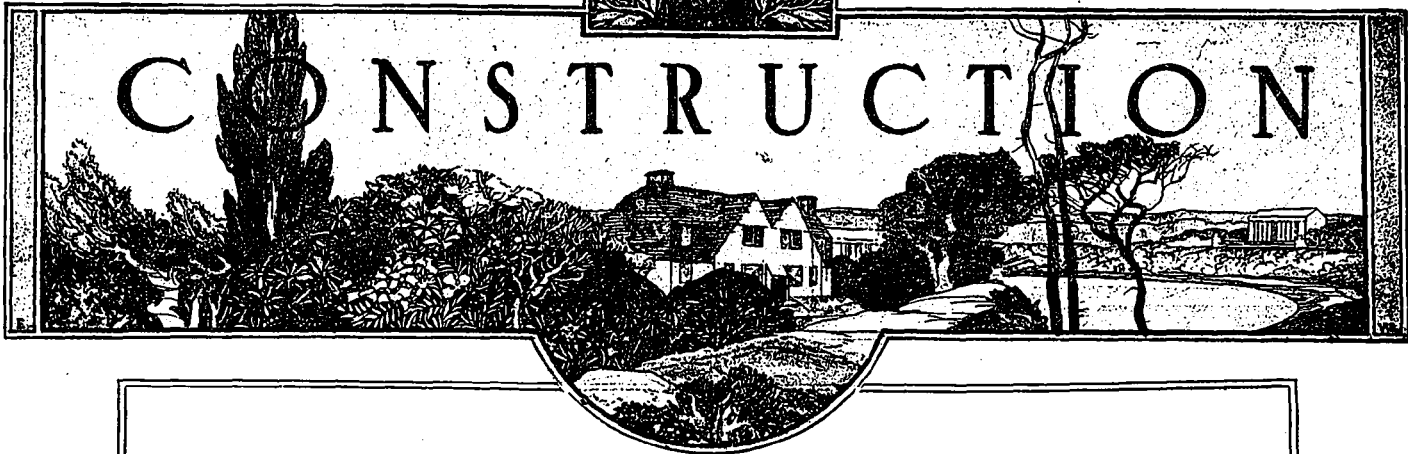


Pages Missing



CONSTRUCTION



October, 1919

Volume XII, No. 10

CONTENTS

THE HALIFAX DISASTER AND RE-HOUSING.....	293
THE R.A.I.C. AND O.A.A. JOINT CONVENTION	309
CONVENTION ADDRESSES:	
THE EDUCATION OF THE ARCHITECT	315
By Professor Ramsey Traquair, McGill University.	
PUBLIC VIEWPOINT AS REGARDS THE PROFESSION.....	317
Address by Sir Edmund Walker.	
ADEQUATE PROTECTION FOR THE CANADIAN ARCHITECT.....	319
By Charles S. Cobb.	
ARCHITECTURAL SCOPE IN TOWN PLANNING	323
By Noulon Cauchon, Consulting Engineer and Town Planner.	
WAR MEMORIALS	325
By Herbert E. Moore.	
PUBLIC TASTE IN ARCHITECTURAL HOUSING	327
EDITORIAL	329
Architects and Architectural Issues.	
FIRST PAN-AMERICAN CONGRESS OF ARCHITECTS	329

Frontispiece

HALIFAX RE-HOUSING DEVELOPMENT	292
--------------------------------------	-----

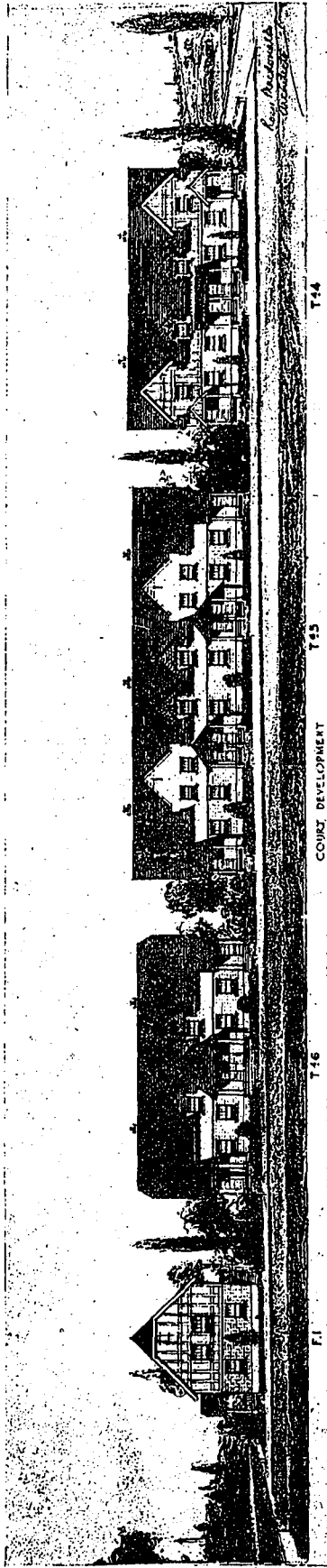
H. GAGNIER, Limited, Publishers

GRAPHIC ARTS BLDG., TORONTO, CANADA

BRANCH OFFICES

MONTREAL

NEW YORK



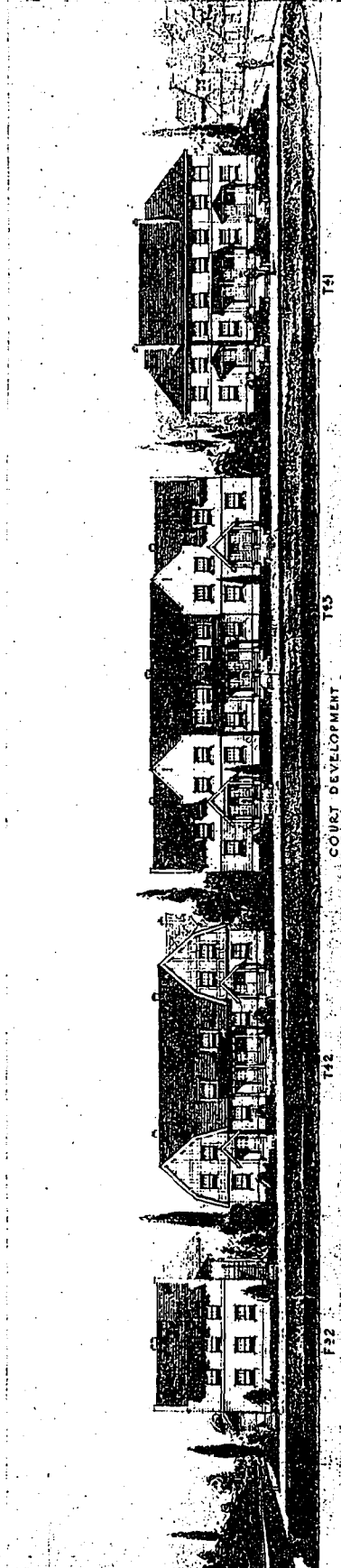
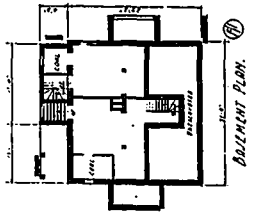
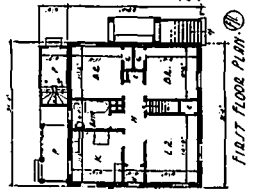
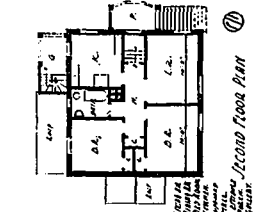
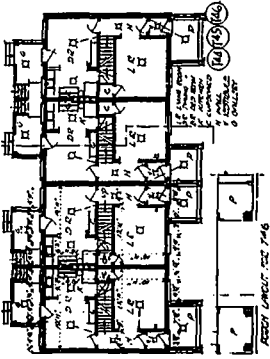
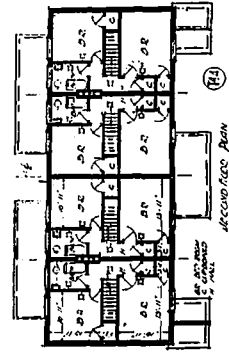
T44

T45

T46

T1

COURT DEVELOPMENT



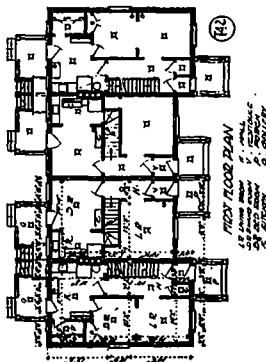
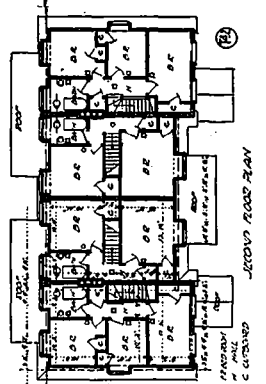
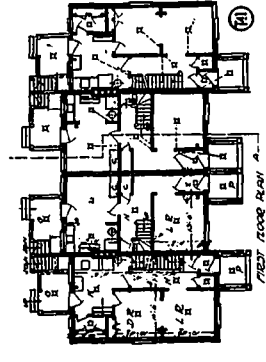
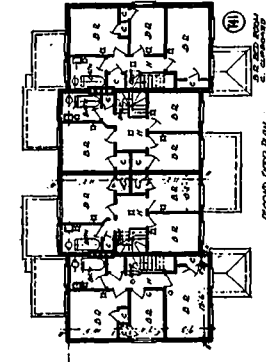
T41

T40

T42

T38

COURT DEVELOPMENT



HALIFAX RE-HOUSING DEVELOPMENT, HALIFAX, N.S.
 ROSS & MACDONALD, ARCHITECTS.



COMPLETED COURT DEVELOPMENT, RE-HOUSING SCHEME, HALIFAX, N.S.

The Halifax Disaster and the Re-Housing

By George A. Ross, F.R.I.B.A.

Ross & Macdonald, Architects, Montreal.

THE explosion which took place in the harbor of Halifax and which destroyed a considerable portion of that city, occurred nearly two years ago, on the morning of December 6, 1917. About two square miles in the north end of the city, were laid waste in about two seconds, when the cargo of the munition ship "Mont Blanc," consisting of 4,000 tons of one of the most deadly explosives known to science was ignited a few minutes after the collision of this vessel with the Belgian relief ship "Imo."

As the "Mont Blanc" blew up near the Halifax shore the portion of the city north of Russell Street received the full force of the explosion and nothing was left standing above the ground in this section of the city. More than fifteen hundred people were either killed instantly or died in the wreckage and thousands of homeless and injured ones were forced to flee for their lives from the fire which immediately began to break out in the ruins of each shattered building, and continued to rage until the first blizzard of the winter extinguished the blaze, and left this whole area a mass of smoldering ruins.

Rescue work began at once, at first haphazard, then organized under a temporary committee. Relief measures grew from local first aid to assistance of the most substantial kind from cities and States near and far. Large funds of money were appropriated to carry out immediate relief of human suffering, and later a program of reconstruction took definite form.

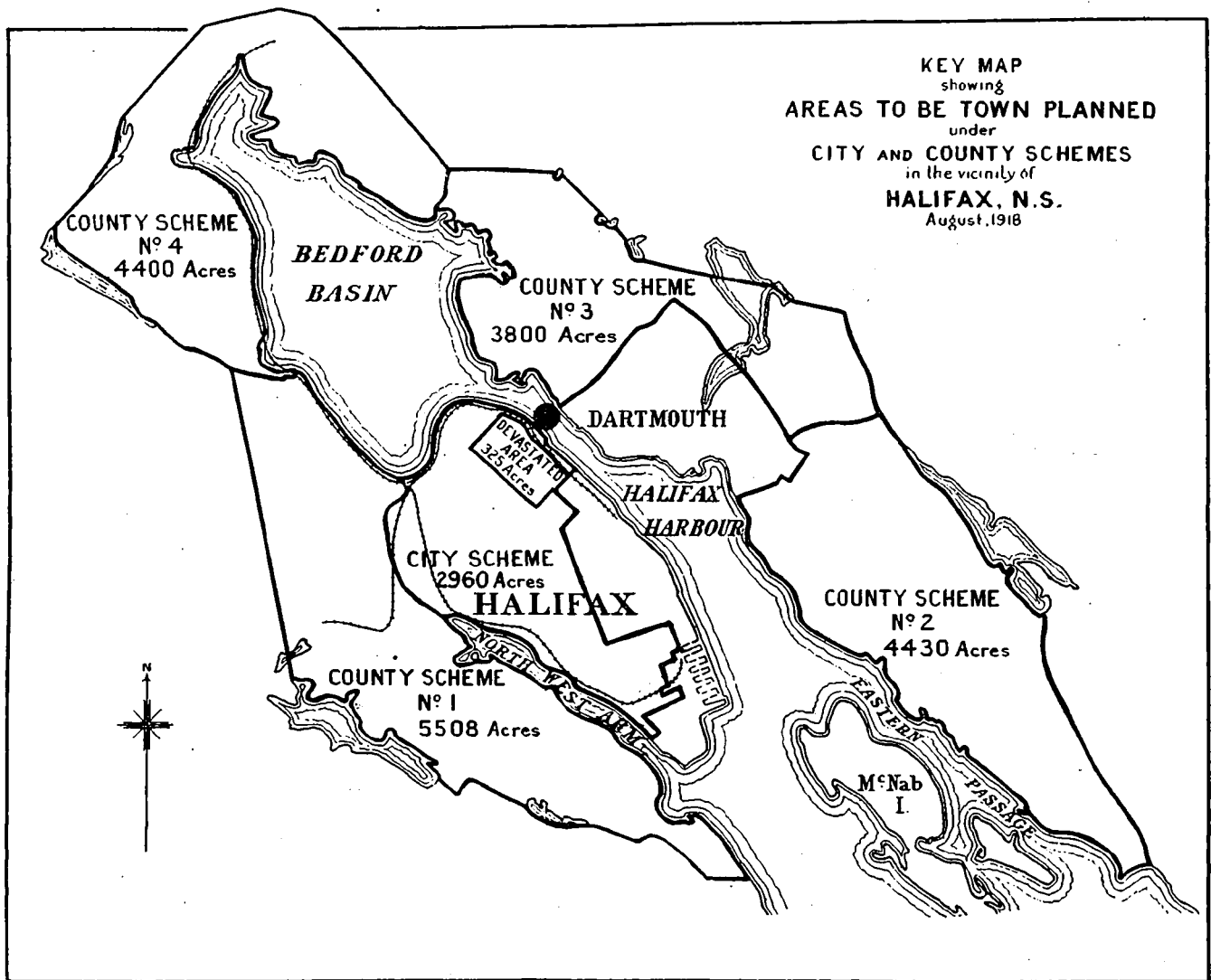
Six weeks after the explosion a relief commission was appointed. The ruins were cleared away, and with builders working day and night,

colonies of temporary houses sprang up on the Commons and public grounds of the city, and some five thousand people of the devastated area were more or less housed in a remarkably short time. Approximately 8,000 houses have been repaired. Industries that faced ruin have been sustained by aid in rehabilitation, and permanent houses to the extent of some 700 homes are now rapidly nearing completion.

The Relief Commission, under the energetic and untiring leadership of its chairman, Mr. T. Sherman Rogers, K.C., ably assisted by Judge Wallace and Mr. Fowke, his fellow commissioner, immediately undertook an active program to administer the investment of millions of dollars which had been provided for relief purposes, involving the complete rebuilding of districts in which the houses had been destroyed beyond any hope of repair.

The commission called into consultation Mr. Thomas Adams, town planning adviser, Commission of Conservation, Ottawa, and Ross & Macdonald, architects, of Montreal. The work of planning a greater and better Halifax has had the careful study of Mr. Adams for some years past, and extensive areas of undeveloped land surrounding the city have been sufficiently surveyed to fix the boundaries of the several city and county schemes.

Altogether the rebuilding of the many hundreds of dwellings in the affected area is of special interest at this time when so much attention is being given to the subject of housing, because it involves the most pretentious utilization of concrete units that has ever been undertaken and the most extensive housing program that has as yet been considered in Canada.



DEVASTATED AREA

Immediately following the appointment of the Relief Commission, that section of the city more or less completely destroyed by the explosion, comprising some 325 acres and now known as the devastated area, was set aside to be dealt with by the Halifax Relief Commission under statutory provisions included in the Halifax Relief Act.

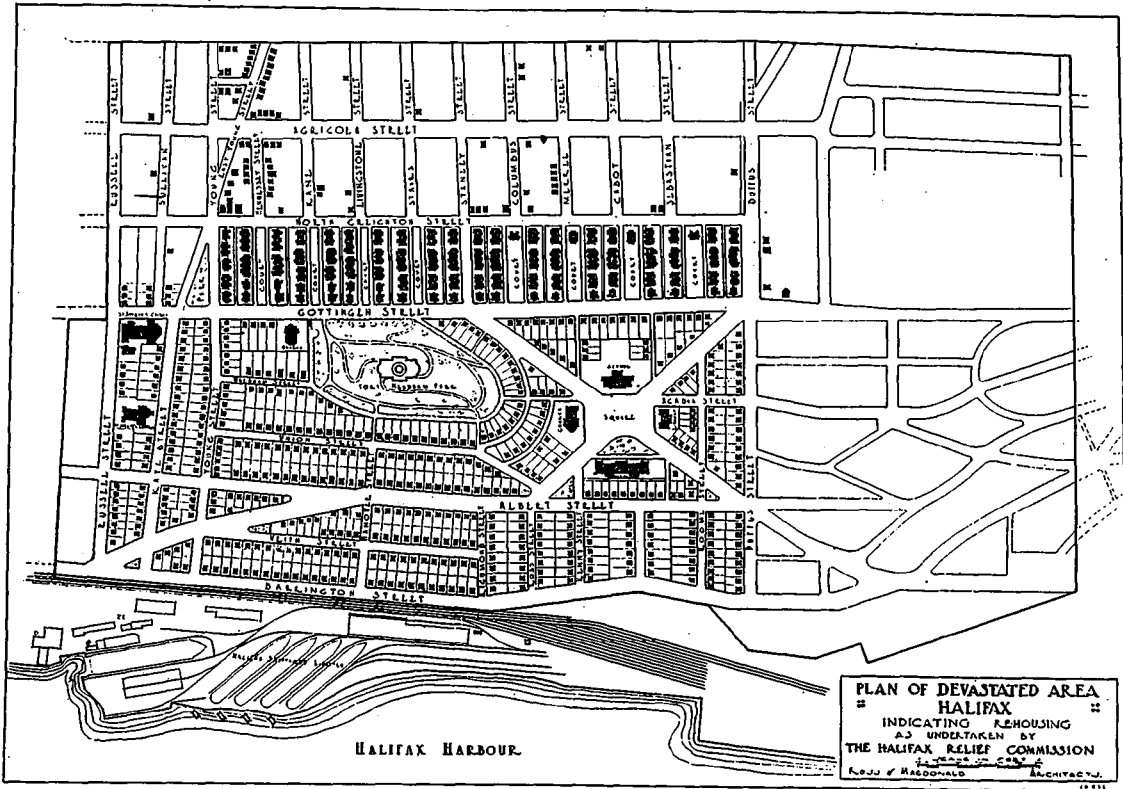
Through the courtesy of Mr. Adams, and under his supervision and criticism, Mr. H. L. Seymour, his able assistant, has been almost continuously employed in the careful consideration and study of this particular area, with the result that definite boundaries have been fixed by survey lines, street grades have been established on all main thoroughfares, and building lines laid down for all properties throughout the area. Definite sections have been set aside for residential and industrial development and areas fixed for first and second class construction.

The Halifax rehousing problem differed radically from that presented by the usual industrial town or housing development, in that well developed streets had existed in this area be-

fore the explosion, and the water and drainage service in the streets was still intact, and must, if possible, be taken advantage of. The original city plan of this section, having little or no regard for the ground contours, was naturally most unsatisfactory, with streets arranged on a hillside in rectangular blocks, so that the cross streets mounted straight up the hill at excessive grades with main thoroughfares only at the top and bottom of the slope, having no convenient means of communication between them.

In the study of the new Town Planning Scheme, it was decided to retain as many of the old streets as possible, preserving the existing water and service lines, and to introduce two new diagonal thoroughfares crossing midway up the slope, so as to give communication at easy grades between the upper and lower levels, that is, between Gottingen and Barrington Streets, the two main thoroughfares running north and south paralleling the harbor and Richmond Slope.

Widths of Streets—Careful consideration was given to the study of the main traffic thoroughfares, with the result that the diagonal boulevards were fixed at a width of eighty (80)



MAP OF THE DEVASTATED AREA OF HALIFAX AS REPLANNED.

feet, and while wide streets have been established in certain instances for traffic reasons, and as an incentive to a more desirable housing development; still many existing streets, on the other hand, bearing no direct traffic have been reduced, all street widths being fixed with regard to their grades, length and estimated traffic.

Building Lines:—A general plan with regard to building lines was adopted, fixing a distance of not less than fifteen (15) feet from the street line, where lots are one hundred (100) feet deep or over. For shallow lots the set back has been reduced three (3) feet for every ten (10) feet of reduction in the depth of the lot, subject to proper architectural treatment being given to the building. A scale computed in accordance with this rule resulted as follows:

- Lots 100 feet deep set back 15 feet.
- “ 90 feet deep set back 12 feet.
- “ 80 feet deep set back 9 feet.
- “ 70 feet deep set back 6 feet.
- “ 60 feet deep set back 3 feet.
- “ 50 feet deep set back Nil.

Open Spaces:—On the original City Plan of this district there were open spaces having a total area of approximately five (5) acres, but so located as to be of indifferent value. In the study of the new plan, the Commission has abandoned these open spaces, absorbing same within the building area, the site of the old parks being exceptionally good locations for building purposes, while due to their position and the con-

tour of the ground, they are practically impossible as playground or satisfactory park lands.

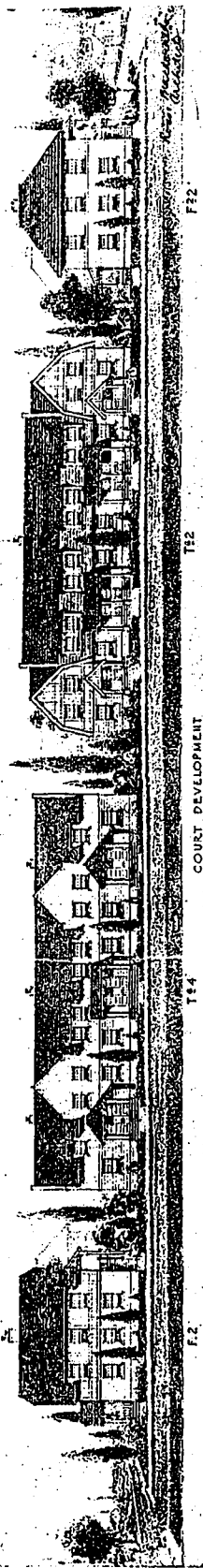
For open spaces other than streets and paved areas, Fort Needham with an area of over eight (8) acres has been acquired by the Relief Commission for a public park, while playground areas have been provided in the form of open spaces or courts of three hundred (300) feet in depth and one hundred and forty (140) feet in width, forming the grass areas or open courts between houses of the “Court Development,” eight of these Courts being provided in this particular development.

