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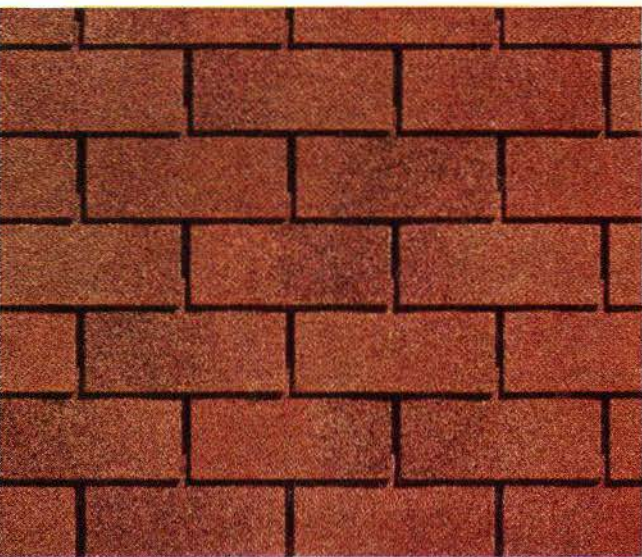
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JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 178

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Vol. 17, No. 6

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IT has long been the lament of the artist that his talents are not used by the architect except on large buildings. Since every architect would agree that his building would be improved by mural decoration, the reason for the non-employment of the artist must be one of expense. We remember the pleasure with which an architect informed us that he had persuaded his client to have a decorative map in his vestibule. His pleasure was short lived when the artist, whom he selected, asked more for his panel than our friend's gross fee on the job, and the whole proposal came to nothing. Many architects have had similar experiences and we recommend artist and architect to a careful reading of the B. B. C. discussion in this *Journal* where, we think, Mr. Goodhart-Rendel makes a good suggestion. The possibilities in co-operation are very great, and are likely to have a profound effect on the art of Canada.

There can be no shortage of metal in England for a long time to come, but the Architectural Journals anticipate it by a suggested review of decorative cast iron in Britain. Miles of railings could go into the melting pot without loss to urban and suburban areas and at a great gain to national defense. The Review shows some London Squares without the rather snobbish railings, which surrounded them, and we are inclined to agree with the author that, in some cases, the removal of the railings adds enormously to the beauty of the Square. We hope by the time this is printed we shall not be at war with Italy because we might be accused of saying a few kind words about the enemy. Italy had the brilliant idea about a year ago of melting down its worst statues wherever they existed throughout the country. If such a scheme were adopted here, we could, in Queen's Park, Toronto, alone, find enough bronze to mechanize a division and in bad statues of Queen Victoria throughout the Empire there is enough tonnage of metal to keep the war going indefinitely. There is something very stimulating in the thought of a great cauldron containing an assorted collection of Liberal and Tory heroes, bad angels, sleeping lions and antique cannon gradually being brought to the melting point. It could be done as a public spectacle.

Port Hope is one of the finest small towns in Ontario with what is, undoubtedly, the finest main street. Good manners in street architecture are still observed there, and the shop keepers should do everything they can to prevent the inroads of vulgar and hanging signs and all the stupidities of advertising which make most Ontario main streets look like an Oriental bazaar. It is in the residential section of Port Hope, and it is noticeable in other towns and villages, that one sees evidence of a new trend. Much of the charm of Port Hope is in its situation and in its neat cottages and trim gardens. These cottages of the first half of the nineteenth century mean everything to the character of the place, and it is alarming to see how many, in the past year, have been "improved". Quite typical were the cottages where the clapboarding took the form of a delicate rustication in imitation of stone. Many of these have been sheeted with wide lapped boards and given a cute porch of doubtful colonial design clearly influenced by American magazines dealing with "homes and home furnishings". The war has probably halted a movement toward ostentation in what we have always considered a town chiefly noted for the good taste of its domestic architecture and a nice disregard for what the "Jones's" might be doing elsewhere.

ARTIST AND ARCHITECT

Discussion between H. S. GOODHART-RENDEL, Past President of the R.I.B.A., and ERIC NEWTON

NEWTON: In one or two of my recent broadcasts, I made the point that the artist of today, unlike the artist of the past, has been forced to retire, as it were, from the world and take refuge in his studio; and that once there he tends to experiment in methods of expression instead of regarding painting as a way of supplying a human demand. In other words, since nobody, except the advertiser and the man who wants his portrait painted, seems to need his services, he is in the position of an unemployed workman who is so keen on his work that he goes on doing it even after the demand for it has ceased. It seems to me that here perhaps the architect can find a remedy. Architecture is supposed to be the Mother of the Arts, though of late years many architects seem to have been deliberately avoiding the responsibilities of motherhood. Can't the architect step in and give the artist a sense that he is really needed? Easel pictures will always be painted, I suppose; but do you think that the solution of the problem lies in more and more easel pictures? I should be interested to hear how you as an architect think that architecture ought to play the mother to the painter of pictures?

GOODHART-RENDEL: By seeing that painters get more and more walls to paint on, so that they don't have to use easels so much. Paintings come to the wall in the end, so why shouldn't they start there? The easel picture with no fixed destination is a homeless child at best, more often out of its proper place than in it. People kidnap it and pamper it and make money out of it, and shut it up in horrible institutions where it looks aimless and unhappy. Whereas a painting on a wall can live a useful life, doing all the time what it was intended to do. I admit that you must have portable paintings as well as fixed ones; family portraits, for example, and small devotional pictures perhaps (like ikons), and ornamental pictures that you can move with the china, linen and glass from one house to another. But all these would be only a sideline if painting really meant anything in the daily life of ordinary people. The main body of painting would be on the walls of the buildings in which that life was led.

NEWTON: I quite agree with you that art no longer means anything in the daily life of ordinary people. But suppose there were a general demand for it. Suppose every wall of every house had its painting. Surely nine-tenths of it would be pretty mediocre stuff?

GOODHART-RENDEL: Certainly, if painting were universal, a good deal of it would be bad—but it's that anyway. Very likely a sort of universal painting, all over the place, would mean a downward step in quality. You'd get stuff like that on the outside of South German houses or on the ceilings of old-fashioned Riviera villas. But I don't think that would matter any more than it did during the Italian Renaissance, when there was quite as much bad painting as good. If you got the bad with the good, you'd also get the good with the bad and some of the bad might be quite enjoyable!

NEWTON: Yes, but if an easel picture is bad you can just scrap it or refuse to buy it, whereas there's something horribly permanent about mural painting. If it's bad you can't easily get rid of it; if it's good you can't take it with you when you move into another house.

GOODHART-RENDEL: Of course, the kind of painting that you do in a house which you may leave or let must be a

very sketchy affair. The Italians understand that very well, and, to a certain extent, so do the Japanese. What we need today are young men who will paint people's walls on the understanding that they will paint them over again at a very low cost if the people get bored with them.

NEWTON: All the same I have grave doubts about the suitability of mural decorations in private houses, though I'm willing to be convinced. Public buildings are different; you only pass through a public building.

GOODHART-RENDEL: Obviously the painting of public buildings must aim at some degree of permanence and importance. That's a different problem from the private house problem. In private houses I think you have two alternatives: you can either have the wall-painting on canvas that looks fixed but really is movable, or you can have the painting not worth moving—the temporary painting that is a decoration the artist must be prepared to do cheaply and quickly. It's this sort of temporary painting that I most hope for in houses. Whether we get it or not will depend, of course, on the demand. After the extraordinary increase there has been lately in the demand for music I do not despair. Young people are growing up with a background of musical noises 'off'—and very often they stop to listen. Why should they not grow up against a background of painting and very often stop to look?

NEWTON: Hear, hear! 'Use more art' isn't a bad slogan. But if we are to have murals all over the place, they have got to be *about* something—and what is there for them to be about?

GOODHART-RENDEL: Well, I do think that at the present time every little picture had better tell a story if it can—not in order to curry favour with the public, but in order to put definite tasks before artists instead of letting them throw things off their chests without any consideration for the people whose heads they drop upon. As I have implied, I do not despair of a time coming when people will order paintings just as naturally as they order meals and buy clothes. It's hardly reasonable to expect them to order paintings in bulk; but one can well imagine them getting really keen on ordering certain things to be painted.

