY 16TH AND 17TH

EVERY EFFORT IS BEING MADE TO MAKE THIS MEETING AN EVENT IN THE HISTORY OF THE INSTITUTE. THE PRESIDENT EXPECTS EVERY ARCHITECT WHO CAN, WILL BE THERE.

SOME OBSERVATIONS REGARDING FROST ACTION

By A. F. GILL and J. F. J. THOMAS, *National Research, Ottawa.*

THE action of frost on soil masses has long been recognized as a major cause of deterioration of highway surfaces and it has been studied by numerous laboratories and field investigators, particularly during recent years. At the 1938 meeting of the United States Highway Research Board a very informative session on prevention of frost heave was held and the consolidation of the papers then presented, as published in the Proceedings, supplies very interesting reading to anyone with more than a passing interest in the subject. In addition, laboratory investigations, reported from time to time, have served to establish certain principles which may now, it is believed, be taken as fundamental.

Detrimental frost action manifests itself in two main ways. First, there is the *frost heave* in which vertical and, to a lesser extent, horizontal movement of soil surfaces takes place during the process of freezing. Secondly, there is what is commonly known as the *frost boil* which often does not appear until after thawing of the road surface has set in. It is characterized by the development either of an isolated eruption or of a comparatively widespread morass. Both of these phenomena are caused by the action of frost in the presence of moisture. Under ordinary conditions mere freezing of sub-grade moisture *in situ* is not a significant cause of either frost heaves or frost boils. In order that the effect may be appreciable, it is necessary that conditions be such as will allow the migration of moisture from sub-grades or adjacent areas such as road shoulders to build up ice plates at the freezing surface. The migration of water in this way is a recognized physical phenomenon and, other things being equal, it is a function of the capillarity of the medium through which the water must move if the water table is low, and of the permeability if the water table is high.

The resultant ice plates may be of a lamellar nature, or they may be the well-known "Jack Frost" needles. In either event greater or less surface movement results. If weather conditions are such that thawing of the frozen soil takes place from the top downward—and this need not always occur—the time comes when there is a frozen and relatively impermeable sub-grade, surmounted by a soil mass containing the excess water resulting from the melting of the ice plates. Thus, is brought about the frost boil.

The conditions necessary to detrimental frost action on soil surfaces are thus, in brief, a supply of water that is free to migrate and a temperature gradient running from above the freezing point of water to somewhat below it. The recognition of these facts—for which we must thank the students of soil phenomena—has, it is believed, more than passing significance to those interested in concrete road construction and also to those concerned with the action of frost on masonry in buildings and other structures. It is recognized that under some conditions concrete highways will spall, and also that some brick and other building units, particularly those of the porous types—although not necessarily all—have characteristically low resistance to frost action.

Frost is also recognized as one of the major reasons why rock formations, whether igneous or sedimentary, are eventually broken down into earthy material. Most of us have been told at a very early age that the action of frost under such circumstances is due to the fact that ice occupies approximately one - seventh more volume than water. The trouble is that when water-saturated materials freeze they sometimes spall and sometimes do not. The laboratory investigation of building units and of concrete materials generally has been largely along the lines of conventional freezing and thawing tests. It is believed that it is a fair statement to make that the results of such tests must be interpreted with a great deal of caution.

The view that it is mere expansion of water into ice that exerts the disrupting effect on a saturated, porous matrix led in early studies to the belief that a more porous body would be more susceptible to frost action. The fact that this was not always true has been explained in some measure by the conception of a saturation coefficient. In other words, certain stones or masonry units, because of their chemical or physical nature or of the structure of their voids, do not become completely filled with water when apparent saturation has been reached. As a result, when freezing occurs there is still room left for the water to expand and no harm is done. Even with this rather elastic provision the forecasting of the behaviour of stone or masonry on the basis of laboratory tests cannot be considered to be very satisfactory. It is probably fair to say that materials that are relatively very dense do show better frost resistance, but this, it is believed, is only part of the story.

In studies that have been made of the deterioration of masonry structures, particularly by the Department of Scientific and Industrial Research in England, some rather interesting observations have been made. For example, masonry monuments and other structures prior to, say, one hundred years ago, were generally laid up in mortars of comparatively high porosity or, more accurately, probably, permeability. In numerous instances these structures have given very good accounts of themselves from the ageing and weathering point of view. However, in recent years it has been observed that when such structures were repointed with dense mortar, the effect upon the unit so bonded was often disastrous, in that spalling immediately set in. The explanation offered was that the spalling was due to migration of soluable salts derived either from the mortar, from the unit, or possibly through the action of atmospheric sulphur gases on calcareous materials; with a permeable mortar the soluble salts tended to migrate through the mortar and, as they crystallized, the mortar spalled off; when a relatively dense mortar was used migration tended to take place through the building unit with the result that the spalling, when it occurred, did much more damage.

It is believed that the concentration of soluble salts in quantities sufficient to disrupt the masonry, is closely parallel to the concentration of ice in similar localities brought about by similar migration.

In parts of Canada where the temperature stays well below the freezing point for several months of the year with only short periods of thaw, it is sometimes possible to remove a brick or a section of stucco from the exterior of a building and find a layer of ice in the interior of the wall. Such ice might originate from rain or snow or from moisture coming through from the inside, reaching its dew point, condensing, and eventually becoming solid. In either case there is an accumulation at what is presumably the "frost line".

Consideration of the conditions bearing upon the weathering of soil masses, concrete road surfaces, masonry buildings and masonry dams and retaining walls, shows that they have

in common the factors mentioned above as being necessary to detrimental frost action, *i.e.*, a temperature gradient from above the freezing point to below it, a degree of permeability, and moisture available on the warm side to migrate to the point at which freezing is taking place.

