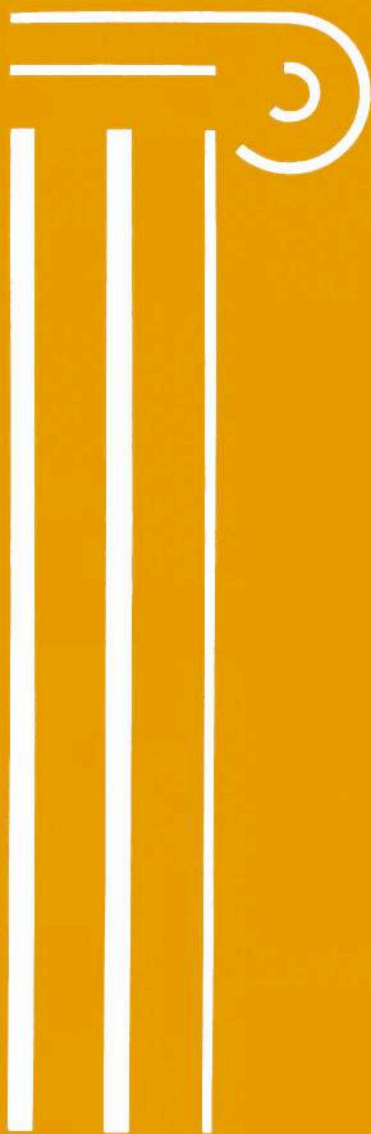


# JOURNAL

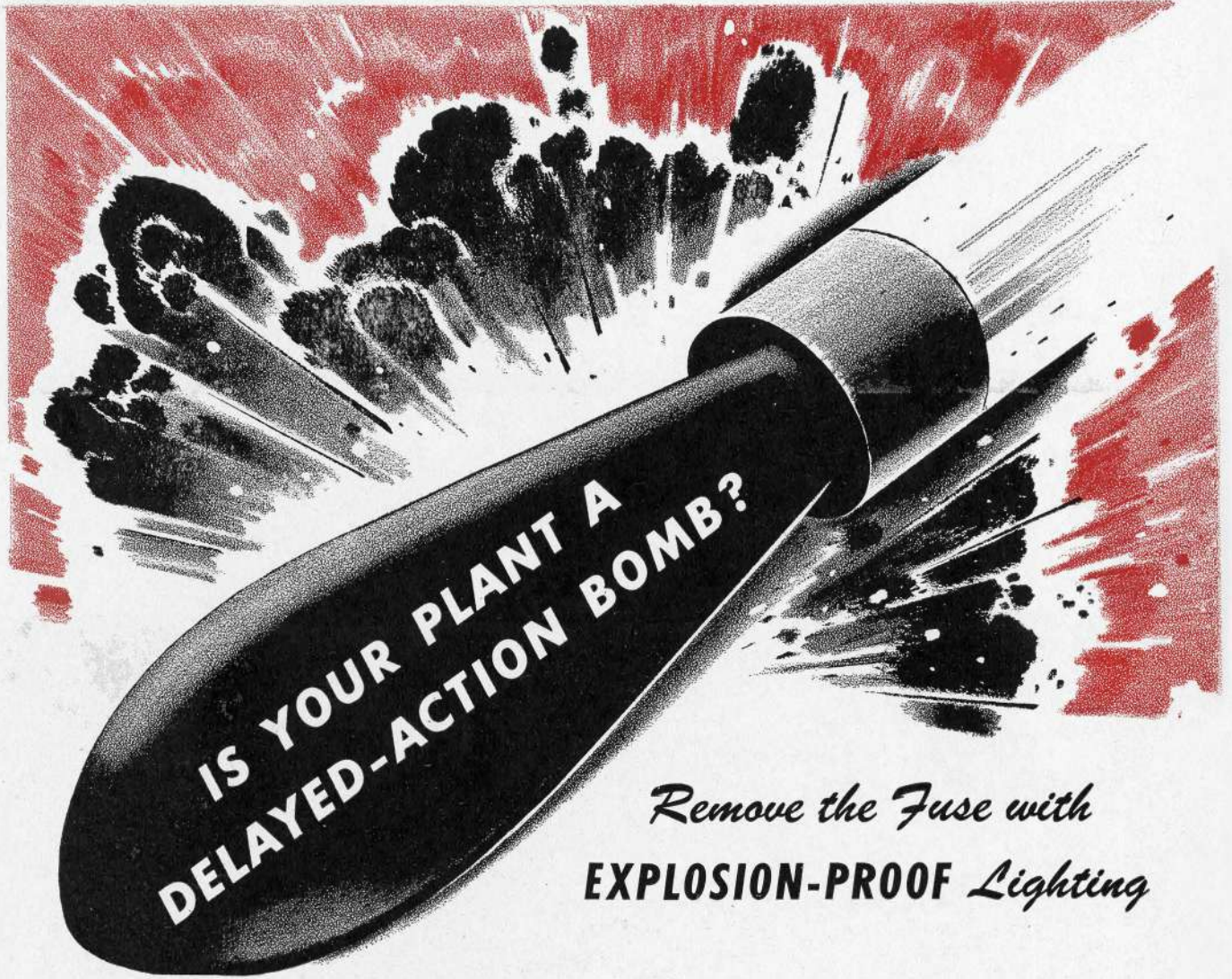
ROYAL ARCHITECTURAL  
INSTITUTE OF CANADA



**VOL. 20**

**TORONTO, APRIL, 1943**

**NO. 4**



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# JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 212

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IT MAY BE appropriate at this time when students are graduating from the Architectural Schools to remind them of the past which they inherit. They have for five years been in close touch with modern architecture — le Corbusier, Gropius, Oud and Saarinen are household names to them, and they know their works better than they know their own university buildings. They are their gods, and they are worshipped to the exclusion of all who preceded them. Even Sir Christopher Wren is in the discard except as a Town Planner, and Europe holds no fascination for the modern student except where he can see modern work. The buildings that his father enjoyed are to him the dead bones of the middle ages or the artificial trappings of the Renaissance, and the atmosphere in which his father revelled in Paris, London or Rome is but the musty odour of the antique. We feel he has lost something. It is true that we were brought up in a period when the romance of history was so strong that it was reflected, perhaps palely, in the buildings we produced, and history and design were, too often, synonymous terms. The teacher of history today has to shed romance and teach his subject as an evolutionary process leading up to the architecture of our age. He emphasizes the fact that each period of architecture was an expression of its age and way of life, and not something to be imitated. He is of course correct in his approach, but unless he is a good teacher, he fails to make each an exciting event in the history of the world, and he is hard put to make his subject at all as romantic or as exciting as the steel column or the reinforcing bar.