NEWTON: What things? That's important, isn't it?

GOODHART-RENDEL: Yes. In churches, I suppose, there will never be any doubt. And in public buildings—municipal buildings—there are certain incidents that local people would be very proud of having painted—would willingly pay to have painted. Some traditional ceremony peculiar to the city, or an important Royal visit, or any really remarkable sporting incident. Things like the opening of docks or markets don't make at all bad subjects. In houses, on the other hand, I think slightly fantastic subjects would be the best to live with. Pleasant fantasies, of course—something you would like to happen to you, but that never will. When I say that every picture ought to tell a story, I don't necessarily mean more of a story than the strong emotional adventure there is in Picasso's 'Zephyr'. That isn't a wall-painting, but it is the sort of design I imagine for the cheap and quick house-decoration I want.

Of course the painter would often be asked to do something artistically impossible. At the present moment most

of the world seems to me to be half-educated and to have lost its natural commonsense without acquiring any other. I remember, after the last war, a village committee almost deciding to commemorate the dead by putting a bronze bulldog on the point of a stone obelisk. . . . And then, human conservatism being what it is, I suppose there would be some demand always for more of the allegorical stuff that most of us feel we have seen a great deal too much of.

I admit that in buildings of the styles we call Classical, occasional allegories are bound always to occur. What I hate is the sort of female personifications which give us Thrift (rather slender) and Commerce (not so slender) receiving gifts from Plenty (full figure). It's just as bad in sculpture. Indeed, in a recent bank building you can even see Britannia seated between the Higher and the Lower Mathematics. Things like that give painting and sculpture a bad name with the man in the street.

NEWTON: Well, at least we are agreed that subject-matter is important. And I suppose it's the architect's job to dictate the subject-matter—at least in his capacity of liaison between the client and the artist.

GOODHART-RENDEL: At the present moment, nobody wants painting on the buildings that ordinarily come an architect's way. One's average employer doesn't expect to be in the least interested in the subjects of any paintings there may be. If an architect wants paintings he must try to smuggle them into the building contract; if they are not done at the start they never will be. It's just the same with sculpture; you leave blocks of stone to be carved later and they never are. London is simply covered with Alpine garden effects where carving was meant to be. The Foreign Office has never been finished at the top; the Admiralty Arch has two great rocks sticking out on the Mall side, and the stonework has never yet been finished between the pilasters of the arch on Constitution Hill.

NEWTON: So we are back again to the old trouble—lack of demand. But if the demand were there, would you be able to supply it?

GOODHART-RENDEL: No; I don't expect that architects and painters would be able at first to deliver the goods with any certainty. They collaborate so seldom nowadays that there would probably be an awkward period before they got to know each other's ways. I'm afraid I think there are some that would have to be born again before they learnt to give as well as take.

NEWTON: Well, I suppose you, as an architect, try to collaborate as far as possible with the artist? Do you find it difficult?

GOODHART-RENDEL: I do drag the painter and the sculptor in whenever I can. But only on four buildings have I been able to get wall-paintings during the whole time I have been working. I have worked very happily with one or two sculptors—and unhappily with others. There is still too much isolation between workers in different arts for them to be able to shake down together very easily. But young people in both callings are being much better trained to team work than their elders ever were.

NEWTON: So the younger generation is being educated on the right lines. The right artists are coming along. But is the average architect capable of choosing the right artist?

GOODHART-RENDEL: I will answer that with frankness rather than professional loyalty. No! But I think the youngsters in architecture are going to be taught in the way they ought to be. They do know something about modern painting.

NEWTON: So you think a renaissance is due, if it has not come. We shall have to evolve a sound tradition in mural painting, and decide on a few basic principles, shan't we, before such a renaissance really begins to count?

GOODHART-RENDEL: As a rule, neither architects nor painters seem to me to have any general principles of wall decoration at all. No. That isn't quite true. They have exactly one maxim—that a wall-painting must emphasize the solidity of the wall it is on, and not appear to knock a hole in it.

NEWTON: Isn't that a sound principle?

GOODHART-RENDEL: It may not be bad as a general maxim, but of course it is most arbitrary. In every building some walls impress the eye as being weight-carriers and others appear to us only as screens. Naturally, it is most uncomfortable to have weight-carriers painted away, but you can do what you choose with screens.

NEWTON: What about Veronese's big ceiling panel? There's a hole in the building if ever there was one! Don't you feel it is more justifiable to knock a hole in the ceiling than to knock a hole in the wall?

GOODHART-RENDEL: I am prepared to knock a hole anywhere; but I am not prepared to let you do on a ceiling an enormous vertical composition which half the time is seen upside down. From only one point on the floor does it make sense. Oh, I know the number of precedents to the contrary, from the Sistine Chapel downwards. But do we really want any more booms-a-daisy compositions, with heavy bodies crashing through the plaster and everything always just wrong from where you are standing? I can't see anyone doing them nowadays, and I'm not sorry. Paintings that aim at the perspective illusion of reality aren't very enjoyable anywhere, except as a joke. But if you have, within an architectural frame, a vertical surface that might just as well be open as closed, then, short of illusion, you can have as much distance and perspective in it as you choose.

NEWTON: This is fascinating. Do go on.

GOODHART-RENDEL: The most important principle in my opinion is that of observing in the painting the natural scale of the surroundings. Scale in architecture is of two kinds, the natural and the artificial. Any Gothic building has all its features what you might call man-size. If the building is larger than usual the individual features are hardly any larger for that—there are merely more of them. The buildings of classical antiquity, on the other hand, and many buildings of the revived classical styles, have features following a fixed proportion with the size of the building; and in buildings of any magnitude those features are therefore apt to be gigantic.

NEWTON: Like the Cherubs at St. Peter's—they weigh about ten tons; but they fit beautifully into the building.

GOODHART-RENDEL: Yes, and they are just about as big as they can be. As far as there are any absolute rules for decorative painting, I think it is true that the largest figure in any subject ought not to exceed the size implied by the surrounding architecture; except, of course, when you are portraying supernatural or abstract personifications.

NEWTON: But who is to judge exactly what size *is* implied by the surrounding architecture?

GOODHART-RENDEL: The architect knows that, or he ought to. As a rule, the painter doesn't. And another thing the painter doesn't usually know is the *sort* of composition that is most suitable to the surroundings. Take a long hall or gallery, a place that people pass through and never remain in. The architect must tell the painter that here the paintings too must be, as it were, processional, and not a series of tight little pictures that you have to stop and look at separately.

NEWTON: Yes of course that is the sort of thing that the artist wouldn't realise — and that the architect presumably would—or shall we say should? But these are details. Your main theme is one I heartily agree with and I'm glad you are a bit pessimistic about it. Optimists always seem to think the Millennium has arrived. Pessimists work hard to bring it about. I don't quite see how this particular Millennium—this inducing the average man to demand painting as a normal background to his daily life—is to be brought about. Obviously the painter himself can't bring it about without

help, and obviously the architect is the proper person to help him. But that means training the architect on rather new lines—giving him a new point of view. You say the architects of the younger generation *are* being trained. I say hurrah if that is so. As long as the architect regards himself as nothing more than an engineer with perfect æsthetic taste, the prospect of a renaissance in architectural painting seems to me a pretty poor one.

—Reprinted from "The Listener", February 8, 1940.

BOOK REVIEW

ARCHITECTURAL SPECIFICATIONS

By HAROLD REEVE SLEEPER, A.I.A.

Companion Volume to Ramsey and Sleeper's Architectural Graphic Standards. Published by John Wiley & Sons Inc., New York. Price, \$10.00.

THIS excellent work in its composition and well ordered and uniform arrangement of the contents should commend it to all architects. It contains a most comprehensive and exhaustive fund of information providing a ready and very suggestive reference to all subjects relating to the work of the various trades, and applicable whether the construction contemplated is either on a large or a small scale as regards character and cost.

About forty years ago Mr. Henry Van Brunt, whose name and works may be remembered by architects of maturer years, defined a specification in the following terms, and the essentials are just as up-to-date now as they were then:—

"A specification is a formulation in words of all those items of information regarding a proposed building which cannot be graphically set forth in the drawings. It is consequently supplementary to the drawings and is necessary to define the especial conditions, limitations, and requirements to be observed by the contracting parties in carrying them into execution, and, specifically, the character and quality of the material and workmanship to be employed."