On this basis the criterion of the weathering resistance, so far as frost is concerned, of any masonry material, would not be so much a matter of its porosity or absorption, as of its permeability. As is well known, these two characteristics need not necessarily parallel one another. The measurement of permeability is not always a very easy task, particularly in ceramic or cementitious products. On the other hand, the most reliable criterion of the suitability of any material for a given purpose is the test that most closely reproduces the sequence of conditions that it must withstand in service, in their proper relative magnitude. According to the above reasoning the conditions that should be observed in any test of the stability of a road mass, a concrete slab, or a masonry structure, to frost action would be those already outlined.

In preliminary tests made in these laboratories nearly a year ago, indications were that it would be possible to test building units and concrete specimens in accordance with these conditions. A thermostat was constructed in which one or more brick or concrete specimens could be stood on end and partially immersed in water, the upper end being exposed to the air of a cold room at a temperature considerably below the freezing point. The specimen was surrounded with thermal insulation at the point where it left the water, so that no difficulty was encountered in keeping the water above the freezing point. In this apparatus it was found possible to spall more porous types of brick in the course of less than 48 hours and the formation of an ice plate at the point of fracture was plainly discernible.

Some brick failed to break in the test but no quantitative data were available as to the relative permeability of the brick nor was there any information on their behaviour in service.

As a result of this preliminary work it was planned to undertake a comprehensive laboratory investigation having as its object the development of a test procedure for frost resistance based on these principles. The outbreak of the war has, however, made it necessary to postpone this work.

THE GENESIS OF A HOUSING PLAN

Answers From Reports of Social Service Investigators

Woman and house neat but bare.

Man has ulster on his stomach.

Woman is saving up for an illness.

Couple breaking up home, friends helping.

Milk needed for the baby and father is unable to supply it.

Until a year ago this applicant delivered ice and was a man of affairs.

Couple have been completely stripped. Now barely able to get along.

These people are extremely cultured. Something should be done about their condition.

Since Christmas family has been living on a Democratic Club basket.

Man has diabetes and is insulated twice daily.

Couple's only source of income is four boarders all out of work. They owe $600.

Man aggressive—has nine children.

Applicant's wife is making little garments through the kindness of a neighbour.

Nice, quiet home family. Dorothy has been out since July.

Roomer pays no board as he usually acts as godfather.

The people have religious pictures all over the place, but seemed clean, however.

Man recently had operation but is able to hold any position he assumes.

Sophie is married to a sailor and her whereabouts are unknown.

Apartment crowded and untidy. Saw evidence of girl in clothing.

Woman says they are a delicate family and must have steamed apartment with eggs and oranges.

Applicant has one child, Lillian, who is three months old and owes 12 months rent.

Saw woman. She has seven children. Husband a veteran.

Applicant is typical real American. He is the father of eight children.

Woman still owes $45 for a funeral she had recently.

Woman in quarry, too old to work, too young for pension.

Man hit by automobile—speaks broken English.

This woman is ill, being treated. The gas has been turned off.

The daughter, Mary, is active mentally and otherwise. She has advanced herself but not at home.

From James Mather, M.D., D.P.H., Branch County Health Dept., Coldwater, Mich.

From Health Department Records, taken from records of social workers in Florida and appeared in a local paper, "Jonesville Independent".

THE HUDSON'S BAY COMPANY, EDMONTON, ALBERTA

By H. H. G. MOODY

IN designing the new Retail Store building for the Hudson's Bay Company, in Edmonton, there were three problems which made the project more difficult than the ordinary straightforward building job on a new unobstructed site.

First—The new building had to be built on the site of the old Retail Store. This comprised a group of several old buildings of various constructions and floor heights occupying a site 320 feet frontage and 150 feet deep.

Second—The retail business of the Company had to proceed with as little disturbance as possible, during the course of construction.

Third—The new building was to be designed for three stories and basement but only two stories were to be built at present, leaving a future third storey to be built at a later time, as the city and business expanded.

The first two requirements made it necessary to plan the construction work in three sections, to be built consecutively and to finish each section completely for the Company to occupy before starting the next. This made it very necessary to work out a careful time-table for the building operations and to rigidly conform to this schedule; also it was essential to plan in advance all the moves of the various departments of the store as the sections were completed. A good deal of temporary work such as bridges and covered ways had to be included to connect up the various parts of the occupied store during the construction periods, and all parts of the mechanical equipment had to be planned to give efficient service at all of the various stages. As in any commercial building project, costs were a prime consideration and had to be accurately estimated in advance and taken care of in a stipulated sum contract which had to include all of this temporary work.

The third problem of designing a building to look well as a two storey building for an indeterminate period, and to provide for a future third storey for the completed building, is always one that calls for a good deal of extra study.

The building is 320 feet frontage facing on Jasper Avenue, and 150 feet deep with the side elevations facing 102nd and 103rd Streets, and a service lane at the rear.

The four main entrances, one on each of the side streets, and two on Jasper Avenue, are flanked by four (4′-0″) foot wide pilasters of Polished Bonnaccord Black Granite which material also forms a twelve (12′-0″) foot high base and a background for display windows on all three street frontages. Above this the walls are sawn-faced Manitoba Limestone ashlar. The only decorative treatment on the building is contained in six (6) wall panels—over each of the four entrances and at the two main corners. The corner panels have incised inscriptions—one to do with founding of the Company, the other to do with the founding of Fort Edmonton. Surmounting each is the Company's coat-of-arms incised in the stone. The coat-of-arms and inscription at each corner has been done in colour and gold leaf. The stone panels over each entrance between the black granite pilasters contain an incised carving, each motif to do with some phase of the Company's history: a fur trapper and an early settler over each of the Jasper entrances; a York river boat, and the first ship trading into Hudson's Bay over each side entrance. Above these carvings is the name "Hudson's Bay Company" cut from aluminium plate and ducoed a dark green.