That being so, it is still more difficult to arouse in the student any enthusiasm for the architecture of Canada or the architects of the last 150 years. We, also, may bow the knee to monuments of reinforced concrete and glass, but we do not allow it to blind us in our admiration for the works or workers of the past. There is surely nothing more pleasant than a Sunday morning walk with a brother architect, (we used to do it regularly with Group Captain Marani), looking at downtown buildings of the 19th century. Some were highly competent Greek Revival buildings that reminded us of Edinburgh, some Romanesque, some Italian, and on all of them just as much care had been expended as on any modern building. On their completion, their architects were just as proud and just as sensitive to criticism as their successors. There were, of course, bad buildings, one particularly, assembled by its owner from fragments in a junk yard; but we were not depressed by high feelings of architectural morality or the extraordinary stubbornness of the 19th century architect, who clung to his acanthus leaves in face of progress and the growing power of the machine. We admired the best, and there were many, and we deplored the worst, even if we thought many of them great fun. Is it that the young modern student has lost his sense of humour? The burden of carrying a crusade against all the forces of reaction from Toronto or Montreal to the farthest antipodes is, after all, a grim business.

Finally, how many graduates of this month could give the names of a dozen architects in their city of the fifty or hundred years which preceded the last war. In Scandinavia the educated layman could give such a list with pride, and the buildings associated with each name. To be unable to do so in Canada is the young architect's loss and the profession's loss because there can be no greatness in a society which exists in an uncertain present unrooted in the past. We must take pride in the past, and with justification in professional accomplishment. We refer not only to those who built well, but to those scores of architects who, by the example of their professional lives, their willingness to serve their cities, and their zeal for their profession, made the legislation we enjoy today possible. Governments do not grant charters to professional societies merely for the asking. Over a hundred years of patient work was necessary before the Ontario and other Architects' Acts were made law in the 1930's. We can take little credit for that legislation. The spade work was done by Cumberland, Baillargé, Darling, Langton, Bourgeau, Vallance, Hugh Jones, Mésnard, Maxwell and others whose work was done long before the Acts were passed. The crusade for a greater profession and greater public service will not be weakened by a recognition of those who first unfurled the banner. We trust that this will receive somewhere a receptive ear. We would regret to think that it was read as the nostalgic outpourings of an editor in his dotage.



# CITY PLANNING ACTIVITIES IN MONTREAL

Address by AIMÉ COUSINEAU, C.E., Director, City Planning Department, Montreal

It is a great honour for me to be invited to speak before the members of the Royal Architectural Institute of Canada, and it is with pleasure that I have accepted the invitation of your President, my good friend Gordon McL. Pitts, to meet a sympathetic group of architects, with a large number of whom I have collaborated during the last twenty-five years, in my capacity as Sanitary Engineer of the Montreal Department of Health.

I come before you to-day to continue the good relations which have existed between us; but, this time, in addition, as Director of the City Planning Department, the activities of which must be closely related to the welfare of our community, when one considers the public health implications in planning the control of design and arrangement of cities for convenience, safety and the utmost possible satisfactory conditions. To this end, there is need for environmental sanitation, with opportunity for recreation, open spaces to permit adequate air and light, with freedom from the noises, odours and traffic of commerce and industry. Moreover, when possible, loss of travelling time between home and work should be reduced, congestion and overcrowding avoided. These are city and regional planning matters directly related to public health, because they decrease the danger of transmitting disease and prevent accidents.

I must say, by the way, that my acquaintance with and admiration for such men of international fame as Sir Raymond Unwin, Jacques Gréber, Eugène Beaudouin, Thomas Adams, Noulan Cauchon and others, and my academic interest in city planning for a great number of years, or since the foundation of the Town Planning Institute of Canada in 1920—which Institute unfortunately no longer exists—are somewhat responsible for my active participation to-day in the carrying out of the objective of the orderly development of our City.

Thanks to the broadmindedness and foresight of municipal authorities, our Department was created in May, 1941. Under the authority of By-law No. 1682, it consists of a director, his staff and an Advisory Committee. A few months later, the Building Inspection Division was transferred from the Public Works Department to the City Planning Department. This last innovation brings under one head all matters pertaining to construction of buildings, including the structural, zoning and sanitary viewpoints.

For the last two years, I had the great advantage of being associated, on our Advisory Committee, with its president, Councillor Aimé Parent, member of the City Executive Committee, and with other men devoted to the cause of planning, namely Professor Percy E. Nobbs, Messrs. Marcel Parizeau, Maurice Payette, and later, Harold Lawson, all of your Institute; also with Frederick Todd, landscape architect; the late engineer, Leonard Schlemm; a group of City Councillors keenly interested in this movement, including the Director of the Ecole Polytechnique, Mr. Armand Circé; Messrs. J.-B. Delisle, J.-H. Dupuis, J. B. Flanagan, Edouard Jeannotte, Claude Jodoin, and, finally, with my predecessor, the late H.-A. Terreault, and the Director of the City Public Works Department, Mr. H.-A. Gibeau.

The City Planning Department is, to all intents and purposes, a municipal department, responsible to the Executive Committee through the Director of Departments, Mr. Honoré Parent, K.C. Its Director is the co-ordinator of planning activities; he takes rank among the other departmental heads and has similar prerogatives and responsibilities. This means, in other

words, that planning work in Montreal is now established on the same permanent basis as the other services, such as Health, Public Works, Finance, Police, Fire, and Public Welfare. It is a great step in advance towards order, health and efficiency in our community, and this new development should bring good results.

During the last twelve years, two municipal organizations have been set up by City authorities to study and report on various city planning and housing problems. The first, in 1930, was a Planning Committee, headed by A. Beaugrand-Champagne, and its membership included Ludger Venne, of your Institute; Raoul Lacroix, Frederick Todd, Leonard Schlemm, and also J.-E. Carmel and myself, as ex-officio members. This Committee was succeeded, after a lapse of about four years, by a Commission under the chairmanship of the late Mr. Terreault, who had formerly been Director of the City Public Works Department. I must add that about nine years previously, in 1921, an amendment to the City charter authorized the establishment of a City Planning Board whose duties were to make suggestions or recommendations deemed necessary or useful in connection with the improvement of the City. No effect was given, at the time, to this power granted by the Legislature.

Between November, 1936, and March, 1939, much valuable data have also been collected by the Planning and Research Department of the Montreal Metropolitan Commission, under the joint direction of George Mooney and Major Réal Bélanger. The former is now joint director of the Montreal Industrial and Economic Bureau, and the latter is with the Canadian Army overseas. These two gentlemen were assisted by Pierre Boucher, who, with a seven-year experience in this line of work, has become assistant-director of the newly-created City Planning Department.