Fort Needham is very well situated as a park for the southern section of the devastated area and occupies the highest land in the vicinity (lying at an elevation of from 180 to 225 feet above ordnance datum), with remarkably beautiful views of the harbor, Bedford Basin and the ocean. It is, however, unsuitable for building purposes owing to its steep approaches.

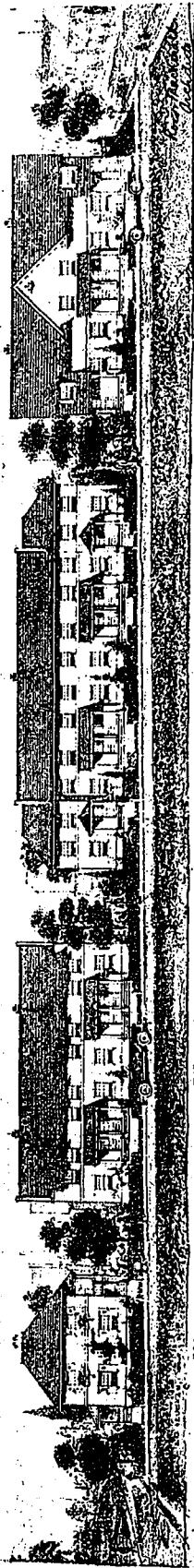
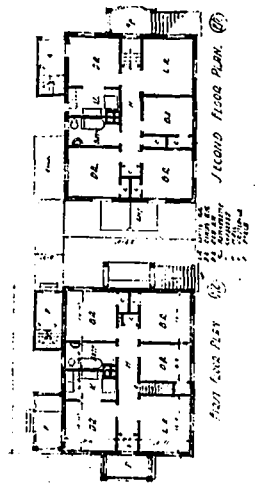
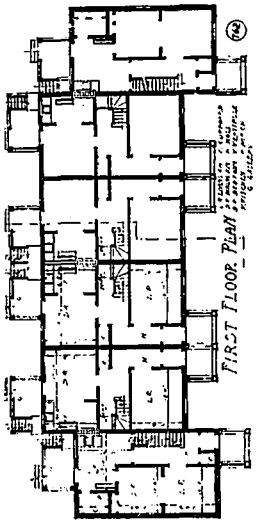
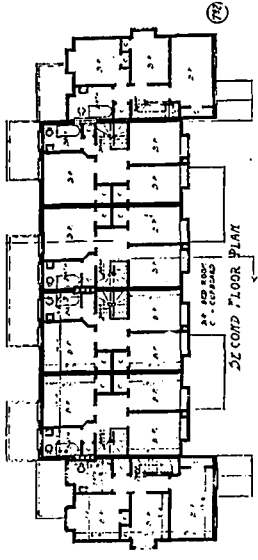
Building Restrictions:—Building restrictions were carefully considered and established governing the spacing of houses and class of materials used in their construction. The subdivision of land acquired by the Commission has been adjusted on a unit of 120 feet, giving two 60 ft. lots, three 40 ft. lots (and in terrace groups, four 30 ft. lots, and even less).

A restricted building area east of Gottingen Street, extending to the water front, permits only of the construction of the better type of buildings, having masonry, brick, concrete or stucco walls, with a fireproof material for the

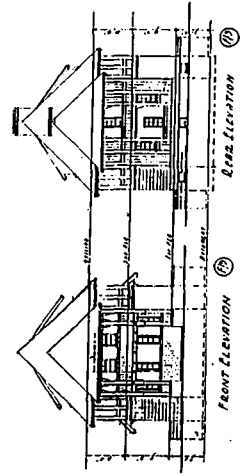
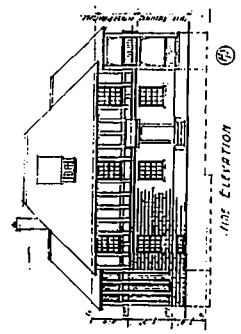
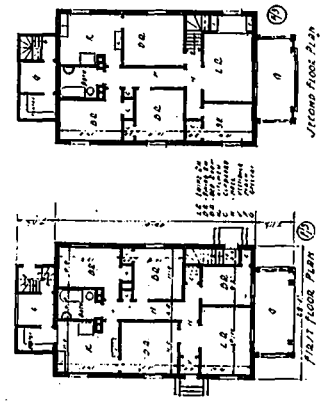
CONSTRUCTION



COURT DEVELOPMENT



COURT DEVELOPMENT



HALIFAX RE-HOUSING DEVELOPMENT, HALIFAX, N.S.
 ROSS & MACDONALD, ARCHITECTS.

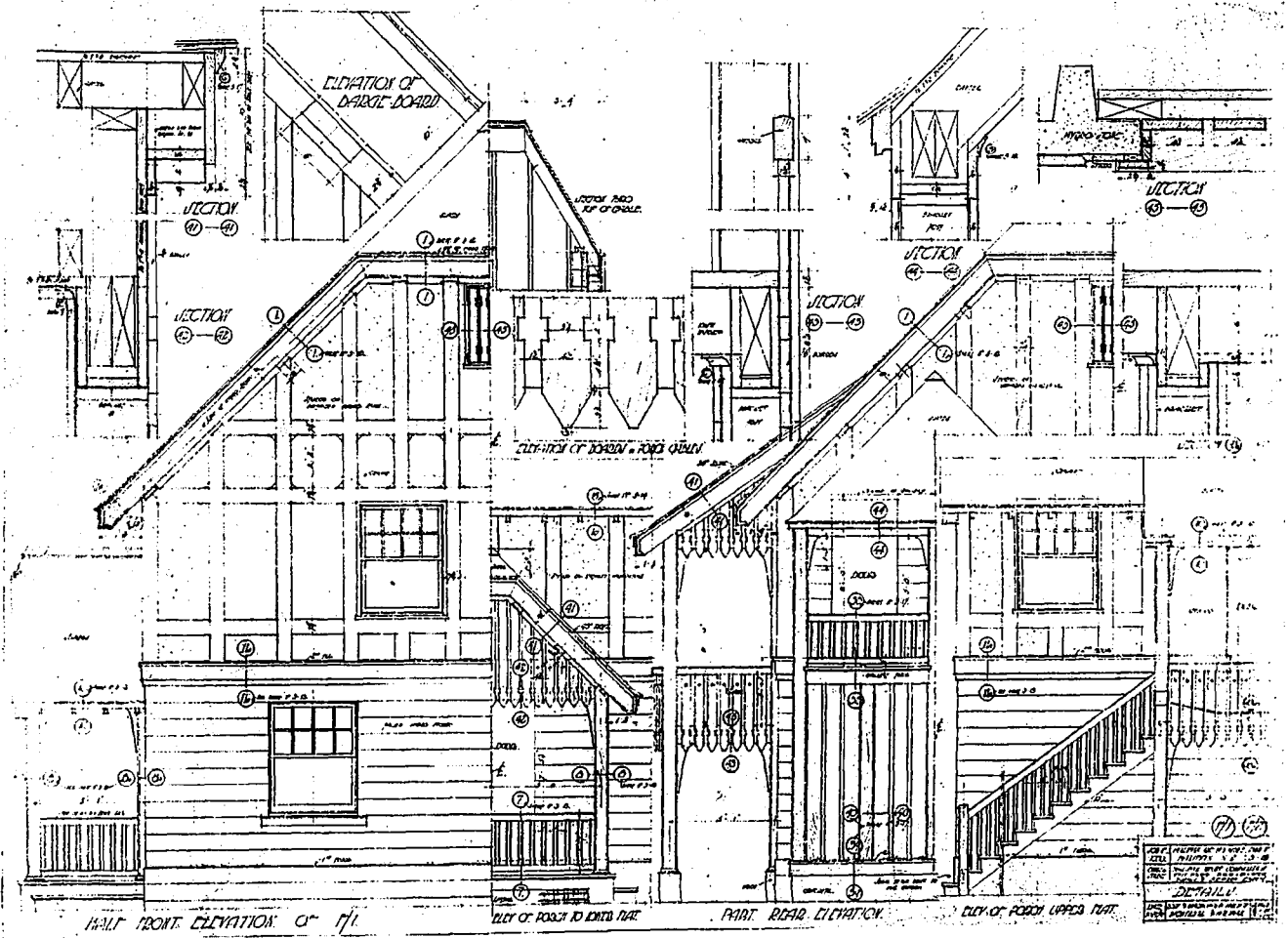
roof. Detached dwellings where of frame construction are in no instance placed closer than eight (8) feet to the side lines of the property, thus giving a minimum distance between houses of this type of sixteen (16) feet.

Semi-detached or terrace groups of houses are so constructed as to be entirely separated by fire party walls of brick or other acceptable fire proof material.

General standards of building construction, standards governing the minimum size and heights of rooms, area of windows, stairs and clothes closets and general sanitation, etc., have been adopted and rigidly adhered to, the stand-

shortest possible time, it was imperative that accurate information should be obtained as quickly as possible on the following essential facts:

- (a) Number of families rendered homeless by the disaster for whom provision must be made.
- (b) Detailed information as to size and general condition of the homes destroyed, especially as to the amount of accommodation, the number and size of rooms, character of construction and the condition of the building for valuation purposes immediately prior to the explosion.



DETAILS OF TYPE F.1, DETACHED DWELLING, RE-HOUSING DEVELOPMENT, HALIFAX, N.S.

ards so fixed being practically identical with those accepted by the United States in connection with their Permanent War Housing Programme.

Service lanes have been provided, in the Group Development only; these lanes contain all service features, such as sewerage, water, gas and electric light; and are twelve (1) feet in width, with curb and pavement in every instance.

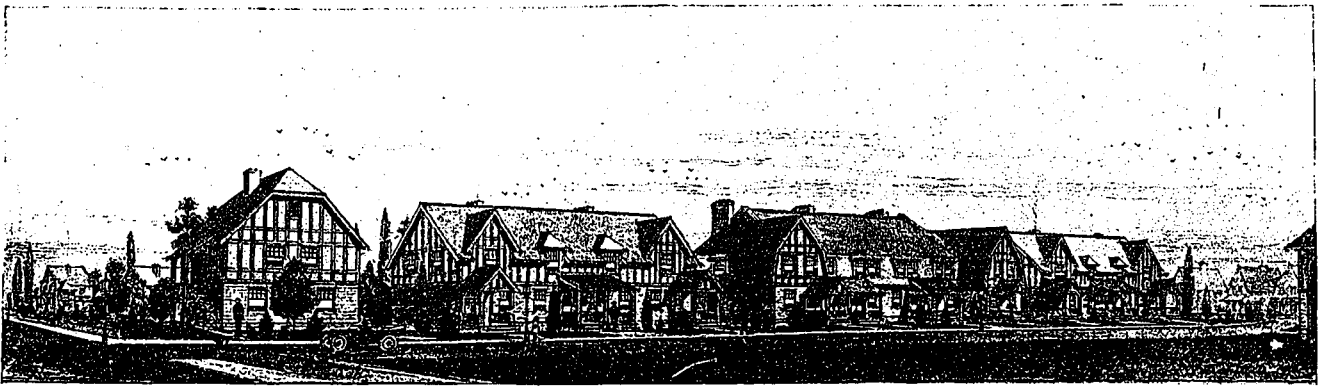
Housing:—In order to determine upon a definite programme as to the best procedure to follow in obtaining the reconstruction of the greatest number of individual homes within the

- (c) The cost of replacement by new buildings under existing inflated building values.

From records obtained by the Commission in connection with the first item, it was estimated that one thousand families must be rehoused, this estimate being subsequently reduced to seven hundred and fifty.

Information as to the individual requirements of the second item could only be obtained through personal interview and reference to the city records.

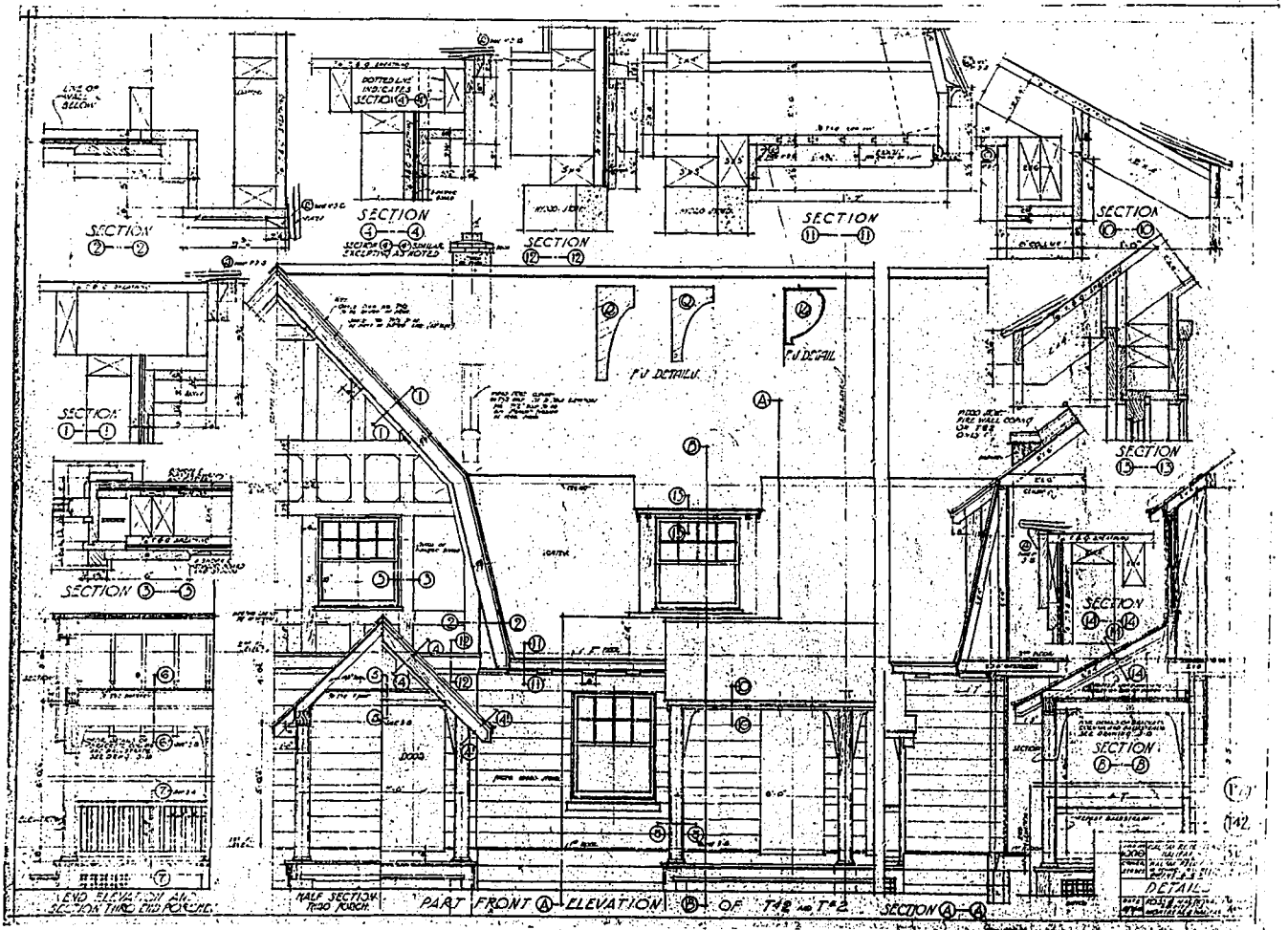
Records of value of homes prior to the disaster were obtained through the active work of



PERSPECTIVE OF NORTH FRONT, COURT NO. 2, RE-HOUSING DEVELOPMENT, HALIFAX, N.S.

an Appraisal Board appointed for this purpose. Faced with the necessity of interviewing each individual householder who had lost his home, ascertaining his requirements and providing a plan to meet the individual need at reasonable cost of reconstruction, was a task requiring considerable patience and time. In the meantime it was found essential to immediately house as many families as possible in more permanent structures than those provided for temporary relief, and it was realized that this could only be accomplished by the rapid construction of some four hundred dwellings of varied design and accommodation. For this purpose, a suit-

able plateau at the crest of the slope of the devastated area was procured, and active building operations started promptly. Beyond this development at the crest of the hill and away from the harbor, there had existed a district in which the houses were of a less pretentious sort than those on the slope itself, and as these houses were at some distance from the point where the explosion took place, they were not entirely destroyed. A somewhat better type of house was desired on the crest of the hill and on the slope overlooking the harbor, and it was felt that the first group of houses, should more or less form a screen between the industrial district



DETAILS OF TYPES T. 2 AND T. 2 TWO AND FOUR-FAMILY DWELLINGS, RE-HOUSING DEVELOPMENT, HALIFAX, N.S.

and the residential section on the slope of the hill.

The work of rehousing has, therefore, divided itself into three parts, which are known as—

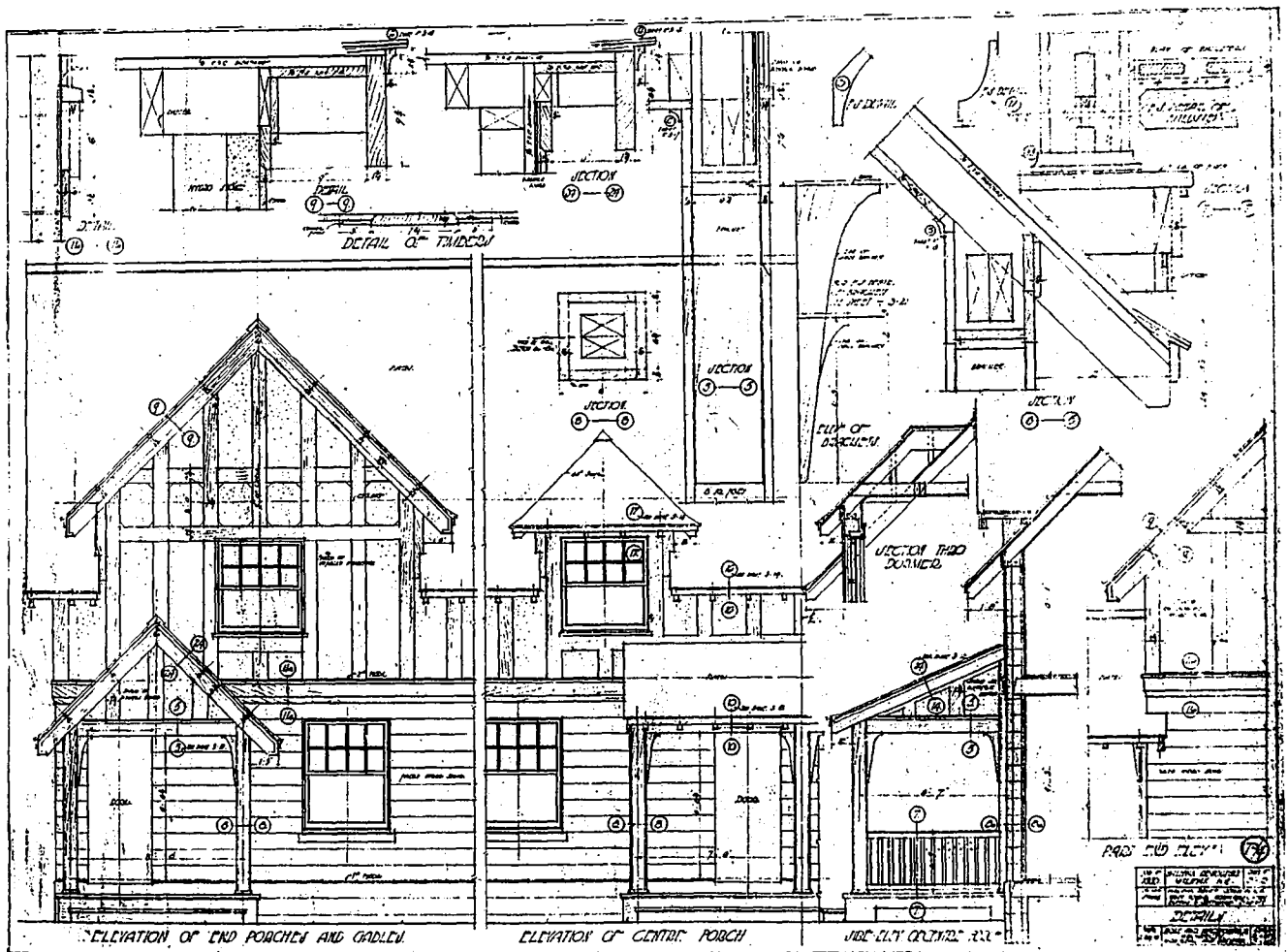
The Group or Court Development,
Frame Dwellings,
Individual Housing.

The Group Development:—The purpose of the Group or Court Development was to give shelter to as many families as possible while their own permanent houses were being built and afterwards to provide dwellings which

permit of the passage of tradesmen's wagons. In each of these lanes has been installed the water and sewer services for thirty dwellings. Service yards have been provided in the rear of each dwelling of a sufficient area to meet the usual requirements.

The development of the courts in front of the houses provides for two twenty (20) feet paved streets at either side of the grass or play area, with concrete curb and four (4) feet cement sidewalks and suitable approaches to each home.

The street lighting has been arranged by



DETAILS OF TYPE T. 4, TWO FAMILY DWELLING, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

might be rented by those families who were tenants in the devastated area. It was decided to build dwellings of from four to six rooms each, with bathroom, electric light and all modern sanitary conveniences, and to arrange these buildings in short rows, composed of two, four and six dwellings each, on each side of a series of wide grass courts, which would serve as playgrounds for the children. To the rear of the houses service lanes have been constructed with cement curb and pavement. These service lanes communicate with the main thoroughfares running north and south and are of sufficient width to

means of underground conduit, so that no poles obstruct or disfigure the general appearance of the Courts.