The awnings for the display windows disappear into a stainless steel band twelve (12″) inches wide which is continuous around the three street elevations. The entrance doors and frames are recessed and made of stainless steel with a transom panel of glass brick over each set. The second storey lighting is also done in glass brick, as a continuous horizontal band, the sill seven (7′-0″) feet high from the second floor in order to have unrestricted wall space inside for fixtures.

On the first floor a section at the rear centre, 140′ x 36′, facing the lane, is used for delivery loading and receiving. This is all done under cover through six (6) large electrically controlled overhead doors. A freight elevator and parcel chutes are located at each end of this delivery yard. Goods are received here, taken to the basement for unpacking and marking, then distributed into stock. Also parcels going out are all sorted in the basement below the delivery yard then sent up to the delivery trucks via each side elevator. The remainder of the first floor is used for selling.

The two main stairs are located on the intersections of the main aisles leading to entrances and escalators are located just inside the two Jasper Street entrances. Provision has been made for two passenger elevators, which may be installed at a later time.

The second floor is also used for selling except for the business offices located immediately above the delivery yard, a beauty parlor, and lavatories.

Part of the basement is used for the foods department and a coffee shop restaurant; a large section is devoted to stock rooms, and the remainder is taken for mechanical equipment, boiler room, parcel sorting, opening and marking rooms, etc.

A penthouse at the rear which will form part of the future third storey, is used for employees' rest rooms, work rooms, and the two large fans which distribute the heated conditioned air.

The building is built of reinforced concrete flat slab construction. It is provided with a sprinkler system and the most modern electrical equipment. The heating system provides for winter air conditioning with future provision for cooling. The steam is generated by two gas fired boilers in the basement and conducted to banks of steam coils in the two fan rooms located each side of the building in the penthouse. From here the air is washed, humidified and warmed and distributed to the building by duct work, discharged through louvred grilles from the ceilings. The building is divided into four (4) zones, each automatically controlled to give an even temperature for all weather conditions.

The general contractors, Messrs. Bennett and White, and the contractor for heating, plumbing and sprinklers, H. Kelly and Company, achieved a record in finishing the first two sections six weeks ahead of schedule, which meant that the Hudson's Bay Company were able to do business in the new store for the Christmas trade of 1938.

The third section was started early in 1939 and completed in September, 1939.