With the above organizations and the data they have accumulated to supplement the thousands of plans and studies made by the engineers of the City Public Works Department, who have also been urging for several years the preparation of a city plan, but who had to use their allotted appropriations and time for immediate needs; with the co-operation of associations of architects, engineers and other professions, with that of the Property Owners' Associations, the Montreal Metropolitan Commission, the City Improvement League, the Board of Trade, the Chambre de Commerce, the Montreal Parks and Playgrounds Association, the Royal Automobile Club, the City Industrial and Economic Bureau, the Real Estate Board, and finally McGill University and the Ecole Polytechnique of the University of Montreal, under whose auspices several series of lectures have been given; with the invaluable assistance of the Press and of technical reviews; in a word, with all these factors as a background, the leaders of our population are now better prepared to appreciate the urgency of city and regional planning.

We feel, however, that our task is great but that it can, nevertheless, be accomplished with proper organization, competent personnel and close collaboration from interested professional and technical bodies, including transportation and public utility companies which are always planning their activities several years ahead of existing improvements or extensions.

Before proceeding further, let us review briefly the provisions contained in the by-law, already referred to, creating the City Planning Department and defining its responsibilities. It is the function of this Department, among other things, to

establish a master plan and prepare a report setting forth the principles of such a plan.

This is to be determined according to a programme covering the following points:

1. The streets, roads and highways to be conserved, modified or created.
2. The open spaces and the reserves, whether wooded or not, to be created, maintained or developed for establishing parks, public gardens, public squares, markets, parking areas, playgrounds, beaches, and for any other planning purposes.
3. The sites to be reserved for monuments and public buildings.
4. Natural, historical or artistic sites or monuments to be preserved in their present state or otherwise.
5. The zones and sites reserved for industries, public services, commerce, housing, low-rent housing, or any other specific category of construction, or for any other purpose.
6. The zones and sites prohibited for new industrial or commercial enterprises or the extension of the presently existing establishments.
7. The control and regulation of billboards, signs and advertisements of any nature whatsoever on public and private property.

In order to carry out this programme, the City Planning Department may entrust any appropriate municipal department with such studies and works as it is not in a position to do itself.

There are many other responsibilities entrusted to our Department, such as preparing, and recommending the adoption of drafts of by-laws dealing with such questions as building lines, servitudes, lotting and redistribution of lotted land, planting and protection of trees, cessions or sales of immovables belonging to the City, and, lastly, all questions pertaining to building, housing, zoning and regional planning for the whole of the island of Montreal.

In the matter of building codes, we know that, under the joint sponsorship of the Dominion Department of Finance and of the National Research Council, an authoritative document has been prepared which sets up principles on structural soundness, fire protection and adequate sanitation, which all important cities cannot ignore. We contemplate availing ourselves of the technical guidance of the National Building Code, in order to provide Montreal with a code that will give adequate protection, while allowing of reasonable latitude with regard to materials and methods of construction.

As far as our Plumbing Code is concerned, it is a modern one, needing practically no revision. Nearly all the health and sanitation requirements contained in the National Building Code are already in force in Montreal, and only minor changes need be made to the existing regulations.

With regard to zoning regulations, reference to which will be made further, great progress has been made towards the general application of their principles.

In the field of housing, on the initiative of Mr. Nobbs, a first report on a post-war programme for low-wage earners has been submitted to the City Executive Committee and forwarded to the Committee on Post-War Reconstruction, in Ottawa. It is evident that special attention should soon be given to the alarming shortage of dwellings which we are presently facing.

If one considers that there are about 90,000 vacant lots within the City, 50,000 of which are under municipal ownership, one readily recognizes that Montreal, under the help and guidance of appropriate government agencies, offers architects and engineers a great opportunity for opening up housing centres or neighbourhood units.

In short, the programme of the City Planning Department is twofold. First, a long-term objective, which is the preparation of a master plan aimed at providing healthful living conditions, in order to attain a well-balanced social structure. Second,

a short-term objective, which is the interim control of buildings and their uses, and of other activities in the development of the city, while the master plan is being prepared.

If Montreal has made steps in the right direction in recent decades, it still offers a great opportunity for city planning. About fifty years ago its territory only covered approximately ten square miles; its area is now fifty square miles and includes twenty municipalities, annexed to the original territory since 1883. A rapid and unusual, but inevitable, growth has taken place, attributable to rural depopulation and industrial development.

As pointed out in a paper of mine published in the Journal of the Engineering Institute of Canada, a few months ago, it is obvious that the growth of the original City has not been scientifically regulated and, to a far lesser extent, that of the cities since annexed thereto. A carefully studied master plan for its territory, correlated with a regional plan for the whole island of Montreal and its immediate vicinity, is urgent, especially in connection with the Post-War Reconstruction Programme. I must add that the Government of Quebec has already developed an improved system of provincial highways leading to the outskirts of the City, to which certain city arteries must eventually be extended.

Opportunities would be given, in the preparation of a master plan, for the design of a rational system of main traffic thoroughfares, including more practical intercommunication between the city and the harbour, for the creation of new parks and the extension of the present ones, some of which are of exceptional beauty, and for the establishment of more and better recreational facilities.

Although interim and piecemeal regulations are not always desirable, the compilation of existing building restrictions for about half of Montreal, drawn up in the last few years with differentiated regulations as to heights and uses, will be of great help in the preparation of the comprehensive zoning of the metropolitan area. The work already undertaken is but preliminary to this desired result, which cannot be attained without the preparation of a master plan.

In recent years provision was made for certain main arteries and grade separations, adequate and potable water supply, and the construction of trunk sewers; but all future important and necessary public works should be planned in correlation with a regional plan for the whole island and its immediate vicinity.

The island of Montreal has therefore a great opportunity for growth control, with its 177 square miles of territory, of which area the city proper covers about 28%, while approximately 85% of its total population of about a million and a quarter resides within the city limits.

The movement towards decentralization of cities, or abandonment of central areas, has created in Montreal, as in other great cities, new problems and economic waste. This may be attributed, among other things, to unsuitable use of land and to inadequate distribution of open spaces; in a word, to lack of foresight. On the other hand, if decentralization has corrected over-concentration of population, it has caused internal degeneration of central areas, and with these migrations, as stated in a certain *Business Week* report, "have come in most great cities, demolition, parking lots, slums, and other changes in urban land use that shrink taxable valuations and pile up delinquencies". Fortunately, the need for rehabilitation has been better understood within recent years, and city planners have tended more and more to correlate their activities, not only towards effective decentralization, but towards the regeneration of blighted areas as well.

In a recent address before the Town and Country Planning Association of Great Britain, Professor Patrick Abercrombie, F.R.I.B.A., stated that the war has accentuated the decentralization problem and brought it into closer perspective, and



that his country is not only suffering from "war blitz", but from "peace blight" as well.

Residential and industrial decentralization, which I shall not attempt to discuss to-day, is a delicate question; this applies also to the alternatives to fringe developments, which Abercrombie suggests should be replaced by satellite towns or colonies, the latter having complete existence of their own. The author is of the opinion that there is scope for a Government Ministry of National Planning in Great Britain to prevent what he qualifies, constructively but quite severely, as "housing dumps", and by this he means, I presume, the beautiful cottage and flat estates we have seen or read about, a great number of which are so needed here.

