

# JOURNAL

ROYAL ARCHITECTURAL  
INSTITUTE OF CANADA



**VOL. 19**

**TORONTO, APRIL, 1942**

**NO. 4**





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Serial No. 200

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## CONTENTS

Editorial . . . . .	52
Plastic Possibilities—The House of the Future, by T. Warnett Kennedy . . . . .	53
A Report of the R.A.I.C. Committee on Housing . . . . .	55
Explanation and Comments on the R.A.I.C. Report . . . . .	56
The P.Q.A.A. Looks Toward Reconstruction . . . . .	56
Architecture and Design of the TVA, by Geoffrey Baker . . . . .	59
Meetings of the Executive . . . . .	65
Provincial Page . . . . .	66
Special Notice to Architects . . . . .	67

## PLATES

Norris Dam, Tennessee Valley Authority, Knoxville, Tennessee . . . . .	60
Reception Hall, Pickwick Power House . . . . .	61
Consumers' Co-Operative, Shelbyville . . . . .	61
Victoria Hospital, London, Ontario . . . . .	62
Cathedral of Notre Dame of the Assumption, Moncton, New Brunswick . . . . .	64

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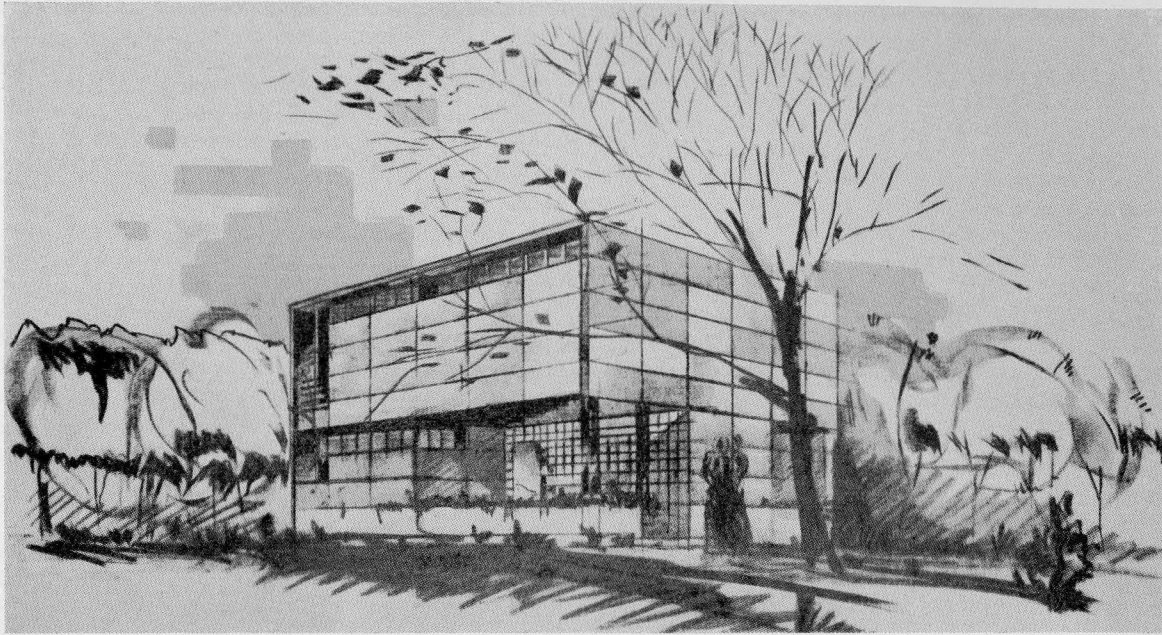
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THOSE loyal members of this Institute who monthly scan the pages of the *Journal* will never realize what ambitious plans the Editorial Board entertains for the greater usefulness of the *Journal* in the War Effort. It is true we are handicapped by space and circulation, but it is nice to even imagine a *Journal* that in itself would be equivalent to the opening up of a second front against the enemy. That is perhaps an idle dream, but members will receive a shock when they open their May *Journal*. For some time we have been considering requests for information about A.R.P.,—not only in relation to new shelters, but for the possible protection of existing plants and houses against fire and bomb. It was decided to do a special issue of the *Journal*; one that would be of use to municipalities, owners and architects and one that would, as far as possible, contain information that would suit Canadian needs. To do such an authoritative number, profusely illustrated, required more funds than the *Journal* had at its disposal, but even that matter has been solved. Feeling that we were undertaking a useful thing in the public interest, the Ontario Association of Architects and the Province of Quebec Association of Architects have each contributed \$1,000.00 to defray the additional cost of publication and increased distribution. We hope, with the assistance of a special committee, to do something worthy of their trust in the *Journal*. This money is being presented to the Royal Architectural Institute of Canada, and if any other Provincial Association feels that it would like to help with even a token contribution, its assistance will be welcomed. We shall not write on this page in May and take this opportunity of asking members to make our A.R.P. *Journal* known to Press, city architects, A.R.P. headquarters and other interested bodies.

We were pleased to see in the annual number of that very friendly, and admirable paper, the Daily Commercial News, that architects are doing wartime buildings all over Canada. There was a time when the lunch table or a chance meeting on the street provided our editorial gestapo with news of a fine house or a church which we should publish, but those days have gone and the busy architect with a wartime factory discusses everything but his work. However, we intend showing industrial buildings in the June and July issues of the *Journal*, and committees in Quebec and Ontario are engaged in securing material. Ordinary factories engaged in such pacific pursuits as the making of food or soap need no special permission to be photographed and we would like as many photographs as we can get. Certain buildings connected with war industries may be photographed, with special permission from Ottawa and we think it of first rate importance that they be published in order to show what the profession is doing. Needless to say, all instructions such as not naming the building or its location will be scrupulously followed. A great many have already been published elsewhere and permission to republish should not be difficult. We earnestly request the co-operation of architects in a matter of vital importance to the profession. May we suggest that the most active in war work have a special duty in this regard. The Institute has shown much energy in impressing on the Government the fact that the architects of Canada can assist the war effort, and we wish to prove that point by an imposing collection of well designed buildings.

As we guessed when we wrote an editorial note on Mr. Gordon Pitts' election as President, he is not taking his new duties lightly. During the last few weeks his peregrinations have taken him from Ottawa to the Maritimes. We might have added to our sincere eulogy of Mr. Pitts, which has embarrassed him already, that no one that we know combines, as he does in such equal parts, the characteristics of the hornet and the dove with the wisdom of the owl. He will find good use for all three in the next two years.





## PLASTIC POSSIBILITIES—THE HOUSE OF THE FUTURE

By T. WARNETT KENNEDY

*With the courtesy of Architectural Design & Construction*

**B** RITISH drawing boards are today littered with ingenious schemes for building houses by new methods and materials. The majority of such schemes await the post-war boom for the opportunity of a realistic try-out. Among the newer materials are the numerous plastic compositions holding out the promise of higher standards of living in respect of cleanliness, colour, weather resistance, insulation and flexibility of design.

### WHAT PLASTICS ARE

The range of plastics is wide, the most commonly recognised including Phenol Formaldehyde, Urea Formaldehyde, Celluloid, Cellulose Acetate, Casein, Acrylic Acid Derivatives, Styrenes, Vinyl Resins, Nylon, Lignin and Synthetic Rubbers.

From these primary plastics are developed numerous purpose-made compositions. Many of these are known by their trade names, the use of which has the effect of causing confusion, as frequently they have no apparent relationship to their generic names. At the present stage of research for building purposes, attention has been mostly directed towards the exploitation of Phenol, Cresol and Urea Formaldehydes, Cellulose Acetate, Styrenes, Polyvinyl Acetate, Polyvinyl Chloride, Lignin and Acrylic Acid.

In almost every application, synthetic resins are used in conjunction with filler materials such as wood flour, paper, fabrics, wood, asbestos, mica and vegetable fibres. The physical properties of the resultant compounds are largely determined by the nature of the filler content, the manner in which the fillers are processed, and the orientation of the fibres. Generally, powdered fillers are inclined to give the material a tendency towards brittleness. Fibrous fillers give tough and impact-resisting materials, and laminated fillers are strong enough to permit plastics to be used in a limited structural sense. The range of fillers is without restriction and is being supplemented continually by the addition of new waste products.

### SHAPING OF PLASTICS

The techniques by which plastics are converted and shaped into final products include pressure moulding, injection moulding, extrusion, sheet formation, lamination, impregnation, casting, and paints and lacquers.

These techniques have been developed by the plastics industry mainly for the production of small, highly-finished, mass-produced articles. Plant used is specialised and, where dies or moulds of specially hardened metals are employed, initial costs are high. Research for building plastics will necessarily mean that new and inexpensive methods of production will have to be devised.

### PHYSICAL CHARACTERISTICS OF PLASTICS

From the architects' viewpoint, the physical characteristics of plastics are remarkable and can be enumerated as follows:—

*Weather Resistance.* Water absorption in many cases is negligible. The architects' problem, therefore, becomes the design of perfect joints. They are proof against normal atmospheric erosion and discoloration. In most thermoplastics the heat softening point is much higher than temperatures normally encountered, but thermo-setting plastics are dimensionally stable. They are proof against corrosion and may be used for windows and glazing bars.