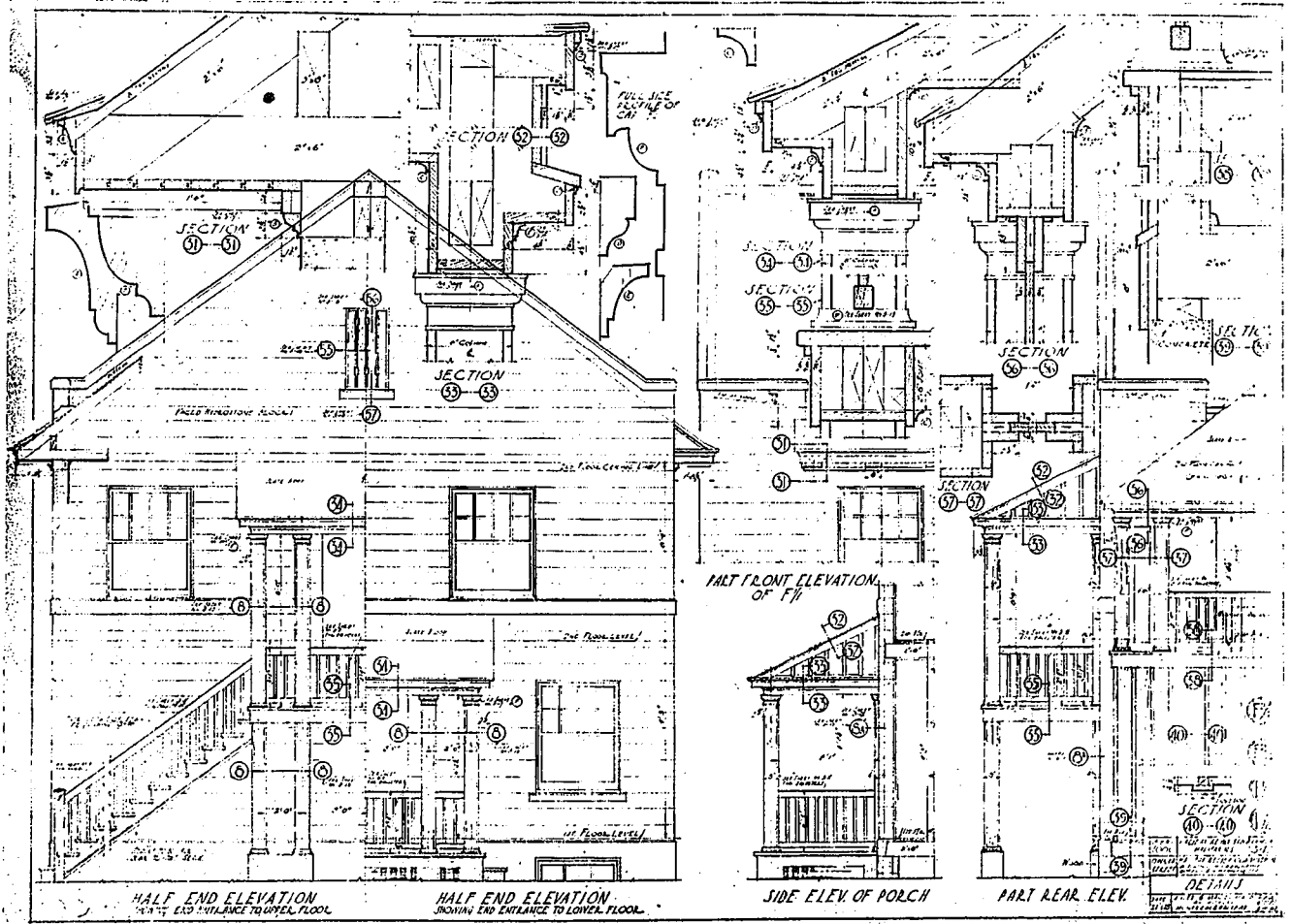
The buildings containing four dwellings are of six separate types, varying as to plan and accommodation. In each of the plans the middle dwellings show five rooms and a bathroom, and the end dwellings six rooms and a bathroom. Where only two rooms are obtainable on the first floor, as in the middle apartments, a kitchenette has been provided by partly screening off a portion of the dining-room and kitchen and placing in the alcove the service fixtures, such as range, sink and domestic hot water

heater. This leaves a large part of the room quite free for use as a dining-room.

The six types of buildings containing four dwellings each, differ from each other as to exterior treatment, both in design and in the use of materials, the variation being obtained principally in the study of a variety of roof treatment and a combined use of hydro-stone, stucco and half-timber. In this way it was

covered verandah and is raised approximately eighteen (18) inches above the finished grades. Covered service galleries of six (6) feet in depth are also provided in the rear of each dwelling, opening off the kitchen in each instance and partially forming the roof to basement entrance.

Each plan shows a vestibule, which was found necessary, due to the Halifax climate, and in



DETAILS OF TYPES F.² 1, F.² 2, DETACHED DWELLINGS, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

found possible to have, with a few variations in plan, twenty-four dwellings, each one differing from the other sufficiently to give a certain individuality.

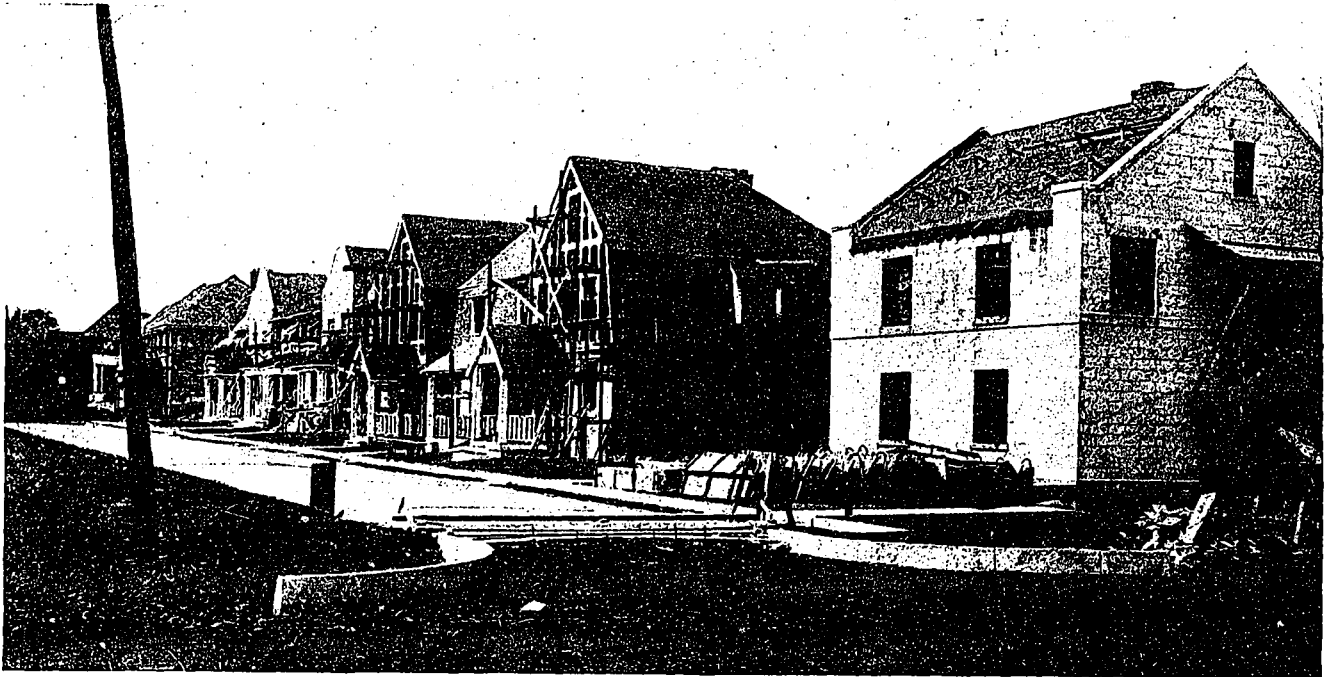
In this particular group of housing of 326 dwellings in all, there are 37 buildings containing four dwellings each, the remainder of the development being composed of buildings containing six families and some buildings containing two dwellings each. The buildings containing six apartments each are of five different types and in plan are much the same as the four family types. The elevations are, however, quite different and in some instances the plans have been reversed in order to give an even greater variety of architectural treatment.

Each dwelling is provided with a liberal front entrance porch, of sufficient size to be used as a

every case a coat closet adjacent to the entrance hall. One family bedroom and two smaller bedrooms are provided in each of the five and six-room houses, and clothes closets of a minimum depth of twenty-two (22) inches, open off all bedrooms, with the exception of a limited number of the middle apartments.

Each dwelling is provided with electric light and full plumbing, including completely equipped bathroom and kitchen, with laundry trays in basement. There is also a separate outside entrance to the basement, the basement being constructed in concrete and having finished cement floors.

Scattered throughout the "Group Development" there are thirty-two buildings of the "Flat Type," each containing two self-contained apartments, one above the other, each with



PROGRESS VIEW, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

its individual entrance on opposite sides of the building. These buildings are of three different arrangements as to plan and elevation, and range in accommodation from five to six and seven rooms, with bathroom.

After considering carefully the various local materials available for use in the construction of the buildings, frame construction with either dropsiding or shingle was found to be most economical and the next cheapest was found to be a form of pre-cast concrete block, known to the trade as hydro-stone, the third — stucco on frame, and the most expensive—brick or concrete formed in place.

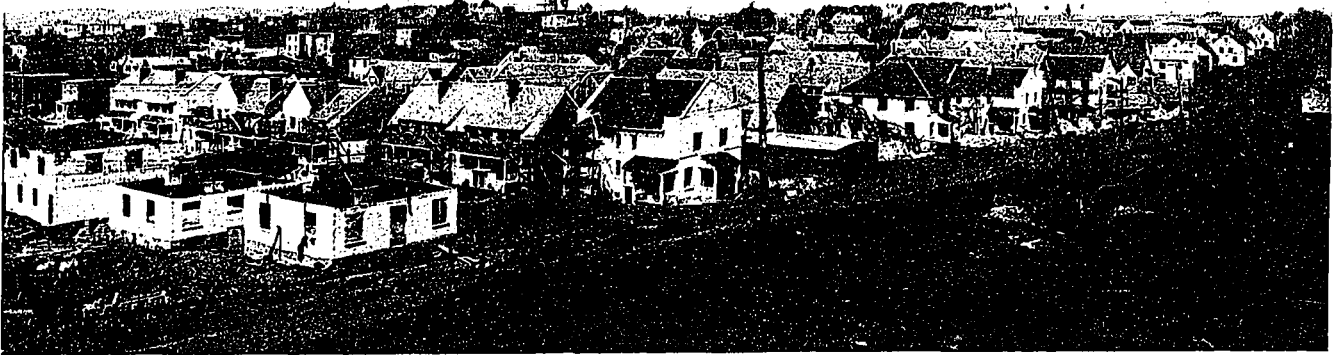
As a permanent and fireproof material was

desired, it was decided to make use of "hydro-stone" and to manufacture this block at a plant built for the purpose by the Commission at South Eastern Passage, Nova Scotia, where a plentiful supply of clean gravel and sand was available at low cost.

It was also decided to roof the buildings with slate, but to construct the interior frame, floors and partitions of wood, with finished walls of hard plaster. All interior woodwork is of British Columbia fir, with natural varnish finish, and the finished floors throughout are edge grain fir. The exterior and party walls of all buildings are of hydro-stone and foundations of mass concrete. Where the concrete blocks are ex-



COURT SCHEME NEARING COMPLETION, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.



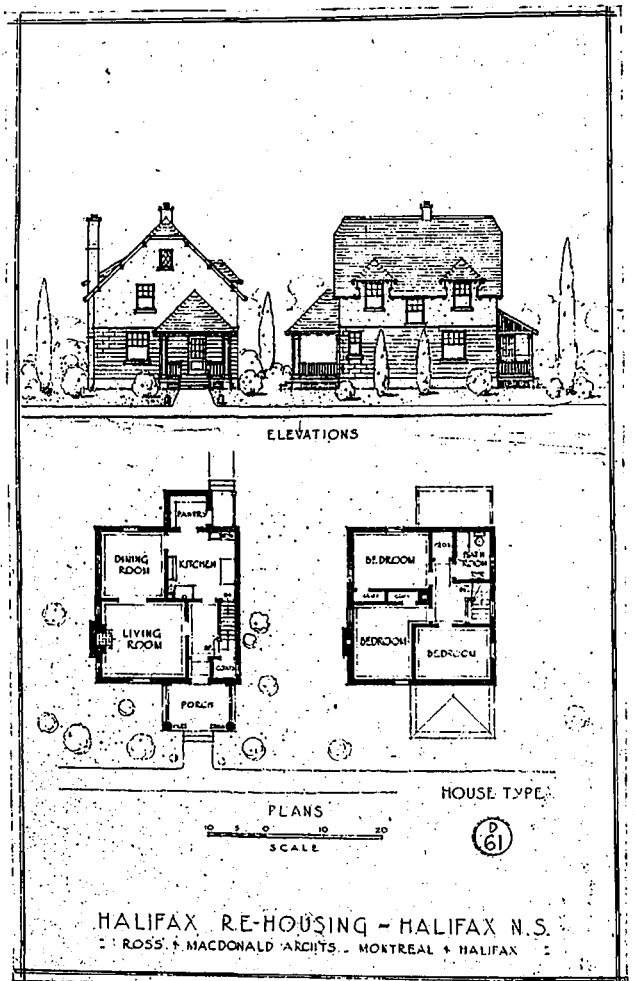
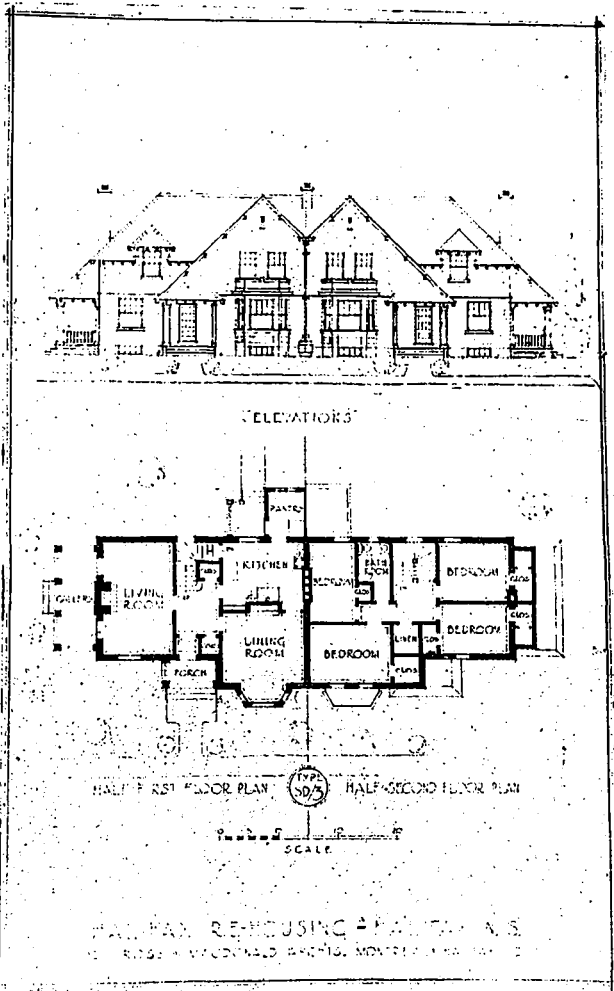
GENERAL PROGRESS VIEW OF DWELLINGS IN COURSE OF ERECTION, RE-DEVELOPMENT, HALIFAX, N. S.

posed, a faced block is used, which is constructed of crushed granite, giving a mottled granite effect. Where stucco finish is used, the stucco is applied to the rough concrete block.

Frame Dwellings:—Several tracts of land having been acquired by the Commission, seventy (70) self-contained frame dwellings, vary-

ing in size from 21 ft. x 27 ft. to 25 ft. x 33 ft., were constructed simultaneously with the "Group Development" throughout the unrestricted part of the devastated area, these buildings being completed and occupied in the course of five months' time.

Individual Housing:—In addition to the



TYPES OF DETACHED AND TWO-FAMILY DWELLINGS, RE-HOUSING DEVELOPMENT,



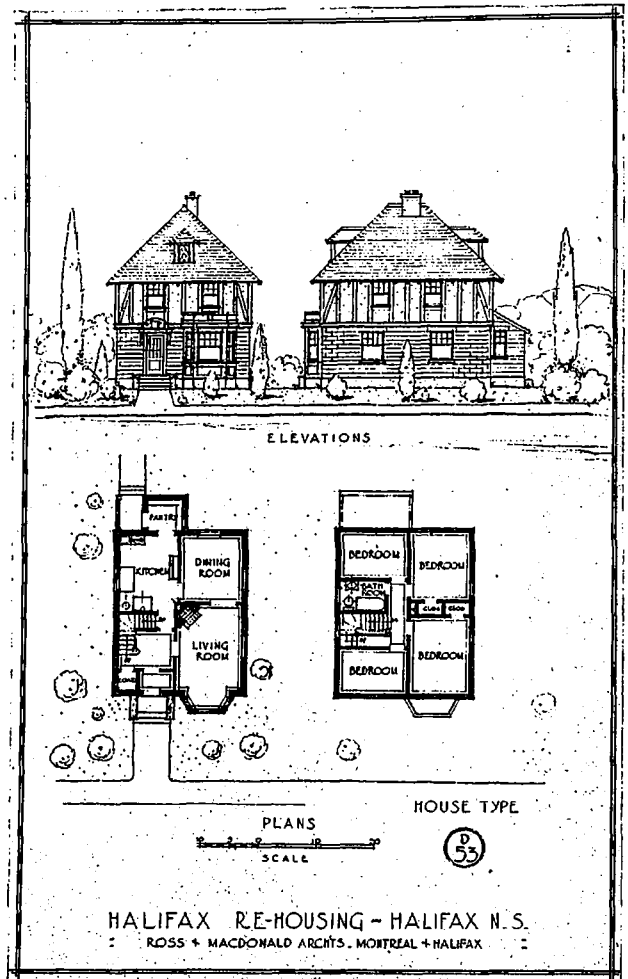
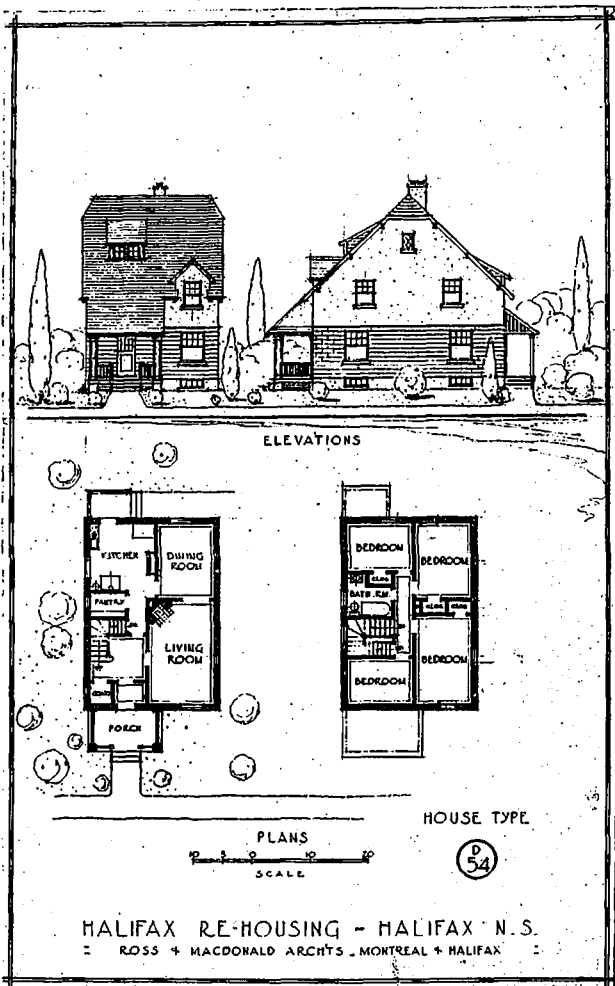
FRAME DWELLINGS, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

“Group” and “Frame” Developments, one hundred and ten (110) homes have been built, scattered throughout the area, designed to meet the individual need in each case, and contracts covering the construction of one hundred and fifty (150) homes in addition to those already completed are being proceeded within an energetic way. These homes vary in size, accommodation and cost in relation to each individual need and the size of house owned prior to the

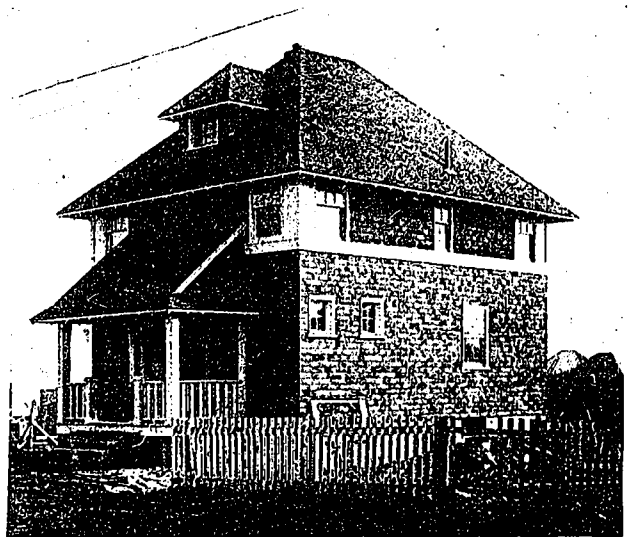
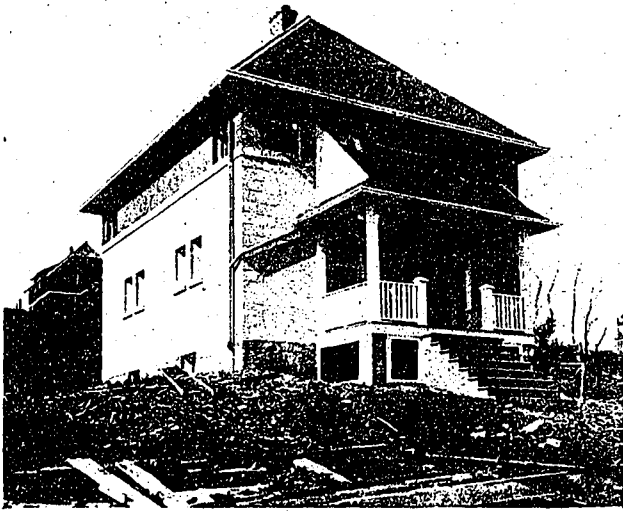
disaster. The individual homes are constructed of hydro-stone, stucco and wood.

COMPARATIVE COSTS

For purposes of comparative cost, the local material and labor market were carefully studied and estimates prepared (using varying types of construction) of a detached two-flat house, having four rooms and bath on each floor, with outside dimensions 28 ft. 0 in. x 29 ft. 0 in.,



TYPES OF SEVEN-ROOM DWELLINGS, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.



TYPES OF SIX-ROOM DWELLING, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

two full stories in height. Each type of construction investigated is indicated in the following table in order of cost, beginning with the lowest. Since all interior finish, such as lath and plaster, paint, finished woodwork, floors, etc., is applicable to each type and therefore practically unchanged as regards cost, consideration for comparative purposes has been lim-

ited to the several forms of wall construction only.

Considering the lowest priced construction as 100 per cent., the comparative costs were determined as follows:

FRAME SHEATHING WITH SHINGLE AND STAIN

No. 1:—Exterior walls, 2 x 4 spruce studs, sheather on the outside with $\frac{3}{8}$ in. tongued and grooved spruce, cover dwith one layer of 1-ply prepared roofing, and shingled with No. 1 clear shingles, dipped and stained with creosote stain, 100 per cent.

FRAME SHEATHING WITH DROPSIDING, PAINTED

No. 2:—Construction similar to No. 1, replacing shingles with spruce dropsiding painted three coats of lead and oil paint, 101.2 per cent.

CONCRETE PRE-CAST BLOCK

No. 3:—Exterior walls constructed of two lug concrete blocks set in cement mortar, 103 per cent.