HUDSON'S BAY COMPANY STORE, EDMONTON, ALBERTA

MOODY AND MOORE, ARCHITECTS

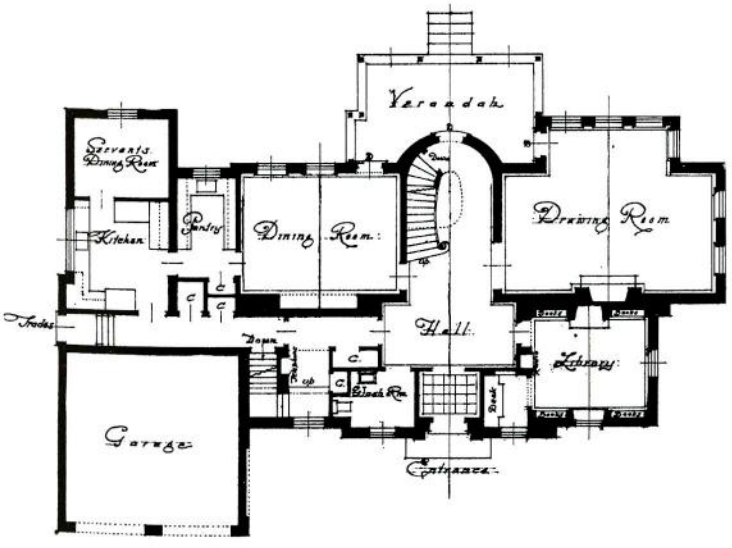
ENTRANCE DETAIL

INTERIOR DETAIL OF THE BEAUTY SALON

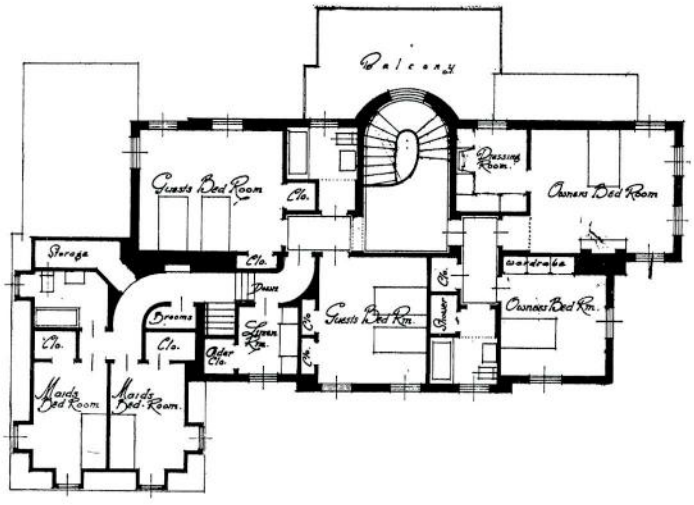
INTERIOR DETAIL OF THE COFFEE SHOP

HOUSE OF MR. IAN MACLAREN, TORONTO, ONTARIO

WILLIAM RALSTON, ARCHITECT



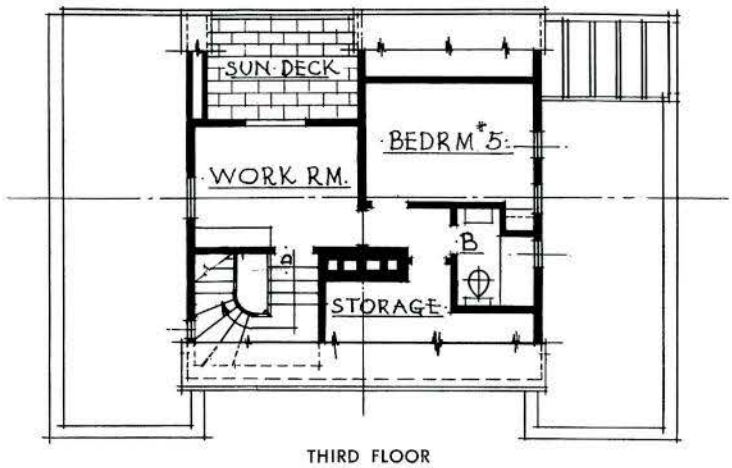
FIRST FLOOR PLAN



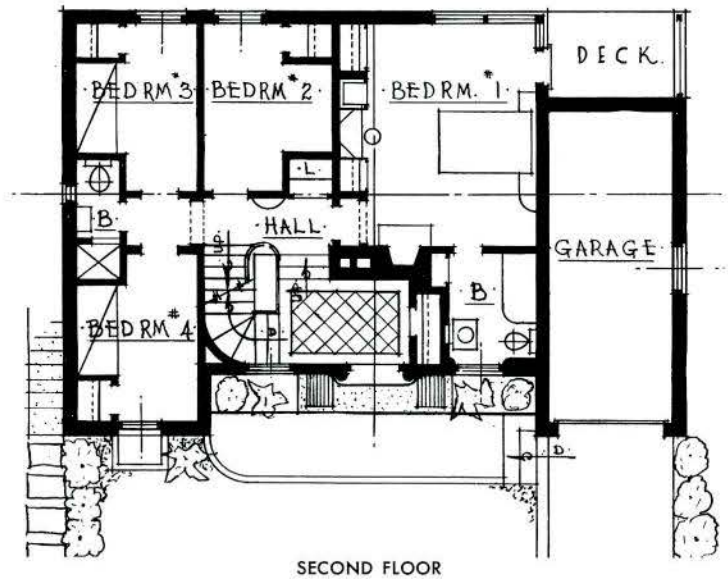
SECOND FLOOR PLAN

HOUSE OF MR. R. A. FISHER
TORONTO ONTARIO

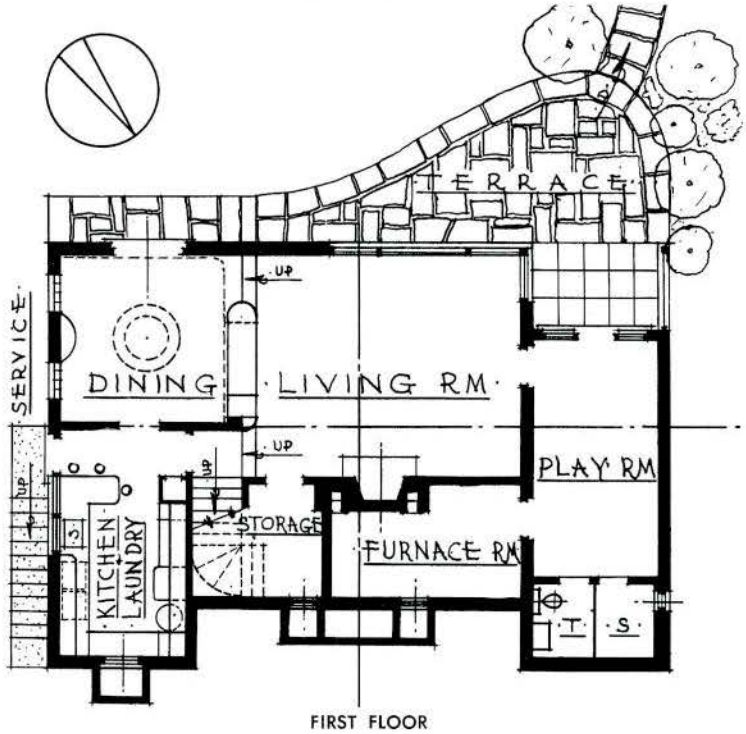
WILKES AND FISHER, ARCHITECTS



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

The steeply sloping site, in addition to dictating the rather unorthodox section of this house, posed some structural problems which were solved by pouring a deep reinforced concrete beam, some six feet deep by one foot wide under the entire rear wall of the house. This beam is internally buttressed at four points by returning the beam back (and stepping up to regular footing level) under both side walls, under the wall between garage and house, and at the lateral concrete beam forming the step between Dining and Living Room. The wood floors at the lower level are on sleepers laid directly on the concrete. The warm air heating returns are encased in concrete beneath the floor, and in addition return air is drawn mechanically through the space between finished floor and concrete slab; a device which prevents dry-rot and at the same time keeps these floors as warm as if a heated Basement were underneath.

The Living Room and Dining Room are actually one space, separated by a two step difference in level, and a bookcase-sideboard fitment containing also a built-in radio-gramophone, record racks, etc. The Dining Room can be completely separated for table setting, etc., by a curtain sliding on a metal track in the ceiling. The Kitchen also serves as doubled-up space, a section of the linoleum covered counter top being removable to expose a pair of laundry tubs. The projecting portion of counter top is fitted with folding seats to form a children's lunch bar (or for more adult entertainment). The Play Room (known locally as the Bomb-proof Room because of its reinforced concrete slab ceiling) with its adjoining toilet, serves as children's entrance.