Any city which finds itself in a state of arrested development and is desirous of co-ordinating its planning activities may well study the case of St. Louis, Mo., a city of about the same population as Montreal.

In the planning survey of St. Louis, a few years ago, recommendations for an urban land policy were made which, with a few minor changes, might apply to Montreal. Although progress has been made here in the right direction, allow me to summarize these recommendations very briefly:

1. Revision of zoning regulations to the scale of known laws of supply and demand for each different class of property use.
2. Strict enforcement of modern sanitary and building codes, including minimum housing standards.
3. Elimination of smoke nuisance. (And we know that its abatement has been a complete success, in St. Louis.)
4. Repair and renovation of old buildings not altogether obsolete, and removal of obsolete structures unfit for human habitation.

## THE PERIODICALS SHELF

By ANTHONY ADAMSON

Every architect in Winnipeg, Vancouver, Toronto, and Montreal, should read, buy and keep the March issue of *New Pencil Points*. Repeat. Every architect in Winnipeg, Vancouver, Toronto, and Montreal, should read, buy and keep the March issue of *New Pencil Points*. This issue contains in elaborate detail the town plan of Chicago easily explained. Study of it will be invaluable to Canadian city architects if they wish to project their services into wider planning fields. Besides the maps and plans of the proposed development and rehabilitation of Chicago are three good "discussions on urbanism" by an architect, a doctor and a sociologist. Every architect in Halifax, Windsor, Brandon, Quebec, Edmonton, Regina, Victoria, St. John, Trois Rivières, Port Credit and points East or West should read "The Town of Willow Run" in the March *Forum* if they want to do the same thing. Every architect in Stouffville, Pottsville, McMinnville, Cherierville and Hicks Corners could read "Rural Housing" in *Architectural Design and Construction* for March, without doing themselves any harm.

Architects who are following the series of articles on Prefabrication in the *Forum*, which in the March issue discusses the house, might possibly like to see an article in the *R.I.B.A. Journal* for January on lessons in prefabrication from U.S. practice.

Architects in the Toronto Chapter, who have been considering in camera the condition of the profession, might be interested in the address of Lord Portal, U. K. Minister of Works and Planning, to the R.I.B.A. also in its *Journal* for January. He describes the setting up of a building industrial council with an industrial representation which he said he wanted to leave behind him as an organization to safeguard the building trade from the architect down to the operative. Currently there is little else on the problems of the profession.

The article "British Plans are Bold" in the March *Record* is

5. Development of neighbourhood units.

6. Construction of modern, large-scale, low-cost housing projects.

The St. Louis Plan Commission concluded its report by a real question: "Shall we gradually abandon St. Louis?"

Can we not ask ourselves the same question: SHALL WE GRADUALLY ABANDON MONTREAL?

Our answer may be contained in the brief review of our city planning programme, which I have undertaken to summarize, with full realization of the magnitude of the task.

It is unquestionable, as stated by the city planner of St. Louis, Harland Bartholomew, that the continued interest and participation of architects and engineers is indispensable in the planning of better cities, in gaining public support for and in aiding the official realization of such an ideal. It is also obvious that city planners are now thinking of cities or towns as living, changing, developing, but, not necessarily, growing organisms, the different parts of which have different functions, and also that cities are no longer considered as a collection of structures classified according to their uses and other elements.

I need not further stress before this audience the importance of direct action against the evils of bad or insufficient housing and planning. Suffice it to add that public authorities have learned from city planners how sympathetic the population is to any movement tending to a comprehensive plan, as soon as it realizes that the direction of city growth has been regulated and means taken to prevent economic waste, to preserve the element of beauty and the amenities, and, finally, to safeguard public health.

worth reading and the same issue has a fairly comprehensive coverage of religious buildings, and one good New York State house eminently suited to Canada.

## NOTICES

Attention of the members of the Institute who are on active service and received their copy of the March issue of the *Journal*, is drawn to the list of members on active service appearing in that issue. The secretary would appreciate being advised of any changes in rank, etc., and would welcome the co-operation of these members in keeping this list up-to-date.

The pamphlet "Canada, What About Housing" on sale at the end of April is brought to the notice of architects across Canada. It is a 48-page booklet laced with pen and ink illustrations selling for 10 cents.

This publication is chiefly the report of a Housing Conference arranged by the Ontario Association at the end of February. Part I consists of a report of the six addresses made at the opening of the Conference, followed by a report of the Conference discussion. The six introducing speakers and their topics are as follows: Professor Arthur on "The Town Planning Need"; Alderman the Rev'd. John Frank on "The Social Welfare Need"; Deputy Minister A. J. B. Gray on "The Municipal Problem"; Mr. Alfred Ward on "The Labour Problem"; Captain Rodney Adamson, M.P., on "The Political Problem". Part II consists of a report of the address given by Miss Catherine Bauer on Public Housing to the Ontario Association dinner. Miss Bauer is author of the book "Modern Housing" and besides many other things adviser to the United States Housing Authority. Part III consists of a summary of the Canadian housing problem with ten commonly asked questions answered concisely, as well as a bibliography, etc.

This pamphlet is obtainable from the Canadian Institute of International Affairs, 230 Bloor Street West, Toronto, or at your booksellers.

## A MEETING OF THE EXECUTIVE COMMITTEE

The first meeting of the Executive Committee of the Institute for the year 1943 was held in the rooms of the Institute, 620 Cathcart Street, Montreal, on Saturday, April 3rd, at 10 a.m.

*Present*,—President, Gordon McL. Pitts (F) in the Chair; Charles David (F), Honorary Secretary, Forsey Page (F), Honorary Treasurer; J. Roxburgh Smith (F), Harold Lawson (F), Eugene Larose, Maurice Payette, and Miss Mary Elmslie, Secretary.

The President opened the first meeting of the 1943 Executive Committee of the Council with an expression of welcome to the newly-appointed members, Mr. Eugene Larose and Mr. Maurice Payette of Montreal.

Efforts are being made by the Executive Committee to enlist the support of the Canadian Institute of Public Opinion in undertaking a "Gallup poll" of the women of Canada to determine popular types of housing desired under a post-war housing programme. Mr. Smith reported success in a similar poll carried out recently in England. In this connection the President received the approval of the Executive on a letter designed by the Montreal members in reply to a list of questions received from the *Financial Post* on post-war housing. Further discussion on this subject was held with regard to a proposal to interest the Canadian Broadcasting Corporation in a special R.A.I.C. housing broadcast and the President was asked to investigate the possibilities of this proposal and report at the next meeting.

Mr. A. J. Hazelgrove was appointed to represent the Institute as successor to the late Mr. R. H. Macdonald on the Canadian Engineering Standards Association Committees on Building Materials and Fire Tests on Building Construction and Materials, and also on the new C.E.S.A. Committee appointed to investigate the possibilities of the use of sawdust and shavings for insulation purposes and to draft an appropriate specification.