*Flammability.* Thermoplastics melt at high temperatures. Thermo-setting resins are subject to charring to a degree determined by the filler. Complete non-flammability may be obtained with asbestos filler.

*Hygiene.* Improved standards of health and environmental cleanliness are possible. Wall surfaces remain fresh indefinitely, and are readily cleaned down. Plastics are proof against rot, vermin and insects. They can replace wood or, alternatively, wood can be impregnated with synthetic solutions.

*Decoration.* The decorative range is unlimited. Plastics are obtainable with full colour range; pastel shades; mottles;

texture; matt, smooth or embossed finishes; transparency and translucency. The plastics technician can meet almost any clearly formulated request by the Architect.

*Insulation.* Plastics lead in the field of electrical insulation. For building, the thermal conductivity is generally low and heat loss should be negligible. Sound, vibration, and thermal insulation is a matter of design for purpose. The industry has over-developed highly compressed compounds. The best results are anticipated from development of techniques of impregnating porous substances with plastics sprays, emulsions, and solutions.

*Mechanical Strength.* Phenol and Cresol laminated plastics give good figures for compression, tension, and shear, and a low modulus of elasticity. Strength-weight ratio is excellent. Structural plastics are suitable for light framing and advanced prefabrication schemes.

### CONTRIBUTION TO POST-WAR HOUSING

It is not surprising that synthetic materials, having these admirable properties and lending themselves so readily to admixture and design for almost any well-stated problem normally encountered in building, will be largely used during the post-war period for priority housing. The ideal of complete prefabrication of houses is brought substantially nearer realisation by their study development and design application. Already it can be said that every component of a house can, theoretically, be factory-made from plastic materials and, indeed, schemes are already well in hand to build experimental houses in Scotland.

The housing components which are being developed include light structural framing members, external and internal wall sheeting, walling blocks or panels, floor slabs, floor finishes, staircases, roof slabs, doors and door frames, windows, skirting, trimmings, etc., and built-in fitments. Research is also being directed towards the attainment, through the medium of these materials, of higher standards of sound, vibration and thermal insulation, and a substantially wider range of decorative effects.

### THE PREFABRICATION SYSTEM

While these separate researches are being co-related towards the objective of building the all-plastics house, it is

quite realised that synthetic materials may be used in many cases, perhaps in some to greater advantage, with existing building materials or new alternative materials in process of development. It is in line with the scientific spirit to make certain that the design forms which emerge, should accurately reflect the particular advantages inherent in the new synthetics, rather than attempt to make slavish copies of traditional forms.

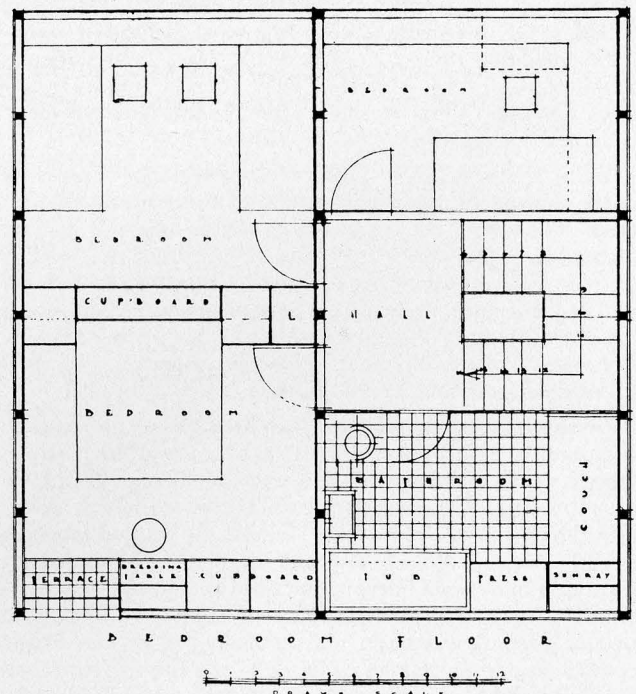
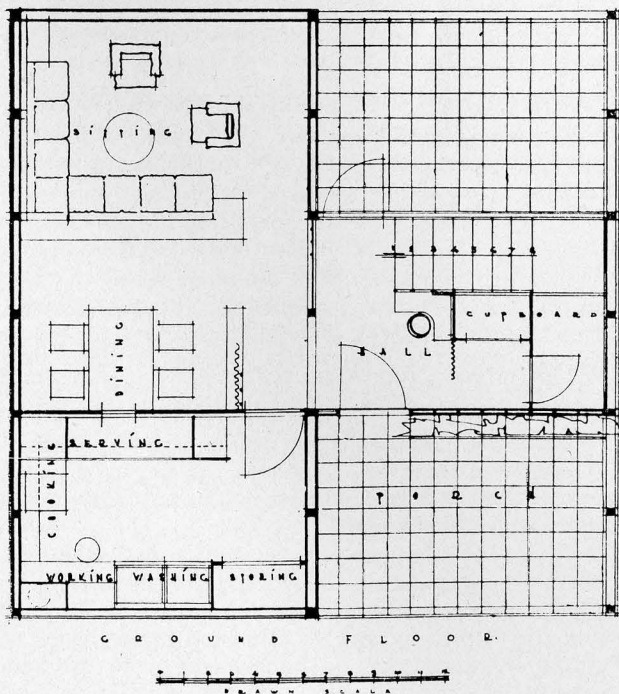
New methods of construction, therefore, cannot be reasonably divorced from the new materials, and it is in this particular aspect of research that the architect will play an important part. In this connection, present efforts have been devoted almost exclusively towards the application of plastics to prefabricated systems, as it is realised that precision-made components can be shown to best advantage and used most economically in a factory-controlled design. It is thus that the economic advantages of speed and rationalisation in building can be used to offset the temporary higher cost of these materials.

### THE FUTURE OF PLASTICS

It is already common practice to use plastics for minor fittings such as door furniture, handrails, W.C. seats, etc. The list will be supplemented by plumbing (as in Germany), cisterns, electrical cable sheathing, curtains for bathroom and spray, and furniture with woven plastics fabric covers as used today in the U.S.A.

One can foresee, therefore, that a logical development of building plastics will imply the setting up of House prefabrication Companies. These will collect from various firms in the plastics industry, the various housing parts made to order from architects' designs, and undertake the co-relation and assembly of these components in the factory and on the building site. Alternatively, factory-made parts may be forwarded to local builders for erection under the supervision of a skilled Clerk of Works from the factory.

Speculations on the form of organisation which will develop to cope with the new opportunities is perhaps premature, but it is apparent that the skill and training of architects will be more than ever necessary to guide aright a movement of a significance so great that it dare not get out of hand.



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# A REPORT OF THE R.A.I.C. COMMITTEE ON HOUSING

WHEN it was suggested in the annual report of the Committee on Housing that "Research Committees for the consideration of local problems of location and construction created by the emergency of war and future reconstruction, be sponsored by the Royal Architectural Institute of Canada in the various Associations and Chapters of architects", the thought behind the suggestion was that the Council should request the various Associations to establish committees in their various chapters or important centres of population or industry, to survey all classes of building with reference to the best future development.

These committees would co-operate and consult with local authorities on building, health, education, social welfare, etc., and with committees of various professions interested in building, sanitation, lighting and landscape gardening, endeavouring to form with them committees to investigate all matters affecting the present and future good of the people. This larger committee, sponsored by the various organizations interested, would co-ordinate the whole effort locally.

The Committees sponsored by the R.A.I.C. would report to the Council which would allocate to its committees the parts to come under their separate consideration.

The Art, Science & Research Committee might take that part of the reports dealing with Education, Museums, Historic Buildings and Research into building materials.

The Housing Committee would report on housing in its relation to better living conditions and to Business and Industry and also to Schools, Churches, Parks, Recreation centres, and Social Uplift.

A special committee on Town-planning would consider the whole in relation to Zoning, Parkways, Transportation, Parking and Motor Travel, Lighting, Sanitation, etc.

A tentative outline of what these committees would investigate and report on follows:

## I. Survey of Business Centres:

- (a) Uses of buildings—stores, offices, banks, theatres, light industry, warehouses, garages, etc.;
- (b) Relation to and separation from housing;
- (c) Transportation to and from distant housing;
- (d) Auto parking and travel — streets and parking spaces;
- (e) Parks and conveniences.

## II. Survey of Industry:

- (a) Kinds of industry—number of persons employed in different capacities;
- (b) Relation to and separation from housing;
- (c) Transportation to and from distant housing;
- (d) Auto parking and travel—heavy truck travel;
- (e) Employees' relation to industry—Employer and Employee—Unions and organizations.

## III. Survey of Distant Transportation and Terminals:

- (a) Railways—Water Transportation—Inter-urban Bus Service, etc.;
- (b) Relation to Business, Industry and Housing:
  - i. Separation from Housing—parkways;
  - ii. Convenience for industry—switches, etc.;
  - iii. Terminals—freight sheds—yards.