FRAME SHEATHING, BISHOPRIC BOARD AND CEMENT STUCCO

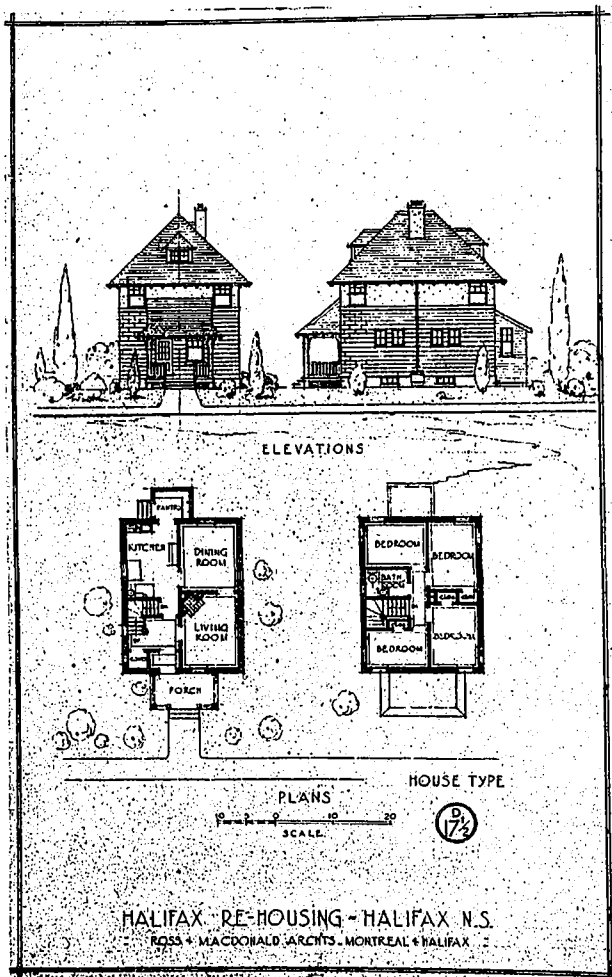
No. 4:—Exterior walls, 2 x 4 spruce studs, sheathed on outside with $\frac{3}{8}$ in. tongued and grooved spruce, Bishopric stucco board, and finished with cement stucco, 104.2 per cent.

FRAME SHEATHING, METAL FURRING, LATH AND CEMENT STUCCO

No. 5:—Exterior walls 2 x 4 spruce studs, sheathed on outside with $\frac{3}{8}$ in. tongued and grooved spruce, covered with one layer of 1-ply roofing, furred with 1x2 furring, finished with metal lath and cement stucco, 105.6 per cent.

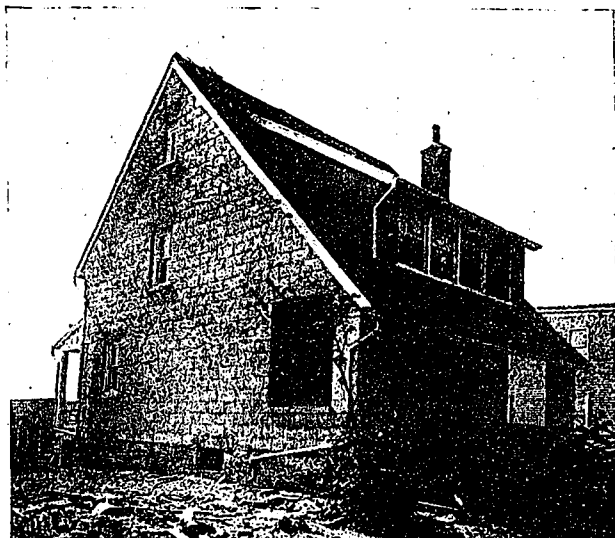
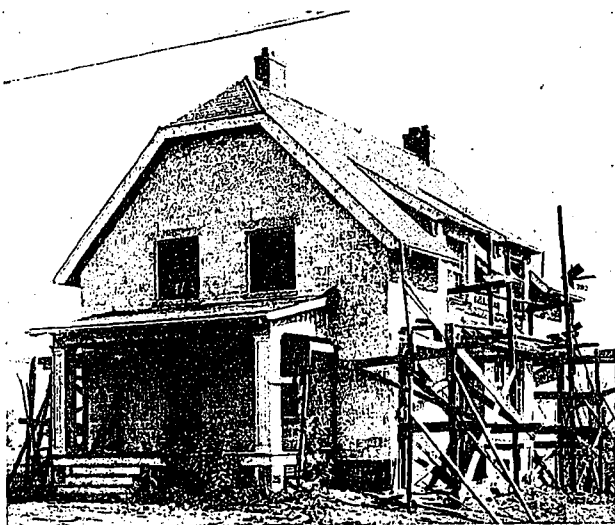
BRICK VENEER

No. 6:—Exterior walls 2 x 4 spruce studs, sheathed with $\frac{3}{8}$ in. tongued and grooved spruce



HALIFAX RE-HOUSING - HALIFAX N.S.
ROSS & MACDONALD ARCHTS. MONTREAL & HALIFAX

ELEVATIONS AND PLANS OF ABOVE HOUSES.



HYDRO-STONE CONSTRUCTION, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

sheathing, covered with one layer of 1-ply roofing and veneered with brick, 106.9 per cent.

SOLID BRICK

No. 7:—Exterior walls of brick, two bricks of thickness, 108.8 per cent.

MONOLITH CONCRETE

No. 8:—Exterior wall poured concrete, 8 in. in thickness, rubbed to an even surface on outside face, 116. per cent.

It was found from actual comparison of cost after several months of operation of the hydro-stone plant, that the difference in cost between frame building with shingle, and hydro-stone, was five per cent. (5%) instead of three per cent. (3%) as estimated, this increased cost being largely due to transportation costs from the plant to the works and reduction in the estimated output of the plant, due to labor difficulties.

HYDRO-STONE MATERIAL

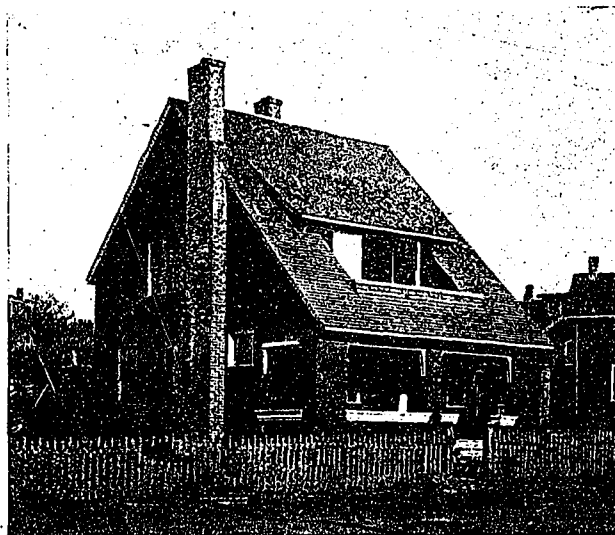
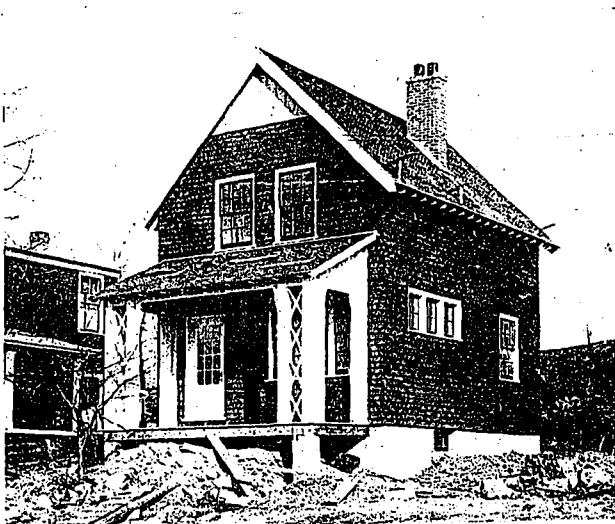
Hydro-stone, the material decided upon for the exterior of the houses, consists of a mixture of concrete, composed of gravel, crushed stone,

sand and Portland cement, with sufficient water to crystallize the cement thoroughly; moulded under heavy pressure into the form of building units, and then cured in steam or rooms kept moist to prevent rapid evaporation.

The heavy pressure admits of the use of a sufficiently wet mix to form a high grade concrete, and the system of moulding admits of facing with crushed granite, marble, mica-spar or colored sands.

The block is nine inches (9 in.) by twenty-four inches (24 in.) on the face and is built into the wall either as a two-piece wall or as one piece. The two-piece wall comprises "T" shaped units, laid up in header and stretcher bond, breaking joints alternately back and front. The wall has continuous horizontal and vertical air spaces throughout. The inside and outside walls having no direct contact, forms a wall thoroughly insulated against heat, moisture and frost.

The one-piece wall is well adapted for small buildings or residential work, and this form of



DETACHED HOUSES OF FRAME CONSTRUCTION, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

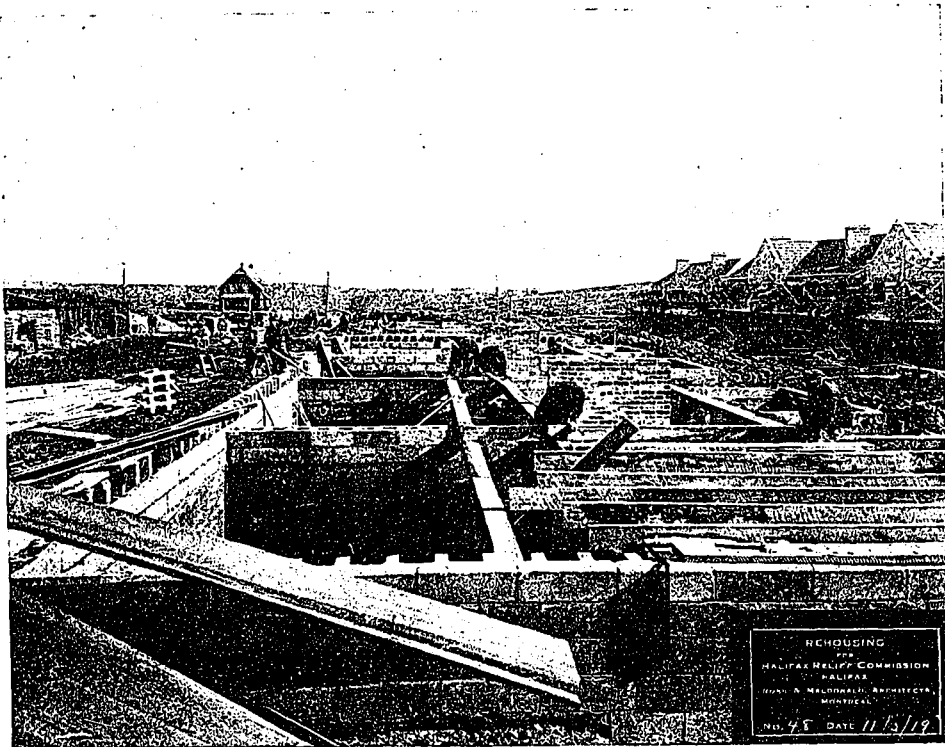


ROW OF HYDRO-STONE HOUSES WITH DWELLING CONTAINING TWO FOUR-ROOM APARTMENTS IN FOREGROUND, RE-HOUSING DEVELOPMENT, HALIFAX, N. S.

construction has been adopted in the group development, with the use of a bishopric board on the inside of all exterior walls. The blocks have two webs projecting from the back, spaced

is nailed to the furring strips and plastered in the usual manner.

The hydro-stone machines are operated in the form of a press, estimated to exert a pressure



VIEW SHOWING WALL CONSTRUCTION OF HYDRO-STONE HOUSES.

on 12-in. centres, and are laid up so as to break joints and form a strong, self-sustaining wall, ranging from 5 to 12 in. in thickness. Furring strips are fastened to the ends of the webs by a simple clip laid in the joint. Any form of lath

of some 150,000 pounds against the face of the block. The plant was equipped with five machines, with a total output covering from 3,500 to 4,000 blocks per day. The pressure against the face of the block, while in the mould, com-

pacts the concrete, squeezes out excess water and fills up the voids, forming a block with a dense face and square, sharp edges, which is immediately removed from the mould.

The concrete mixture used is a comparatively wet mix, the proportions being determined after careful experiments with the sand and stone available. In the manufacture of face blocks, white cement was used with white sand in order to obtain the full effect of the crushed granite. The facing material is filled in to a depth of $\frac{3}{8}$ in. on top of the ordinary concrete, the pressure applied at once, thus securing a thorough bond between the facing and the body of the block. When washed the blocks are removed to a steam room where they are cured (approximately 48 hours), then placed in the storage yard for shipment to the works.

On account of the large size of the blocks, nine inches by twenty-four inches (9x24 in.) they are laid up very quickly and remarkable progress has been made, a small number of masons being able to handle the output of the plant as fast as it can be delivered to the building.

RECORD OF PROGRESS

In the face of war conditions which made it exceedingly difficult to obtain anything like adequate labor or the materials required in the reconstruction of the devastated area, the Halifax Relief Commission have practically rebuilt the northern section of the City of Halifax in the remarkably short space of two years. Through the active efforts of the late Col. Robert S. Low and latterly those of Mr. George H. Archibald, of the firm of Messrs. Archibald & Holmes, Contractors, Toronto, the entire work of temporary relief shelters and the repair of some eight thousand homes was entirely completed eight months subsequent to the disaster.

Great as the effort of the Halifax Relief Commission has been, and marvellous the results obtained in this wonderfully short period, there still remains, however, much to be done. Further improvements are contemplated in the development of what is known as Richmond Slope, between Gottingen Street and Halifax Harbor, representing in almost every instance houses for the individual owners suffering loss within this area. Work is rapidly nearing completion in this section on many buildings of a public character, such as schools, churches, convents and other institutions of like nature. The architects have given special attention to the planning of the development as a whole. The houses have been studied in groups in relation to the topography and also with the idea of working out a harmonious grouping and color scheme. Instead of the usual development of long rows of uninteresting houses, there are diagonal and diverging streets, with effectively picturesque homes, giving pleasant vistas and an interesting

architectural treatment of the whole. This, with the planting of trees and shrubs and the seeding of the park and playground areas—landscape features so often overlooked—will add greatly to the desirability of this section of the city as an artistic community development of homes at modern cost, and it is to be hoped will do much to soften and obliterate the horrors of the tragedy of December, 1917, and that Halifax will look forward with confidence to becoming a better and greater city—ranking foremost among the big cities of the Dominion.

Construction Cost Reduced

Examples of the economic advantages of using electricity are daily brought to notice, and are of special interest in Canada, where approximately 85 per cent. of the electric power is derived from water-power, and is, therefore, usually available at low rates.

The saving effected by electric operation in construction work is demonstrated in a recent article in "The Engineering News-Record." The plant referred to is for the construction of a nine-span concrete bridge in Ohio. Electric energy is supplied to some 13 motors, varying in size from five horse-power to sixty-five horse-power. These are used for such machines as the sawmill, belt conveyor, concrete mixers, derricks, pumps, pile driver, cableway and concrete hoist towers. The cableway is equipped with a sixty-five horse-power motor, the conveyor with a fifteen horse-power motor, while a mixer of one cubic yard capacity has a twenty horse-power motor. In determining the reduction in power costs by using electricity, it is stated that the work can be carried out with an average power bill of \$450 monthly, while the single boiler plant which has to be used for a steam hammer costs \$10 per day. If steam were used throughout, separate plants would be required for all machines, owing to their wide separation, and it is estimated that each would cost as much as the steam-hammer operations.—L. G. D., in "Conservation."

New Partnership Formed

The firm of Sharp & Brown, architects, practising at 18 Wellington Street East, Toronto, has been dissolved. Mr. J. H. Brown, who has been in Ottawa for some time past, is still occupied with his work there, and Mr. Andrew Sharp is continuing practice in association with Mr. Herbert Horner, who for the last fifteen years has been in the service of Messrs. Darling & Pearson, architects, both at Toronto and Winnipeg.

The new firm will be known as Sharp & Horner, architects, and are now located at their new offices, 73 King Street West.



A. Frank Wickson

*Re-Elected President of the
Royal Architectural Institute
of Canada.*

The R.A.I.C. and O.A.A. Joint Meeting

WITH the return of a large number of members who have been away on overseas service, the joint meeting of the Architectural Institute of Canada and the Ontario Association of Architects, held in Toronto on October 2nd, 3rd, and 4th, was of a character which in the words of President C. H. Acton Bond of the O.A.A., might aptly be termed a Victory Convention. With the renewal of its membership, it is felt that from now on the deliberations of the profession will result in the shaping of a policy which will deal effectively with such issues as have been the occasion of annual debate, besides bringing more recent questions up for immediate and definite consideration. It was generally voted the best meeting of the profession since before the war, consisting of a three days' programme of important addresses and discussions and including by far the most notable exhibition of architectural drawings and photographs ever displayed in Canada.

Following the reading of the minutes on the opening day which was devoted to the affairs of the Ontario Association, President Bond reviewed the work of the Council during the period of the war. He felt that the present time marked the beginning of great things for both the profession and the association. The architects and their assistants had played no small part in the world struggle and the association was proud of the many members who were on active service, at the same time sustaining a distinct loss in those who had made the supreme sacrifice, including the late Colonel Beckett and Colonel Stewart, the latter of whom was a member of the Council.

During the war the association had given active attention to the question of competition from alien architects, and had taken the matter up with the Canadian Manufacturers and the Toronto Builders Exchange with a view to memorializing the Government, although no final action was taken.

Mr. Bond stated that in December, 1917, as representative of the association, he was sent at the request of Sir Clifford Sifton, of the Commission of Conservation, following the Halifax disaster, to confer with Mr. Thomas Adams in reference to the rebuilding of the city. Subsequently the Ontario Housing Commission had asked for the co-operation of the association in the working out of their scheme and a committee was appointed for that purpose.

An effort has also been made to secure a greater degree of protection for the profession through the Provincial Government, and both the Premier and Minister of Education had been

interviewed with good results. Besides this three members of the association had been appointed as a War Memorial Committee to cooperate with the Ontario Society of Artists and other representative bodies for the purpose of giving free advice in reference to the erection



MR. HERBERT E. MOORE,
Newly Elected President of the Ontario Association of
Architects.

of memorials with the object of seeing that they are in good taste and of benefit to the community.

THE QUESTION OF COMPETITIONS.

At the conclusion of Mr. Bond's address, the Secretary and Treasurer reports were presented, and were followed by a strenuous debate in reference to members of the association entering competitions contrary to the code of ethics. The question resolved itself around recent school work both in Toronto and in other parts of the

province. As the subject was one of great importance it was felt that there should be some expression as to a general policy with the object of impressing the public as to the status of the architect. It was useless to complain of Canadians employing foreign architects, if the members had not sufficient self-respect to live up to the rules of the association. In the British Isles no responsible public body could hold a competition, nor any important competition take place except under conditions approved by the Royal Institute of British Architects. This result was obtained only by a process of education covering a period of twenty years in gaining public approval. It was likewise necessary to have patience and faith and to go on educating the public here in Canada to obtain similar results. Further discussion raised the point as to whether the members who competed understood the code to be compulsory or advisory, and as to whether the committee was justified in insisting on a majority on the Board of Selection. It was pointed out that this was contrary to the attitude of the American Institute which was generally content to get an adviser.

A suggestion was made that the Council might well consider the advisability of a standing advertisement of the code in the newspapers, and that an effort should be made to educate public opinion so that it will understand that the architects are endeavoring to promote public welfare and will go into competitions only with that end in view.

The feeling of the meeting was that the lines should be drawn a little closer and that it should be thoroughly understood that any one who was a member of the association was not only expected to act according to the code, but that otherwise he would be subject to censure and dismissal.

PUBLICITY AND PROPAGANDA.

Co-related to the above discussion was the report on Publicity presented by Mr. J. Banigan, which recommended an active campaign of propaganda. Mr. Banigan stated that his committee had interviewed a number of newspaper editors and advertising agencies with the idea of finding out some means of directing public attention to the architect and his work, and the objects of the association to which he belongs. This investigation led to the discovery that there were various means by which this could be obtained, some expensive and others inexpensive except in time. It was found that there were a number of daily and weekly papers which were not only willing but anxious to publish well-prepared and illustrated articles dealing with the work of the profession on such subjects as "Why Employ an Architect," "Why Build Now," "The Ethics of an Architect,"

"The Work of an Architect," etc. Subjects of this character were of interest to the public. It was also found that certain booklets were published on these topics which were very suitable for distribution, and which could be given wide circulation by calling attention to them in paid advertisements. At a per capita expenditure of two and a half dollars a month on the part of the members, a fund would be available which would cover several of the principal cities whose newspapers circulate well out into the province, so that the subject of publicity could be worked out at a relatively small appropriation. The idea was to get before the public, not antagonistically, but in a pleasant educative manner, illustrating the advantages of the association, its code, its methods, what it has done, and what it intends to do, and the benefits of employing an architect. Such a campaign would also afford an opportunity for getting members, getting legislation, getting anything which any body of a hundred men could get if they were united and enthusiastically went after it.

Mr. Banigan's proposal met with enthusiastic approval and a fund was immediately started to carry out his suggestions. The opinion was that it would prove one of the most active and beneficial enterprises which the association had yet undertaken.

THE LEGAL STATUS OF TECHNICAL PROFESSIONS.

Another subject of special interest before the meeting was "The Legal Status of Technical Professions," which was discussed by Mr. J. P. Hynes and Mr. Harry Acres.

Both speakers cited the Illinois Act as a model on which legislation in this country could be drafted to determine the qualification of technical men and to protect their interest in the opportunities for practice which the state provides.

The status of the architect in the community, Mr. Hynes declared, was measured by the service he can render to the community. A comparison of the services rendered the community by the medical profession in the development of preventive medicine, culminating in the present system of the Government Health Department, and the services that architects and engineers can render in the matter of town planning and housing shows a striking parallel. Just as medical practitioners could make little progress individually in the matter of preventive medicine, so architects could make little progress individually in town planning. Medical health departments were made available to the community by means of legislation, and proper legislative measures are necessary in connection with housing and town planning before architects will be able to render the service they are capable of rendering along these lines.

"The legal status of the architect depends on his ability to reach that standard of reliability which warrants him being singled out as particularly capable of rendering to the community that service for which he is trained. In Ontario it is a striking fact that the practice of all professions other than technical ones have the practice of the province conserved for them. This permits all practitioners to have sufficient practice to develop to the full their ability and has established the fact that the standard of the professional men of this province is not less, and perhaps greater, than in many other communities. And it would seem only feasible and just that if the practice of the province should be conserved for men of the medical, legal and other professions, it should likewise be conserved for the men of the technical professions, so that the province may be supplied with trained men from its own technical institutions to handle its own technical problems."

The question was one, Mr. Hynes stated, which the association could not afford to overlook and one on which it was most desirable that there should be unanimity of opinion among the architects.

As the matter stood, the province suffered a direct economic loss in that it provided advantages for technical training which cost the Government twice as much as the individual, and then failed to conserve the opportunities for practice for those whom it has thus educated by throwing the field open to outside competition. The Government should be equally concerned with the development of its manhood resources as it is with any material resources, instead of limiting its interest to the training of technical men who have the most to do with the production of material resources and then giving them no further support.

Fourteen States up to the present time, as well as three or four of the provinces in Canada, have Registration Acts for architects, but none of them, according to Mr. Hynes, seemed equal in merit to that which Illinois presents. In Illinois the Government assumes the responsibility, and by its enactment it has established a Department of Education and Registration, having under its jurisdiction the administering of all examining boards in relation to the various technical professions.

REGISTRATION.

Mr. Ralph Shepard pointed out to the meeting that the Ontario Architects Act passed thirty years ago, gave the members of the association the right to use the title "registered." It was a perfectly good title which the association as a body has ignored, and he was in favor of it being made compulsory on the part of the association that all members call themselves "regis-

tered architects." According to the Act any one wrongly appropriating the title could be prosecuted.