Mr. Smith reported on his examination of a proposed standard "Job-Record" form recently submitted for the consideration of the Executive Committee, stating that this particular form does not cover every type of work and suggesting that the lack of any standard printed form in the American Institute of Architects "proves the difficulty of complete achievement in this direction." The Executive was greatly interested in a list of headings presented as used for this purpose in a certain architect's office and permission was obtained to publish the list in the *Journal* for adoption by any interested architectural firm.

In discussing the appointment of Standing Committees for 1943, it was agreed to follow the policy of retaining as far as practicable the same Committees for the two-year period of the President's term of office in order to carry on more expeditiously the many activities on which the committees are now engaged. For the most part, therefore, the Committees stand as they were appointed in 1942, with some additions to the membership of one or two and will be published in toto in the membership list which will be forwarded to the membership with the May issue of the *Journal*. The new Editorial Board appears on the frontispiece of this issue.

It was reported to the meeting that copies of the P.Q.A.A. proposed memorandum to the Government recommending establishment of a Central Building and Town-planning Author-

ity had been forwarded to the Presidents of the Provincial Associations urging immediate consideration by their Councils. A reply received in time for presentation at this meeting from the Council of the Alberta Association of Architects endorsed the proposal in principle and made certain suggestions which will be considered, along with others made by interested members of the R.A.I.C. Council, in revisions to the memorandum which are to be made by the committee in charge, under the Chairmanship of Mr. Harold Lawson.

A progress report on the activities of the National Construction Council was presented in the form of a letter to the President from Mr. A. S. Mathers, President of the N.C.C. The Secretary was instructed to write the Provincial Associations asking that representatives be appointed to act with representatives of other component organizations of the N.C.C. in the various regional districts recently revised by the N.C.C.

At the request of the Secretary of the Royal Institute of British Architects, the appointments were made of the 1943 representatives of the R.A.I.C. on the R.I.B.A. Council: Mr. Gordon McL. Pitts (F), F.R.I.B.A., was re-appointed representative residing in Canada, Mr. L. Sylvester Sullivan, representative residing in Great Britain.

It was decided, due to wartime restrictions, that a delegate will not be sent to the Annual Meeting of the Dominion Fire Prevention Association this year.

Much interest was shown in the resolution submitted by Professor John Bland, Director of the School of Architecture of McGill University, proposing investigation into "the possibility of organizing a National Building Materials and Trades Exhibition, to be held in a suitable Canadian centre during the second year following the conclusion of the war." The proposal was referred to the Committee on Exhibitions and Awards for further consideration and Professor Bland was appointed Chairman of this Committee which, due to the war, has been inactive in recent years.

A proposal received from the President of the Dominion Council of Professional Engineers for the organization of an all-inclusive body of technical Professional Associations received consideration and was referred to the Committee on Public Relations for further study and report.

A motion was passed giving approval to the formation of a P.Q.A.A. committee set up to co-operate with representatives of the engineering profession and the Dominion Government in preparations for civilian defence, and recommending that similar technical committees be formed in other Canadian centres.

It was reported by the President that plans are now under way for institution of a special extra-mural course in Town-planning at the University of McGill and an outline of the proposed course has already been submitted to the Vice-Chancellor for his approval.

The Secretary was instructed to advise the Schools of Architecture that an award would again be available for presentation to the outstanding graduate of each School this year, by the R.A.I.C.





GRAIN STORAGE BINS, IOWA

## CHEMISTRY : FARMING : BUILDING

By FRANKLIN C. WELLS, of Holden, McLaughlin & Associates

For over a hundred years, we have been living in the Machine Age. In the early days of this era, men were so delighted and pleased with their new black and cylindrical boilers, tanks, smoke stacks and tunnels, that they promptly dressed themselves like the machines—with stove-pipe hats, black cylindrical Prince Albert coats and pantaloons.

But today the Chemical Age, far more astounding in its effects than the Machine Age, has crept upon us unawares. We read about the miracles of chemistry, but the significance of the fundamental changes that confront us is but little appreciated.

The main events in the upsurge of organic chemistry are as follows: Toward the end of the last century, the research on synthetic dye manufacturing led to establishment of a practical laboratory technique of organic chemistry. So important was this basic step that in the first years of the century Germany knew that if she could synthesize nitrogen and oils she could challenge the world. In 1913, the Germans succeeded in taking nitrogen from the air, thus gaining unlimited explosives and fertilizer, but war came before they could produce oils and

fats synthetically. This was one of the reasons they lost that war.

The use of clay and bone-like materials is prehistoric. In trying to make an artificial ivory billiard ball, celluloid was invented. In 1909, Bakelite plastic was found as an imitation amber. Since then we have become accustomed to the increasing number of articles made from plastics—cabinets, knobs, tools, wrappings, electrical goods, parts of planes, water pipe, and a host more. This is only a start, since specifications for superplastics are now in chemical laboratories.

In the last decade chemical technique entered the field of textiles, so that in the near future it will completely dominate it with rayon and nylon displacing silk, and curly fibred rayon and Aralac (from milk) taking the place of wool and fleece.

The effect on diet of vitamins, and the use of sulfa drugs, and the constant new discoveries such as the mould "pencillin," entail far-reaching changes in human health and life span.

We know that sea water is an almost unlimited source of raw mineral materials; but it is only one new source. Agricul-



SEABOOK FARM, BRIDGETON, N.J., AN AGRONOMIST'S ESTABLISHMENT WHICH EXTENDS AS FAR AS THE EYE CAN SEE. VIEWS, FROM ROOF OF PACKING HOUSE, SHOW WORKERS' COMMUNITY (ABOVE); SHIPPING AREA, PARKING LOT AND GREENHOUSES (BELOW).





tural products and the products of the forests are the great, self-renewing sources for most of the ingredients needed by the Chemical Age. The profundity of this change is indicated by the fact that in the last decade, with the Chemical Revolution barely under way, over 200,000 brand new chemical products, having a pre-war annual sales value of ten billion dollars or more, have been produced.

The impact of the Chemical Revolution is being felt first by the farmer. He has clung to age-old methods and hand tools as has no other producer—except possibly the builder. The farmer has resisted mechanization; but, in spite of him, today the farm is fast becoming industrialized. This is happening in two ways. The first is through education, which enables the intelligent, college-trained farmer to apply readily and quickly to his work the results of modern science.

The other way is the "factory in the fields"—the large corporate farm (still illegal in some states) which is assembled from foreclosed farms, or capitalized by financial groups, or by canners, or groups of city business men. In relation to certain crops these industrialized farms are successful. Although they have the best management and machines, they still depend, for labor, on exploiting the migrant, and on nearby small farmers. However, they do not successfully compete with the "educated" farmer where he is well established, as in Iowa. With these two new types of farms lie the future of agriculture.