## IV. Survey of Housing:

- (a) Low Income Housing:
  - i. Single houses;
  - ii. Terrace houses;
- (b) Middle Income Housing:
  - iii. Duplex and Triplex;
  - iv. Apartments;
- (c) High Income Housing:
  - v. Boarding houses;
  - vi. Garden and lawns (private);
- (d) Relations of Housing to Business and Industry; Possible elimination of class lines;
- (e) Transportation to Business and Industrial Centres;
- (f) Separation from Industry — parkways — shopping centres—off-street parking for autos—protection of children, etc.;
- (g) Parks—recreation centres—theatres (movies).
- (h) Schools—churches—social centres.

## V. Education and Social Uplift:

- (a) Survey of Buildings and relation to housing, etc.;
- i. Schools—public, commercial, technical, etc.
- ii. Churches—denominations;
- iii. Social organizations and societies;
- iv. Parks — streets — public gardens — museums;
- v. Sociology—creation of interest in the better things through radio, movies, photography, lectures, concerts, patriotic movements, recreation, world outlook, etc.

## VI. Survey of Historic Buildings, etc., with object of preservation and education.

## VII. Survey of Public Health and Services:

- (a) Health Services;
- (b) Hospitals, etc.;
- (c) Sanitation—water, etc.;
- (d) Electricity—gas, etc.;
- (e) Streets—lighting, cleaning, snow clearance, prevention of accidents, etc.

## VIII. Research into new building materials as well as old — new uses of materials — heating and lighting — sanitation—etc.

## IX. Map making and diagram to illustrate the various conditions and suggestions for betterment.

Attention might be drawn to the report of "Committee for Civilian Defense in Boston, Mass." which was published in the Pencil Points Magazine for January, 1941, pages 42 to 46; also to the work of the P.E.P. (Political and Economic Planning) in England.

Respectfully submitted,

(Signed) Wm. H. Holcombe,

*Chairman.*

May 9th, 1941.

## COMMITTEE

C. W. U. Chivers	Gordon McL. Pitts
William Fredk. Gardiner	J. H. Puntin
Leslie R. Fairn	John U. Rule
H. Claire Mott	J. Roxburgh Smith
W. L. Somerville	

## EXPLANATION AND COMMENTS ON THE R.A.I.C. REPORT

COPIES of the report of the Committee on Housing submitted May 6th were sent to each member of this committee with the request for their comments.

The personal reaction of the members whose replies have so far been received shows appreciation for the scope of the report and expresses the desirability of some such survey while doubting the possibility of carrying it through or of awakening interest of the local authorities or organizations and obtaining their co-operation. The report is being referred to the local Councils of the Associations and their attitude must be one of the deciding factors in carrying out the programme.

There are some misapprehensions as regards the proposed organization and objectives and the following statements are made to cover these:

- First:* That it is not thought possible to carry out the programme in a short space of time. It would be a project for future committees for at least several years, possibly for the duration of the war.
- Second:* The R.A.I.C. should not attempt to undertake the programme alone but in co-operation with Engineering, Building, Social and Educational organizations each appointing and sponsoring their own local combined Research Committees. In the smaller centres, individuals would be appointed who would then form the Research Committee.
- Third:* Many organizations, associations and committees have, in the past, been working on some part of these problems and no doubt others will be formed and it is to combine their efforts, sift the materials at hand and endeavour to fill the gaps to a complete survey, in an attempt to solve some of those problems to the betterment of government, of business and business relations, of education and of social security and uplift, that will be the object of this larger committee.
- Fourth:* It might be noted that in the outline given in the report of May 6th the whole survey is largely built around Housing as the main interest of this committee. Committees of other organizations would stress that part most interesting to their organization.

*Fifth:* That the ultimate objective of the whole must be something higher than the ordinary objective of any one of the organizations engaged in the survey: "The making of this country and of the whole world a better place in which to live." And it might be suggested at this point that the raising of the standard of life is the necessary precondition to the betterment of building, of industry, of science and art, as well as of government.

*Sixth:* That the results of the survey should be laid before the Federal and Provincial Governments by a committee of the organizations participating. It would probably, in the advance stages of the survey, be necessary to seek aid from the Government, unless it can be obtained by private means or through organization, in order to complete and publish the final report. This could be done when such results have been obtained as will prove it worthy of full consideration and assistance.

*Seventh:* One member of the committee makes the further suggestion: "There is no question of doubt that we should give very serious study to the reconstruction and perhaps follow the example of the other Dominions in co-operating with the general reconstruction plan which I believe is headed by Lord Camborne and the Right Hon. Arthur Greenwood."

It has been suggested in a letter from a member of this committee that the original sponsor of this scheme is the National Construction Council, but it might be pointed out that the programmes of the two surveys are quite different and a restudy of the Committee on Housing report in the light of the seven points above, will make this clear. It will also be clear that co-operation within the two programmes is possible and desirable and that it is still possible (the desirability has been expressed many times that the Architectural Profession and Associations should take a larger part in Public and Social matters) for the R.A.I.C. to become the sponsors or originators of this larger and more comprehensive programme.

Respectfully submitted,

(Signed) WM. H. HOLCOMBE,

September 26th, 1941.

Chairman.

## THE P.Q.A.A. LOOKS TOWARD RECONSTRUCTION

THREE REPORTS BY THE RECONSTRUCTION COMMITTEE OF THE P.Q.A.A. DEALING WITH THE PROFESSION AND ITS RELATION TO POST-WAR RECONSTRUCTION

SEPTEMBER

*The need for a Conference on Town Planning. (A memorandum intended for distribution to other professions concerned in social welfare.)*

This Memorandum has been drawn up by a group of architects, French- and English-speaking, who constitute, in part, a newly formed Reconstruction Committee of the Province of Quebec Association of Architects, together with others interested in the subject. Some members of this body, under the name of the Architectural Research Group, last spring produced "City for Living", an exhibition of town and regional planning. In the pamphlet accompanying the exhibition, one of the steps suggested as being necessary to any town planning movement in this city was a conference of various groups and individuals whose knowledge and advice were essential to the study of the problems involved. The object

of this Memorandum is to seek such collaboration: it is an attempt to outline the reasons for such a conference, and an invitation to assist in arranging it.

### *The Need for Planning*

The social and economic troubles of modern cities are largely a result of their unplanned growth, bad housing, congested land, lack of adult and child recreational facilities, insufficient health clinics, crowded schools, unsafe and inconvenient communication, the physical ugliness of the cities themselves; which all contribute to bad living environment, are all products of uncontrolled and disordered development.

The condition of our cities before the war was critical; the war has aggravated the situation, and at the same time has brought a wider recognition of the resulting evils. The post-war problems, loaded on top of the existing situation, will further complicate the problem unless steps are taken now



to study the conditions and to formulate means for improving them. The question is fundamental to democracy, and a sane and progressive planning programme must be one of the basic elements of any post-war reconstruction policy. We cannot tell when the war will end, but it is clear that whether hostilities cease in a few months, or several years from now, there is no time to be lost before a definite town and regional planning system is determined.

The problem is not localized to any city or to any one part of the country. It is a national problem, and Canada has done less than any other "civilized" country to cope with it. In putting forward the following suggestions, however, it is proposed to concentrate on the problem as it exists in the city and region of Montreal. Action may now be in progress, or may come later, in other parts of the country, and such would desirably be joined into a national movement; but this memorandum is addressed to those interested, or potentially interested, primarily in the local situation.

### *The Requirements of Planning*

As architects and planners, the authors are not under the illusion that town planning is a question purely of physical beautification of the city. Planning, as we see it, is infinitely broader and more complex; it is the technique whereby the city and its complementary region, is so ordered as to be healthy, safe, convenient and beautiful.

To make possible any planning programme, two things are necessary: an understanding of the problem itself, which implies technical research; and a public appreciation of, and thus demand for, the social and economic benefits of planning. Without the first, there can be no intelligent plan, and without the second, the legislation and authority necessary to carry out the plan cannot be achieved.

### *Professional Co-operation*

The technical information necessary to a comprehensive study of the problem is obviously beyond the capacity of any one profession or group of technicians. The problem of planning involves the principles of public health, education, sociology, architecture, engineering, law economics, real estate and others.

Similarly, any intelligent programme of propaganda must be designed to cover the same fields and to appeal to the public with many arguments.

Thus it appears that to study the problem effectively; to arrive at intelligent conclusions; to enlist the support of the public, and to permit the acceptance of any principles, it will be necessary to bring together representatives of many professional and technical groups.

### *The Means of Co-operation*

In approaching members of the professions suggested above, the authors of this memorandum invite them to a discussion of the general problem. The purpose of such a discussion would be to survey the problem from the various points of view represented; to formulate a statement of its scope, and to set up an association of the various technical and professional groups to deal exclusively with planning.

The next step would be to form, within the various groups, research units which would study the particular aspect of the general problem which touches them directly, and to which they could apply expert knowledge.

These working units would constitute part of the larger association, which would function as a clearing house of data provided by them, and a forum for general discussion and the development of conclusions and proposals.

The association would have the further task of carrying on propaganda by all possible means, such as lectures, exhibitions, newspaper articles and radio talks. Such publicity would have the more effect because it would be backed not by

an individual group, but by a wide body of experts and technicians. The authority of such an association in making reports and proposals could not be overlooked either by the public or by the government.