"As with the progress of civilization, the requirements of convenience, comfort, use, and economy or luxury of every degree have become more exacting, and as the appliances to meet these exactions have become more complicated, and scientific, the function of the specification in building contracts has greatly increased in importance. The modest instrument of a dozen or twenty pages, which amply sufficed our fathers to secure good work and material according to their standard, has expanded into a formidable document often of more than a hundred. The progress of invention is so active, and methods and materials of building are so constantly changing and enlarging, that the architect cannot properly develop his specification on established formulas or comfortable routine, but is constrained to a constant vigilance, lest in his latest work he should fail to avail himself of the best which science and invention is constantly lavishing upon the art of building."

"The greatest virtues of the modern specification are comprehensiveness, order, clearness and compactness of definition, and the utmost brevity consistent with these qualities; avoiding unnecessary enlargements, repetitions,

and all that sort of generalization which may mean much or little, according to the point of view, which rather confuses than instructs the builder, and is therefore fruitful in disputes. Moreover, the overburdened specification may be and often is greatly relieved, without in any way impairing the force and intelligibility of the contract, by omitting such items as can be inscribed upon the drawings themselves and in immediate delineation of the details which they are intended to explain."

The above quotations so admirably cover the essentials of a good specification, that they have been applied in review of the work just issued from the press as the result of most painstaking effort and preparation.

Mr. Sleeper very modestly states that his work "is the result of an analysis of the work of many specification writers in prominent offices and government agencies, and an examination of existing standards; of conference with and letters from trade associations, manufacturers and contractors." He "realized fully the impossibility of providing an all inclusive book and has had continually to weigh the question of what to omit in order to prevent undue bulk, which would destroy the usefulness of the book. His presumption in undertaking a task of this magnitude was due to his conviction that such a book was a vital necessity to architects and the building trades."

The importance of a specification as a Legal Document and not a Treatise on Building Construction, imposes upon the architect or specification writer considerable care in its preparation so as to avoid the pitfalls which later confront him by the use of ambiguous terms and phrases capable of uncertain meanings under legal interpretation.

It is clearly the intention of this book to provide the specification writer by means of a "thorough check list, a logical and considered form, as well as standard substance" as regards materials and workmanship. At the same time the author states it will not automatically enable him to write a good specification, as building is too involved and complicated to insure such a result without the knowledge, experience, and common sense required to interpret by means of the written word.

This book is therefore presented as a work of painstaking endeavour, which should find favour and a prominent place on the book shelves of architects who welcome the production of such a useful volume of valuable up-to-date information and reference.

—R. H. Macdonald.

PLANNING NEIGHBOURHOODS FOR SMALL HOUSES

Revised February 1, 1939

Federal Housing Administration, Washington, D. C.

This pamphlet seemed to provide useful information for an architect's file. The first half is printed below, the second will follow in either July or August.—Ed.

IN the building and owning of a house, land is the first item of cost; environment is the final source of value. Whether from the point of view of economy, or of satisfaction with a property, or of marketability, no individual dwelling or class of dwellings may be considered apart from the land they occupy and the surrounding features which tend to make the land retain its value for residential purposes.

The word "planning" as it is used in this discussion, means the process of adapting a specific area of land to the economic, social, and physical factors which determine its ultimate value for residential and allied purposes. Such adaptation is achieved by the platting of the land, by establishing zoning and deed restrictions, and by otherwise creating and maintaining the quality of a neighbourhood. It requires the exercise of special technical skill on the part of the developer, the relating by him of the amount and type of new housing to be produced to the effective demand for housing in the community as a whole, and the co-ordination of the physical layout of his land with the plan of the whole community.

For many years planning has been characteristic of "exclusive" neighbourhoods or subdivisions of high priced homes. Such neighbourhoods have been carefully laid out, subjected to architectural and landscaping control, and protected by covenants restricting property against uses inharmonious with the neighbourhood. The individual who invests in high priced residential property makes no objection to limiting the use of his own property. In fact, he is induced to invest because of these limitations, realizing as he does that this mutual restriction of the right of use by the separate owners protects them all in the broadest possible enjoyment of their holdings.

Unfortunately, neighbourhoods for modest dwellings have only rarely been developed in this manner. Frequently they have been produced devoid of plan or protection as lot selling schemes, wholly unrelated to the character of dwellings which might some time be built. As a result, acres of land in and surrounding our cities have been subdivided, partially built up or abandoned, possessed of no identity as neighbourhoods, uncontrolled as to land use, monotonous and unappealing in appearance. From the peak of the first sales hysteria, values stagnate and owners find little or nothing to encourage the maintenance of their properties or to hold their interest in the locality.

From this result arises the paradox that the small home which, by all economic theory, should be the safest and most liquid of investments, often becomes a commodity in which speculation is greatest and in which long term security is lacking. This condition, of course, is not universal; it need not even be general. Neighbourhoods can be produced as satisfactorily for modest homes as for expensive homes, and in many cases with lower land development costs.

This bulletin is not intended to be a treatise on neighbourhood planning, or in any way to offer a substitute for the esthetic and engineering skill required in the laying out of a subdivision. It seeks to call attention to the necessity for good planning and the economic advantages of good planning. It attempts to set forth the principles which must be followed if appropriate planning is to be achieved; and it endeavours to offer suggestions to sub-dividers, engineers, architects, land

planners, and operative builders which will result in the production of more neighbourhoods for modest homes—neighbourhoods to which, with investment secure, mortgage money will flow at attractive rates, and in which owners will find lasting enjoyment and satisfaction.¹

PART II

GENERAL PRINCIPLES

In the creation of new neighbourhoods complex elements must be weighed and given their proper values. The need for the development, the land costs, the topography and consequent costs of development, the accessibility, the character of adjoining neighbourhoods, the type of restrictions necessary to provide proper protection, must all be taken into account in order to provide the promise of lasting values.

Certain general principles covering these factors may be suggested as of importance to the developer in deciding the location and character of his enterprise, to the mortgagee in determining the distribution of his loans, and to the family seeking to buy a home. While these principles are applicable to neighbourhoods of all types, they are discussed here with particular reference to neighbourhoods suitable for low priced dwellings.

ASCERTAINING THE NEED AND DEMAND

There should be convincing evidence of a healthy and active demand for homes of the type contemplated and at the prices asked.

The purpose of the subdivision of land is to provide sites for needed homes. The sale of unimproved lots for purely speculative purposes, seldom, if ever, results in the establishment of sound communities. No matter how attractive its surroundings or how well it is designed and restricted, a real need must be evident before a development is justified. When there is no demonstrable market for the type of housing proposed, the property cannot be considered economically sound and it, therefore, offers neither a safe mortgage risk nor a proper equity investment.

The developer's first concern, therefore, is to ascertain the type and cost of home that is in demand in his particular community. His entire development program and the success of his enterprise hinge on the determination of this question. The demand for homes may be measured in a number of ways. Statistics covering employment, wage scales, city growth, obsolescence of existing structures, percentage of vacant homes, the number and cost range of dwellings that have been built in recent years, and real property surveys are sources of information from which a very accurate estimate of the capacity of the market to absorb a quantity of various types of housing may be obtained.

SITE AND TOPOGRAPHY

The site should be plainly suitable for the type of development contemplated.

With the need ascertained, the next step is the selection of the land. The main factors to consider here are its location, cost, and topography. These must be appropriate for the type

¹ (F. H. A. Form No. 2059, Circular No. 5, Subdivision Development, should be consulted in preparing application for insured mortgages in undeveloped subdivisions.)

of housing contemplated. Land which might be excellent for the high salaried group might be entirely unsuited for garden homes for workmen. *Many subdivision failures are the result of trying to find a use for a piece of land, instead of finding land for a specific use.*

The property finally selected should be the one which is desirably located and priced to meet the demonstrated demand, topographically suited for the intended use and free from any natural or created hazards such as floods, fog, smoke, noises, obnoxious odors, and similar undesirable conditions.

The attractiveness and physical appeal of the subdivision, as well as the cost of preparing the land for occupancy, depend to a great extent on topography. Rolling land with patches of wood and broken slopes lends itself to a picturesque development of small estates where great variation in block sizes and lot areas is permissible. Steep hillside slopes make expensive sites for low-cost homes. Densely wooded land may be too expensive to prepare for an economical development.