Now the farm's first job is the food supply. One-sixth of the first draft in this war were rejected because of malnutrition. For this country to be adequately fed would require an increase of 25% more dairy and poultry products and 100% more fresh vegetables and fruit. Yet so fantastic have been the results of chemical discovery that on two-thirds of the acres now tilled we could raise this enlarged food supply. The war-perfected nitrates, insecticides, and bactericides are being tremendously improved, meaning higher yields per acre.

Other developments have been proceeding at breakneck pace. These include low-cost manufacture of plant-growth accelerators, such as levulinic acid and cochicine; discovery of enzymes for industrial use; use of qualities inherent in existing plants which at present are not used; adaptation of plants, even changes in plant forms and properties, by plant geneticists, to make available unheard-of agricultural products, such as levulose—which comes from the Jerusalem artichoke and the dahlia, is half again as sweet as sugar, and is three times more easily assimilated.

Eighteen hundred oils can be "grown" here; cellulose comes from agricultural crops. Paper pulp, cellulose for rayon, and plastics, as well as naval stores, are today grown with an efficiency which reverses what used to be common figures for lumbering—20% yield and 80% waste.

Gasoline ruined thousands of small farmers because it broke the farm cycle. Draft animals, which fed on farm produce and contributed fertilizer, were replaced by the tractor and gasoline, which required a cash outlay. A gasoline-alcohol blend of fuel has been successfully marketed for present carburetors, and catalysts to improve the blend, are available. The low cost of alcohol, derived from farm products, as fuel, is anyone's guess. The farmer who grows his own fuel can use more

of the new and improved machines that can plow, till, and harvest with a minimum of human labor. Again, soilless farming, with the direct use of chemical solutions in tanks, has been proved successful.

The status of the farmer, as a "colonial" under the domination of city, industrial-financed overlords, has passed. The farmer will be a producer of raw material and also a processor and primary manufacturer. The freezing and dehydrating of foods, the pressing of oils and distilling of agricultural materials, the preparation of cellulose and other forest products, mark the beginning of a new day on the farm.

Another medieval occupation—building—also has clung to hand tools, resisted mechanization, and is at last ready to step forward and become an integrated industry. Although one great task lies ahead in rebuilding our cities, great new opportunities are also apparent in the rural field.

**Regional Planning.** The economic rehabilitation of farming, and the application of science to agriculture, demand skilled planners. Architects, as the members of society whose function it is to study the ultimate use of things, have before them many important problems of zoning and planning: the re-utilization of farm land, involving classification as to use; the withholding of marginal land from crops and turning it into shelter belts and cultivated woodland; the planning for soil and water conservation and power requirements, as well as the orderly flow of goods; the designing and locating of the chemi-industrial farm towns of the future.

**The Housing of the Farmer.** Most farmers are now living in rural slums. One-third of the farm houses are unpainted; 25% do not have screens; 70% do not have running water in the kitchen; 90% have no bathroom with running water. The heating is primitive. Four million out of 6½ million farm houses are lighted by kerosene lamps. Surely this is a challenge to a new building industry! Sooner or later the corporate farm will have to adopt a decent labor policy, which will inevitably demand housing for its workers.

**Farm Buildings and Equipment.** Lumber dealers, mail-order houses, farm implement companies, and agricultural colleges have poured forth copious plans and plan books concerning the farmer's barns and other equipment. But the results are not satisfactory for the scientific farm. New ideas must constantly be found and quickly put to work. Today, for example, experiments are being conducted to see if cows and chickens should be housed or not. Apparently the cow should not and the chicken should. Yesterday's methods are not good enough.

Further, a good deal of poor construction has been turned out in the past—for example, 2" x 3" rafters on a 10' span in a



INDUSTRIAL FARMING: SUGAR FACTORY AND BEET FIELD, MONTEREY COUNTY, CALIFORNIA







MAKING BACTERIOLOGICAL TESTS ON CANNED PRODUCE



PACKING BEANS FOR "QUICK FREEZING"

northern state. It is an architectural job to elicit the results of research, correlate the experts, and with a knowledge of construction and detailing make good farm buildings easily available. A survey was made recently to discover a post-war farm market for prefabricated building products. Kicking around an agricultural college was research data on a new "corn dryer", a shed-like structure using cleverly directed streams of air, and very much needed in the corn belt. This device requires that someone detail it economically and build it in the various sizes required—and thousands of farmers will gladly buy it.

The architect has proved that a well-designed factory pays in efficient operation. The same applies to the farm with its machine shed, processing plants and storage facilities. The recent success of good design in the 1000 bushel grain bin for the ever normal granary program is a case in point. The research and studied design which made this bin so great a success indicated that the field for the agricultural engineer-architect is just opening. Any new structure or device or plan which will save farm labor will be welcome, and the designer will be well paid.

As the scale of farm operation equipment tends to larger units, this better planning and design will be more needed. For example, a group of Western farmers wish to form their own power company in which each farm runs a diesel engine feeding the central power loop that goes to all the members. When a farmer needs a large amount of current, he draws

from the main. At other times, by automatic controls, his generator contributes to the main. Oh yes, the exhaust from the engines will heat the domestic hot water.

**New Materials.** The utilization of new plastics and other materials for building requires the presence of the architect from the very inception. The chemist can make anything—anything that can be described. But it is the architect whose knowledge of "use" fits him to say what products shall be made and how they shall be joined together. Through the electronic microscope, we can see the lattice of material structure. The chemist can fill that lattice with many different kinds of substance; he needs instructions on what he shall make. For example, the plastic panel for the outside of houses is yet to be made. The architect can set up the requirements and the lattice will be filled with silicate or magnesium to give durability, low specific gravity, fire-proofing, permanence of finish, thermal insulation, translucence as required. The great chemical companies want the architect's advice.

The Chemical Age offers to us a new frontier. Had a new continent been suddenly discovered off our shores, it would not offer more opportunity to our country than does recent scientific advance. This means that no one need go hungry or unsheltered, if we with courage step across this new threshold.

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# NEW ARCHITECTURAL ELEMENTS MADE POSSIBLE WITH CONSTRUCTION GLUE

With wartime building in high gear and steel continuing to be allocated away from building uses, wood—the long underrated Cinderella of heavy construction—is at last being given a chance to show what it can do in this field.

Girders, arches, columns and beams, for factories, hangars and other buildings requiring large unobstructed spaces, are being needed as never before. Quickly erected strong walls are wanted by the thousands for houses for wartime factory workers. Conventional materials for such construction, especially metals, are needed elsewhere, and wood has been drafted to fill the gap.

What wood has been able to do, however, is considerably more than was expected. It is no longer looked upon as a substitute for steel but is ranked as an "alternate", and justly so. Modern structural developments have provided the building trade with wooden members which are stronger than steel, which are more fire resistant, more versatile to work with, faster to erect.

But wood did not accomplish this miracle alone. It has a kind of Siamese twin without which it could not function as a material for heavy construction. This indispensable partner is glue.