On the bedroom floor an attempt was made, insofar as is possible in a small house, to separate adults' and children's "wings". The two bunk rooms and bath are a self-contained unit; Bedroom No. 2 (nursery) has a recess for future bunks, or by removing the non-structural partition between, be combined with Bedroom No. 3. The sill of the large corner window in Bedroom No. 1 has been kept just twelve inches above the floor so that the view may be enjoyed without getting out of bed; those in the children's rooms were kept three feet high, to discourage falling down the Valley.

1. South-east wall of Dining Room. 2. Living Room looking North from Dining Room. 3. Living Room looking West from Dining Room. 4. Living-Dining Room. 5. Entrance from road. 6-7. Exterior views from ravine. 8. Stairs from entrance landing.

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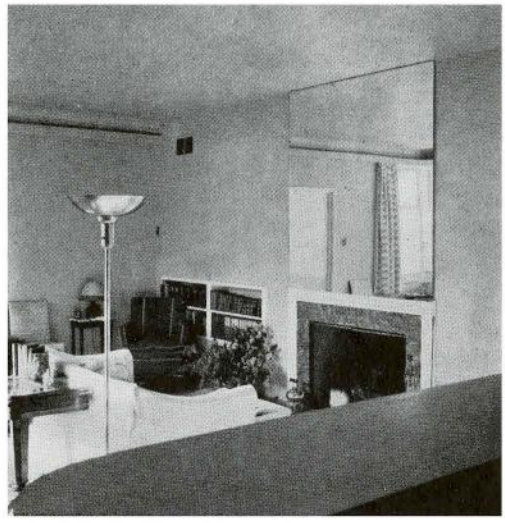

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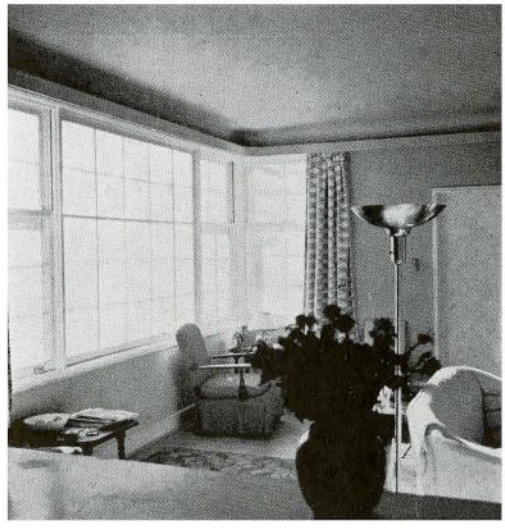

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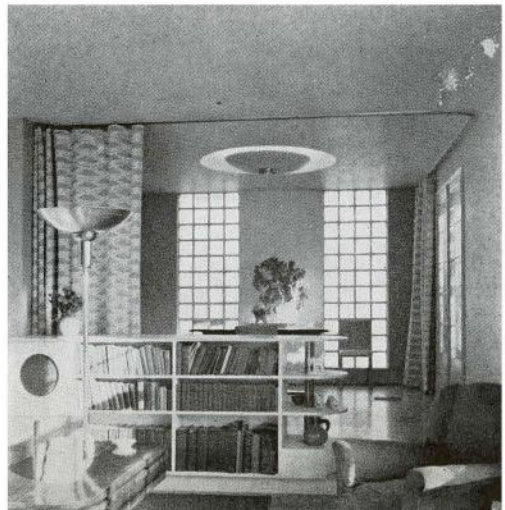

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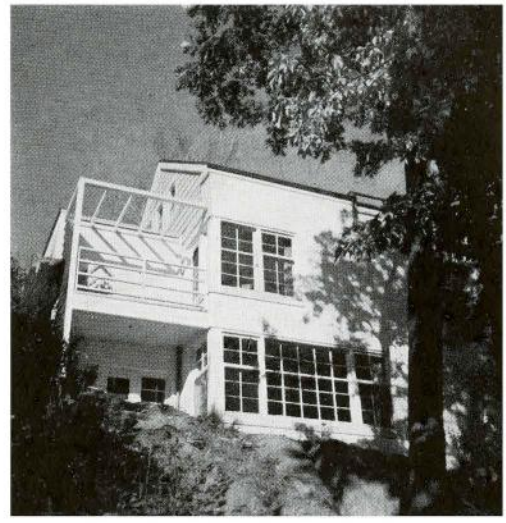

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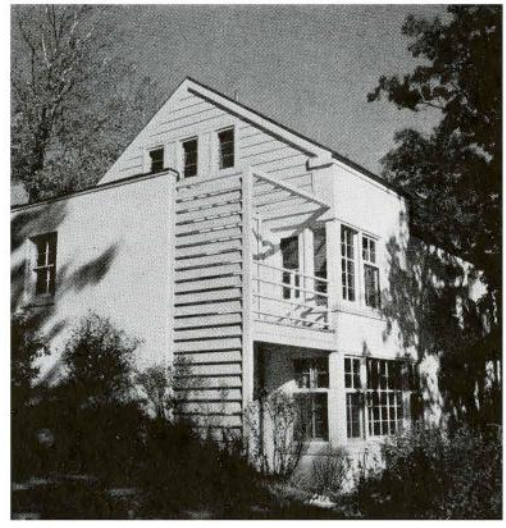