## OCTOBER

### *A preliminary report prepared for the Reconstruction Committee at Ottawa.*

Accepting as necessary premise the development of a post-war reconstruction programme by the Federal Government, it may be stated that one essential function of such a programme will be to guide the physical development of the country, the expansion of urban and rural communities, in such a way as to grasp and utilize most advantageously the opportunities which the post-war period will provide, and to avoid, by means of authoritative control of some sort, the repetition of past mistakes and the consequences of further unplanned development such as has hitherto prevailed.

The controls which will inevitably be maintained or imposed by the Government at the end of the war can be such as to ensure that public funds administered and public works undertaken as part of a rehabilitation and reconstruction programme are part of a comprehensive plan of development of the communities and regions concerned, rather than ill-considered stop-gaps unrelated to the ultimate scheme of things. (There are many examples of money and opportunity wasted on public works relief projects, particularly in the municipal field, which have become liabilities rather than assets because there has been no broad plan into which to fit them. In the same way, the present war-time housing developments create potential liabilities due to the fact that haste has not permitted a sound planning scheme to safeguard their future value.)

Realizing the importance of the post-war opportunities in reference to this community, the Reconstruction Committee of the Province of Quebec Association of Architects has set itself the task of studying the local problem with the object of preparing, eventually, for this city and region, a master plan upon which a reconstruction programme could be based. This plan would have as a long-term objective the control of the future development of the City of Montreal and its interdependent region, and as an immediate consideration emergency proposals which would form part of a national post-war rehabilitation and public works programme.

The Committee believes that land use and building development should be controlled throughout the country. (The English Town and Country Planning Act, 1932, is an important precedent.) It believes that, as part of any reconstruction proposals, it is important that there be established in all communities competent planning authorities with the power and the obligation to control development in urban and rural areas; that a time limit be set for the preparation of outline plans, and that public financial aid be restricted to those communities which have such development plans approved by a central co-ordinating authority. (*c.f.*, the Ministry of Health in England, before the war, and Lord Reith's current proposals.)

This Committee also proposes, as an early part of its task, to formulate a planning method in order to establish the basis of approach to the subject of city and regional planning in this community, and to state the scope of the problem and enumerate the various professional and technical fields whose co-operation is involved.

In order to demonstrate the importance of a sound approach to planning, this committee intends also to show by examples in detail what are the results of lack of planning in the past, what will be the inevitable results of lack in the future, and conversely, what proper planning may be expected to provide in various phases of city and regional development.

*P.Q.A.A. report to the R.A.I.C. Housing Committee regarding post-war reconstruction and the Architectural Profession.*

CONSIDERING first the reaction to the original report of the R.A.I.C. Housing Committee as outlined in the report of September 26th, we cannot agree with those who doubt the feasibility of carrying out a programme of the nature suggested: dire necessity makes its fulfilment essential.

That the programme must be a long-term one is certain. Committees must be set up to stand as long as required and existing annual committees must be correlated, in order that all the associations and chapters of architects across Canada may work, in their own Communities and together through the R.A.I.C., toward the effective contribution of the profession to the post-war reconstruction of this country.

The broad question of physical reconstruction obviously extends beyond the field of the architect alone, but even as the architect must be the planner and designer of "living environment" and the organiser of the individual building project, so he should be the planner of physical reconstruction, and the co-ordinator of the expert knowledge of various technicians along with his own. The architect must seek and utilize the assistance of the doctor, the engineer, the social scientist, the educationalist, the economist and other experts; and with the information they supply he will then be able to plan and design efficiently the houses, the schools and hospitals, the offices and factories, the theatres and recreation centres, and to inter-relate them by means of streets, parks and open spaces to form communities which will be "better places in which to live"—healthy, safe, convenient and beautiful.

Thus we fully agree that it is the duty of the profession, both to itself and to the communities which it serves, to endeavour to form associations with the other professions and technicians whose co-operation is essential to the study of town planning as it relates to post-war reconstruction. Within such associations specialized reports should be co-ordinated by the central associations into comprehensive surveys and programmes of reconstruction of the communities concerned.

These findings should not only be laid before the Federal, Provincial and Municipal governments, but (and we consider this a serious omission from the Housing Committee reports) presented to the public by every possible means of publicity, and to the influential organizations such as the Chamber of Commerce, the Boards of Trade and Labour Organisations. Public demand is vital to any government action, and such demand will be more easily effected if the proposals have the support of a wide group of technical and professional experts, and the endorsement of powerful lay organisations. Such publicity should be developed as a continuous programme, and for this the assistance of publicity experts might well be considered.

The funds necessary to such undertakings might logically be contributed, in the early stages at any rate, by the various organisations represented on the local research committees, and the architectural associations will lose nothing by contributing to the full extent of their ability.

To the possible objections that the individual members of the architectural profession have not the time, nor even perhaps the energy, to undertake such activities, we simply restate our belief that the job must be done if the profession is to continue to exist as such. Such a job, more compelling perhaps, but also more difficult, is being done today by the architects in England, as may be seen from the reports and editorials in the English journals, the work of the R.I.B.A.

Reconstruction Committee, the findings and proposals of Lord Reith's Committee, and similar examples.

Turning to the more detailed statements of the first of the Housing Committee reports, we find ourselves obliged to think of the whole question as a problem of Town and Regional Planning, of which the various inter-related subjects of Housing, Education, Industry, Recreation, Zoning, Transportation and so on, are subdivisions.

Thus we believe that the master committee, composed of various professional and technical groups, should be essentially a local Town and Regional Planning Committee, supported by technical sub-committees (Doctors, Social Scientists, Architects, Engineers, Educationalists, Transportation Experts, etc.), which would again be broken down into specialised groups (architects, for instance, forming separate working units to study various types of buildings, building technique and details; and these units would automatically have to co-operate with certain units from the other professions).

While steps might well be taken now towards forming such associations, there is work that must be done by the architects alone before they can co-operate fully with the other bodies. After some discussion with members of some of the other professions concerned, it has been found that many of them have already established much of the information which will be required. The medical profession has a fairly complete idea of what it considers necessary in housing, what hospital facilities are necessary, etc., and much has already been done by social scientists and educationalists to establish their minimum standards. Similarly there exist useful statistics pertaining to transport facilities and such civic services.

Little or nothing has been done to co-ordinate this knowledge or to apply it to the broad picture of Town Planning, and this job can and logically should be carried out by the architect. His most immediate duty, however, we consider to be to catch up with the other professions whose knowledge he hopes to utilize, by setting forth quite clearly what are the minimum architectural standards—that is to say what the architect hopes to produce by town planning.

The first step in this direction is for each chapter of the provincial associations to set up a standing committee (Reconstruction, Town Planning, or whatever it may be called) to study and analyse the local community, to produce surveys of existing land usage, housing, traffic conditions, parks and recreational facilities, etc.; to establish "natural" districts and neighbourhoods; and generally to produce an easily read picture of the existing conditions, trends, and problems of the community. Such findings would be in the form of a series of maps, charts and reports.

From there the process becomes one of applying the best principles of Modern town planning to the problems and potentialities of the district, and here the knowledge and assistance of the other professions will come more and more into play.

The detailed organization and subdivision of the work to be done is one which involves considerable study and discussion, and it may well be found that the methods will vary according to the communities. Therefore we would suggest the desirability of having each provincial association set up at once an interim committee to study the question, and to bring before the forthcoming annual meeting of the R.A.I.C. its proposals for organising a programme in the various communities with which it is concerned. Such a move should awaken considerable interest within the profession and might prepare the way for an official R.A.I.C. programme to be approved and instituted at the annual meeting.



# ARCHITECTURE AND DESIGN OF THE TVA

By GEOFFREY BAKER

**T**HROUGH all the hullabaloo of politicians, lawyers and utility magnates, the architects and engineers of the Tennessee Valley Authority have been patiently working on the gigantic task of remodelling a region 40,000 miles square, in which dwell 2,000,000 people. If successful, the result may become the model for similar regional development in other parts of this country, and in Europe, after the war. The just-opened exhibition of TVA architecture and design at the Museum of Modern Art, made up of enlarged photographs and models, should serve as an effective bracer for those who doubt the creative power of democracy.

As the vital centre of that remodelling, TVA has planned a series of dams to generate power, control floods and improve navigation. As by-products of these primary aims there are parks, towns and local industries. Some of the dams are still under construction, but the half-dozen completed stand out as the most genuine and enduring public architecture to be found anywhere in recent years. The design, of powerful simplicity, has been chosen to last just as carefully as have the materials which give it shape.

The beauty of these dams (with which the present exhibition is primarily concerned) is ageless; it is the honest beauty of a fine tool, shaped by the purpose of its use. Here it is the Tennessee River which sets the scale and even dictates the forms. The force of flowing water translated into engineering factors has determined these clean shapes. The admirable curve of those cutwaters was determined by experiment in the engineers' test tank. No architect could better that particular form.

In other cases the architect has been able to improve upon the raw machinery that satisfied the engineer's mechanical demands but was lacking in co-ordinated design. The gantry cranes at Wheeler Dam are far less beautiful than those at Hiwassee, completed some years later. The latter have been consciously designed for appearance; they are also more efficient than those at Wheeler.

That aged red herring, "Where does engineering stop and architecture begin?" seems particularly unimportant in the case of TVA. For these dams are rightly regarded as but a single factor in a vast pattern of regional development. Architects and engineers have worked side by side, each benefiting from the other's talent. An official policy of anonymity has prevented any scrambling for credits.