Further opinion on this point was expressed by Mr. Munro Grier, K.C., legal adviser to the Council, to the effect that it would not be logical to approach the Government for additional consideration when the association had not made use of the things already granted.

PROMINENT SPEAKERS ADDRESS LUNCHEONS.

The luncheon on this and subsequent days of the meeting at the King Edward Hotel were largely attended and introduced as guests of the occasion Sir Edmund Walker and Mr. Munro Grier, K.C., who delivered addresses on "The Viewpoint of the Public with Regard to the Profession"; Sir Robert Falconer, President of Toronto University, and Brigadier-General Charles H. Mitchell, Dean of the School of Practical Science, who spoke of the University in relation to architectural development; and Prof. Percy E. Nobbs, who, with Mr. Herbert E. Moore, discussed the subject of War Memorials. At the final day's luncheon all members who had returned from active war service were made special guests of the occasion.

R. A. I. C. Meeting, October 3, 1919

With the Montreal convention last January as a precedent in meeting when one of the provincial bodies was in session, the R.A.I.C. held its annual assembly on the second day.

The following report of the honorary secretary, Mr. Alcide Chausse, reviewing the work of the Institute during the past year, was read and adopted:

REPORT OF THE HONORARY SECRETARY FOR 1919.

To the President, Officers and Members of the Royal Architectural Institute of Canada.

Gentlemen:—

As an experiment, in January, 1919, the Eleventh General Annual Assembly of the Royal Architectural Institute of Canada, was held jointly, and at the same time, as the annual convention of the Province of Quebec Association of Architects, at Montreal. It proved very successful and brought to the various meetings of both the P.Q.A.A. and the R.A.I.C. very good attendance. The Architectural Exhibition held at the Arts Club during the Assembly was very interesting.

It is hoped that this year the joint meeting of the Ontario Association of Architects, and of the Royal Architectural Institute of Canada will be a success.

At the last General Annual Assembly the officers elected were as follows:—

Mr. A. Frank Wickson, Toronto, President; Mr. David R. Brown, Montreal, and Mr. W. G. Van Egmond, Regina, Vice-Presidents; Mr. Alcide Chausse, Montreal, Honorary Secretary; Mr. J. P. Hynes, Toronto, Honorary Treasurer.

The "pro rata" contribution of the provincial associations was fixed at two dollars (\$2.00) per member.

In order to have a quorum at the meetings of the Council, it was decided to pay the actual traveling expenses of the President, the Honorary Secretary and the Honorary Treasurer; and the actual traveling expenses of the members of the Council, other than officers, up to and not exceeding twenty-five dollars (\$25.00), upon presentation of a detailed statement of such traveling expenses.

It was decided that arrangements be made by the President with the publishers of "Construction" for the printing and mailing of the proceedings of the Montreal General Annual Assembly. This has been done and every member of the R.A.I.C. has received a copy of these proceedings with a letter from the President.

The Finance Committee appointed was composed of Messrs. J. P. Hynes, Victor D. Hershberg and Ralph K. Shepard, and as pointed out by the Auditor that the Honorary Treasurer cannot act on the Finance Committee, Mr. J. P. Hynes resigned and Mr. R. R. McGiffin was appointed to replace him.

A special committee was appointed to consider a policy to be pursued by the Dominion Government in the erection of Government buildings throughout the country to insure their being creditable as to purpose, design and location. This committee has been requested to report at this assembly, it is composed as follows: Mr. Herbert Raine, chairman and Messrs.

Hugh Vallance, John S. Archibald, A. Beaugrand-Champagne and U. J. Asselin.

Through the efforts of a member of this Council, (Mr. A. Graham Creighton) now residing in the Province of Nova Scotia, an association of architects has been formed in that province under the name of the "Nova Scotia Association of Architects" with Mr. R. A. Johnson as President and Mr. A. Graham Creighton as Secretary, it is proposed to have a Bill introduced at the fall meeting of the Provincial Legislature for incorporation.

We have received from the Committee on Competition of the American Institute of Architects a communication asking information concerning the history of architectural competitions in Canada, the methods under which competitions are conducted; the amount of compensation paid to competitors; their popularity with the public and with the profession; and the present attitude of the R.A.I.C. toward the principles involved. Mr. David R. Brown and the President, Mr. A. Frank Wickson, were requested to reply to this communication.

At the suggestion of the President, Prof. P. E. Nobbs was appointed to the Central Dominion Advisory Committee on War Memorials.

The matter of the R.A.I.C. Medal is now in the hands of a special committee composed of Messrs. A. Frank Wickson and David R. Brown, and it is expected that a final report will be made very soon.

ALCIDE CHAUSSE,

Hon. Secretary.

Considerable discussion developed with reference to the report of the Committee appointed at a meeting of the Council held at Ottawa to deal with recommendations to be made to the Dominion Government, in regard to the erection of government buildings throughout the country so as to insure their being creditable as to purpose, design and location. This report was presented by Mr. Herbert Raine, chairman of the committee, and is as follows:

In accordance with the resolution of the last meeting of the Council held in Ottawa, a Committee was formed, made up as follows, Herbert Raine, Chairman; Hugh Vallance, John S. Archibald, A. Beaugrand-Champagne, U. J. Asselin, "to consider a policy to be pursued by the Dominion Government in the erection of Government Buildings throughout the country to insure their being creditable as to purpose, design and location."

This Committee met on the 19th inst., all members being present. There was unanimity of opinion that the Institute, before making any recommendations to the Government, should be reasonably certain that they would be accepted in the spirit in which they were made, otherwise we would be laying ourselves open to a rebuff and loss of prestige.

The Committee doubted very much that any suggestion they could offer, unless it clearly showed a resulting economy, would be acceptable to the Government, which at the present time is attempting to make every retrenchment possible. We are satisfied that the Architectural Department is run much more effectively with a view to economy than would result from any suggestion we might make and we feel that this is the essential thing at the moment. We feel that the Department of Public Works is doing good work under very unfavorable circumstances, and that any recommendations should be to help the Department, with a view to obtaining further funds only that it may offer such remuneration as will attract the best designing talent in the profession.

In case of purely monumental buildings, where everybody has a right to demand that only the best talent be employed, we think it might be well for the profession to be consulted through the Institute or the Provincial Associations as to the best methods of attaining the desired results.

In conclusion, we desire to say that a question of this kind calls for discussion from representatives of all the Associations, and should not have been left to those of one, viz., the P.Q.A.A.

HERBERT RAINE,

Chairman Committee.

President Wickson suggested that in view of the nature of the report a resolution from the Royal Institute to the Minister in charge, not of an abstract kind, but a resolution expressing the wish that the Government would take every possible means of increasing the efficiency of the staff, might help the Chief Architect of the Public Works Department.

It was pointed out by Mr. J. P. Hynes that there were other national societies whose objects were somewhat akin to those of the architects, that were recently considered by the Government, particularly the Royal Academy. Mr. Hynes felt that if the institute could form some policy in regard to art and architecture, the co-operation of these societies would be invaluable, and take away the idea that the architects were

actuated by selfish motives. The Royal Society, which was literary and scientific, was in a measure similar to the institute, and should be interested in the development of art and architecture in this country. The Royal Academy was established for that purpose and the Institute should co-operate with such bodies and get a platform before the public that will be seriously considered by all the various national societies. Something along these lines should be considered before undertaking any negotiations directly with the Minister of Public Works.

The meeting did not in any way construe that the Government was not administering the Public Works Department properly as regards the erection of buildings, but simply expressed disapproval of the fact that much work that has been carried out was not in accordance with the best standards of design. The expression was that all important public buildings should be open to the best talent in the country, the same as in France, and that in view of the fact that the department found it necessary to go outside to get consulting engineers, why would it not prove a like advantage to employ the services of consulting architects.

The Government was criticized with reference to its new office building at Ottawa, which is now in course of completion, on the ground that it was the first public building erected after the official plan for Ottawa was approved, and was a direct departure from that plan, instead of being an integral part of it, the building being thrown out as an isolated unit in the heart of the city. The Ottawa plan cost the city and Government \$70,000, and yet those who prepared the plan and who were in a position to give advice, were in no way consulted.

As a result of the discussion the matter was referred to the committee on resolutions, with instructions to report on whether the Institute should deal directly with the Minister of Public Works or appoint a committee to formulate a policy towards approaching the Government.

ARCHITECTURAL EDUCATION

Two very excellent papers on architectural education—one by Professor Ramsay Traquair, of McGill University, which appears elsewhere in this number, and the other by Mr. W. D. Cromarty, of Ottawa, which owing to lack of space cannot be dealt with until the November issue, were read at the meeting and received with great interest.

There was indeed much in the views subsequently expressed to indicate that the subject of education was going through a process of progressive thinking.

Mr. J. P. Hynes stated that for some little time the president of Toronto University had

been considering the idea of a six years' course with a double degree, and that architecture would be one of the favorite studies which this course would introduce. It would likely comprise a two years' art course, two years partly arts and partly architecture, and the last two architecture only. The student taking the six-year course would receive the degrees of both Bachelor of Arts and Bachelor of Architecture.

A plea was made by Mr. Charles E. Cobb for the better training of the man who cannot possibly go to college. He referred to the recently formed Draughtsmen's Association, stating that he hoped architects would take some interest in the new organization, which represented a large number of young men on whom the architects had to depend to do a large portion of their important work. In his own office, for instance, there were three young men who have not been able to secure a college education for very good and sufficient reasons. They were men of capability and were holding up their end splendidly in the work. In his opinion it was desirable that some arrangement should be arrived at whereby such men may have some advantages in the matter of improving their understanding in design, and he felt that some room or headquarters should be provided where they can, to some extent, begin what has been very satisfactorily tried out in New York, the Atelier system of training draughtsmen. "The movement," said Mr. Cobb, "should be supported for the architects' own mercenary ends. If the architects are to produce good buildings, it was necessary for them to have competent assistants and these were none too plentiful."

Mr. A. F. Wickson stated that the Ontario Association would be only too glad to render any assistance along the lines suggested, although he would be sorry to think that the Draughtsmen's Union would in any way have the tendency to impress young men that it was not necessary to have a college education to become an architect. He further recommended that the incoming Council be requested to take up the question.

The need of business education as a part of architectural work was emphasized by Mr. V. D. Horsburgh, who stated that among assistants generally there was a tendency to despise business, and for this reason were hampering their own future. There was also, as regards scholarship, he said, opportunity for the planting of seed in fertile soil. A committee on publicity could help in this direction by informing the public that the Institute required several donations amounting to \$20,000 to establish \$1,000 scholarships. Far greater sums had been raised from wealthy men for smaller ends.

Professor Traquair said that he did not believe that it was possible to teach the business of an

architect's work in the college, nor did he believe that it was expected. Business experience was to be gained by contact with life in the office, and it was therefore necessary to make the office an integral part of the whole course of training. The colleges themselves, he said, could not turn out trained architects, nor could they be trained entirely in the offices. It was necessary to combine the two, and he was certain that the colleges were only too anxious to establish the closest personal connection with the profession. It was his opinion that every teacher in an architectural school should have been, or should be, a practicing architect as well as a teacher. Not that it was necessary that he should have a large practice, but that he should be experienced as regards actual modern work.

As regards the non-college student, Professor Traquair felt that he was just as valuable as the college student, only that he was getting his education in a slightly different way. He cited the case of a draughtsmen's society or union in England, and what had been achieved through the efforts of such a union and the assistance which it had received from the senior societies.

As for the Beaux Art system, he was glad to note that many of the colleges in the States were throwing it off. It was a most admirable system for France, but the conditions here were different both as regards the position of the architect and his work. It was necessary for Canada to mould its own system, and the system which has been devised did not include that large amount of technical draughting which is rather characteristic of some schools. The real Beaux Art course was one in which men had to spend from ten to twelve years in place of four or five years, which the college course provides. The college course, Professor Traquair said, was hardly more than the introduction to it, and that much work, if done at all, would have to be done after the student left college. He felt that a copy of anything was bad. While acknowledging all the virtues of the Beaux Art course in France, it was well at the same time to acknowledge that, like the Corinthian capital, however beautiful it may have been to the Romans, it is a question as to how beautiful it is when copied in Toronto or Quebec.

In his opinion it was perfectly possible for the universities to give partial courses, and to arrange many of the lectures and studies so that a draughtsman could avail himself of a considerable part of the course, by partial attendance at the University at hours that would not altogether interfere with his office work. That is to say an hour in the morning from 9 to 10, when it would be possible for him to arrange with his senior to be in attendance.

JOINT MEETING OF THE R.A.I.C. AND O.A.A.,

The third day of the meeting resolved itself into a joint meeting of the Institute and the Ontario Association.

Very excellent addresses were delivered by Mr. Naulon Cauchon, Chairman of the Ottawa branch of the Town Planning Institute of Canada and Mr. Thomas Adams, Town Planning Adviser to the Commission of Conservation on "The Architectural Scope in Town Planning;" and by Mr. James Govan, Architect of the Provincial Secretary's Department of the Ontario Government, who spoke in relation to the problem with which the Government has had to deal under the Ontario Housing Act. These addresses were exceptionally well presented and the interest of the meeting was evidenced in the discussion which ensued.

Separate council meeting and routine business occupied the greater portion of the afternoon period.

The report of the Committee on Resolutions was as follows:

O. A. A. RESOLUTIONS.

Resolution No. 1: Publicity Committee:

Resolved: That a committee of three be appointed, with power to add to its numbers, and subject to the Council, to be known as the Publicity Committee.

It shall be the purpose of the Publicity Committee to put the Ontario Association of Architects favorably before the public.

Be it further resolved that this Committee be authorized to collect by voluntary subscription for publicity purposes a sum not less than \$2,000.

And be it also further resolved that this Convention approves of the purposes of the Publicity Committee and urges all the members to subscribe.

Resolution No. 2: Amendment to Articles 32 and 33 of By-Laws:

Article 32 shall read: When the application of members who have resigned or have failed to retain their membership, shall be approved of by Council, the applicant shall pay a fee of \$25, which shall include the annual fee for the year current at the time of the resumption of membership.

Article 33 shall read: When the application of associate members who have resigned or have failed to retain their membership shall be approved of by Council, the applicant shall pay a fee of \$10, which shall include the annual fee for the year current at the time of the resumption of their membership as associates.

Resolution No. 3: Competitions:

Resolved: That the Ontario Association of Architects deprecates competitions except in public and civic work.

Members entering competitions disapproved of by the Council shall be subject to censure or to erasure from the Architects' Register, or both.

The Council shall not approve of a competition without the following requirement, that at least one Assessor be a Registered Architect nominated or approved of by the Council.

That the adjusting of further details of the Code governing competitions to harmonize with the foregoing, be left to the Competition Committee acting under the supervision of the Council.

Resolution No. 4: Registered Architect:

Whereas the members of this Association have the right, under the Ontario Architects' Act of 1890, to practice under the title of Registered Architect.

And Whereas the technical men of the Province are seeking legislation regulating the technical professions in

this province, it is the strong recommendation of this Convention, and its legal adviser, that the members use the title of Registered Architect, thereby making operative the privileges granted them by the Ontario Architects' Act.

Thereby be it resolved that after the first of November, 1919, all members of the Ontario Association of Architects are urged to practice under the title of Registered Architect as provided by the Ontario Architects' Act, and to use this title on all stationery and on other suitable occasions.

Resolution No. 5: Associate Membership:

In recognition of the services rendered by Architectural students who served in some theatre of the Great War, the Council may, at its discretion, grant such men associate membership—

Provided however, that they shall have satisfactorily completed at least two years of their Architectural Course at the University, and the one year's practical experience now required by the by-laws.

R. A. I. C. RESOLUTIONS.

Motion 1.—This Committee recommends that the R. A. I. C. take up with the new Minister of Public Works in a friendly way the question of submitting the design of monumental and important public buildings, etc. to properly conducted competitions among the architects of the affiliated associations composing this body.

Motion 2.—This Committee recommends that the following resolution be forwarded to the Government by the R. A. I. C.

RESOLVED—That whereas it is contemplated to erect monuments to the fallen Canadian soldiers at various points on the battle-fields of Europe, the Government of Canada is hereby urged to see that the designing of these memorials is executed by Canadian Architects, and that the sculpture and painting in connection therewith be placed in the hands of Canadian sculptors and painters.

Motion 3.—Increase in tariff on imported plans.

This Committee recommends that the question be carried over for further discussion.

O.A.A. ARCHITECTURAL EXHIBIT.

The exhibit of architectural drawings and photographs in connection with the convention, was undoubtedly the best of its kind that has ever been seen in this country, occupying the three galleries and entire corridor space of the Toronto Art Museum. A special feature was a marvelously interesting one of two hundred and fifty photographs of French Cathedrals, made prior to the war, including such historic edifices as Rheims and Amiens which suffered so severely as the result of the German bombardment. The photographs afforded a very complete realization of the golden age of church architecture in all its detail and inimitable variety, and the dimensions of the picture were on a scale which gave a true suggestion of the grandeur of the originals. This collection is owned by the Brooklyn Museum, and the loan was obtained through the good offices of Prof. Good-year. The exhibit of work by Canadian architects also served to show the high standard of excellence which has been attained by designers in this country in recent years. On the opening night, which was largely attended, and which proved a decidedly social event, Mrs. H. Dunnington Grubb gave a most interesting address on landscape architecture, tracing its development from the early Egyptian gardens down to landscape work in its modern form.

Other features of the convention was an en-

joyable evening at the Toronto Royal Museum as the guest of Professor Currelly, and a motor trip about the city ending with an inspection of Hart House at the Toronto University, where the members and visitors were personally conducted through the premises by Mr. Henry Sproatt of the firm of Sproatt and Rolph, the architects.

ELECTION OF OFFICERS

The election of officers resulted as follows:

R. A. I. C.

President, A. Frank Wickson, Toronto; vice-presidents, David R. Brown, Montreal; L. H. Jordan, Winnipeg, Man.; honorary treasurer, Aleide Chausse, Montreal, Que.; honorary treasurer, C. S. Cobb, Toronto, Ont.

Council: J. P. Ouellet, Quebec, Que.; Jos. Perrault, Montreal; Ramsay Traquair, Mont-

real; M. W. Sharon, Regina; W. G. Van Egmond, Regina; David Webster, Saskatoon; A. Melville, Winnipeg; R. B. Pratt, Winnipeg; J. M. Watt, London; C. H. Acton Bond, Toronto; H. E. Moore, Toronto; G. H. MacDonald, Calgary; W. D. Cromarty, Edmonton; S. M. Eveleigh, Vancouver; A. S. Mercer, Vancouver.

The next General Annual Assembly of the Royal Architectural Institute of Canada will be held at Ottawa, Ont.

ONTARIO ASSOCIATION OF ARCHITECTS

President, Herbert E. Moore; first vice-president, R. K. Shepard; second vice-president, John M. Watt; treasurer, Gordon M. West; registrar, J. P. Hynes.

Council: W. R. Gregg, Chas. E. Langley, Lieut.-Col. R. D. McGiffin, Lieut.-Col. Colborne P. Meredith, A. Frank Wickson, R. B. Wolsey.

Auditors: J. Wilson Gray, C. H. Bishop.

The Education of the Architect

Address delivered by Professor Ramsey Traquair before the R.A.I.C.

IN recent years the education of the architect has undergone that change which, many years ago, took place in the other professions; it has, in part, been transferred from the office, the place of work, to the college, the place of learning. This change was inevitable. Something no doubt was lost, yet more was gained, and if we can mold our system wisely, still more is to be gained in the future.

Most of us were educated under the old system of pupillage or apprenticeship. We know what good results it often had when the pupil was enthusiastic and the master sympathetic. The pupil's studies were always directly related to building in actual progress and he was accustomed from the beginning to think of architecture as building rather than as a learned mystery. But we know also that in too many cases the education of the pupils was left to an already overworked head assistant, and that the years of apprenticeship were wasted on office routine. The pupil was kept doing what he could do rather than encouraged to learn something which he could not do.

Of recent years the amount of knowledge required of an architect has largely increased. New materials have come into use, and new methods of construction. Much of the more scientific work is done by consultants outside the office and the draughtsman has little opportunity of finding out how the consultant engineer arrives at his results. Yet these results should

modify deeply the planning, the design and proportion of the building.

To gain this extra knowledge the old-time pupil used to attend evening and morning classes at the technical schools. His working day was often from eight in the morning to ten at night, and in these over-long hours something had to suffer. No boy can study the orders for two hours before and mathematics for three hours after his office work and be energetic and keen all the time. Some suffered both in body and mind, some saved the situation by a little judicious idleness.

Yet, though harmful when thus pushed to an extreme, the idea of the system was right. School training alone will never make an architect, just as office training at the present day will rarely produce more than a draughtsman. The old system was an effort to combine the two, and one cause of its failure was that the combination was too much. But any system must provide for both elements of training.

Now, in the first place we cannot lay too much stress on the need for a good general education. The architect is called upon to mix with all kinds and conditions of men and he should meet the best of them on terms of equality. He must in the first place be able to write his own language correctly. On leaving school any boy should be able to write on a subject within his knowledge, clearly, concisely and with good arrangement.

Further, an architect's work calls for a wide

knowledge of literature and of the historical and artistic traditions of our past. He is constantly called upon to use references to classical life or fable, or to the more modern incidents of European or American history. The habit of reading, the habit of study and an intelligent interest in the history of mankind are no small aids to success in architecture.

Drawing as an exercise in accurate observation might well be included in general education and is certainly necessary for the intending architect. This should not be regarded as an artistic subject nor studied as art. It should be hard accurate description and nothing else. I do not know of any elementary school which teaches drawing from this point of view, but I am convinced that it is an educational subject of the greatest value.

Technical subjects should be left entirely to the college and omitted from the school course.

Architecture admits of more side interests than most professions, and I know of hardly any subject on which an architect may not be usefully informed. Let us then lay all possible stress on the need of a sound general education as a preliminary to the professional studies.

These studies are usually divided into three interdependent branches.

1. The artistic training, including archæology and design.
2. The scientific training, including engineering, building construction and the legal side.
3. The office training, the preparation of working drawings, the handling of building operations and the practical conduct of an architect's business.

The first two of these branches can be undertaken in the college, the third cannot and should not be attempted. It must be learned in the office and in contact with actual work. The college and the office must therefore co-operate in the training of the future generation.

When the college system was first introduced too much was occasionally asked of it. The graduate, flushed with his parchment and his college training, thought himself a full-fledged architect, entered an office and failed on the first working drawing he was asked to execute. His employer found that boys with no such training could do his work better and too often condemned the whole system forthwith.

But those graduates who practiced humbleness of spirit, hid their degrees for a year or two, and beginning at the bottom again, learned this new side of their profession with the habits of observation and study which they had gained in college, found that, within a year or two, they were something more than good office hands, they were architects with an equipment enabling them to specialize in whatever branch of their

profession opportunity or inclination presented to them.

The danger lies in the student forgetting his college education whilst he is gaining his office experience, and in the disconnection between college and office. To avoid this, and to bring the college and the profession into closer contact, a method has been adopted by which the student works in the college for the winter months and in an office for the summer. So he brings his college learning at once into contact with the practice of his profession, and, what is as important, brings a knowledge of building operations into his artistic and technical college studies. So at the end of his course the student may hope to emerge as a young architect in touch with the actualities of his profession. He will require much further experience, but the end of his college course will not mean beginning quite at the bottom again, and he will pass naturally into the ranks of the profession.