The type of soil should be given consideration, especially if the purchaser intends to secure part of his living from garden produce. Land on which water stands or which is marshy should be viewed with suspicion because it may cost thousands of dollars to install a drainage system that will fit it for use, and even then there may be wet cellars in the spring or times of heavy rains.

ACCESSIBILITY AND TRANSPORTATION

The subdivision should be easily accessible by means of public transportation and adequate highways to schools, employment, and commercial centres.

The convenience of public transportation and the accessibility to employment centres and schools becomes increasingly important as the income range of the prospective purchasers decreases. Not only should the transportation facilities such as are afforded by street cars and buses be adequate but there should be convenient access by motor car through arterial highways which provide easy approach to industrial, recreational, and shopping centres.

In a development for industrial workers a difference of a few cents in the cost of transportation may ruin the chance of success of an otherwise desirable project. The convenience to schools, stores, and employment may frequently be the deciding factor in weighing two competing properties. An inaccessible site is a difficult handicap to overcome, even though other factors may be favorable to it.

UTILITIES AND STREET IMPROVEMENTS

Appropriate and necessary utilities and street improvements should be installed, or definite assurance given that such facilities will be furnished.

Due to local custom and to the character of the climate and neighbourhood, street improvements which are suitable in one case may be undesirable in another. A road which would be satisfactory where the climate is mild and dry might be most unsatisfactory where freezing and thawing occur. Walks may be omitted in an open, semi-rural type of development, while they will be needed on both sides of a street in a densely populated urban neighbourhood. No rule regarding street improvements may be made except that they must be suited to the climate, the density of population, and the traffic requirements of a particular area.

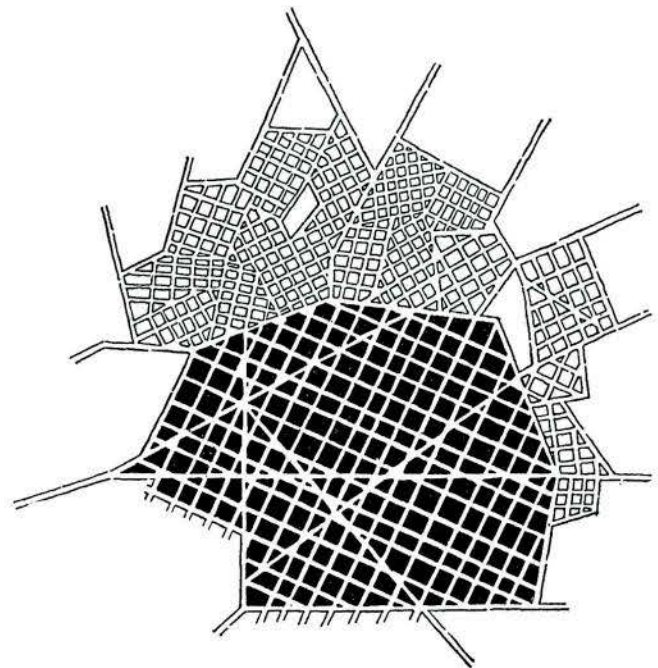
The same variation in requirement will apply to the facilities provided for water supply and sewage disposal. Except in developments of large lots and favorable geological conditions, water supply from individual wells cannot be recommended since the quantity and purity can seldom be relied upon. While the disposal of sewage by means of individual septic tanks or cesspools may under certain circumstances prove acceptable, such methods frequently present a menace

to health, particularly if the drainage is poor and the lots are small. It will generally be found that the cost of drilling individual wells and installing private pumping systems and of constructing a properly designed septic tank is greater per lot than the cost of installing the mains. Where public water or sewer mains are readily available, connections to them should certainly be made.

Inadequately improved subdivisions seldom develop into stable neighbourhoods. Such properties are usually sold for land speculation, with but little interest in the building up of a permanent community. The actual investment of the promoter is so small that he can take a quick profit in the land, assuming no responsibility for its development. This very often results in an orphaned subdivision and a blighted and undesirable neighbourhood—an area to be avoided when investment risk is considered.

The cost of such improvements as are here recommended need not place an excessive burden upon the modest neighbourhood. Complete street improvements and utilities will usually range in cost from seven dollars to fifteen dollars per front foot. When the improvement costs are greatly in excess of these figures, heavy delinquencies in purchase contracts or in assessments frequently result. It must be noted, however, that the cost of these improvements will not always decrease with the cost of the dwelling, since with small lots, and the resulting density of population, better traffic facilities may be needed and larger sewer and water mains required.

Street improvements and utilities for garden homes on acreage plots in outlying areas where the traffic demands are light, may be extremely simple and inexpensive. Under such conditions a graded and surfaced roadway, without walks or curbs, will often be found to meet the needs of the property owners, and even including water mains and sewer lines the front foot improvement costs can frequently be held to less than five dollars.



This is an actual example of what happens to city growth when there is no master city plan. The original portion of the city (in black) followed a pattern in which consideration had been given to arterial highways. Lacking subdivision control or a city plan, new subdivisions were placed on the market without reference to the existing arterial highways and the future traffic needs of the community or to the street plan of adjoining subdivisions. This resulted in jogged, narrow streets cutting off main highways, impeding traffic and throttling the growth of the city. It is not necessarily desirable to extend all the minor residential streets, but main traffic arteries should be direct and the entire street pattern extended in an orderly connected manner. Every city should have a well-studied street plan to provide for future growth and to which all subdivisions should conform.

Improvements may be installed by the developer and included in the lot price or put in by the local government and the cost assessed over a period of years. If improvements are to be paid for in yearly instalments, this should be clearly stated in the sales agreement. If property is sold with the understanding that certain improvements will be made by the developer, either a proper proportion of the sales price should be set aside in a trust account for this purpose, or the developer should furnish a bond guaranteeing the fulfilment of his agreement.

The streets and improvements should be acceptable for dedication to the city or county wherever they have jurisdiction. The responsibility for maintenance is then transferred from the lot owners to the municipality and there is fair assurance that the improvements are appropriate to the climate and needs of the community.

CITY PLANNING AND ZONING

Whenever the subdivision, or any part of it, falls within the jurisdiction of a city, county or regional plan or of subdivision regulations, the design and development should comply with such plans and regulations.

The process of breaking up large tracts of land into small parcels involves a serious responsibility, affecting as it does, the way in which the land may be utilized in the future. Developers are urged to co-operate with planning bodies even though they may lack complete authority in the enforcement of their recommendations.

Subdivision development in all of its phases is a part of city and county planning including the control by zoning ordinances. Each new area opened should be planned and its use controlled not only in respect to its internal and individual requirements, but in relation to the existing and probable future plan and use of the community and its environs as a whole. Proper attention to such relationships will tend to establish the new neighbourhood on a sound basis as regards its general environment, to preserve it from loss due to overdevelopment of certain types of land use, such as commercial and apartment areas, and to provide a reasonable permanence of the use for which the area is designed.

In order that this requirement be met, every new area should be platted and the plat and deed restrictions recorded. Selling property from other than a recorded plat is to be discouraged, except in comparatively large tracts in areas destined to remain semi-rural in character.

As against describing a parcel by metes and bounds, the advantages of the use of a recorded plat and restrictions are as follows: (1) Uniformity of restrictions for all similar properties; (2) better means for the proper distribution of land use in an area, for the provision and dedication of proper streets, installation of utilities, etc.; (3) facilitates more equitable tax assessments in the areas; (4) avoids involved deed descriptions with the increased possibilities of error and makes titles easier to check, with a favorable effect on the title insurance rate; (5) stimulates confidence in the seller and permits the purchaser to make a more accurate estimate of the future environment of his property. All of these items are to the advantage of both the property owner and the reputable land developer, whose chief interest should be in the creation of a stable community and sound real estate values.

RESTRICTIVE COVENANTS²

The property in a subdivision should be protected by appropriate and recorded restrictive covenants.

Well-drawn restrictive covenants aid in establishing the

² (See Appendix A for typical restrictive covenants suitable for modest neighbourhoods.)

character of the neighbourhood through control of the use of the land and of the structures to be erected upon it. They increase marketability and help to maintain a stable market condition in an area; and they assure the purchaser that his investment will not be jeopardized by thoughtlessness or selfishness on the part of his neighbour.