The result is a single quality of design running through all these TVA structures—not only in the obvious, "show" places, such as reception rooms, outlooks, power-houses, but also in the smaller details such as railings and pipe ladders, drinking fountains and sidewalk lights. Each new dam shows some refinement of design as compared with its predecessors,

yet the general style remains within limits suggested by the fixed necessities of dam building.

Aside from these limitations, the designers show a fresh and imaginative realism which is still, however, informed by what may be called a TVA style. A fair example of this is the Murphy steel footbridge. When new reservoirs were created and large tracts flooded, many roads and railroads had to be moved to new positions. The new bridges which this necessitated are of all types and many different materials. They effectively dispel the argument that regional plans will induce a stereotyped design over large areas of country.

On the other hand, the Murphy footbridge has much the same "feel" as the experimental barge shown on a neighboring panel at the museum. In this case architectural style, the designers' manner of thinking, is the only reasonable link. Perhaps there is a sign here that shows the emergence of a genuine style of our time. It is surely not too arrogant to imagine that the TVA work will seem less trite twenty years hence than the Wilson dam (not ornate, just second-hand) appears today.

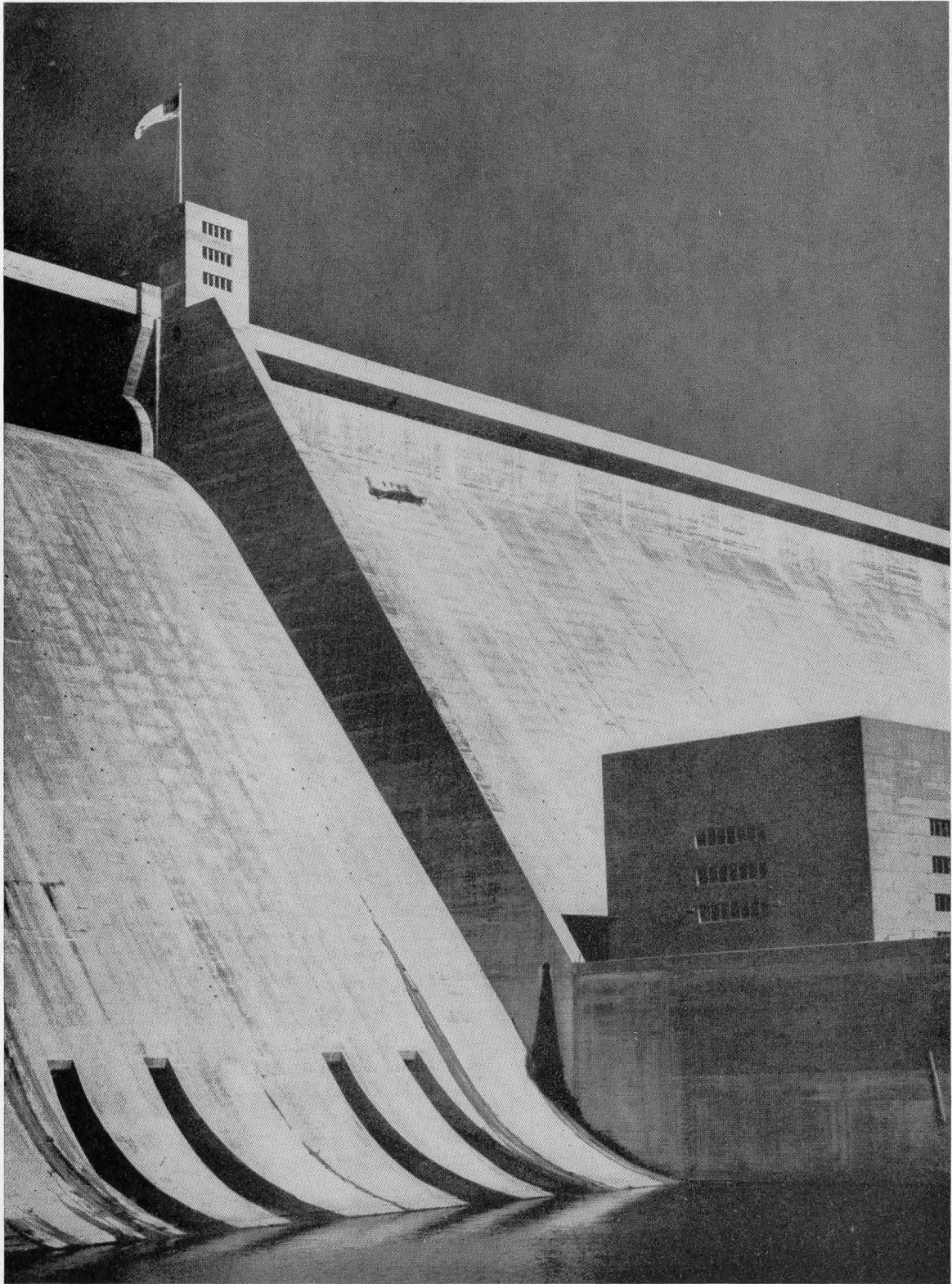
There is one insistent difficulty that these designers have not yet overcome. They are still without a surfacing material attractive in color and texture, inexpensive and long-wearing, though I understand experiments are now being made with limestone slabs. Concrete is presumably the inevitable choice for the dam itself and for any buildings liable to flood pressure; but there will be cases in which the power house and administration buildings might be given a more attractive finish than concrete is able to provide.

The designers have already tried giving the monolithic concrete walls a surface pattern by using rough-sawn boards as forms. They are laid vertically and horizontally in alternate rectangles. The result is a checkerboard pattern of horizontal rectangles, each with grained board marking. The proportion of the rectangles is repeated in the proportions of doors and windows. This comes off particularly well at the Norris power house, where a pair of aluminum-sheathed doors more than twenty feet high allow large machine parts to be moved in and out.

It is unfortunate that the present exhibition at the Museum of Modern Art contains no color photographs. These would show, it is true, the unattractive nature of the concrete walls in some places, but they would also show the interior of the power house at Pickwick Dam, where the green and silver generators are backed by lemon-yellow walls. Even in the black-and-white photographs it is easy to appreciate the disciplined, bold forms of the generator casings, though the immense scale of the machines is not so easily grasped.

This is architecture of lasting worth. Why shouldn't we insist that other government architecture be equally well designed?