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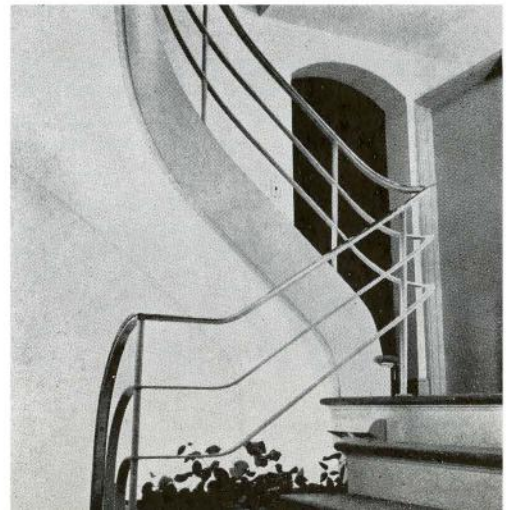

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PROVINCIAL PAGE

ALBERTA

I have received the following summary of building in Lethbridge and district for the year 1939-40 from Mr. Victor Meech, Architect:—

"A picture of the increased activity in the City of Lethbridge, for the past year, over the previous year will be seen in the fact that building permits issued have advanced over 100% from $200,000 in 1938 to $425,000 in 1939.

"To a lesser degree this activity is true of the immediately adjoining irrigated district involving a territory within a radius of, say, about 30 miles. In the dry land area beyond this, except in Cardston and vicinity, there has been little relative improvement.

"Some public work moneys are included in the permits for 1939, but in the main the increase is due to the erection of three buildings totalling roughly $125,000,—an apartment house, a new bottling plant and warehouse complete with new machinery for the Lethbridge Breweries Limited, and a utilities building for the Canadian Western Natural Gas, Light, Heat and Power Co., Limited.

"Small residential building in the $3,000 class has made a substantial gain and the conversion of a number of large old houses into suites has also caused a large expenditure.

"On the whole Lethbridge has experienced an exceptional year for a community of its size.

"A shortage of building sites within the built-up area of the city is pressing the question of the expansion of utilities. This in turn is causing some agitation for a Town Planning Board and it is not too much to hope that the city may have the advantage of such a board in the near future."

Two storeys are to be added, by Messrs. Rule & Wynn, to Woodward's store in 101st Street, Edmonton. This is a branch of the Vancouver firm. Whilst in earlier days Alberta's connections were chiefly with the west of Canada, as time goes on the connection with the east steadily strengthens. The first great step in this direction,—after the completion of the trans-Canada railways,—was the opening of the Panama Canal which gave Alberta farmers, and other exporters, the choice of shipping either east or west according to which offered the better terms. British Columbia always supplied excellent fir and other timber. Vancouver manufacturing firms now take a strong place in Alberta markets.

—Cecil S. Burgess.

BRITISH COLUMBIA

The 1940 Council of the A.I.B.C. met for the first time since the Annual Meeting of the Institute, on January 9th, where Mr. George C. Nairne of the firm of McCarter & Nairne was elected President of the Institute and Mr. H. Blackadder of the firm of Watson & Blackadder was elected Vice-President. Mr. S. M. Eveleigh, who has served the Institute faithfully and well for many years as Honorary Secretary, has been in poor health for some time, but in spite of his disability continues to maintain a keen interest in the welfare of the Institute. He was unanimously re-elected to office. Mr. E. B. McMaster was re-appointed as Executive Secretary.

Mr. William Fredk. Gardiner, Past President of the Institute, will attend the annual meeting and dinner of the Washington State Chapter of the American Institute of Architects, to be held in the Edmond Meany Hotel, Seattle, on Saturday, 20th January. He will officially represent the A.I.B.C.

The Building Industry, which is the life-blood of our profession, has suffered a considerable relapse in Greater Vancouver during the year 1939, values having dropped from approximately 9½ millions in 1938 to 7½ millions in 1939. Over 50 per cent. of this amount of 7½ millions is for residential construction, viz.:—dwellings and apartments. New Westminster, on the other hand, has experienced its best construction period in ten years.

The City of Victoria is looking forward to an increase in residential construction during the ensuing year, basing expectations on the volume of real estate sales which has shown a marked increase during 1939.

—David Colville.

MANITOBA

The Annual Meeting of the Manitoba Association of Architects was held at the Fort Garry Hotel in Winnipeg on January 8th. It would be obviously unfair to the loyalty of our architects to suggest that the free dinner had anything to do with the splendid turn-out at the Annual Meeting, or that the liquid refreshments had anything to do with the enthusiasm, but it was a good meeting, a great deal of business was transacted, everyone had a good time, and we had the pleasure of commiserating with each other over what the war would do to architecture and the architects.

The new officers elected for the coming year are: President, C. W. U. Chivers; Vice-President, Col. J. N. Semmens; Secretary, E. Fitz-Munn; Council members, Edgar Prain, Arthur E. Cubbidge, Peter Dobush, Ralph Ham, M. S. Osborne, E. Parkinson, G. Leslie Russell, and F. N. Ruttan. A new member of the Association, George Alan Martin, was introduced.

Mr. W. H. Shillinglaw, of Brandon, Manitoba, for 35 years a member of the Manitoba Association, was elected an Honorary Life Member by acclamation.

Certain revisions of the existing by-laws were discussed, but the matter was left to the incoming Council for action. A sincere hope was expressed by the Meeting that uniform laws might be established throughout the Dominion, regulating the inter-provincial practice of the profession of architecture. It was felt that the present system tended only to emphasize provincial lines and to build up walls of misunderstanding between provinces and sections of the country.

The practice of holding monthly luncheons was approved because of the opportunity it afforded the members of the profession to get together informally to discuss mutual problems.