The term "restrictions" is too often associated in the public mind with unwarranted interference in the use a property owner may make of his land. Every effort should be made by developers to show the home buyer that reasonable and effective restrictive covenants protect his investment and assure him a better community in which to live and one in which real estate values will be more stable. Restrictions should be recorded at the time the plat is recorded. They should also be in the purchase contract and deed, and should run for a sufficient period to assure the property being properly developed in the manner intended.

The principles outlined above have two main purposes: (1) The preparation of residential land at cost which will provide reasonable sites for low priced homes and in a manner which will be suitable to the requirements of the neighbourhood; (2) the creation of a neighbourhood which will have a distinct character and in which that character will be protected against encroachment from without and deterioration from within.

The fulfilment of the first of these purposes should result in a commodity within the range of effective demand. The second is aimed to give that commodity both initial and lasting appeal. The production of good neighbourhoods is not philanthropy but good business. It means homes which are more readily sold or rented, and it means homes that stay sold and rented.

A further contribution to both these ends may be made through the conduct of large scale operations; that is, the creation of a whole or a large portion of a neighbourhood at one time.³ Such operations may offer to the substantial developer the possibility of a broader and more profitable use of capital in the housing field. While requiring a more painstaking investigation and comprehension of the market than piecemeal building, they permit industrial methods to be introduced into home building with resulting savings in overhead, erection, and merchandizing costs. Above all, they permit the developer to achieve his plan in a consistent and harmonious manner.

Another factor not to be neglected in large scale operations is the benefit to be obtained from a development of commercial services such as retail stores and gasoline stations necessary to the life of the new community. Such commercial development may be, and frequently has been, overdone; but properly related to the needs of the neighbourhood, it may not only be made an attractive focal point in the plan, but may become an important feature in the returns from the enterprise. In the production of neighbourhoods of low priced dwellings, a proper consideration of the income derivable from associated commercial properties becomes especially important.

The purchaser or renter participates in the advantage of large scale enterprise. He may gauge from actuality, rather than from the rhetoric of the promoter, the character of the environment in which he is to live. He is given the maximum of protection against the deleterious use of neighbouring properties and has consequently the greater security in his holding. He may benefit from the cost savings of a well conducted enterprise.

³ For methods of conducting large scale operations with insured mortgage, see F. H. A. Form 2012, "Multifamily and Group Housing Insurance", and F. H. A. Circular No. 4, "Operative Builders."

PART III
NEIGHBOURHOOD DESIGN

Good subdividing, whether for low priced or high priced properties, is not simply blocking off an area into lots which can be easily surveyed, staked, and recorded. On the contrary, it means the creation of real estate values through devising a layout which is not only economically sound but which provides to the maximum degree those conditions which make for pleasant and healthful living. The original cost, the stability of values, and the whole quality of living within the subdivision are affected by the layout of the tract and the determination of the manner in which it may be used.

In every plot of land there are certain sections where values naturally will be comparatively higher than in the remainder of the tract. These will be found to be near such features as a lake, a park, or fine residential boulevards. Little ingenuity or thought is required to market such sites. All too frequently, however, when these choice areas are sold, the remaining property, due to its lack of appeal, may be sold only with difficulty. The subdivider's profit, as well as his big problem, lies in marketing the less desirable portions of his allotment; that is, in the creation of interest in his poorest land. In this section some of the features making for more distinctive neighbourhood quality are discussed.



This monotonous gridiron plan has but little character or appeal. The unnecessary cross streets are wasteful of land and expensive to construct. Values drop off rapidly as the lower end of the property is approached and the city park, which is the best natural asset, is left inaccessible. No effort has been made to divert through traffic from the minor residential streets.

STREET PATTERNS

One of the chief functions of a city plan is to provide a street pattern that will assure an orderly and natural city growth. This is done usually by a plan for the extension of existing main thoroughfares so that circulation will not be



In this plan the city park has been made a focal point and a real asset to the entire property. Lots in the lower right-hand corner are no longer cut off from ready access to the city. Unnecessary cross streets and alleys have been eliminated, resulting in a saving of a 1,000 feet of road construction with a slight increase in the number of lots. Some of the more desirable lots are now in the lower end of the property near the park.

restricted and whole areas cut off from ready access to the main body of the city. Every developer should give consideration to this and the needs of the adjoining acreage, planning his allotment accordingly. This does not mean, however, that minor streets in a development should either carry through or be directly connected with existing streets. Frequently the breaking of the line of such minor streets improves the vista, diverts through traffic, and increases the privacy of the residential area.

The gridiron plan which has been so universally adopted in most of our cities has several very decided disadvantages when applied to residential areas. In the first place, it creates waste by providing a greater paved area than is necessary adequately to serve a residential community. Secondly, it causes the installation of a more expensive type of paving by dispersing the traffic equally through the area, which in turn creates an increased traffic hazard. In addition to these disadvantages, it creates a monotonous, uninteresting architectural effect and fails to create a community aspect.

Street patterns should be so designed as to provide a reduction in the paving costs, a proper control of traffic, adaptation to the terrain, and also to provide an architectural setting which will lend interest and create a sense of social responsibility as well as a feeling of pride in the community.

In designing a subdivision the major and minor streets, the blocks, lots, parks, business centres, etc., should be adjusted and co-ordinated into a well balanced unit and adapted to tie in with adjacent future or existing developments. The width and arrangement of streets, the size of the areas set aside for residences and for business or recreation must all bear a proper relation to each other and to the needs of the com-

munity. It is easy to throw a subdivision off balance by the allocation of too great an area for business, resulting in a large proportion of the most valuable frontage lying idle, or by installing too many streets of excessive width, creating an exorbitant construction and maintenance burden.

MAJOR THOROUGHFARES

Major thoroughfares must be provided that give quick and convenient access to principal centres. If possible, the trunk highways should be located along the borders. If, however, this is not possible and they must go through the tract, they should be made direct and of sufficient width to provide for the unhampered passage of traffic. Allowance should be made for the future traffic needs of major highways. Although at first the paving of such thoroughfares may be held to a minimum width, it is always desirable to dedicate a sufficiently wide right-of-way to provide for future needs in order to avoid expensive condemnation proceedings later.

MINOR RESIDENTIAL STREETS

The most desirable residential street is one on which the noise and hazard caused by traffic is reduced to a minimum. The street layout should be designed with this definitely in mind and through-traffic discouraged. Wide intersections should be eliminated. Minor streets should meet the main thoroughfares at right angles in order to decrease traffic danger and permit a more efficient lot subdivision. Surfacing of residential streets devoted to local traffic may be of lighter and less expensive material than is possible where through traffic must be allowed for. The minor residential streets should follow the topography closely (swinging around a knoll or a clump of fine trees) with the result that an attractive and unforced curvilinear layout is secured at reduced improvement cost, creating interesting vistas and doing away with the monotony of long straight rows of houses. On minor streets grades steeper than 5%, usually considered the maximum for main highways, are permissible to avoid expensive cut and fill. Paving widths may be reduced and in some instances walks omitted.

CULS-DE-SAC

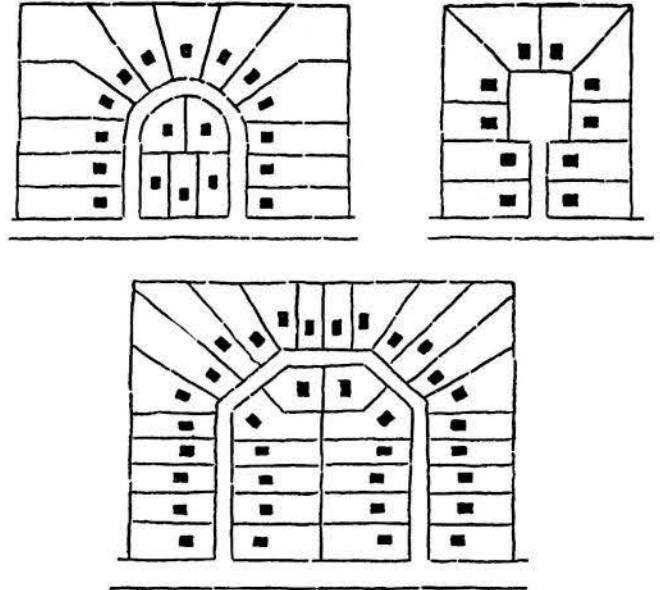
Homes located on *culs-de-sac*, or dead-end streets, and on courts or crescents may offer distinct advantages, especially to families with small children. In addition to the reduction in traffic hazard, the creation of such sites has many other advantages, both to the buyer and to the developer. The cost of street improvements may be greatly reduced as there is no need of wide, heavy paving, and as only a comparatively small number of houses are served in each group, large size water and sewer mains are not required.