—*Courtesy of New York Times.*



NORRIS DAM, TENNESSEE VALLEY AUTHORITY  
KNOXVILLE, TENNESSEE





RECEPTION HALL, PICKWICK POWER HOUSE

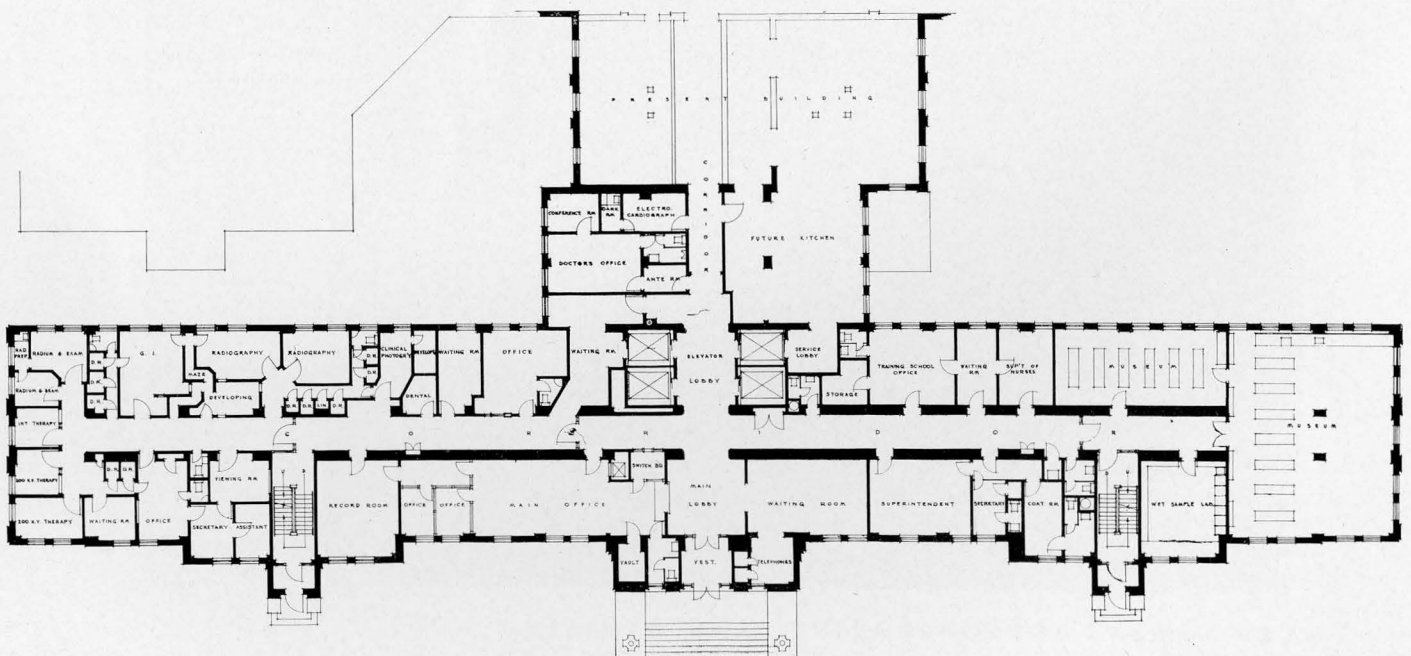


CONSUMERS' CO-OPERATIVE, SHELBYVILLE



VICTORIA HOSPITAL, LONDON, ONTARIO

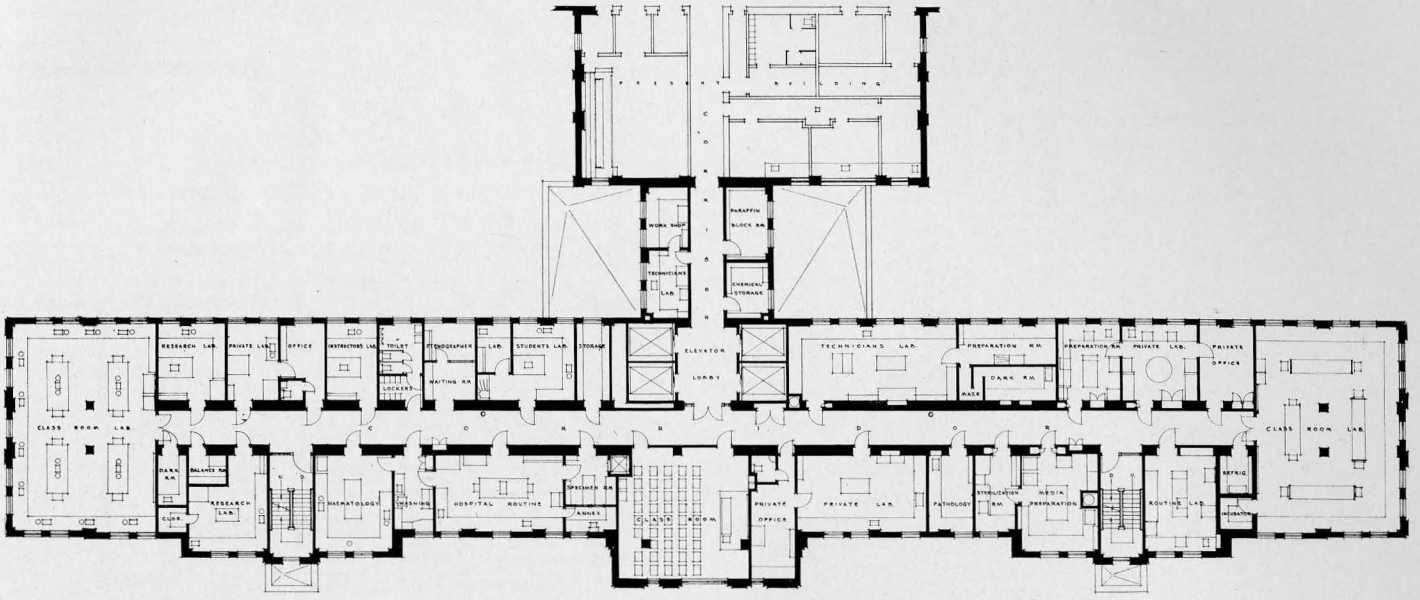
WATT AND BLACKWELL AND  
O. ROY MOORE AND COMPANY, ARCHITECTS



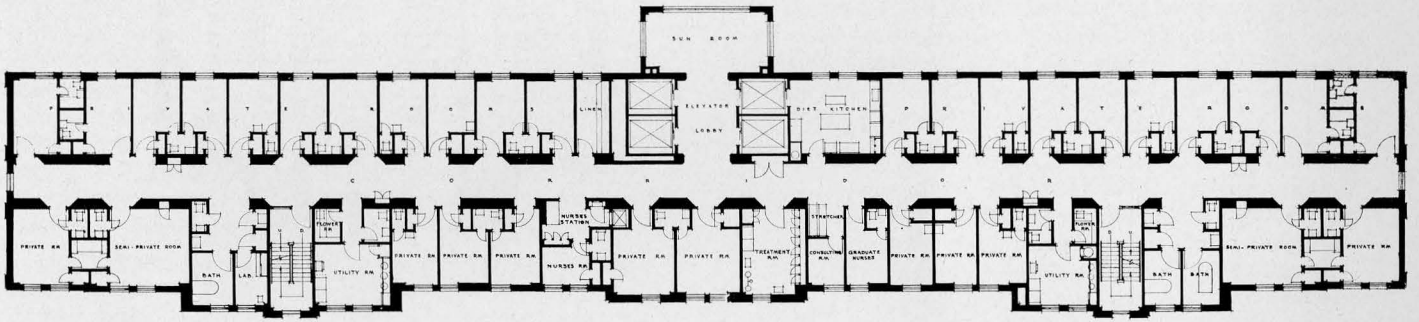
FIRST FLOOR PLAN



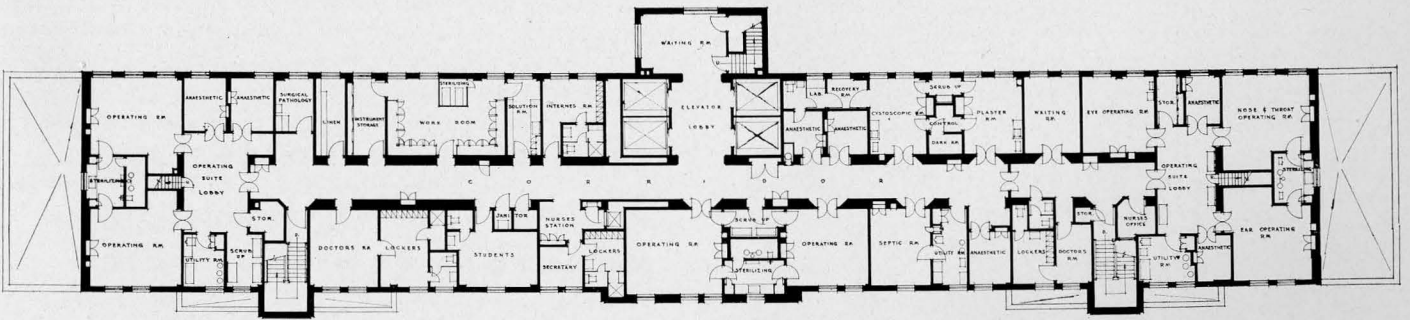
# VICTORIA HOSPITAL, LONDON, ONTARIO



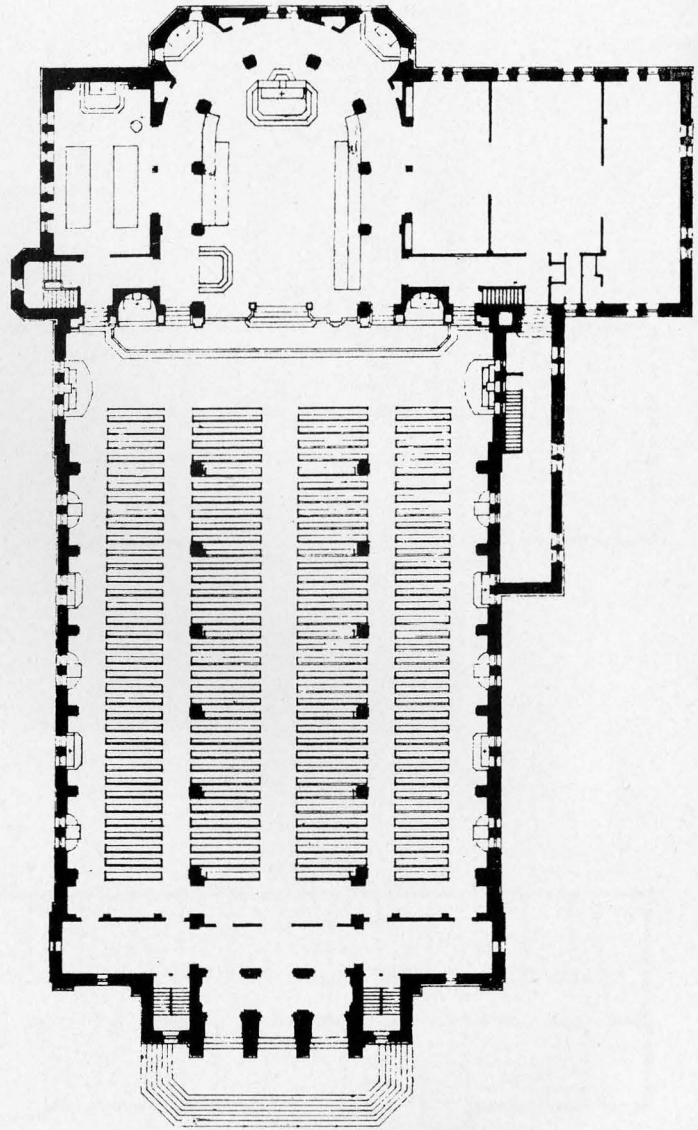
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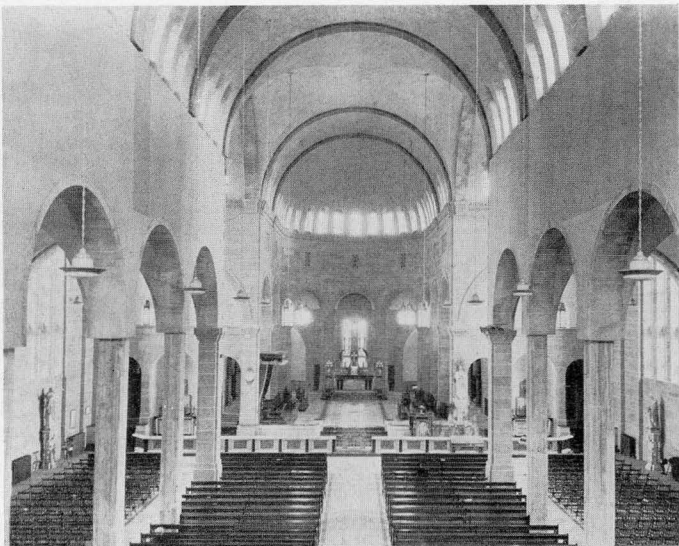
FIFTH FLOOR PLAN