The annual report of the work in the Department of Architecture and Fine Arts was presented by Professor M. S. Osborne of the University of Manitoba.

The president, Mr. C. W. U. Chivers, and Prof. M. S. Osborne were selected by the Meeting to represent the Association at the Annual Meeting of the Royal Architectural Institute of Canada in Toronto.

The retiring president, Mr. Edgar Prain, read his report on the activities of the Association for the past year and expressed his hope for peace, prosperity and international good-will for the coming year.

The guests at the Annual Dinner included Mr. C. S. Adamson, representing the Association of Professional Engineers, Mr. C. D. Brown, of the Manitoba Land Surveyors, and Mr. E. Claydon, of the Winnipeg Builders Exchange.

—Milton S. Osborne.

NEW BRUNSWICK

The Annual Meeting of the New Brunswick Association of Architects was held on January 22nd in the Admiral Beatty Hotel, Saint John. The President reported a "very satisfactory year for the Association". The Meeting was preceded by a dinner, presided over by J. Leonard Heans, Saint John, who was re-elected President. Other officers for the ensuing year were elected as follows: — Vice-President, John L. Feeney, Saint John; Secretary-Treasurer, H. Claire Mott, Saint John; additional members of the Council, H. S. Brenan, Saint John, and Kenneth Campbell, Fredericton; Registrar, Mr. Mott; Auditor, Mr. Brenan; Examining Board, Messrs. Brenan, Feeney, Mott, Heans and W. W. Alward, Saint John.

A great loss to the Association was the death of one of its oldest members, Mr. Harry H. Mott, F.R.A.I.C.

Among the activities of the year was the Association participation in the preparation for the Royal Visit.

ONTARIO

This is the season popularly dedicated to conventions, annual dinners, vestry meetings and similar affairs. Of primary importance to us who depend upon construction for our livelihood was the convention of the Canadian Construction Association, held in Toronto about the middle of January. The C.C.A. is one organization which does not mince words, and it devoted vigorous attention to the irresponsible and short-sighted interests who are urging the immediate abandonment of all building not directly connected with the war effort. Especially encouraging were the words of the President of the Toronto Board of Trade—"Business and industrial leaders should not hesitate even at this time to embark on any sound building project." Other speakers advocated the use of economically justifiable public works as part of a deliberate policy for the mitigation of unemployment, both during and after the war.

Another very interesting subject discussed at the convention was the Manitoba Trust Fund Act. Under its provisions, all sums paid to a contractor on account of work done become a fund held in trust for that particular job, so that no part of them may be appropriated by the contractor for his own use until all liabilities connected with that job have been discharged. A committee was set up to devise ways and means of obtaining, in other provinces, legislation having a similar objective.

The annual meeting of the O.A.A. was held in conjunction with the January luncheon of the Toronto Chapter, and adjourned to the day immediately preceding the meeting of the R.A.I.C. This will enable many of the Association's members to attend the meetings of the Institute as well. Those present at the luncheon heard an interesting and informative address by Controller Douglas McNish, on the progress of the proposed zoning regulations for Toronto, and the two traffic-artery projects which were rejected at the civic elections. In concluding his remarks Mr. McNish appealed for all the help that architects could give in arousing public interest in the zoning problem, so that steps could be taken in the near future to deal with the chaotic mixture of industrial, mercantile and residential developments.

A committee has been formed, representing the Builders' Exchange of Toronto, the Toronto Chapter of the O.A.A. and the Ontario Association of Professional Engineers, for the study of problems affecting the three bodies. This committee should be a valuable adjunct to existing organizations of wider scope, because it can meet on very short notice and, not least, because its members are well known to one another.

—Gladstone Evans.

QUEBEC

At the Annual Meeting to be held on January 27th at the Windsor Hotel, the new members of Council and Delegates to the R.A.I.C. will be elected. For the chief offices no vote is required, and members generally are congratulating the new President, Jean Julien Perrault, on his new honours. Elected a member in 1915, the year in which his distinguished father, the late Joseph Perrault, was President, the son, twenty-five years later, now occupies the presidential chair. Jean has had a wide experience in professional matters and in the work of the Association, having served for many years as a member of the Council. He is also very familiar with the many sides of the building industry, having held the somewhat unique position of President of the Builders Exchange in 1930. J. Roxburgh Smith, a member since 1920, will prove a competent and popular Vice-President.

The *"Review Forecast"*,—the Annual of the *Daily Commercial News*,—has just been published and is an interesting document of 142 pages. All Architects should appreciate the good work done by the Editorial Staff of this paper in obtaining and publishing from leading members of the profession several interesting articles. Amongst these are to be noted that from the President of the R.A.I.C. on the "Planned Use of Construction in the Transition to Peace", which is worthy of serious study. Quebec members also contribute articles on "Industrial Design" (J. C. Meadowcroft) and "Designing Food Plants" (Sydney Comber).

George S. Mooney, director of the Montreal Economic and Industrial Bureau, who addressed the members of the Association at a luncheon meeting last December, has for some time been stressing the absolute necessity of providing housing for the low income class in Montreal. Recently Mr. Mooney announced a proposal to create some sort of reserve housing accommodation in preparation for a complete slum clearance programme, which would necessitate the expenditure of at least $75,000,000.

The present plan, which has been submitted to the Dominion Government and the N.H.A. authorities, is to borrow $5,000,000 from the latter for erection of 1,600 multiple three to six room dwellings in four districts of the city. The districts, selected as being most in need of reserve housing, are as follows: Rosemount Ward; East Central District, in the area bounded by Sherbrooke, Craig, Amherst and Papineau Streets; Cote St. Paul; and Ville Emard.