With the aid of modern self-bonding construction glues, which are water-resistant and require no elaborate pressure methods but only firm contact for setting, at least two new wooden architectural elements have emerged to take important places in the wartime building field. Glued laminated framing members and stressed-cover walls are filling an urgent wartime need.

In the true sense of the word, however, these elements are not new. Their application is. Laminated wood has been known since early Egyptian times but only recently have its possibilities for structural application been investigated. Likewise, the stressed cover idea for walls in building is an adaptation of the long-used "monocoque" construction of the airplane industry wherein wings and fuselage are so put together that there is a distribution of the weight burden over all parts of the ship and the "skin" or covering is made to carry a large share of the stress.

## Stressed-Cover Panel

To produce the stressed-skin idea in wall construction, glue is used to affix panels to studs and framing members. The result is a strong rigid wall, every square inch of which carries its part of the weight load.

This type of construction has been used recently in a great many defense houses and has been of tremendous value in speeding up wartime building. The stressed-cover panel is made up of a board of considerable area to which are glued the framing members, i.e., studs, rafters, joists, etc. It must be a strong board capable of being glued and is either an artificial composition board or more commonly a plywood board. Such boards may be glued to one or to both sides of the framing members, depending principally upon the strength required.

Walls generally have boards on both sides, and ceilings roofs and floors usually on one side only. This construction is very strong for its weight and is quickly assembled. Because of its great strength, the section of the framing members may be considerably reduced, and since the plywood is also light in weight as compared to other sheathing, this combination provides a notable reduction in weight with consequent ease in handling and erecting. Its utility in the present emergency is perhaps due to its exceptionally favorable strength-weight ratio, as well as to the availability of the materials from which it is constructed and the speed of construction which its use permits.

Down through the ages, wooden timbers sawn directly from the log have been used to provide support. Nowadays, however, many of the big trees are gone and large enough timbers for this purpose are not only hard to find but are apt to contain still more structural defects than in the old days when exceptional old growth trees were available. They are subject to knots, checks, pitch-pockets and other weaknesses which cut down their usefulness for heavy structural framing. Hence, until the laminated idea was developed the use of wood in this field had been on the down grade.

Now, however, by laminating smaller pieces of wood together with glue, the worst defects are eliminated altogether. The effects of sound knots and other minor weaknesses can be cancelled out and beams, arches or girders of almost any size and strength and of superior quality can be built up. Low-grade random widths of lumber, which are now plentiful to the point of being a drug on the market, can be used effectively in the production of these large laminated elements. The use of small stock to form large structural units has in no way any adverse effect on the strength and durability of such framing members. On the contrary, by building up layers of small lumber and "welding" them together with special construction glues, a higher degree of strength and rigidity is attained in the completed unit than would be found in clear solid timber. Furthermore, the strength and durability of steel is equalled without incorporating its disadvantages. Metal trusses or beams will soften and buckle in the intense heat of a fire, whereas laminated wood will char and take a long time to burn through and subsequently fail.

The possibilities for glued-up stock are limited only by the uses to which wood can be put, and these are expanding every day. It is a simple matter to adapt the wood-glue technique of large laminated framing elements to all types of lumber for almost any purpose. Small stock, for example, such as 2 x 4's, sheathing lumber, siding, etc., or any other stock may very well be glued up from smaller pieces and even from the scrap which ordinarily goes to the "hog". Wide boards are now successfully made out of narrow ones and long ones out of short ones. The combination of wood and glue has ushered in a new era in building technique and economy, the momentum of which is not likely to diminish when the present war emergency is over.



# COLLECTIVE BARGAINING LEGISLATION

by ARTHUR FLEMING, K.C., Legal Adviser to the Ontario Association of Architects

The Collective Bargaining Legislation just passed in Ontario contains revolutionary features.

It was introduced for the alleged purpose of legalizing collective bargaining in that province because there seemed to be some doubt as to the right of groups of employees to bargain collectively with their employers. In so far as that was the principle of the legislation, no one had any quarrel with it, but it goes farther and deals with other labour matters in a manner that aroused much vigorous opposition.

The legislation provides for the certification of authorized collective bargaining agencies and defines some of the rights and obligations of such agencies among themselves and toward their members and non-members and sets up machinery for the determination of disputes on such matters. In these are found the revolutionary features.

The first is in respect of the professions. Some thought that the exclusion from the term "employee" as used in the Act, of persons acting on behalf of the employer in a supervisory or confidential capacity, would exempt all professional men, but the Minister quickly confirmed the fears of others who thought differently by stating in the House that the Act was intended to include the professional classes.

The definition of a collective bargaining agency is given as, "any trade union or other association of employees which has bargaining collectively amongst its objects and shall not include any such union or association, the administration, the management or policy of which is dominated, coerced or improperly influenced by the employer in any manner whether by way of financial aid or otherwise."

It is entirely probable that none of the professional associations have included collective bargaining amongst their objects in their acts of incorporation or charters. Certainly the Ontario Association of Architects has not done so. None of these may, therefore, be able to qualify as collective bargaining agencies without some statutory or other amendments to their powers. It would seem to follow for the present that employed professional men who wish to deal with an employer through the medium of their professional association will be unable to do so. To bargain collectively, such professional men may have to join a trade union.

It is not likely that the failure of the legislation to pay any particular attention to the professional organizer had any connection with its early oversight of the architect or engineer. No doubt the industrialist had hoped that the legislation would require collective bargaining agencies to make full disclosure of the salaries paid to their official representatives so that those who are paying dues to a union might know exactly to what extent certain individuals might be profiting from the organization. While the Act requires a collective bargaining agency to furnish its members on request with a financial statement of its affairs to the end of the last fiscal year, one can easily see how the Act may be complied with and yet no information given on the vital matter of organizers' salaries. Organized labour may possibly have taken this leaf from the book of some in control of certain corporations, who have never been very frank with the lowly shareholder in the matter of management salaries.

Then there is the matter of the "closed shop". One of the clauses of the Act is to the effect that a provision in a collective

bargaining agreement requiring all or any specified employees of an employer to be members of a specified collective bargaining agency shall not be deemed to be in conflict with or contravention of any of the provisions of the Statute. A subsequent clause provides that no employer shall fail or refuse to bargain collectively with the duly appointed or elected representatives of a certified collective bargaining agency.

These provisions would seem to make it possible for a powerful collective bargaining group in an industry to bring sufficient pressure to bear upon an employer to force him to agree that all his employees should be members of that particular bargaining agency. In that way a professional man might have been compelled to join some particular trade union. However, due to the efforts of representatives of the professions, the Minister of Labour who sponsored the legislation, made an amendment which provides that a "closed shop" clause in a collective bargaining agreement shall not apply to a member of a learned or scientific profession. This should leave him free to bargain individually as has been the general practice in the past, but it does not improve the position of his own professional association.