Our aims in a well considered scheme should be: Firstly—To bring the student at once into contact with the profession. Secondly—To provide in college the scientific, technical and historical basis, and to give practice and guidance in design. Thirdly—To provide simultaneously with the college course for training in office work. Fourthly—To give to selected students an opportunity of foreign study.

Now, as to the college course, what relation should the mathematical and scientific studies bear to the artistic? This is one of the most debated questions of architectural education. Some courses provide an artistic training with the minimum of engineering knowledge, others an engineering course with a little architecture thrown in. All are of value and any attempt at uniformity in the various courses would be a mistake. It is well that the student should be able to choose the type of education that he desires and go to the institution which provides it. I cannot help, however, regarding the architect as essentially an artist. He is an artist who works with structure and he must understand the engineering side of his work sufficiently well to be able to use it freely, but he need not, and in practice rarely does, calculate the actual members himself. He goes to a consulting engineer for that. He must be able to direct his engineer. He must be able to choose the most economical as well as the most expressive forms of engineering, but he need not be able to make the actual working calculations and drawings.

We know that much of the finest architecture of the past has arisen out of structural methods. The mediæval masons of Northern France were the best engineers of their day, and much of the deplorable copyism of recent architecture has arisen because the architect was unable,

through lack of engineering knowledge, to use the new structural forms to the ends of beauty. So he fell back on the good old standards and clothed his nineteenth century engineer's design in the archæological fragments of the past. But this is not architecture. If we are to have real modern architecture it must arise out of modern requirements and modern structural methods, not out of the fragments of Augustan Rome or of any other age of history.

The engineering training is valuable not as making the architect an engineer, but as providing him with inspiration for modern architectural design.

The most urgent need for architecture at the present day is to escape from copyism and antiquarianism. To escape from the stifling atmosphere of the "styles." Engineering offers one avenue of escape, but it must be kept subordinate to the artistic training.

There is one branch of education on which great stress is laid in Europe but which, for obvious reasons, does not bulk largely on this continent, the study, sketching and measuring of old work. We have some old work in Canada, particularly in the Province of Quebec, and to it our students might well give more attention than they have hitherto. Beside the architecture of Europe it cannot take a very prominent place, yet it is our own, it is of the soil and from it I believe our modern Canadian architecture might well be developed, certainly in domestic and church work. Much could also be gained from the study of our best modern buildings.

The importance to the advanced student of a visit to Europe cannot be exaggerated. Without seeing the great architecture of England, France and Italy he can have no real conception of the heights to which architecture can soar. A cathedral to him is merely a name, a

photograph, it is not the embodiment of a people's emotions and the shrine of beauty.

Now for this we urgently require endowment. We require travelling scholarships which would give our best students six months or a year of study in Europe, or for a shorter period in this continent. We want scholarships, and we want a number of them. The scholarships of the Royal Institute of British Architects are open to Canadian students, but the practical difficulties in the way of competing are too great. We want Canadian studentships with conditions of competition and of study arranged to suit our Canadian students. It is difficult to see how this can be done except by the generosity of private benefactors, but it is to be hoped that some day we will see that the best of our young architects are given their proper opportunity.

The education of the architect is not a task that can be undertaken single-handed by the colleges or by the practicing profession. It calls for the co-operation of all. I would appeal to all practicing architects to help in this most important work for the future of architecture in Canada. Consider sympathetically the youth who comes for temporary employment during his college course and work him as hard as possible. Let him occasionally visit work in progress. I know from personal experience how valuable and how highly prized were such opportunities.

If our Canadian architects continue to be not only men of practical ability but also men of culture and of attainments, we need have no fear that the honorable profession of architecture will fall in public esteem. No legislative or artificial protection can ever equal the protection given by personal ability and a high standard of work. To maintain this we must educate not only ourselves and our students but the public as well.

Public Viewpoint in Regards to the Profession

Address by Sir Edmund Walker before O.A.A.

ABOUT the second year of the war one of the compensating hopes which came to many of us was the report that in Berlin they had been forced to melt down all statues because they needed the metal for other purposes. I think it has often occurred to people that the sculptor who brings into existence a statue in material which is likely to last for a century or two, and also the committee of citizens who desire to have some great politician perpetuated, have a great responsibility to society. They surely cannot know how greatly they interfere with the hap-

piness of people who have any measure of taste. I venture to think that there is a condition a little bit like that in architecture.

I suppose the main responsibility for the baldness of many buildings that are put up in new countries must be put upon those who are determined to have buildings for an almost impossible cost—the architect must obey instructions. When one considers a country like our western provinces, and especially the towns, and when one also thinks of the time in the United States which was characterized in an

article in the "Tribune" about thirty years ago, as the Neo-Oskosh and Romano-Cheboygan periods of American architecture, one is compelled to the conclusion that in spending the money and in devising the buildings a good deal more might have been done to save the natural beauty of North America than was done in the early days of town building, and than is being done in many new towns to-day.

The Neo-Oskosh has almost disappeared, and the Romano-Cheboygan cannot be found as often as it once could; the domestic architecture of the United States has improved wonderfully in the last generation, and what is true of the United States is also true of Canada. I can remember in the seventies, when I was a young man in Toronto, I used to walk about with a friend and say that we could tell about the year a building had been built by the various new vulgarities the architects were introducing at that time.

The point I wish to insist on is that a man who is building any kind of a house, and the architect who is designing it for him, have a duty to society, which, if this country was managed as well as France and some other countries, the state itself should oversee, regulate and control. But do not mistake me; I am not here to do anything but praise the architects. I do not think in our material life anything has improved so much in the last few years as domestic architecture. In public architecture, not so much the buildings that the Governments are responsible for, as the buildings of important public bodies, including the banks, the architects have been helped and have certainly helped in return, towards a better day than that of thirty or forty years ago, but yet it seems that we do not consider our problems sufficiently.

Toronto, for instance, is like the Lombard cities of the plains. It is a city that must naturally build of brick, or terra cotta, or cement, or some of those substances which fifty years ago were, in North America, rather despised, and the plastic nature of which is such that human vulgarity has an unusual opportunity to express itself. It cannot ever be in as abominably bad taste to build of stone buildings, and have them carved, as is possible with terra cotta and other plastic materials. We must, however, build of terra cotta and cement and other like materials, and we must consider how, by the help of science and artistic skill, we may learn to use these materials and produce the beautiful results that were produced in Southern Europe two thousand years ago, rather than to produce exhibitions of the efflorescence of our vulgarity or the lack of our ideas. Many architects have already done wonders in this direction, but I do not think that the general public appreciates the difference between good and bad architecture sufficiently to help the architect. I do think,

however, that associations like this, and publications such as CONSTRUCTION, might do something in the way of a wider distribution of books and illustrations, so that the people who contemplate building might see fine types of architecture and obtain instruction which people are almost certain to absorb when they are forced to give attention to any one subject.

The Canadian people are highly intelligent, but when two or three generations have lived in the backwoods and the farms arising therefrom, there is not likely to be much aesthetic sense; it is almost certain to be eliminated and it must be built again from the bottom upwards. Our people do not often appreciate this, and those who come from abroad are hardly patient enough to understand it. When a man goes into the backwoods and hews a house out of logs and builds snake fences, and lives for one generation without paint, or anything else to merely please the eye, and then leaves his farm to a son who spends his generation paying off the mortgage, you have, by and by, a third generation who have never seen beautiful things around them, and do not think beautiful things are necessary in life. If you do not believe that this is the result, go and see the quite expensive schools and churches which stand in fields, around which no bush, shrub or flower has been planted, because the people in that community do not feel the want of them. They need not find any excuse. There is no excuse but that they can live quite easily without flowers or shrubbery, and without beautiful trees or beautiful things of any kind.

The point I wish to make before sitting down is that architects are a body of men who live mainly for the satisfaction of exercising their professional skill, as university professors and others do, and not for the remuneration they get in money. Anyone who went into architecture for remuneration only, could not have entered Mr. Cram's office, because he used to ask intending students if they desired to make money out of architecture, and if they did, he told them he thought they had better turn to something else. I suppose you live for your profession and the good that can be done, and incidentally for the commissions that are earned. We honor you for that and we glory in what architects have accomplished.

As far as I am personally concerned I have been interested not only in the structures that have come under my control in the Bank of Commerce, but in trying to develop the Royal Ontario Museum. I had definitely in mind the hope that it would help towards a better architecture in this country. In the Museum we have not yet done what we have hoped to do. We shall soon be putting up some interesting specimens of Chinese architecture in the shape of

two great archways. We can show there now the wonderful things that can be done with terra cotta, and we also hope, through the gift of the Eatons, to erect complete Jacobean, Georgian and other types of rooms, carrying out the idea so that they will be useful to architects. We hope to have there as complete examples of furniture as can be obtained, one of the avowed objects of making the collection being that it will improve the types of furniture in this country.

I know that one of the heart-breaking things to many architects—especially those coming from other countries to Canada—is that after they have built a beautiful house with beautiful rooms, the occupant proceeds to ruin every dream in which the architect has indulged by the

furniture he puts in, the pictures he hangs on the walls, and what he puts on the floors. And our Museum—perhaps more for the interior of houses than otherwise, is intended to create public taste and to benefit the arts connected with architecture. We have reached a point where the objects owned by the Museum are so enormous in number, the new collection of Greek vases so useful in design, the things that are coming from China, and Mexican antiquities, and other things, that the second section of the Museum must be built in the immediate future. I would like very much to think that I could interest architects here enough for them to satisfy themselves as to the value of the work we are doing, and to have them use every effort they can towards the building of the second section.

Adequate Protection for the Canadian Architect

Paper read by Charles S. Cobb before the R.A.I.C.

IN the report of the Royal Architectural Institute of Canada, proceedings of eleventh general annual assembly, Montreal, last January, appears the following statement, which was made in the report by Mr. Hynes on this subject of this paper, as follows:

“In considering what the Government of the Dominion has already enacted affecting the practice of architecture in Canada, we note that there is a custom tariff which imposes a duty on plans imported into this country of 22½ per cent. (plus war tax of 6½ per cent.) on one per cent. of the cost of the building. However satisfactory this measure may be for the purpose of raising revenue, it is practically useless as a protective measure to the architectural practice of the country. It is easily avoided and frequently evaded, and is extremely inadequate, amounting, as it does, to less than three hundred dollars on every hundred thousand dollars cost of building.”

Continuing, he says: “The Alien Labor Law is another Dominion enactment which might be thought to ameliorate our grievance, but on examination it is found that it is not enforced in regard to the professions, and though it is a reciprocal measure, it works to the disadvantage of this country. The United States permits an alien architect or engineer properly accredited to practice personally in that country, but absolutely refuses to allow him to transfer his organization to that country. In Canada, on the contrary, temporary offices are established by outside organizations and the principals do not personally conduct their operations, in many cases rarely even visiting the country.”

Taking this as my inspiration it occurred to me that it would be interesting to enquire further as to just what was the form of the existing tariff as regards building plans and specifications, the paragraphs of the tariff relating to them being as follows:

CANADIAN TARIFF, 1907.

ITEM 177.—Admiralty Charts, Manuscripts and insurance maps, and album insides of paper; *pictorial illustration of insects or similar studies*, when imported for the use of colleges, schools, and scientific and literary societies,—free.

ITEM 180.—Photographs, chromos, chromotypes, artotypes, oleographs, paintings, drawings, pictures, decalcomania transfers of all kinds, engravings or prints or proofs therefrom, and similar work of art n.o.p. blue prints building plans, maps and charts, n.o.p. 22½% ad valorem, 7½% war tax.

APPRAISERS BULLETIN NO. 152.

JUNE 7, 1906.

Specifications are free as “manuscripts” when written or typewritten.

Special plans of building or blue prints or substitutes therefore, are to be valued for duty at the charge usually made by the architect for the drawings, without specifications.

This charge may be fixed for duty purposes at one per cent. of the estimated cost of the building to be erected.

Detail drawings or blue prints or substitution therefor if imported separately to be appraised at a valuation of one per cent. of the estimated cost of such detail.

When the building is erected to cost less than \$10,000, the plans or blue prints thereof may be appraised at the usual charges for furnishing same, according to the special circumstances in each case irrespective of the preceding rule (No. 2).

I believe that the text of these schedules is specially interesting, illustrating as it does the meagre appreciation of the framers of this tar-

iff as to what adequate protection for the architectural interests of Canada really means. You will note that specifications which, as we all know, are as important as the plans, are duty free, and are classified with, among other things, "pictorial illustrations of insects." As regards building plans they are not considered of greater importance than chromos, chromotypes and decalcomania transfers.

As regards the authority by which the existing tariff of 22½ per cent. and 7½ per cent. war tax is based on valuation of 1 per cent. of the estimated cost of the building—this is not in any way connected with the Act, but is a decision given by the Customs Board at Ottawa and incorporated in Appraisers Bulletin No. 152.

In discussing this situation informally with some of the customs officials in Toronto, while reluctant to make any comment on this situation, they conveyed to me the idea that in their opinion the basis of this tariff was entirely out of proportion with the duties imposed upon all other kinds of imported goods. They also led me to believe that it was only very occasionally that they were asked to pass upon the application of this Act and left with me the impression that by far the greater amount of work handled in Canada by outside architectural firms escaped even this meager tariff payment.

There are several things of a constructive nature which could be done in this connection, some of which are as follows:

1. A duty should be placed upon specifications similar to that at present existing on plans, or 22½ per cent. *ad valorem* and 7½ per cent. war tax.

2. The basis of valuation which is not part of the Tariff Act but is at the discretion of the Customs Board at Ottawa, should be raised from 1 per cent. of the value of the building to at least 2½ per cent.

If these suggestions were carried out we would then have a duty of 22½ per cent. *ad valorem* or a total of 5 per cent. on the value of the building, divided equally between the plans and the specifications; this would give us a tariff about four times as heavy as it is at present, and I believe that much could be secured with little difficulty.

As to the *ad valorem* rate of 22½ per cent., I believe that this should be increased to at least 35 per cent. This of course, would require a revision of the Act, but as the tariff was formulated as far back as 1907 it is in order to consider that it is time for a revision. If this percentage was changed to 35 per cent. on a valuation of 5 per cent. of the cost of the building, distributed half and half between the plans and specifications, it would increase the present imposed duty about eight times, or a tariff charge of \$1,750 on each \$100,000 worth of work exe-

cuted in Canada exclusive of war tax. This basis is in accordance with the duties prevailing in general on manufactured goods of foreign origin.

There may be a difference of opinion as to whether this would be a deterrent; I personally believe it would, at least, the fact that it was plain justice would make our architects feel better on the subject, which in itself is very decidedly worth while. I know that there exists in this Institute the feeling that the business of the architect cannot be compared with the manufacturer who deals in tangible goods, but I am one of those who feel otherwise.

In recently approaching a local merchant, who was proposing to erect a large store in this city, a Canadian architect made every reasonable and legitimate effort to secure this man's interest and the commission for his building, if not for himself, at least for some local practitioner. The results of his efforts were that the job was given to a United States concern having a local branch in Toronto. The reasons given for this action was that there was no one in his opinion in Toronto who had the requisite experience or could show the same background of executed work, as the firm which was awarded the job. In this the architect was compelled to agree with him as far as the extent of the executed work, but as regards efficient, intelligent and energetic handling of his problem, he could not agree that the service which the merchant had secured would be in any respect superior to that offered by local firms.

In discussing the question with him after his decision had been made, the merchant was shown under what a disadvantage the local architect was laboring in view of the fact that he could not display the mass of executed work which his United States competitor could do, and that in this respect he was in the same position as the small manufacturer, who could not hope to develop his business successfully unless there was some encouragement given to him to make it possible for him to overcome the initial inequalities. The "Protective Tariff System" does not permit of the architect in the infancy of his industry to secure a footing against the competition of the larger and highly organized competitor—this was supplied. The architect pointed out to him that in his opinion there would be no such thing as a Canadian manufacturer, and indirectly no prosperous Canadian industrial community from which the merchant drew the great bulk of his business, without protection. This argument seemed interesting to the merchant and he finally said, "Where is your association? Why don't you bring these facts more actively before the public, and try to develop some sentiment which would assist you in this connection?"

I feel that the practice of architecture in Canada is in its infancy, and when arguments are used against the employment of a local architect because of the small amount of executed work, we in a sense are in an identical position with the small manufacturer who could not even consider the possibility of entering the field of industry in Canada, if his initial efforts were subjected to impossible conditions of competition. The highly organized industrial machinery which exists in the United States has been built up by years of high protective tariff, and has developed an enormous production with the resulting cheapening of manufacturing costs. Still another aspect of this situation is that the securing of an initial job in Canada by an alien architect often means the start of a practice which becomes strongly entrenched.

As regards the ability of the Canadian architect to render service, I do not wish to say that there is no room for development and improvement; but I am confident that if the opportunity were given to any of the progressive firms in Canada and the same consideration accorded them as given to the alien practitioner, that the result would not be disappointing.

I feel that as regards our profession and this question, that we may be likened to the seed of a plant which is placed in a dark cellar and expected to produce a vigorous plant. The seed may have all the potentialities of a vigorous plant, but without the sunshine, good soil and cultivation, it can never reach its fullest development.

An argument which is used against the Canadian architects is that he has not the organization of his foreign competitor. How can a local man support an organization if he cannot secure the big work necessary for maintaining it? In what respect, therefore, do we differ from other struggling industries, and why should not the Government give us the same measure of assistance that is necessary in all branches of the industrial field?

In discussing this question it has been suggested to me that the tariff could not reach the bottom of this problem, and that our energy should be devoted to securing some type of legislation which would absolutely debar the foreign architect from practicing in Canada, except in collaboration with some Canadian. Personally, I do not think that this policy is possible, or desirable, any more than it would be to restrain the importation of foreign goods. I believe that there could not be an embargo placed upon the securing of outside architectural service if a Canadian firm or individual considered that they could not secure the quality which they desire except by importing it. I do feel, however, that architectural services should be placed upon an equal basis with the import-

ing of anything else of essentially foreign origin and covered by a proportional tariff.

As regards the subject of evasion, there is no question that at present the duty, meagre and ineffectual as it is, is evaded. There is no dodging the payment of duty on a carload of machinery, or clothing or other manufactured articles, because it is too big to escape the observance of the Customs Department. But a set of plans or sketches of a building, which may entail in their production a higher cost than a carload of goods, and may return to their owner a profit many times that of the same carload of goods, can be slipped into a coat pocket. I understand that a large corporation recently erected a plant in Ontario designed and constructed by a New York concern on which not one cent of duty was paid in any way. The cost of the enterprise ran into millions.

As to the character of this foreign competition much can be said. During the past few months in Toronto we have had placed before us three-quarter page advertisements in the daily papers, stating the qualifications of a certain firm of engineers, architects and constructors. They have included in their advertisements a sizeable list of commissions executed in Canada, and also a list of similar commissions in the United States. They express to the public the advantages of placing the entire building problem in their hands, from its inception to the completed building, and conclude their appeal by asking for an opportunity to study any problem presented to them without obligation to the owner. As to whether this method of appealing to the public is in accordance with the ethical standards of this association, I must leave to the judgment of the members.

In the discussion of this question last spring, there developed a considerable sentiment among the members of this association as to whether this question was worthy of our consideration. When we see all of the theatrical work divided between one office in New York and another in Detroit, and again see the two largest department stores in Toronto engage Chicago firms of architects to do their work, the cost of which is in the millions; when the addition to our local hotel, costing one and a half millions, has to be handled from Buffalo; when the factories of the automobile industry are designed in Detroit, and the directors of banks, in some instances, have considered New York as the only source of high class architectural service, and many other instances, forming a list too long to mention, I claim it is a subject affecting the larger development of architecture in Canada, and too great to be lightly passed by.

The opportunities which arise from Canadian business should be conserved for the Canadian architect, his present disadvantage should be

offset by adequate protection given by the Government. Methods of evasion should be overcome and offset. Our efforts should be centred on securing strong tariff protection and an Act like to the Architects Registration Act now in force in Manitoba, or some similar enactment, which would have a very important indirect influence on this subject.

A few years of adequate production would, I believe, change the situation. One large commission held on this side of the line would set some local office on its feet. One large commission successfully executed would mean more work of the same kind, and finally this process would result in the development of strong, efficient Canadian firms competent in every way to give the same or better service than the outsider.

The question of education, vital as it is to the proper supply of workmen and eventually architects in our profession, should not prevent us from getting adequate protection at once. I fear that if we await the fulfilment of the educational platform, many years may elapse and the opportunity will have largely passed.

Has the Canadian importer of American buildings inquired into the technical education of the theatrical expert, departmental store expert, mail order building expert, etc., etc.? I do not think so. I believe that all these men have approached the Canadian field with a business sense, and speaking to business men in their own language have put their proposition across, leave us here in Canada wondering how it was done. The public judges more by the product of the practitioner as to whether he is properly educated than by the number of degrees which he can attach to his name. If we conserve the opportunities for our own architects, adequate education in itself will follow, as the architectural field will be one of importance and will warrant support.

We will look forward to an increased activity in building coming after the present period of re-adjustment. I believe that American competition will not decrease, but will increase. One great obstacle in my mind preventing the collective action of the architects is apathy and the willingness to let things remain as they are, and this should immediately be overcome. The Canadian field should not be the happy hunting ground for the American architects as against the domestic practitioner. In connection with a recent building erected in Toronto, I find that the duty was paid on the plans, but that the architect did not pay same, but had been astute enough to provide for the payment of this small levy by the contractor.

The experience of local firms acting as associates for outside concerns, has not been entirely satisfactory. In many instances this local association is simply to meet public senti-

ment in the matter, and the local associate is very much in the background. I am sorry to know, also, that in at least one instance a local firm, and a member of this Institute, is actively soliciting work for a prominent United States organization, and in so much as this is true, weakens our position with the public. A stronger organization of Canadian architects should be our object.

As the architects, the engineers, the building contractors, the manufacturers of building material and the people that all these agencies employ, as represented by the Trades and Labor Councils of the building industry, are all interested, I believe in considering this subject, if they were strongly allied together, that even the most powerful interests in Canada would hesitate before passing up the local man.

There is no question in my mind as to the tendency of the foreign architect to specify imported material, and in a specification which I have noticed, prepared by an American architect, the standards established for many of the materials used in his building were of United States origin, and apparently the whole specification was a copy of the one used by the firm for American business.

In conclusion, I would say that it is expedient in the *public* interest to give Canadian architects adequate protection for the following reasons: (1) To improve the quality of Canadian architecture. (2) To increase the opportunity for lucrative employment for those of our young men who wish to make architecture their life work and thus hold them in the country. (3) To make available to the public the best possible architectural service, backed by strong, efficient and skilful organizations. (4) To foster the use of Canadian building materials, to encourage the employment of Canadian contractors, and to promote in general the best interests of the Canadian building industry and the large body of men connected with it.

Whether it would be ethical, or proper, for a combined Association to place their attitude before the public in a series of well-considered advertisements is a question of interest and possibility. Of course, all of this means energetic action of the organization and a willingness to make some sacrifice for the common good, and above all, to overcome the apathy which has in the past handicapped the best interests of our profession.