Culs-de-sac and courts may be fitted into the plan so that odd-shaped inaccessible remnants of a subdivision, which would otherwise have but little value, are converted into desirable lots. All dead-end streets should be provided with convenient turn-arounds with a radius of not less than 30 feet. Customary planting strips and sidewalks should encircle the turn-around.

BLOCK LENGTHS AND WIDTHS

Blocks should generally range from 600 feet to 1,000 feet in length and may be even longer where they front on main highways, although blocks in excess of 1,300 feet in length are not to be recommended. Blocks should have their greatest length in a direction parallel to the natural traffic flow. The elimination of unnecessary cross streets is an important method of reducing construction costs. The use of a public cross-walk midway of long blocks is recommended.

In urban developments block widths will normally be between 200 and 300 feet. However, there has been a recent tendency toward wider block sizes than the normal type, the interiors of which are developed with park areas.



These diagrams indicate designs for courts and culs-de-sac. Sites such as these are off noisy and dangerous traffic streets and are much in demand by the parents of small children. Because traffic needs are not great the paving and walk widths may be held to a minimum and the improvement costs considerably reduced. Paving widths of only 18 to 20 feet and 4-foot walks frequently will be found adequate. A 30-foot radius for the turn of the cul-de-sac should be considered the minimum. It is possible to group small homes much more interestingly in locations of this kind than along straight streets. A skilful planner will find that by the use of culs-de-sac many odd-shaped remnants may be plotted into valuable sites.

In semi-rural and garden home subdivisions, block widths may be considerably greater. It is frequently desirable in such projects to provide for future re-subdivision into smaller lots by setting aside properly located easements of suitable widths for roadways and by prohibiting any other method of re-subdivision than the one established by the developer.

LOT SIZES

The size of the lot to be established in an area will be determined by several considerations among which are the following:

(1) *The remoteness from the centre of the community.*—Generally speaking, the farther from such a centre the area is located, the larger will be the lots. Garden homes will not be appropriate adjacent to the commercial section, nor will row houses ordinarily be appropriate to the open country. There should be a diminution in the density of population as the circumference of the city expands, from approximately 12 to 16 families to the gross acre for close lying attached home developments, to 4 to 8 families to the gross acre for urban and suburban areas of detached houses. There is a strong trend to provide greater land areas for all types of housing, and because in general land values decrease as the distance from a main centre increases, a process of decentralization is occurring in most of our large cities.

(2) *The price of raw land.*—If low priced houses are to be produced on large lots they will ordinarily have to be placed in a distinctly suburban section. However, the influence which a specific type of subdivision has upon the price of land must not be neglected. The acceptance of a fixed size of lot by a large part of the people of a community tends to establish the price of that lot. Thus in different cities of comparable size the price in one of twenty foot lots for row houses may not differ from that in another of forty foot lots for detached houses. Public demand and the price the public can afford will, therefore, except where congestion is caused by peculiar geographical conditions, to a great degree influence both the size and the price of the lot.

(To be continued in a later issue of the Journal.)

CAPTAIN GEORGE KENNETH CROWE, R.C.E.

George Kenneth Crowe, 40 years of age, well known architect of Montreal, was suddenly stricken at his home on June 2nd and buried with military honours on June 4th.

A native of Guelph, Ontario, he received his early education there and at Upper Canada College, subsequently attending the Royal Military College at Kingston and Toronto University Department of Architecture where he graduated with the degree of Bachelor of Architecture.

He was an Associate of the Royal Institute of British Architects, a member of the Province of Quebec Association of Architects and a Past President of the Arts Club of Montreal, a most highly esteemed member of our profession who will be greatly missed.

Ken Crowe gave up a successful practice to serve in the Royal Canadian Engineers, holding the rank of Captain and being stationed in Ottawa.

He is survived by his widow, formerly Dorothy Mowatt Duff, one son, Christopher, his parents, three brothers, Lt.-Col. C. D. Crowe, R.C.A., Major R. M. Crowe, Hastings and Prince Edward Regiment, both overseas and E. W. Crowe, Assistant Actuary, Sun Life Assurance Company, and a sister, Mrs. D. B. Shutt of Guelph.

We extend our deepest sympathy to all members of his family.

—Harold Lawson.

FLYING OFFICER GEORGE E. AULD, R.C.A.F.

On May 17th, Flying Officer George E. Auld, R.C.A.F., was killed in an airplane crash near Trenton, Ontario, during a training flight.

The son of the late George Auld and Mrs. Auld, he was born in Charlottetown, P.E.I., thirty-two years ago. He went to Bishop's College School, Lennoxville, and McGill University. Graduating from McGill in 1933, he studied in Europe for a year and returned to Montreal where, in 1935, he joined the Province of Quebec Association of Architects and entered private practice in partnership with G. Everett Wilson. George Auld has always been an active and enthusiastic member of the P.Q.A.A., giving much of his time and energy to its work. In a very short time he made many friends in the profession and in the construction world.

To those of us who knew him intimately, he was never more content than when designing, or when thinking and talking about architecture—not historic ornament, but the real architecture of space, proportion and texture, of steel columns and heating pipes. He was a keen disciple of the modern movement for whom the only regret was that private practice afforded so few opportunities to design buildings the way he felt they should be.

Last January, both George Auld and Everett Wilson closed their office and joined the Royal Canadian Air Force. They were in training together when the fatal accident occurred. His death means a great personal loss for his many friends, among whom a number of his fellow architects sadly claim their places.

—Richard E. Bolton.

WARNING TO APPLICANTS FOR REGISTRATION UNDER THE ARCHITECTS' REGISTRATION ACT OF THE UNITED KINGDOM

"A person shall be eligible for registration under the Principal Act if his application for registration be made before August 1st, 1940 and if having served before August 1st, 1938 as an architectural assistant in an architect's office in the United Kingdom for a period of not less than one year, he proves to the satisfaction of the Admission Committee that on August 1st, 1938 he was an architectural assistant and that he had been engaged in the study of architecture and execution of architectural work in any part of His Majesty's Dominions for at least seven years, and had received an architectural education and training equivalent in value to that normally received by an architect in the United Kingdom."—New Regulation.

Further,—"*Applications, which must be posted before August 1st, 1940, should be made by letter addressed to: The Registrar, The Architects' Registration Council of the United Kingdom, 68 Portland Place, London, W.1. The sum of 11/- must be enclosed, being 10/- admission fee, returnable should the application be rejected, and 1/- for a copy of the Regulations by which every applicant must undertake to be bound. The Registrar will then send the requisite application form.*"