SIXTH FLOOR PLAN



FIRST FLOOR PLAN



CATHEDRAL OF NOTRE DAME  
OF THE ASSUMPTION,  
MONCTON, NEW BRUNSWICK  
LOUIS N. AUDET, ARCHITECT



## MEETINGS OF THE EXECUTIVE COMMITTEE

THE first meeting of the Executive Committee of the Institute for the year 1942 was held in the rooms of the Institute, 620 Cathcart Street, Montreal, on Saturday, March 14th, at 2.30 p.m.

*Present.*—President, Gordon McL. Pitts (F) in the Chair; Charles David (F), Honorary Secretary; J. Roxburgh Smith (F), Harold Lawson (F), O. Beaulé and Henri S. Labelle (F).

The reading of the minutes of the last meeting of the Council and the last meeting of the Executive Committee were postponed until the next meeting.

The Chairmen and personnel of the various Standing Committees and Special Committees of the Institute for the year 1942 were submitted and approved.

Mr. L. Sylvester Sullivan, F.R.I.B.A., was appointed as one of the Institute's representatives on the Council of the R.I.B.A., and the President was appointed as the other representative subject to his becoming a member of the R.I.B.A.

It was reported to the meeting that the Council of the R.A.I.C. and the Council of the P.Q.A.A. had unanimously recommended that Mr. Alcide Chausse be appointed "Honorary Secretary Emeritus" of the Institute, and that the President and Mr. Charles David, President of the P.Q.A.A. had called upon Mr. Chausse to advise him of this honour.

The meeting was advised that in accordance with the resolution passed by the Council of the R.A.I.C., the Council of the P.Q.A.A. had appointed Mr. Henri S. Labelle as a representative on the Council for the year 1942, and he was welcomed to the Executive.

The Executive considered the matter of gas rationing relative to members of the profession, and it was decided in accordance with the discussions which took place at the Council meeting of February 20th, that no claim should be made by the Institute for special consideration of its members as a class, but that the Oil Controller be approached to see that the individual cases of practising architects be considered on their merits.

It was decided that meetings of the Executive Committee should be held in Montreal at 10 a.m., on the first Saturday of each month, unless otherwise called by the President.

The matter of the rental of offices by the Institute from the P.Q.A.A. was taken up and the arrangement approved.

The suggestion for special numbers or supplements of the R.A.I.C. *Journal* dealing with matters of special and immediate interest to the profession was considered, and as the idea was closely related to publicity the matter was referred to the O.A.A. and the P.Q.A.A. for their opinions and the possibility of their financial support.

The Executive discussed certain phases of the post-war reconstruction policy of the Government and several suggestions having definite possibilities were brought forward.

It was reported to the meeting that the membership lists for 1942 would be issued in the near future.

The meeting adjourned at 5 p.m.

A Special Meeting of the Executive Committee was held in the offices of the Institute, 620 Cathcart Street, Montreal, on Saturday, March 28th, at 2.30 p.m.

*Present.*—President Gordon McL. Pitts (F) in the Chair; Honorary Secretary Charles David (F); John Roxburgh Smith (F), and Henri S. Labelle (F).

The reading of the minutes of the meeting of March 14th, was postponed until the next regular meeting of the Executive.

The President explained the reason for the calling of this Special Meeting and reported that he had made a trip to Ottawa on March 24th and 25th, to discuss matters relative to the profession with the officials of the War Time Bureau of Technical Personnel. At the Annual Meeting of the Institute the consensus of opinion appeared to be that it would be of advantage to the profession to have a representative in Ottawa permanently who would promote its interests and facilitate the service to be rendered by its members, to the Government, in every possible capacity. In discussions with Mr. L. A. Wright, Assistant Director of the Bureau, it was arranged that an Architect would be invited to join the permanent staff of the Bureau.

In discussing the Registration of Architects by the War Time Bureau of Technical Personnel, with officials of the Bureau, the President was advised that a little over 50% of the Architects had filled out and returned their questionnaires. These officials pointed out that it was imperative that all members of the Institute should complete their questionnaires and return them at once, as the Government might otherwise be compelled to bring into force the Act which makes the return of these questionnaires compulsory. It would be much more advantageous if the membership made their returns before the Government took such action. The Committee therefore directed that steps be taken to bring this matter to the attention of all members of the Institute who had not returned their questionnaires.

The President also reported that he had the opportunity of an interview with Mr. Elliott M. Little, newly-appointed Director of the National Selective Service Board for mobilizing the man-power of the country in its industrial effort. As a result of the President's report the Executive authorized the drawing up of a questionnaire to be issued to all Architects designed to meet the present situation.

It was reported to the meeting that a suggestion had been received that it would be particularly opportune at this time if the *Journal* of the Institute would publish a special issue devoted to A.R.P. work in Canada, and that assistance in financing such an issue might be obtained from the O.A.A. and the P.Q.A.A. The Assistant Director of the A.R.P. in Canada expressed the opinion that the idea was most timely and offered his assistance in any way desired. The Committee approved the publication of such a special issue subject to some financial assistance from the O.A.A. and the P.Q.A.A.

The President reported an interview with Mr. C. Blake Jackson, Controller of Building Permits, with whom matters of interest to the Institute were sympathetically discussed.

A letter from Mr. Gordon W. West of Toronto, relative to the licensing of Contractors, was discussed, and this matter is being investigated, for report to the next meeting of the Executive.

The meeting adjourned at 4 p.m.

# PROVINCIAL PAGE

## ALBERTA

At the annual meeting of the Alberta Association of Architects a promiscuous but interesting discussion took place on the probable requirements of post-war reconstruction. The following embodies some of the ideas discussed:—

After the war the first necessity is the restoration of those peace time industries which have lapsed or been seriously curtailed owing to the turn-over to armament production. General supplies must be manufactured in order that living may be placed on a better basis. Supplies for building must be manufactured and forthcoming before building operations can be well established. This cannot be done at once on a full scale nor as an entirely separate operation. Building on a minor scale must begin in order to absorb the supplies. Yet a very considerable programme of building must be envisaged from the start. A great turn-over of personnel must take place from armament factories and from army services to peace time industries and the man whose occupations are thus lapsing must find and, in many cases be trained in, new peace time occupations. At the same time it is essential that these men be supplied with housing.

In war time immense requirements have been met by high taxation. A still high, though probably not comparable, rate of taxation may be needed to meet the requirements of peace. Among the first applications of this must necessarily be the housing and the training of men in the construction of houses. Should this result in a surplus of building tradesmen, these could be employed later in carrying out works of public service. Many returned men will have been turning their hands to various, and often highly skilled types of work. These may be turned into bodies of local co-operative schools of house building, supplied with ready-to-build materials from local factories and mills. In these schools men will proceed to build their own homes, the several trades co-operating. They will also build homes for those of non-construction occupations.

On the principle that "the environment is half the home", architects should turn their attention to the general lay-out of low cost housing schemes in well planted surroundings, rather than to the planning of the individual houses which afford little deviation from a few standard types. Reduction in the cost of the houses themselves may well be made by quantity production applied in the factory production of ready-to-build materials. Especially may costs be reduced in ready-to-install plumbing and heating fixtures which, as at present handled, constitute a disproportionate ratio of house cost.

The question of bad living conditions, due to city congestion must be seriously handled. It should be fully realised that large cities are a social danger, not a desirable aim. Big cities in which most of the housing is inadequate are things to be ashamed of and avoided, not to be proud of. This cannot be left to the haphazard methods of the past. A serious Dominion organisation is essential. There should be a ministry of Housing, Provincial Departments and Civic Commissions of Housing. The root cause of city housing congestion is the disproportionate flow of population from the country to the city, destructive of the interests of both and of the economy of the nation as a whole. Much might be done to make smaller towns and villages better places for living.

—Cecil S. Burgess.