Following Mr. Cobb's address Mr. J. P. Hynes stated that in the enthusiasm of the high tariff days of the N.P. policy in Canada, the tariff was put at 5 per cent. on the cost of the building. The only job I know of, at that time that evaded it was the Ontario Parliament

Buildings, being a public project. The next one was in Ottawa when a Liberal Government failed to make connection with the British American Bank Note Company and gave the contract for all printing of bills and postage stamps to the American Bank Note Company, which promptly brought a company from New York to erect a building. By Order-in-Council the duty was remitted and the plans came in and that Order-in-Council stood until there was a revision of the tariff, which Mr. Cobb mentioned, after a couple of consultations with the architect which seemed to avail nothing.

Yesterday we discussed the status of the architects, and this morning we have discussed how to educate him and put him in the position of a professional man. Mr. Cobb's paper, I think, brings us to the parting of the ways. We cannot hunt with the hounds and run with the hares. We have either to be professional men basing our business on that alone or we have to be on a line with manufacturers.

It seems to me that every blessed thing that any competitor on the other side wants to bring into this country, can be brought in in the form of blue prints, including specifications. So that they would have the difficulty of deciding with the Customs Department whether a specification was a specification or a blue print.

This question was considered by a large committee when the architects and builders got together with the idea of presenting a petition to the Government about their grievances from foreign competition, and after considering the tariff in every phase, it was dropped. In that paper I read I mentioned it merely to show that the thing was not overlooked.

If they got a ten per cent. tariff, if the Canadian builder or proprietor had to pay double the rates to get an American architect, in many instances I believe he would do it. There is no possibility of getting a tariff so high as to prevent the Canadian proprietor bringing in the American architect. The higher that tariff goes the more premium it puts on the American ability. An instance occurs to me. I attended a convention of architects in Cleveland once and met a Japanese architect there. As I shook hands with him I said, "We seem to represent the foreigners here to-day." He said, "That is very good, the imported goods are always best." Now we cannot overlook that.

Are we going to place it on the basis that puts the tariff into such a position that everything will come across in the shape of blue prints, and blue prints are what we have to base it on, does it seem worth while?

It was put seriously forward that the expense of a building going up under foreign supervision was sufficient for the Government to collect duty on, but we were promptly told that the Govern-

ment did not collect duty in that way, and that things on which it would collect duty had to come through the other way and we would have to go to Inland Revenue or something of that kind, and the Inland Revenue said they had never heard of such a thing.

Nothing seems to be adequate. The Committee on Manufactures dropped it on consultation with the tariff expert of the Association. We are constantly giving our attention to building up the status of architects and their education as a profession. We must decide which way we are going.

Mr. Cobb mentioned in his paper—with much of which I heartily agree and do not want to seem hypercritical regarding it—that he did not believe it was possible to get the protection of making the foreign architect practice in conjunction with the native. We are not asking any more in that connection than what is now granted to every closed profession in Canada.

Lawyers may come over here and consult with lawyers even at the counsel table before the Bar, but they cannot rise and address the Court and they cannot open offices and practice as solicitors. Doctors may come over here and assist in the operating room, but they cannot be the operating surgeon.

So it goes right through, with dentistry and pedagogy. As this has been established with the majority of professional practitioners in this country, I see no reason why it should not be established for ourselves. It puts us on a dignified plane and a professional basis. We are not surely going to try to appear to the public as though we are grasping everything in a storm; it may be bad enough and may be worse with the American competition, but we have to keep our dignity and show that we stand on a certain basis and put it fairly to our fellow-citizens and get the Government recognition that the other professions have obtained.

Mr. W. Wrigley stated that, as a representative of CONSTRUCTION, he attended the Convention of the Association of Canadian Building and Construction Industries in Ottawa last fall. "They discussed this question, and got very close to the Government. The architects were not represented at that convention. I would ask Mr. Hynes if his reference to the matter having been taken up with those who supplied material referred in any way to any action of the Association of Canadian Building Industries. Mr. Hynes says 'no.' The situation to-day therefore is that those who supply building materials had this question up. They have an organization; they are close to the Government; they see these departmental stores, these mail-order houses and other buildings being erected by American firms. They see American materials,

which are no better than materials of the same class made in Canada, imported and used in these buildings. It is just as live a question with them as with you. I believe that working with them a committee of this Association could do considerable.

"A case came to my notice during the past week; a mail-order house is being erected at Moncton, with an American architectural and engineering firm doing the work. The Canadian manufacturer of a certain material interviewed the engineer of the mail-order house, who approved his material and promised that this material would be used, everything else being equal. Tenders were called for. An American

manufacturer of the same material tendered. The Canadian manufacturer tendered. The Canadian manufacturer's price was the lowest. But from the office of the American architect and engineer the U.S. manufacturer was given a chance to revise his tender; the order was given to the foreign maker, and the goods were imported over the head of the engineer of the mail-order house in Canada.

"From the standpoint of materials it is a vital question to all members of the Association of Canadian Building Industries, as important as it is to you from the architectural standpoint, and I believe co-operation could be obtained from that end."

Architectural Scope in Town Planning

Address by Noulan Cauchon, C.E., at the R.A.I.C. and O.A.A. Convention.

THE kind invitation to meet and address the Royal Architectural Institute is much appreciated.

As an Engineer I feel that exchange of professional viewpoint is good for us both, and in Ottawa we have endeavored to make this permanent through the Canadian Town Planning Institute, comprising architects, surveyors, engineers and landscape architects. Many of you are already Associate Members of this organization, as are we, awaiting final disposition.

A thoughtful friend of mine—an architect at that—gently intimated that I bore not with engineering and economics. May I then risk, as an engineer, defining Beauty in terms of Energy. Beauty gives pleasure. Enjoyment may be ascribed to the normal exercise of function, the muscular and nervous activity of the senses.

Now, as Beauty stimulates, excites response of the senses, quickening their functional activity, it reveals thereby an actual transmission of power, a vibration quite wireless, if you will, nevertheless an equation of Beauty in terms of Energy.

Beauty is a dazzling form of Energy. Consciousness of this vibratory Energy of Beauty seems to depend upon attunement to "wave lengths"—perhaps we are stumbling on to a scientific appreciation of that mysterious imperious power—Love?

For the moment we must leave the fascinating investigation of it to some physicist—to measure its "wave lengths," and determine the necessary "complex mechanism for the capture, storage, and release of energy" thereof; not neglecting to consult that eminent zoologist, Henry Osborn.

The evolutionary origin of the senses—of the color sense in particular and in general of

"physiological aesthetics," are seemingly not studied or applied enough by architects or engineers at large.

The public buildings of this Canada of ours lack in general that appeal to popular understanding that has obtained for our great engineering works; the latter, though gaunt in their truthful structural expression of power—to purpose—have struck the chord of native understanding as to fundamentals in the nature of things.

If architecture will seek to mould freely the properties of matter—free from traditional bias and conventional cramp—to fathom the abstract soul of things—engineering will come to soften the ruggedness of its archaic strength.

Give no countenance to weakness of line nor sparseness of substance, but do hunger for that complete relation and fullness of organic structure to function, revealed in beauty of perfect human form.

Seek for the organic—transcendental, abstract ideal—in architecture as symbolized in column and lintel of Parthenon, in pendentive and dome of Hagia Sophia, in groin and flying buttress of Amiens.

Art is expression, sought through the properties of mind and of matter, of Truth Absolute, inherent in the nature of things—technique, the tempered tool in master hands.

Some architects claim Noah, builder of the Ark, as the first architect, and we won't dispute the claim of professional continuity—the strength of heredity and tradition is all too palpable in its renaissance on Mount Arrarat in Ottawa; also further a-field in a cubist houseboat with portals that barely admit of "two by two"—and a refrain tingles in one's memory, "there is one more river to cross."

Sons of Noah merely smile—now. “Hope springs eternal in the human breast”—according to the poet; so we despair not, we in the Capital that is so full of promise, of political rainbows—that it will never be so wet again.

Now, coming back to your brethren, the engineers, they may claim prestige from Yu, the first chief engineer of China, who, some twenty-five centuries B.C., so successfully reclaimed the lands of China from the devastations of Noah’s flood—that they made him Emperor. Nothing doing since! Not even a cushy job in Parliament!

We are still toiling to reclaim Nature’s recklessness and man’s wastefulness—toiling for the conservation and the conversion of energy to economic purpose—for the maintenance of life, in the enjoyment of which we can share your appreciation of architecture “as a great worldwide art in which the human race has endeavored to realize in material form its aspirations after abstract sublimity.”

And again, quoting Henry Heathcote Statham, “If there is one thing that a survey of the history of architecture shows clearly, it is that all that is great in architecture has arisen from the desire to do something fine and noble for its own sake, and, where there is not that desire, there will be no great architecture.”

Some town-planning schemes will now be submitted, on the screen, and which, I trust, may display somewhat of the scope there is for architecture in town planning—in Ottawa, Hamilton and London.

Canada is upon the threshold of reconstruction—in ethics, economics, and art—and I trust the material may not triumph over the soul.

When lands that have suffered the actual ravages of war, like Belgium and France, think it meet and advantageous to plan their recuperation with science and art; then surely Canada, with its vast resources unscathed and its wealth slightly taxed, cannot refuse to see the light of understanding.

War Memorials

Address delivered by Mr. Herbert E. Moore before joint meeting of R.A.I.C. and O.A.A.,

WHEN confronted with the proposal that I prepare something for this convention on the subject of war memorials, my first thought was: What can I say that will be of practical interest to such a gathering, particularly in view of the many excellent articles that have been published from time to time, touching, as most of them do, on every phase of war memorials.

After a review of much that had been written on the subject, it appealed to me that a brief review of conditions leading up to the formation of the Ontario Advisory Committee on War Memorials, and a reference to its activities and experience, would be of more practical value than anything I could say dealing with the æsthetic side of memorials, and might possibly result in facilitating some concerted action toward meeting the conditions surrounding the promotion and erection of war memorials in this country.

In the closing stages of the war, it was apparent that everywhere people were becoming actively interested in the question of war memorials, but, unfortunately, very little had been done to direct public opinion in how best to commemorate the great cause and the tremendous sacrifice that had been made in defence of the liberty of the world.

While it may be said that we had the experi-

ence of the results of the great European war and the civil war in the United States to guide us, we nevertheless were unprepared to deal effectively with the conditions which arose in this country concerning war memorials. This was due, no doubt, to the nature of the war, which was unprecedented in history, and also to the fact that Canada, a young and growing country, had never before been involved in anything approaching such a struggle.

We find ourselves, therefore, suddenly confronted with the problem of how best to direct and advise the public in its desire to erect memorials, a desire which was followed by a decision on the part of individuals, societies, churches and communities generally to be first in the field, and this decision was made and preparations completed for the design and erection of memorials with very little to guide the promoters other than their own ideas and those of the stock tablet manufacturer and the monument maker.

There were some, however, among those interested in the various promotions who counselled delay pending a reference to some authority on such matters capable of giving advice, and as the result of many inquiries directed to those at the head of various art societies, and a realization of the conditions by artists and architects, a meeting was called last March at

the Arts and Letters Club, at which were represented the Ontario Society of Artists, the Graphic Arts Society and the Ontario Association of Architects.

The result of this meeting was the formation of the Ontario Advisory Committee on War Memorials, organized to act as a bureau of information and in an advisory capacity on matters in connection with the promotion and erection of war memorials in the province.

The first work of the committee was the issuing of a circular for public distribution, setting forth the aims and objects of the committee, and offering service in the capacity mentioned. This was followed by a circular containing suggestions as to various types or forms that might be considered suitable, and giving advice as to the best procedure in the promotion, the securing of designs, and in the erection of memorials; and in the case of public memorials of any size and importance, the committee expressed a doubt as to whether the time had arrived for a proper and effective portrayal of the ideas and ideals of the Great War. It was the opinion that it will require years of consideration before the artist has time to find his symbols.

In this connection it would be well to bear in mind that our country cannot be compared with the older European countries that have suffered for centuries through wars; we have never been invaded and pillaged, and have not been called upon to guard and defend our borders and national life as they have been called upon to do. Hence we have not experienced the suffering and the sacrifices which have resulted in the creation of such memorials as the Gloria Victus in the Court of Honor, of the Hotel de Ville, Paris, a monument commemorative of the Prussian War, and conceded one of the best modern war memorials yet produced in sculpture, giving beautiful expression to the spiritual qualities of self-sacrifice, tenderness and mercy. It might be prescribed as an antidote to those whose ideal has been the metal soldier on a tombstone.

While we may hope that our best war memorials will appear in the years to come, it is to be doubted if the average war memorial project in this country can be delayed beyond the present time, when the interest is on the crest of the wave and immediate production is demanded. Realizing this condition, the Advisory Committee has endeavored through a campaign of publicity to reach the public, and requests for advice and service have poured in from all over the province, in fact the whole Dominion, and these were dealt with to the best ability of the committee.

In many cases, promoters were disappointed because we did not provide designs, and the experience gained by the committee furnishes good grounds for the opinion that the public must be educated in the matter of design, the creation of which in their mind is a very simple thing. This education, in the opinion of the committee, can only be accomplished by repeated effort and the publication of examples of the best works of their respective kinds, and also by illustration of works that can be pointed to as failures, or, in other words, examples of "what not to do." In this connection the committee has been favored with valuable suggestions from Mr. Thos. Adams, who has taken such a keen interest in the subject and who advocates the publication of a brochure, such as that published by the Municipal Art Society of New York City. The idea is to have this brochure published by the Conservation Committee. Linked with this suggestion is the question of an effective administration that will cover the whole Dominion, as, while this Ontario Advisory Committee was previously organized to cover this province, it has to a great extent covered the whole country. It is impossible, however, for one committee acting in this capacity to adequately serve the public, neither can it be expected that voluntary service is entirely the proper one under the circumstances. As the result of a conference with Mr. Adams, it has been planned to send a deputation to Ottawa to ask the Dominion Government to appoint a Dominion War Memorials Committee, which it is suggested be composed of representatives from the Art and Architectural bodies of the Dominion, together with such number of laymen as the Government might deem desirable.

The appointment of such a commission would make it possible to deal with all questions respecting war memorials, and would be particularly valuable as an advisory and consulting body to the Government on all memorials of a national character.

I am personally of the opinion that the Government should be asked to organize and equip an office under one of its departments that would be at the service of such a commission, and would prepare and distribute all necessary information and otherwise take care of all business in connection with war memorials.

I am sure you will agree that our memorials must be worthy and must to the last degree adequately represent and express those great ideals that were so nobly upheld by those who served their country in the great war.

Public Taste and Architectural Housing

A RECENT issue of the "Architects' Journal," London, prints a letter from a contributor, from which we take the following:—

Great architecture has always been dependent on three factors—great impulse, needing monumental expression; great command of material resources, and great power, based on knowledge and culture, to use those resources. How this culture was formed, how this knowledge was acquired in the past, we cannot say. In what way the traditions of Classic and Gothic architecture were passed on from generation to generation of architects is not fully clear. In what schools their patrons learned to appreciate the qualities that transform a conglomeration of bricks and stone into a thing of beauty and a joy forever, is equally obscure. It cannot be believed, however, that the great architectural achievements of the past were produced without the stimulus of appreciation and approbation. It is very largely because these stimuli are absent to-day that we have fallen upon so comparatively evil a period in the art. This is a period of reconstruction. Is it to be a period of Renaissance? If in architecture, it will only come when we have succeeded in engrossing the public mind with the idea that the forms in which the buildings appear which are raised to house the myriad activities of the times are of material consequence.

In the period between the Renaissance and the present time such architecture of merit as has appeared has been due to the fact that some appreciation of architecture and some knowledge of its value formed part of a polite education. A world governed by an aristocracy and disposing of its resources through its agency had some regard to at least politeness in its architectural display. This period of aristocratic government roughly came to an end with the passing of the first Reform Bill, through which we plunged into the Victorian era. This era has been subjected to much rough handling by critics, and doubtless deserves it all. It was a period dominated by an intense pursuit of material prosperity—a period in which those rude and vigorous characters who built up the great industrial fortunes of the times elbowed from place and power those who, whatever their incapacity in other directions might have been, had at least carried on some tradition of elegance and refinement.

All the arts suffered in the process. Everything became at once more elaborate, less elegant. Buildings, furniture, tapestries, dress, all alike coarsened and vulgarized. Then came the reaction. The reaction, unfortunately, had a more or less artificial character. Confined in

its area and somewhat fleeting in its effects, engendered by no great dynamic force, rising rather in the minds of aesthetes than in the great common emotion of the people, it left no great deposit on the shores of architecture.

A new world is being born, the pre-Victorian period of aristocratic government is passed, the Victorian administration of the middle classes is following it, democratic government is hard upon their heels. County Councils which, when they first came into being, were the natural field of labor of the territorial magnates, are now captured by labor, and the process is spreading. The great architecture of the future will be built at the demand of the people for their own purposes and to their own ideas. No such calamity can befall the art of this period as befell the art of Rome under the Barbarian invasion; partly because, decadent as Roman art had become, it still stood above the level of the present; partly because with the new invasion comes, if not fully developed and matured taste, yet a great desire for beauty and its expression in life.

The writer attended a conference on housing the other day, at which were present doctors, lawyers, architects, builders and representatives of labor. The thing that struck him as being most significant was that while all the representatives of the professional and trading classes there were in the main concerned with the effect of the housing proposals upon their professional and business interests, it was left for one solitary labor representative to voice the aspiration of the people for an expression in the new housing conditions of those æsthetic qualities which redeem life from sordidness and ugliness and make our outward surroundings correspond to our inward feelings. It is for us who care for these things in architecture to seize the occasion, to stimulate this desire, to develop it, and to train it. How is it to be done?

Comment has been already made in this journal on the happy conjunction which in this unique period of reconstruction had placed a great architect in the chair of the Royal Academy, and a hope has been expressed that out of that conjunction might come a grasp of the possibilities of the present situation which would express itself in the production of the great architectural works commensurate with this supreme passage in the world's history. Naturally one is pleased, therefore, to find that the same thought was expressed, with more felicity by the Prince of Wales at the Academy dinner. In his speech, and in the person of the speaker, the significance of the situation was exposed. It now remains to be seen whether

it will be grasped by those in the profession who are responsible not only for safeguarding the interests of its members, but also for raising the public standard of appreciation of architecture.

One fully appreciates the interest with which architects must watch the narrowing of those fields of private enterprise upon which they have largely depended in the past. One has the greatest sympathy for the apprehension expressed that the life may go out of architecture if it comes under the regulation and control of Government departments. Fear has been expressed that a Ministry of Fine Arts portends a Defence of the Realm Act, which would crib, cabin and confine all artistic expression. How is this danger to be avoided? Only by a development in public taste. To establish a Ministry of Fine Arts in a State where the public care nothing for architecture would, indeed, be to invite disaster.

The outlook is not altogether dark. There are gleams upon the horizon. Architectural education is taking its place where it should be found—in the universities. We may hope and work for its development there. It is to be desired that in every university throughout the length and breadth of this land the Chair of Architecture shall become one of the great chairs, and that students who pass through these great schools shall emerge with the conviction that the expression of life's ideals and emotions is not confined to print and paint, that not alone in prose or verse can be recorded those feelings which lift us from the earth.

In the past the University Extension Movement has done something to present architecture historically to the public. What is needed is to cultivate not only the sense of admiration and reverence, but to produce the belief that architecture is no dead thing, but a living outcome of the needs of society.

One of the greatest and most promising enterprises of the present day is to bring the scope and atmosphere of university life within the range of working-class attainment. This is being done in many centres. Thousands of men and women, many of whom are destined to become leaders in the working-class control of the community, are being imbued with the value of literature, music, and, to some extent, the creative arts. It needs be that architecture should be presented to them as a subject worthy of their study. Is it too much to hope that an enlightened Board of Education may be induced to include some conception of the study of the great principles governing architectural design within the curriculum at least of secondary schools? We all desire to see the day when the men and women of the future who rule England shall at least have not less interest

in architecture than did the men who governed England in the past.

A last word: What is to be the relation of the Royal Institute of British Architects and its country associations to such a movement in education? Is there to be a real link between them and the universities? Will they throw themselves heart and soul into this enterprise? Will they realize that if architecture in the schools is to be the presentment of a living subject and not the tale of a dead past, it will only be if between the men who are practising it in the pursuit of their profession and the men who are expounding its traditions and enunciating its principles is the closest personal contact and the deepest sympathy?

Timber Scarcity in United States and in Canada

The progressive diminution of timber supplies in the United States is reflected in the constantly increasing demands for the importation of forest products from Canada. For example, the United States in 1918 imported a total of 1,370,027 cords of pulpwood, valued at \$13,362,566. Practically all of this came from Canada, and represents an increase of 47 per cent. over the number of cords imported in 1910, and an increase of 119 per cent. in the value of the material. The importations of wood-pulp from Canada and other countries have also been very heavy, aggregating in 1918 some 516,258 tons, valued at \$31,477,175.

Chief Forester Graves, of the United States Forest Service, impressed by the seriousness of the approaching timber shortage, particularly in the Eastern and Southern States, has issued an appeal for the adoption of an adequate national forestry policy, involving drastic action by the Federal Government and by the several States. The need for action with reference to privately-owned timber lands is particularly emphasized.

Exhaustion of local forest supplies, the closing of industries dependent on them, the embarrassment for supplies of the pulp mills and other consumers using special classes of forest products, the generally mounting prices to consumers, are factors which are calling sharp attention to the effect of forest destruction, and are causing increasing public uneasiness.

Forest depletion is injurious long before the last tree is out, and long before all but the last centre of production is exhausted.

Leaders of the southern pine manufacturers state that the bulk of the original supplies of yellow pine in the South will be exhausted in 10 years and that within the next 5 to 7 years more than 3,000 manufacturing plants will go out of existence.

Hundreds of communities are suffering because the resource supporting their chief industry has been exhausted. Sawmills and woodworking establishments close, subsidiary interests can no longer exist, the population moves away, farms are abandoned, roads and other public improvements deteriorate, and whole townships and even counties are impoverished.

A few individuals may have realized handsomely from the speculative enterprise. The community has been gutted of its principal capital.

This is not an occasional occurrence. It is the history of millions of acres of land unproductive and now an economic desert.

We have been discussing these problems for many years, but we have made little progress in securing the right handling of private lands.

I urge that those interested in the forest problem join in bringing about some definite and conclusive action.—"Conservation."

CONSTRUCTION

A JOURNAL FOR THE ARCHITECTURAL
ENGINEERING AND CONTRACTING
INTERESTS OF CANADA



H. GAGNIER, LIMITED, PUBLISHERS

Corner Richmond and Sheppard Streets.

TORONTO - - - CANADA

M. B. TOUTLOFF, Editor

BRANCH OFFICES:

MONTREAL—171 St. James Street,

E. R. Milling, Representative.

WINNIPEG—336 Qu'Appelle Street,

F. C. Pickwell, Representative.

NEW YORK—505 Fifth Avenue.

H. M. Bradley, Representative.

CORRESPONDENCE.—All correspondence should be addressed to "CONSTRUCTION," Corner Richmond and Sheppard Streets, Toronto, Canada.

SUBSCRIPTIONS.—Canada and Great Britain, \$3.00 per annum. United States, the Continent and all Postal Union countries, \$4.00 per annum, in advance. Single copies, 50c.

ADVERTISEMENTS.—Changes of, or new advertisements must reach the Head Office not later than the twentieth of the month preceding publication to ensure insertion. Mailing date is on the tenth of each month. Advertising rates on application.