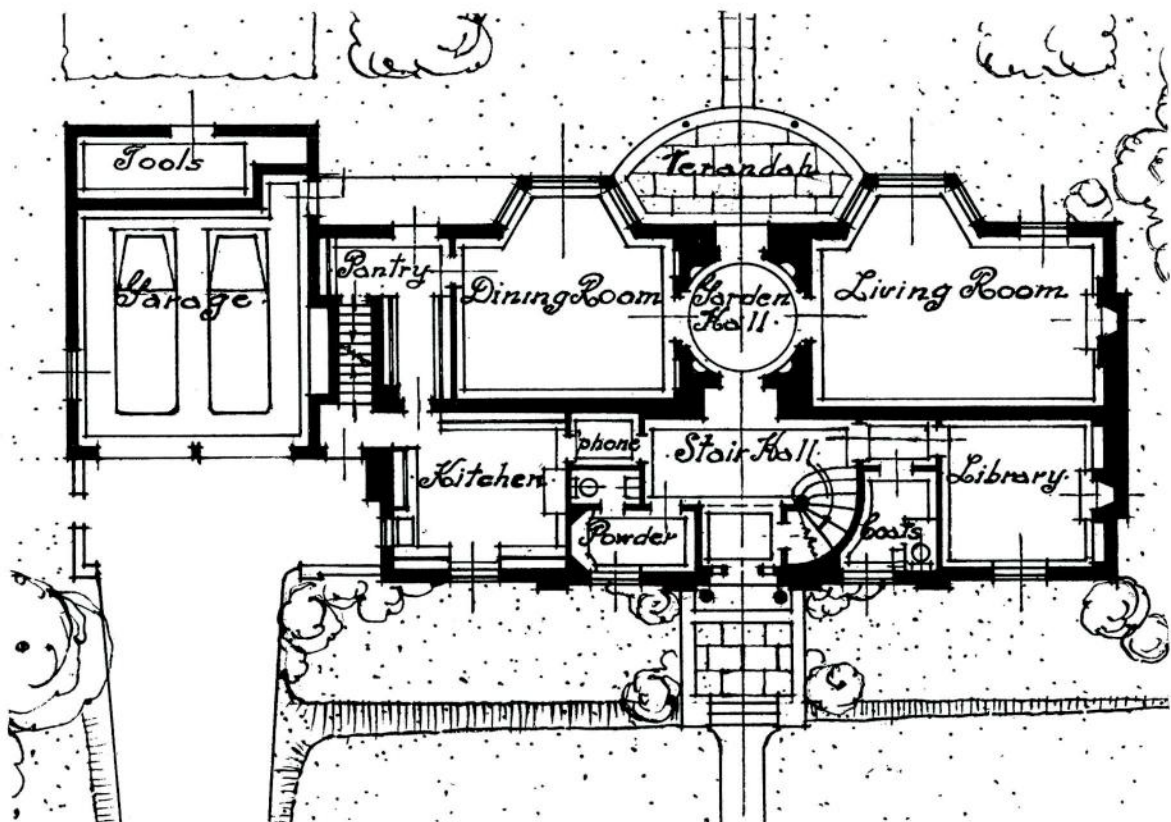


HOUSE OF MR. ALFRED D. MORROW, TORONTO, ONTARIO

ALLWARD AND GOUINLOCK, ARCHITECTS



VIEW FROM GARDEN



FIRST FLOOR PLAN



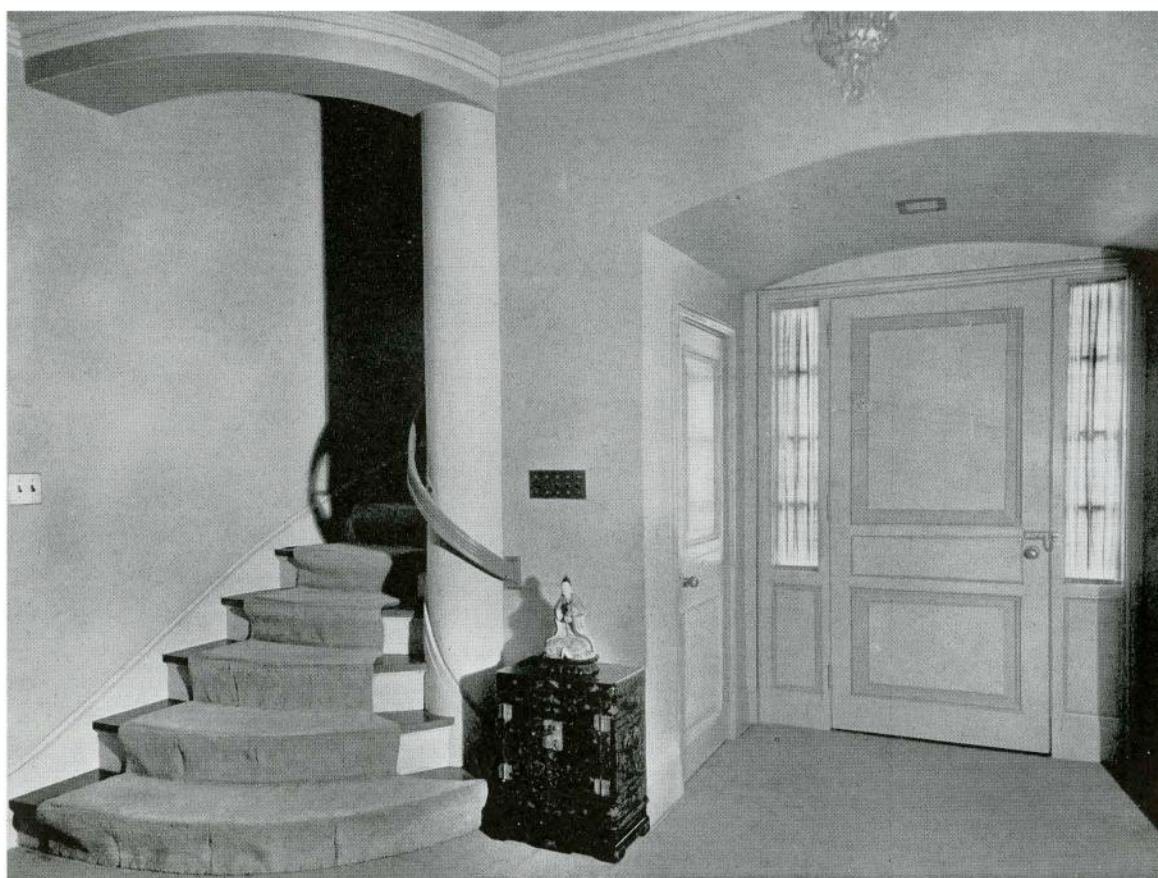
LIVING ROOM



DRAWING ROOM



STAIR LANDING



ENTRANCE HALL



CHURCH OF ST. THOMAS THE APOSTLE, HANWELL, ENGLAND

EDWARD MAUFE, ARCHITECT

CHURCH OF ST. THOMAS THE APOSTLE

By EDWARD MAUFE

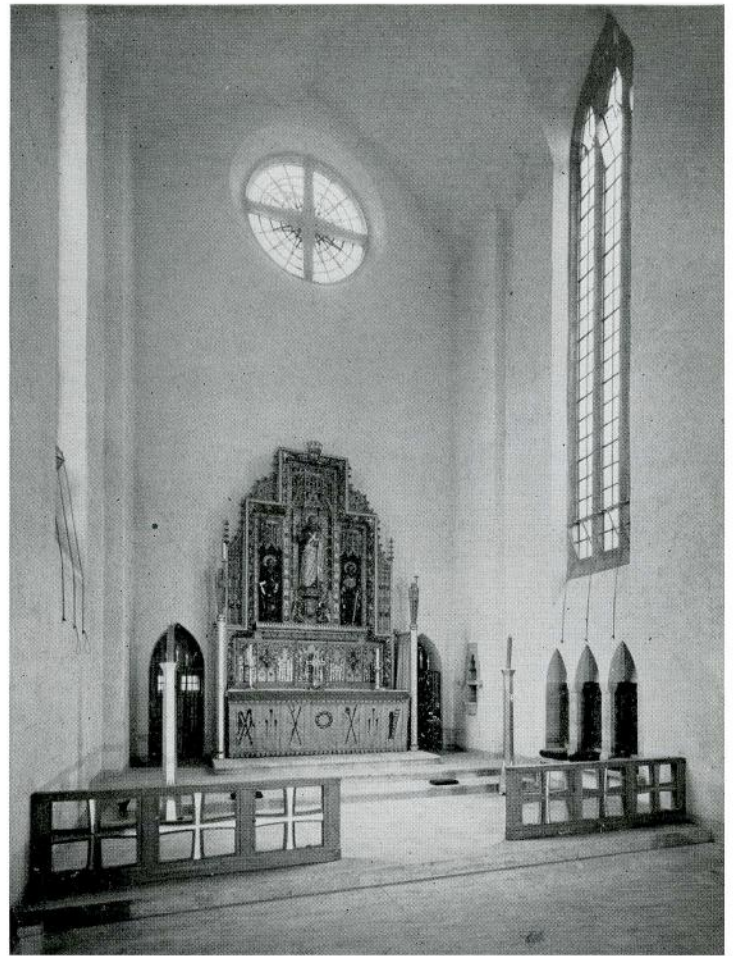
No contemporary designer of churches gets a more religious atmosphere than Mr. Edward Maufe, F.R.I.B.A., and his new Church of St. Thomas the Apostle, Boston Road, Hanwell—one of the 45 new churches for the Diocese of London—is a particularly good example of his art. That there is some danger in the conscious aim at such an atmosphere may be granted—the presence of the atmosphere in churches of the past being due to the circumstances of creed rather than to the intentions of the designer—and Mr. Maufe's work does not escape some sentimentality in detail; but in the main the atmosphere comes the right way; that is to say, from a calm acceptance of the requirements of worship and direct provision for them by the methods and materials of the present day.