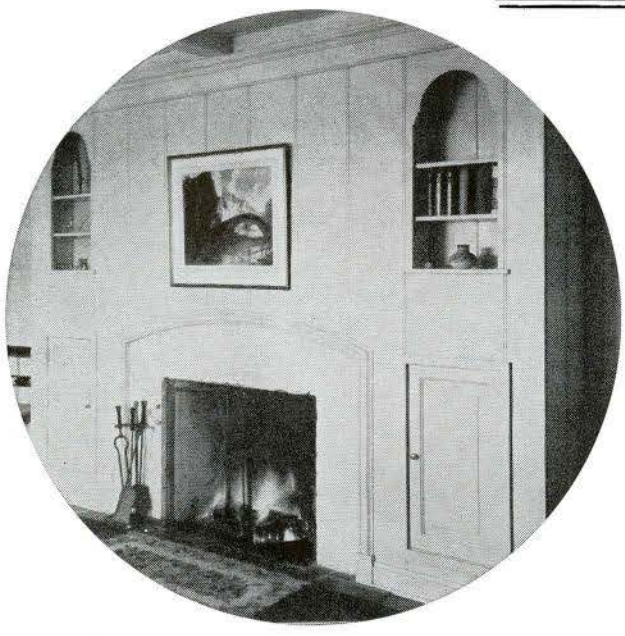
With these houses completed, attention can be turned towards demolition of existing slums and the further extension of the plan. We wish Mr. Mooney success, as the need for low price housing in Montreal is certainly critical at the present time.

Mr. Mooney at the December meeting referred to, presented some striking figures showing the condition of things as they exist in the housing problems of Montreal.

Perhaps the most striking was the fact that the percentage of dwellings vacant in the city was only 1.87, and that by far the largest number of rents (37¼%) comprised those paying 16 to 24 dollars a month, whilst 17¼% paid only 10 to 15 dollars, and 28¼% paid 25 to 39 dollars a month. Another interesting fact is that in Montreal only 12.5% of the inhabitants live in houses of which they are proprietors. In Westmount 41% own their own homes, and in the new town of Hampstead the percentage of privately-owned dwellings is as high as 62.5%.

We were glad to see some of Professor Milton S. Osborne's delightful sketches in pastel of buildings from Finland, in the windows of the Canadian Pacific Express Office on St. James Street last month. This collection of pictures was obtained by the C.P.R., who evidently realise the good work being done by the Professor of Architecture at Winnipeg, having purchased a year or two ago a collection of the sketches of Mr. Osborne's that he made on a holiday in Alaska.

—Philip J. Turner.



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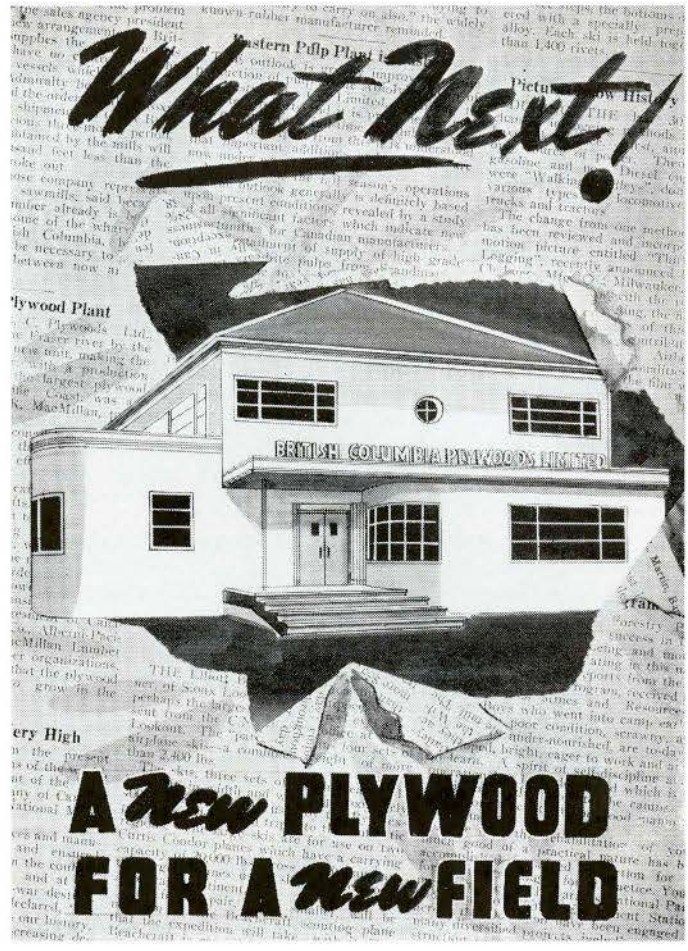

A New PLYWOOD FOR A New FIELD

IN the early spring, SYLVAPLY (B.C. Douglas Fir plywood) will again expand its usefulness in a field of building hitherto unexploited in Canada.

There seems to be no end to the scope of this versatile product: First there was SYLVAPLY for walls and built-ins; then came SYLVAPLY Sheathing for sub-floors and roof decks; then MONO-DOR (lumber core with SYLVAPLY faces) revolutionized the door industry; then it was SYLVA-CRAFT panels with their decorative line treatments and vee-grooved SYLVA-TILE for walls and ceilings.

Production of these SYLVAPLY products has doubled, re-doubled and almost doubled again, within a few short years . . . And now, a new $300,000 plant addition nears completion for production of another SYLVAPLY product—revolutionary yet guaranteed, in a field as yet untouched by plywood in Canada — with an EXTRA sales potential as great as all other SYLVAPLY products combined . . . Watch for it! Full details next month.

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