CONTRIBUTIONS.—The Editor will be glad to consider contributions dealing with matters of general interest to the readers of this Journal. When payment is desired, this fact should be stated. We are always glad to receive the loan of photographs and plans of interesting Canadian work. The originals will be carefully preserved and returned.

Entered as Second Class Matter in the Post Office at Toronto, Canada.

WESTON WRIGLEY, Business Manager

FRED. T. HOLLIDAY, Advertising Representative

Vol. XII Toronto, Oct., 1919 No. 10

Architects and Architectural Issues

Architects are going to advance their affair only to the extent to which they consider the issues before them and the degree to which these issues are discussed and some unanimity of opinion arrived at concerning them. Very little will be accomplished otherwise. No association can be more than an association in name unless it receives the collective and active support of the members who comprise it. What is needed in the architectural circles of Canada is more of the enthusiasm and earnest debate which was evident at the Toronto meeting of the R.A.I.C. and O.A.A.; more addresses of the character which were delivered and more of the splendid feeling and tendency among members which was displayed at the meeting to fully discuss all questions.

The convention at least afforded an exchange of viewpoints which should lead to a much bet-

ter understanding and some definite course of action in shaping an effective policy. The spirit of the discussions and the enthusiasm manifest should not be permitted to extinguish itself in the months which follow. The publicity committee gives promise of doing effective work and should at the earliest possible moment set its machinery in motion. "Registration," "Adequate Protection for the Profession," and the "Conserving of Technical Opportunities" are questions which should be thrashed out with a view to determining which best represents the profession's welfare. Steps should be taken to get in touch and unite in some plan with all other bodies having mutual interests and objects. Of course all this implies well attended meetings, but that is as it should be. Members who attend meetings are certainly of more assistance to the association than those who simply pay their fees and stay away. The necessary thing is co-operative work, a full discussion of issues, unanimity of opinion and action. If this is realized the objects of the association will come closer to being achieved and the association will become a real factor in the accomplishment of tangible results.

First Pan-American Congress of Architects

Mr. A. Frank Wickson, the president of the Royal Architectural Institute of Canada, has been appointed by the Executive Committee of the First Pan-American Congress of Architects, which will be held at Montevideo, Uruguay, South America, on the 1st to 7th March, 1920, to form a Congress Committee for Canada.

The matters to be discussed at the First Pan-American Congress of Architects are the following:

1. Transformation, expansion and embellishment of the city of a type predominant in North and South America.
2. Construction materials proper to each country of North and South America. Adequate means of diffusing the knowledge of its nature and employment throughout the continent.
3. Would it be considered advisable that the exercise of the profession of architect should be reglemented?
4. Cheap houses, urban and rural, in North and South America.
5. Means of obtaining a higher artistic culture from the public for a clearer understanding of architecture as an art.
6. Professional responsibility of the architect.
7. Is it necessary that the teaching of architecture be carried out in special schools?
8. Founding of a Pan-American Perfection Institute for the architects.

9. Proper means to be adopted as a stimulus towards building.

It will be noted that the subjects selected are of a general character in both Americas.

The Executive Committee is headed by Mr. Horatio Acosta y Lara, president; Mr. Jacabo Vasquez Varela, vice-president, and Mr. Fernando Capurro, general secretary.

The honorary secretary of the R.A.I.C., Mr. Alcide Chausse, is in position to give all necessary information to any architect desiring more particulars.

Co-operating on Safety

By F. J. C. DRESSER,

(Representing Associated General Contractors of America.)

It is only in recent years that any discussions whatsoever have been had in reference to the hazards of building construction, and aside from statistics issued by the several insurance companies, no organized effort has been made by the contractors generally to exchange ideas toward the elimination of accidents. However, the present day finds that several of our larger contracting organizations include a so-called Bureau of Safety, and their results have shown a remarkable reduction in the number of accidents, as well as an immense saving of lost time and money.

In order to develop a proper safety campaign for the particular job in hand, an analysis is necessary, for the work itself is suggestive of the major portion, or rather kind of possible accidents you will be obliged to combat. I do not mean to say that you can immediately eliminate all accidents, but certainly a study of former accidents on a similar piece of work will help greatly in a reduction of accidents on future work. To just such work, namely, analysis and issuance of instructions, is a safety bureau dedicated.

Of course, there are and always will be special pieces of work that must be accomplished which are different from any former, but I still maintain that the same fundamentals apply and that an analysis still can be made and preventive measures applied.

To follow this discussion briefly, and to support the former statement that the work in hand will suggest possible accidents, it is evident that the sewer or grading contractor, for instance, can, by a series of test holes, determine the character of soil he is obliged to excavate, and plan his working methods accordingly. Such procedure will tell him quickly what he must provide in the way of equipment and protective measures, and has the further advantage of not catching him unawares as far as unforeseen ground conditions are concerned.

The present day of multiple-story buildings, when radical changes in their construction methods are being employed, finds us facing the source of the greater number of accidents, as is attested by the high insurance rates. Usually the public comes in for consideration, as far as safety methods are concerned, and in fact no other class of structure requires more consistent planning or forethought as regards accident prevention, unless it be in tunnel or subway work as installed in our larger cities. For this work it is plain that proper and substantial equipment must be provided, that possesses a good, safe factor; the sidewalks and streets must be covered; riding loads and in hoists must be forbidden; stairways and ladders must be liberally provided; mechanical safeguards installed; rapidly moving load lines and signal cords boxed or otherwise protected; safety belts and scaffolds provided; and even a man's clothing must receive attention, for many a man has lost a hand by reason of his wearing a gauntlet glove, and others have lost arms and life because of a loose sleeve or glove which dangled into revolving drums, or shafting, or which were caught by a broken strand in a cable.

Heavy foundation work requires the same care in accident prevention study, both in bridge and in building work.

Pile driving is another hazardous piece of work, where

moving timbers and lines are responsible for many avoidable accidents.

Wrecking and underpinning are other sources of accidents, and more numerous undoubtedly than should be because they do not receive the attention of an engineer as regards a plan, or in other words, the average wrecking contractor does not have a staff or an engineer in his service to make calculations before doing work. As a result, defective material is often used and insufficient underpinning installed, causing accidents, of course.

Heavy rock excavation requires care in handling dynamite, and precaution against flying rock and destruction of property.

Industrial building work is the source of possibly the greatest variety of accidents, but usually not as disastrous to life and limb as the previously mentioned classes of work.

An analytical study in the direction of safety, no matter what the class of work, will certainly produce results if undertaken with the same spirit in which a construction engineer plans his layout and schedule.

Employees

In a large measure the application of safety methods depends on the employee. The more intelligent, the less liable is he to accident. In this respect, the ironworker or steel erector is possibly the most versatile in that he thinks of the possibilities of things happening in connection with the work in hand, and is not so easily caught unaware. The brickmason and carpenter are usually on more substantial footing and inasmuch as their work is usually more regular, do not have occasion to give "possible happenings" much thought. No other mechanic requires good judgment more than the hoisting engineer, especially be he engaged on multiple-story building work or heavy bridge construction. The common laborer, however, requires more watching than the trade mechanics, and in this respect much depends on the intelligence of the foreman who directs his movements. All workmen, however, can be schooled in safety methods as has been demonstrated by leading contracting companies who have safety bureaus. For instance, Fred T. Ley and Company began this work in 1915, and their reduction in accident rate per 1,000 employees for 1916 was 25 per cent, and in 1917 was 55 per cent, which is indeed encouraging.

Character of Accidents.

Our records, from a recent piece of construction, which involved steel erection, heavy concrete, brick work, and grading, also trackwork, show, from a total of 242 accidents, that: 73 employees sustained bruised fingers from handling material, 37 employees sustained punctured feet from nails, 11 employees sustained cuts on head from falling material, 7 employees sustained sprained ankles, slipping and misstepping, 7 employees sustained cuts on hands, and the balance were minor injuries. This work comprised the erection of a large engine terminal, and this record conforms in the average to the class of accidents which we must safeguard against in the course of our regular industrial building construction.

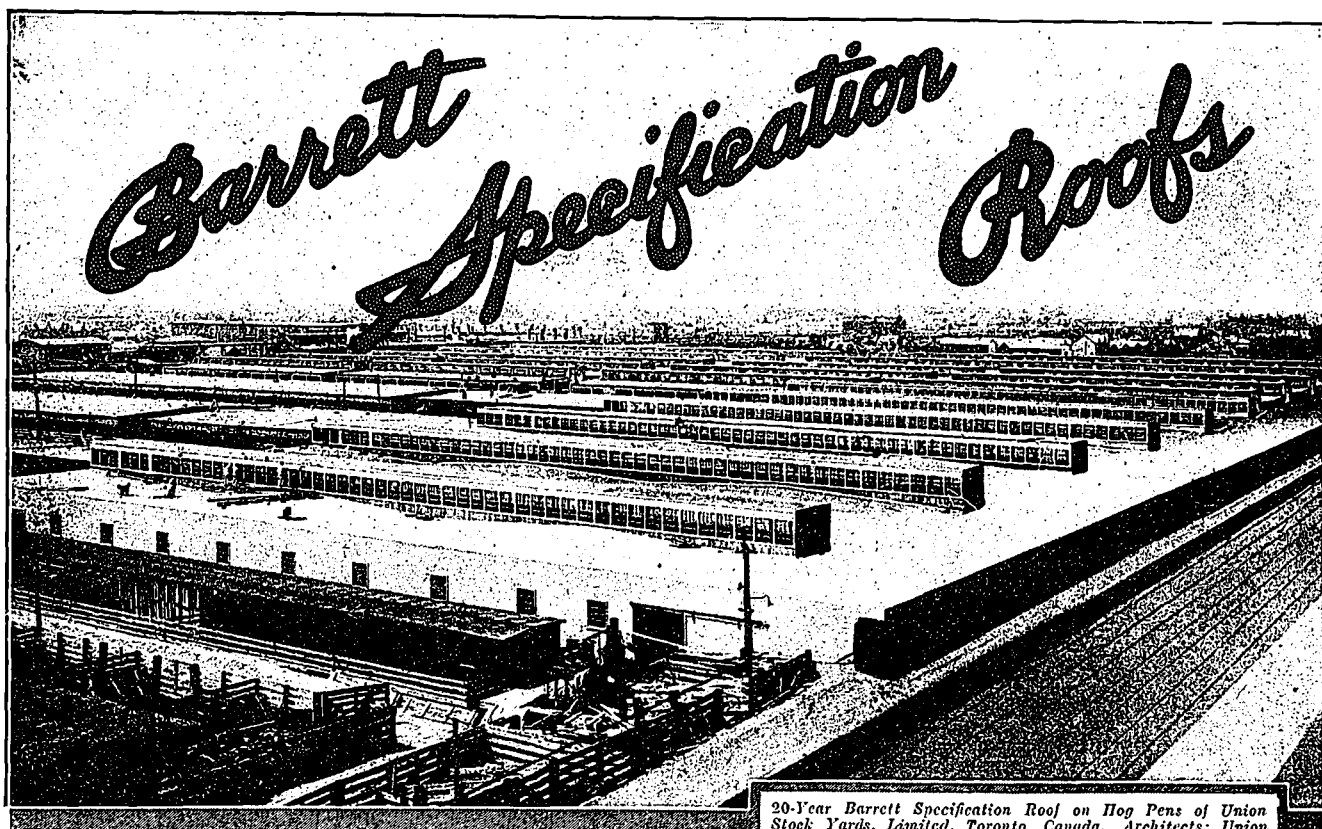
I find in comparison with figures as derived by other concerns, that the accidents in the main are similar in character, but the percentages vary, due undoubtedly to the character of the work in hand.

The greatest number of accidents, we find, come during the handling of material, and are confined to hand injuries; second in number come injuries to feet from protruding nails; third, employees falling, by reason of misstepping or stumbling over strewn material, causing sprained or broken ankles, broken arms or legs; fourth, falling material, causing cuts about the body and broken limbs. These are the four main causes as we find them, and it is natural, therefore, that preventive measures be provided in the order named.

I believe it goes without question that a job properly planned, and scheduled whereby one phase of the work closely follows the other, where material is received and handled in the same order and where orderliness prevails throughout, is rewarded by the least number of accidents.

Receiving and storing of material is a study in itself, for naturally the best position must be selected for hoists, and also for storage. One should be near the other to avoid rehandling and increased costs, and minimum handling also reduces the possibility of accidents, as is plain. But often they are far apart, causing long runways to be built and arranged, in and out, around or through a building, as the case may be, creating a state of disorder and interfering with the other divisions of the work. The ideal, of course, is one where, for instance, structural steel can be placed from car to position, elimi-

* Address delivered before the Eighth Annual Congress of the National Safety Council at Cleveland, Ohio.



20-Year Barrett Specification Roof on Hog Pens of Union Stock Yards, Limited, Toronto, Canada. Architects: Union Stock Yards, Limited. General Contractors: Archibald & Holmes, Toronto, Can. Roofers: The Maitland Roofing & Supply Co., McDermid Bros. Successors, Toronto, Canada.

100,000 Square Feet of Barrett Specification Roofs

The above photograph shows the mammoth new Hog Pens of the Union Stock Yards, Ltd., Toronto, in process of construction.

This is a roofing job of more than one hundred thousand square feet, covering one continuous building, extending back beyond the sixth monitor in the picture.

Naturally, in deciding what type of roof to adopt for this enormous plant, the question of cost had to be given careful consideration.

It is significant, therefore, that a Barrett Specification Roof should have been decided on.

It means that the Union Stock Yards architects fully realize what so many architects and builders have come to appreciate—that it *pays* to buy the best roof because, while the original cost may be

a little higher, the cost per year of service is lower than for any other type.

This plant has a roof that will stand up year after year under the rigorous Canadian climate; one that takes the base rate of insurance and that is guaranteed for 20 years.

Guaranteed for 20 Years

So sure are we of the service Barrett Specification Roofs will give *under the most severe conditions* that we are prepared to *guarantee them for 20 years*, in all towns of 25,000 or over, and in smaller places where our Inspection Service is available, provided they are 50 squares or more in area. The guaranty costs you nothing. We merely require that our Specification dated May 1, 1916, shall be strictly followed and that the roofing contractor be approved by us. The guaranty is a Surety Bond issued by a well-known fidelity and guaranty company.

A copy of The Barrett 20-Year Specification, with roofing diagrams, sent free on request.

The **Barrett** Company
LIMITED

MONTREAL
ST. JOHN, N.B.

TORONTO
HALIFAX, N.S.

WINNIPEG

VANCOUVER
SYDNEY, N.S.

nating rehandling in field; and on large operations where space is available, this can often be done with steel as well as other material, if hoists and material tracks or roads are given some attention as to layout and position before work is started in the field. The main object is to eliminate distance, for work is really distance versus resistance, as the definition goes, and the further application of all possible mechanical means to handle material from cars or wagon to position is another factor which results in a great reduction of accidents.

Our second consideration being given to nails, we find that orderliness in handling of lumber containing protruding nails, eliminates foot punctures by the score. Plank or forms of this character should be stacked with nails down and not be allowed to be strewn all over the job. In order to re-use the plank or board, the carpenter must drive the nails back, and their removal as soon as the plank or brace is taken down is undoubtedly the best practice. As regards concrete form lumber that has been stripped, if it has no further use in the building as fabricated, it should be stacked and nails removed by the cleaning gang, if there is one, as soon as possible to make it available for other use, for certainly the re-use of lumber these days is economy, and a carpenter usually will take a new piece rather than stop to remove nails. In a multiple-story concrete building, forms are usually stripped and immediately placed in position for the next floor, and the same applies to braces, so that the immediate removal or driving back of nails is necessary and foot punctures are made less possible than on the ordinary timber or house job. Elimination of strewn lumber will reduce nail accidents and its reclamation should be taken in hand at once in order to make it fit for re-use, which in itself will cause a saving in the final lumber bill.

To avoid employees falling, railings should be erected on staging and scaffolds; runways of sufficient width provided; and material generally should not be strewn promiscuously about the job. Openings should be covered or railed and good stable ladders built. Climbing up or down hoist towers should be forbidden, and all moving lines boxed so as to avoid tripping. Working aisles should be kept clear of waste and surplus material.

To avoid falling material, storage of the same should be confined to the interior aisles, and scaffolds provided with a sideboard to prevent brick especially from going over the edge.

In discharging debris, closed-in chutes should be installed, wheeling runways to be of sufficient width and overloading of wheel-barrows forbidden, especially when brick are being moved.

Naturally the safety movement must begin with the management itself, and if contractors generally will review the results obtained by those contractors who maintain Safety Bureaus, they will readily see that it is a paying branch of the organization. The gratifying results obtained by Fred T. Ley and Company, of which Mr. L. D. Woedtke is Director of Safety, have already been mentioned. Inasmuch as the work covers a period of only three years, they are indicative of the immense amount of good work that can be done in accident prevention in general contracting, as propaganda of this kind is really in its infancy in this field.

The next step for an organization to undertake is the addition of a Safety Bureau, under whose direction the work is carried on. The first consideration must be given to the field organization itself, meaning the engineers, superintendents and in fact the entire rank and file, for co-operation must exist; and foremen generally must see that the safety rules are observed.

As a further matter of co-operation, the construction department should turn over to the safety man a complete schedule of the job in hand, showing the progress expected, this being the first step. Second, a set of safety rules should be issued applying to the work or particular job in hand, which are set up after due analysis of the conditions which are to be met. The third is, of course, the enforcement and application of these safety rules.

First of all, any job employing 125 men or more, dependent, of course, on character of the work and location, should have a first aid attendant and small field hospital. We find it pays decidedly by eliminating lost time.

Second, the job organization should appreciate thoroughly the meaning of this safety work and they will in the end discover that lower unit costs will result from the observance of the safety rules.

To educate the workmen themselves can be done in different ways, and first of all, I believe they should be taught to observe safety rules provided as a precaution against the first or possibly the second classifications, which are most liable to happen. Their education in this

respect should be gradual or progressive as the work goes on, and the foreman, of course, should see that the rules are observed.

Descriptive photographs are an immense help in avoiding accidents, and educational work, and should be in keeping with the class of work in hand.

Periodical bulletins help greatly, as do also signs which should be of such size and meaning as can be understood by all. A sign that can be read only a few feet distant is not of much use; it should be readable at a considerable distance—the farther the better.

Around the plant generally, guards should be built which will eliminate the possibility of employees coming in contact with the moving parts and lines, and the same consideration must be given to hoists and hoist lines. To operate plants efficiently requires good mechanics, and a contractor who maintains a staff of experienced operators in connection with his organization has done much toward the application of safe methods, for the accident, as a rule, happens to the green man, no matter whether he be mechanic, laborer, or machine operator, and it is necessary to observe such men very carefully, until such time as some experience has been gained.

Safety rules further will establish under what conditions a machine is to be operated and how, and will also establish signal codes to be observed, for very often the operator cannot see the other end of the line or the top of the hoist, as the case may be.

At any rate, common sense application tells us that above all else you must have experienced machine operators, and none other should be permitted to be employed, yet many times you will find some man out of the gang running a machine, the principles of which are entirely foreign to his understanding.

The whole work, however, as regards both employees and equipment is to be reviewed and inspected by the Safety Engineer, who will suggest precautions and safety rules that are to go hand in hand with the working methods decided upon for the handling of the job. This is further beneficial inasmuch as a man from general headquarters sees many things that a man on the job does not deem important.

CONTRACTORS and SUB-CONTRACTORS

RE-HOUSING DEVELOPMENT, HALIFAX, N.S.
 General Contractors, Falconer & McDonald, Halifax, N.S.
 General Contractors, Bate-McMahon Maritime Co., Halifax, N.S.
 General Contractors, J. R. McKenzie, Halifax, N.S.
 General Contractors, Nova Scotia Construction Co., Halifax, N.S.
 General Contractors, Eastern Investment Co., Halifax, N.S.
 General Contractors, Richmond Construction Co., Halifax, N.S.
 General Contractors, Thompson & Theakston, Halifax, N.S.
 General Contractors, D. G. Stewart, Halifax, N.S.
 Plumbing, W. S. Craig, Halifax, N.S.
 Plumbing, H. G. Hagen, Halifax, N.S.
 Plumbing, Farquhar Bros., Halifax, N.S.
 Window shades, T. H. & T. Francis, Halifax, N.S.
 Electrical Work, Wm. Stairs, Son & Co., Halifax, N.S.
 Electrical Work, Tongards, Ltd., Halifax, N.S.
 Electrical Work, Cragg Brothers, Halifax, N.S.
 Electrical Work, John Starr, Son & Co., Halifax, N.S.
 Hardware, A. M. Bell & Co., Halifax, N.S.
 Hardware, Wm. Robertson & Sons, Halifax, N.S.
 Hardware, Jas. Simmonds, Ltd., Halifax, N.S.
 Hardware, Crowell Brothers, Halifax, N.S.
 Hardware, A. J. Grant Co., Halifax, N.S.
 Hardware, Lawrence Hardware, Halifax, N.S.
 Gravel, Dominion General Equipment Co., Halifax, N.S.
 Lumber, Rhodes, Curry & Co., Amherst, N.S.
 Lumber, J. McInnis & Sons, Halifax, N.S.
 Lumber, Dunfield & Co., Halifax, N.S.
 Lumber, Clin C. Tryer, Halifax, N.S.
 Lumber, Brookfield Brothers, Halifax, N.S.
 Lumber, Davidson-Parker Co., Halifax, N.S.
 Lumber, Wm. Rutherford & Sons, Montreal.
 Lumber, James Shearer & Co., Montreal.
 Builders' Supplies, Builders' Supplies & Construction Co., Halifax, N.S.
 Builders' Supplies, Piercy Supply Co., Halifax, N.S.
 Builders' Supplies, David Roche, Halifax, N.S.
 Builders' Supplies, Frank Reardon, Halifax, N.S.
 Builders' Supplies, Silliker & McMahon, Halifax, N.S.
 Builders' Supplies, Frank A. Gillis, Ltd., Halifax, N.S.
 Builders' Supplies, Canadian Explosives, Ltd., Halifax, N.S.
 State Roofing, Bangor Slate Co., Halifax, N.S.
 Clamps, Batavia Clamp Co., Batavia, N.Y.
 Clamps, Crown Point Star Co., Crown Point, N.Y.
 Marble Dust, Conlin & Co., Tuckahoe, N.Y.
 Wall Board, Bishopric Wall Board Co., Ottawa.
 Piping, Canadian Iron Foundries, Three Rivers, Que.
 Douglas Fir, British Columbia Lumber Commissioner.
 Water Proofing, Barrett Co., Montreal.
 Cement, Canada Cement Co., Montreal.
 Electrical Supplies, Northern Electric, Montreal.
 Paints, Brandram-Henderson & Co., Montreal.
 Glass, Pilkington Glass Co., Montreal.
 Electric Globes, Jefferson Glass Co., Toronto.
 Electric Wiring, Standard Underground Cable Co., Montreal.
 Electric Fixtures, Robert Mitchell Co., Montreal.
 Plumbing Fixtures, Standard Sanitary Co.
 Plumbing Fixtures, Canada Metal Co.
 Plumbing Fixtures, Amherst Foundry Co., Amherst, N.S.
 Plumbing Fixtures, Toronto Hardware Co., Toronto.
 Plumbing Fixtures, Empire Manufacturing Co.