## ONTARIO

While it may still be true, (for all we know to the contrary), that "a policeman's life is not a happy one", there is certainly no doubt that at the present time an architect's life is far from being a bed of roses. Even in these days of regulations and controls it comes as a bit of a shock to learn that an application for a license may be turned down on the grounds that the Controller of Construction doesn't like the plans. Yet this apparently has happened. According to the *Ottawa Evening Journal*, plans for an apartment house "were prepared by a competent Ottawa architect to meet the requirements of the Ottawa Building By-Law", and Mr. G. K. Fiske, Deputy Controller of Construction, stated that a license was refused because "the proposed plan would not make satisfactory living quarters and therefore was an improper use of building materials and labor at the present critical time." This action is regarded by the *Journal* as "a quite unwarranted intrusion into the field of local government". If that were all, architects might not be unduly alarmed; nor are they likely to quarrel with the principle that labour and material should not be used for badly-planned or ill-designed buildings, either now or at any other time. But the question is, has the Controller of Construction been empowered to decide such matters, and, if so, what are his qualifications for such a task?

In a subsequent issue, the same paper has something pertinent to say about the responsibilities of building-promoters toward the communities in which they operate. "On residential streets, not only is it practicable but extremely desirable that owners of building lots should have regard both to the comfort of their neighbours and the beauty of the streets. There should be plenty of light and air, and a dignified street line." And the *Journal* adds that building activities which do not conform to these standards "should not be tolerated by the civic building inspector and the city council". It is really encouraging to find an important newspaper taking the stand that the community has some rights in these matters; and that when the promoter, the architect and the civic authorities have done their best to preserve the amenities and to raise the quality of buildings, streets, neighbourhoods and so on, they have done no more than can properly be expected of them.

Prof. Arthur, in a recent address to the Toronto Council of Jewish Women, touched upon another angle of the same matter when he predicted that after the war "we shall return to eighteenth-century good manners; when in street design, at any rate, individual preferences were sacrificed in the public interest." He expected, however, that the improvement would not be adopted on aesthetic grounds, but would be forced upon us by economic pressure—which is certainly in line with the experience of recent years.

All of which puts Prof. Arthur somewhat on the spot; as he has just been nominated by the Board of Control to the new City Planning Commission for Toronto. It is only fair, however, to bear in mind that there are six other men on the Commission.

—Gladstone Evans.

## QUEBEC

Professor John Bland, Director of the School of Architecture, McGill University, reports that examinations will be over on or about April 25th. The graduating class is very small this year. To be exact it consists of one bright young man, Anthony Lewis. The first year students, upon completion of the term, will take a Survey Course at Macdonald Col-



lege, St. Anne de Bellevue and as a contingent of C.W.A.C.'s will be in residence at the same time it is possible the Survey Course may unwittingly widen its scope. A number of students are looking for summer work of a useful nature. Those already having some experience will be available May 1st and Survey students June 1st.

Mr. Campbell Merrett gave an address on March 27th at a meeting of the Montreal Division of the Canadian Federation of Artists. We are always pleased when an architect makes a public appearance and expresses himself vocally, especially if there is a newspaperman in the offing. Mr. Merrett rendered the profession a real service when he agreed to speak.

It is also pleasing when an architect receives recognition and advancement as was the case when Mr. John Schofield was appointed Chief Architect for the Canadian National System. A wide variety of work falls to the lot of an architect for so important an organization and from the results obtained it is evident that Mr. Schofield fully merits his new title.

We regret greatly to record the death of Mr. Jules Caron, one of our esteemed members who practised in Three Rivers for many years, and we extend our sincere sympathy to his family and his brother, Mr. J. H. Caron of Montreal.

By mutual agreement P.Q.A.A. and R.A.I.C. council meetings will be held in Montreal on successive days. The first will meet on the first Friday of each month and the latter on the following day. As there are several members from other cities on both bodies an arrangement like this has obvious advantages. The Papers and Entertainment Committee has mapped out a programme of luncheons and dinners with guest speakers for dates corresponding to these meetings with a view to drawing as many as possible to these functions and promoting stronger fraternal relationships.

The council has recently adopted the policy of inviting out-of-town members to share in discussions at the monthly meetings. Mr. Audet of Sherbrooke attended the February meeting and he will be followed by others during the year.

Thanks to the enterprise of Mr. J. Roxburgh Smith, our Association was enabled to bring to Montreal an exhibition entitled "Stockholm Builds". It consisted of large mounted photographs prepared under the direction of the Museum of Modern Art, portraying the selected works of some of Sweden's outstanding architects and demonstrated effectively their rational approach to the planning problems of a people having a high sense of social responsibility. Morgans Art Gallery, where it remained for three weeks, gave it a good setting and it aroused favourable comment by architects and many others outside of the profession. It gave good continuity to the theme of the "City for Living" which had been exhibited in five places in Montreal and immediate vicinity. The panels of this A.R.G. show are now in cold storage but Spring is here and when the roads are open for trucking we hope to see it start rolling to other parts of the province.

—Harold Lawson.

## LETTER TO THE EDITOR

The Editor,  
Royal Architectural Institute of Canada,  
Toronto, Ontario.

Halifax, N.S.

Dear Sir:

We have a number of circular smoke stacks built of hollow brick here in Halifax and throughout Nova Scotia. I have had to deal with several of them myself, and would like to point out some of the troubles encountered with our weather and sulphur in our coal. First, the hollow brick lacks the mortar bed obtainable with solid bricks. Some of the chimneys take on a decided list to the north after a few years. Nearly every year we have a number of men come into the city prepared to climb the stacks for pointing. This seems to be perpetual motion as far as I can see when one considers lightning rods made of a plated copper wire. In one of the Institutions over which I have the care of the buildings, the stack was built by Nova Scotia workmen using Nova Scotia brick. We have never had to spend a dime on this chimney during my fifteen years of service. I cannot say that about the circular ones.

I have just completed repairs to a stack 130 feet high. We removed and rebuilt twenty-five feet of this chimney. This chimney is five feet diameter and about seven inches thick at the thin part of the wall. When sound construction was encountered I had the holes filled with mortar. We had special solid bricks made which were tapered and curved, header and stretcher courses alternating. All work was laid up in aged rock lime mortar. This chimney was leaning  $4\frac{3}{4}$ " to the north and twenty-five feet had to be removed. We had three  $6" \times \frac{3}{4}"$  steel bands put on the stack. The reason for the heavy bands is that the old ones were completely rotted out. They still retained their thickness but were rotten. We also removed the heavy bell from the top to reduce the weight. When finished the top was covered with a four section cast iron cap with weather locked joints. This had heavy lugs cast solid with the caps to take the lightning rods.

A word about lightning rods. These are continually falling apart. On this repair job I used solid  $\frac{3}{8}"$  annealed copper rod encased in heavy  $\frac{1}{2}"$  lead water pipe. There were two down leads which branch out to two points each or four points in all at the top. The Y branches are brazed and the lead pipe whipped at the junction. The points consist of bronze caps pushed down over the lead pipe. The bronze making contact with the copper. This makes it water tight. The lead extends down forty feet and is joined to the plated copper with a bronze sleeve poured full of lead. I do not expect to hear anything more from this stack in my time. This is quite an expensive job, but it costs about six hundred dollars to put up a good stage for a job like this so I believe in making a job of it while I am at it.

Sincerely yours,

W. A. WEST.

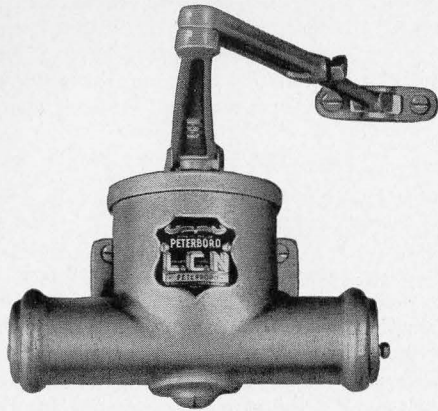
## SPECIAL NOTICE TO ARCHITECTS

The Executive Committee have been advised by the War Time Bureau of Technical Personnel that certain Architects have not filled in and returned the questionnaire issued by the Bureau. This notice is to urge every Architect who has not forwarded this questionnaire to the Government to complete same and send it in at once, as the Government may at any time put in force the Act which makes the return of these questionnaires compulsory.

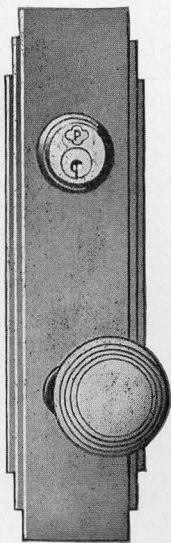
It would be greatly to the interest of the profession as a whole, and to each member individually, if we had the registration of the Architects of Canada properly completed and on file with the Government before such action has to be taken.

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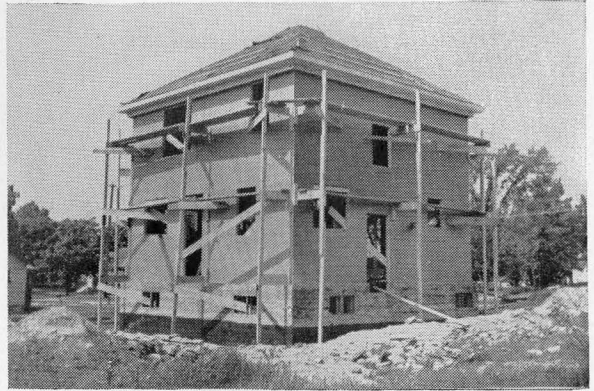
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