Other minority groups, the highly skilled trades for example, are left without the protection afforded the professions. In the result those who do not wish to be members of trade unions will probably be forced into them and the individualist may become extinct.

While the legislation provides that no employer or his agent may make it a condition of employment that anyone shall abstain from joining a collective bargaining agency, it seems to foster and encourage and protect any effort of such an agency to compel every employee to submit to membership in it or one like it.

The official certification or recognition under the Act of collective bargaining agencies is entrusted to a Judge of the Supreme Court of Ontario. It will be his duty to ascertain what unit of employees is appropriate for the purpose of collective bargaining and of determining whether such unit shall be the employer unit, craft unit, plant unit, or a subdivision thereof and of certifying that a collective bargaining agency represents a majority of the employees in such unit. One can easily visualize a wild scramble for certification by conflicting unions, by the industrial union as against the craft union and by the larger plant union as against the smaller technical group. This will form an entirely new field for Court proceedings and the minorities in industry will have to keep a sharp lookout to protect themselves.

What appear to be undesirable elements in the legislation, may perhaps be corrected or rendered innocuous by a wise exercise of judicial control, for all questions arising under the Act are to be dealt with by the Court. This attempt to bring the things that make for labour disputes and industrial warfare within the control of the Law, should develop a sense of order and stability in that field of human relations which will be to the general advantage of the community. Men no longer commonly resort to the shotgun to settle line-fence disputes, but they disregard collectively principles which they accept as individuals. This legislation should substitute to some degree resort to the law courts for resort to the strike and the lock-out and to that extent it marks an important advance.

# PROVINCIAL PAGE

## ALBERTA

The population of Edmonton, according to the 1941 census, was somewhat over 93,000. Ration books handed out in the beginning of March, 1943, numbered over 103,000. This quite justifies the contention of the city officials that war work has increased the population by 10,000 and emphasizes the urgency for more housing. In fact arrangements are now being made for the erection by Wartime Housing Ltd. of 200 houses. Prospective home builders are, farther, being invited to make application for building permits accompanied by plans and specifications of materials required. Efforts will no doubt be made to supply these persons with the materials which they require. But the building owners must be prepared to accept substitute materials and articles in many instances. For example, if built-in baths are asked for, these are not likely to be obtainable and baths with feet must be accepted. Deliveries will probably be slow, especially of such needs as electrical plugs, etc. Farther, since there is a severe scarcity of labour, delays will occur. Even in normal times it was no unusual thing when a house was ready for plastering that a delay of as much as a fortnight might occur before the required plasterers were available. Even so, it is to be hoped that good work may be accomplished during next summer.

Cities that require a considerable number of houses, and that means probably all cities in Canada, might aid the housing problem appreciably by a very simple expedient which, obvious though it is, has probably been too frequently neglected. This is the preparation of a map of the city, large enough in scale to show individual lots and exhibiting, preferably in colour, all the lots which are unbuilt upon, distinguishing particularly those that are city owned. The information for this generally exists in the form of numerous sectional maps continuously kept up to date in the civic land department. With these, cities are apt to feel completely satisfied that all necessary information is readily available. It may indeed be available for some purpose but not in the form needed for a general survey. When the information is exhibited on one large map it offers a conspective view of the situation, which is many times more valuable. The whole situation can then be viewed and the most advantageous situations for new homes may be selected with due regard for distribution or concentration. The latter offers greater economy in erection of buildings and better opportunities for well designed schemes, but may be carried too far to afford convenient access to working places, etc.

The preparation of such a map is very generally neglected for no better reason than that it is a somewhat laborious operation. It is, however, so simple a matter that a careful boy is quite competent to do the work. Its service would be far greater than its cost.

It is, of course, no function of the private architect to do such work for the city. It is properly the function of the town planner—if there were any town planners. The city engineer or the city architect might well do the work, if they had the time or realized the value of it. There are many such maps or charts now crying out to be made. For example, every city should possess a population distribution map—with dots over it, each dot representing, say, 50 citizens, upon their places of residence. This on tracing lines, super-imposed on a map showing car services, parks, schools, factories, etc., illuminates the proper and improper relationships that exist. Architects can readily realize the value of such visual demonstrations and would be doing a good public service by urging their cities to have them made now in view of post-war developments.

In preparation for such town planning as post-war reconstruction may call for there is required a score of such studies as

the above. These are the machine-tools which must be made before the first comprehensive survey of the situation can be undertaken. They can be made without great expert knowledge and will, later on, save all the time that they take to make.

—Cecil S. Burgess.

## MANITOBA

The regular monthly meeting of the council was held on March 1st, at which time, except for the delinquency of one member, the attendance was full and complete.

Our representatives to the annual meeting of the R.A.I.C., Messrs. Moore and Russell, reported having engaged and received the hospitality of the East in a truly Western style, Mr. Moore returning with a vice-presidency and vivid recollections of a good time, and Mr. Russell with a quantity of new ideas in connection with technical training and editorial matters, which latter brought up matters in connection with the Provincial monthly page.

A discussion followed as to how the items should be contributed.

It was finally decided that each member of the council should contribute in alphabetical order, to avoid turning the monthly page into a record of local items which would compete with the social column of a country newspaper. Our aim should be rather an endeavor to discuss matters that would be of interest and vital to the profession as a whole.

In these days of unrest, of little work to do, of continuous exhortations from the press to prepare for a post-war world, it might be well to consider whether or not the architect is exercising to the full his capacity to take entire advantage of the opportunities in a larger field of effort. At present it seems he is expected to confine his activities to the pseudo-genteel practice of making drawings, writing specifications and seeing that absolute justice prevails between the owner and contractor during the erection of his architectural dreams.

The present might be an opportune time to enquire whether or not his activities might be extended beyond the purely professional stage. In connection with the lamented dearth of small houses, who, for instance, is better equipped to enter that field, either as an investor or speculator, to supply that field with well designed and honestly constructed dwellings, or who better equipped to inspect and appraise the value of existing structures that may be on the market for sale or rent? However, were he to engage in financing and erecting buildings as well as supplying the necessary documents, the wrath of the contracting fraternity would be raised in volume and intensity, notwithstanding that they are doing the same thing.

It seems to the writer that the architect has acquired a seat on a pedestal, either by his own genteel intuitions or by a public who, for their own ends, wish to keep him there. Why should he be confined to a mental prison?

Let us examine other professions for a comparison. Take, for instance, the civil engineer. How many ways can he be employed and still retain his status as an engineer? He can take off his coat, roll up his sleeves, put on overalls and jump into the breach, dig a pit in the earth or erect a spire to the sky and never lose caste or diminish the encouraging smiles of an admiring public.

Take the legal profession, the number of lawyers that are engaged in other walks of life are without number, due, no doubt, to the value of their legal knowledge, and yet retain their standing in the profession. Architects should not complain so long as they allow others to drive them from a field that should be exclusively their own.

—Wm. Finland.