Constructionally, St. Thomas's is a reinforced concrete church with an external facing of brick and copper roofs. In plan it is a nave with aisles, treated as passageways only, and a straight-ended chancel of the same height as the nave. On the north side there is a tower, and at the eastern end a range of vestry, sacristy, and Lady Chapel—the last two being connected by a passage—forming a base to the composition when seen from Boston Road. From this end the general effect is faintly reminiscent of North Italy, the east window, high up under the gable, being circular, but the side windows of the nave and chancel are tall and pointed. The church seats 420.

A Subtle Refinement

Simple in mass, the church owes its architectural effect to the proportions and inflections of planes; setbacks at the right points, both vertically and horizontally, a very slight "batter", or inward slope, to the tower, and a barely perceptible splay in the plan of sacristy and Lady Chapel. A subtle refinement, which tells at a distance, is a slight "necking" below the cornice of the tower.

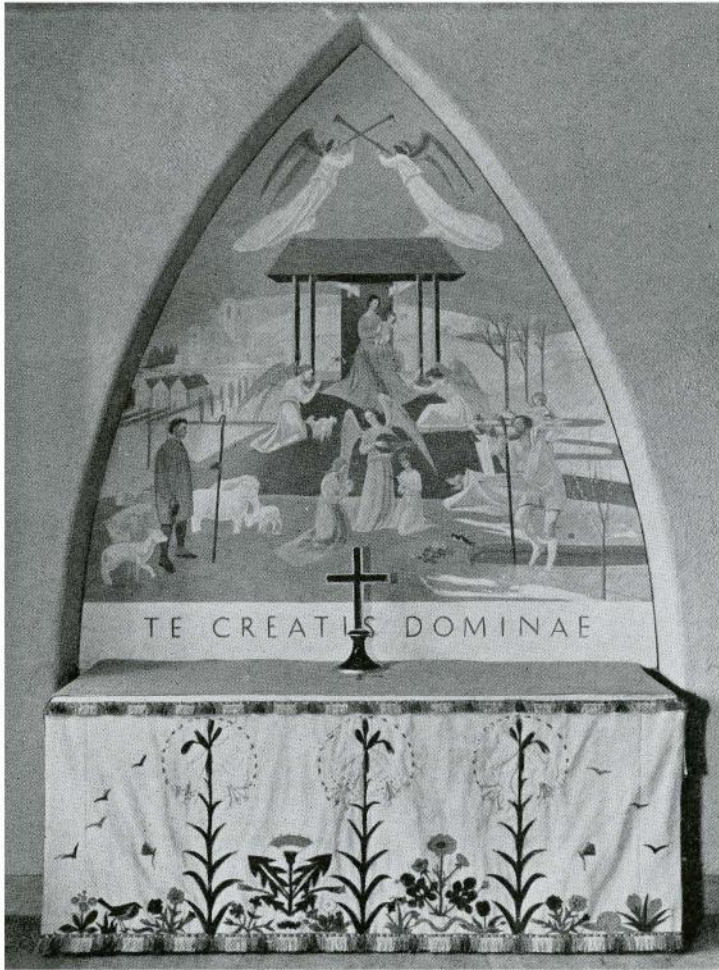
The gracious proportions in form are supported by quality of surface, the facing being of Tondu bricks from South Wales of a warm grey tint varying in tone. At intervals there are courses of a buff-tinted brick, and towards the top of the tower the colours mingle. At the angles of the sacristy and Lady Chapel the bricks are "laced", giving an accent of shadow, and round the base of the whole building there are courses in relief on the principle of rustication. The door and window surrounds and tracery are of warm Welldon stone. On the cross-bars of the circular east window, continued below into a panel of the same stone, there is a Crucifixion, with St. John and St. Mary, carved in bold relief, Romanesque in character, by Mr. Eric Gill. The two porches are on the north, and their wide pointed arches, springing from the ground without break, have keystones carved by Mr. Vernon Hill. That over the porch to the Lady Chapel is vesica-shaped, represent-



EAST END WITH LENTEN FRONTAL



FONT IN WELLDON STONE ON TRAVERTINE BASE



THE CHILDREN'S CHAPEL



ENGLISH OAK SCREEN TO CHILDREN'S CHAPEL

ing a dove within the Girdle of the Virgin, which tradition says was given to St. Thomas, while the keystone of the western porch is carved with the symbol of the Eucharist—birds and grapes.

Tall Pointed Windows

The mullions of the tall pointed windows, three-light in the chancel and two-light in the six bays of the nave, run up to crosses in the head—anticipating a feature in the new Guildford Cathedral, of which Mr. Maufe is the architect. Except for small rectangular windows to the Children's Corner at the base and the organ-loft and ringing-chamber above, the tower has windows to the bell-chamber only, which are pointed and louvred, giving shadow emphasis in the right place, and above is a pattern of small louvred openings in pairs. The pyramid roof of copper is surmounted by a slender gold cross with the Christos symbol.

The moment the church is entered the Gothic form of doors and windows is explained, because the architectural character of the interior is a logical consequence of reinforced concrete vaulting. It is a pointed vault, the windows of the nave breaking in to form groins without ribs. One sees then that the church is buttressed internally by the return walls of the window openings, which are pierced with pointed arches for the passage-ways. There is no break between pier and arch, and the interplay of lancet curves, with changes of tone in the planes of the vaulting, produces a very fine and uplifting effect. This is a case where Gothic form results directly from Gothic principles of construction according to modern methods and materials. The colour effect, a pleasant grey, is that of the concrete surface itself. Where necessary for acoustic reasons the vaulting has been sprayed with absorbent plaster—a double-barrelled "gun" enabling the plaster and fixative to be discharged at the same time.

The centre vista leads direct to the High Altar—with its reredos from the demolished church of St. Thomas, Portman Square, which has been adapted in colour to the new setting—that in the north aisle to the Lady Chapel Altar, and that in the south aisle to the sacristy. The Font, of Welldon stone, set-in at the foot and carved by Mr. Hill, is in the centre at the west end. The organ is divided, its large openings into the church having oak screens carved by Mr. James Woodford. The choir stalls are of limed oak, the chancel is floored with travertine, and a skirting of the same material runs round the church. In the Lady Chapel there is a singularly graceful statue of the Madonna and Child, carved by Mr. Hill, the flat ceiling having a linear decoration in colour by Miss Kathleen Roberts. The Children's Corner and Baptistry have stained-glass windows, in lightly tinted grisaille, very fresh in design, by Miss Moira Forsyth, and for the Children's Corner Miss Elsie Starling is painting a fresco.

Tubular lighting is employed throughout, the nave lights, in sets of four, hanging from "cat-heads", picked out in blue—which is the colour employed for relief in general.

*from the Architectural Correspondent,
London "Times".*

BLAMES FIRES ON ARCHITECTS

Quebec, May 16 (CP).— Faulty building construction “was to blame for all but one of eighty-two major conflagrations in Canada and the United States in the last 100 years,” T. A. Fleming of New York said in an address today before the annual convention of the Dominion Fire Prevention Association.

The exception among major fires, Fleming said, was the San Francisco fire in 1906, which was caused by an earthquake.

Fleming, representative of the National Board of Fire Underwriters, said the greatest fault in the construction of buildings was that architects did not know how “to build a building with greatest resistance to the early spread of fire.

“We haven’t made our architects, we haven’t made our engineers fire conscious,” Mr. Fleming said as he addressed delegates to the one-day convention after Col. E. H. Minns of Ottawa outlined the air raids precautions program in Great Britain and Canada.

Fire claimed 11,000 lives in the United States last year, Mr. Fleming said. More than 60 per cent. of the fires were in homes and 78 per cent. of them were due “to improper ideals of architecture.”

More than 45 per cent. of the victims, he said, were never touched by flame but were smothered by superheated air, which will waft up between walls, open or closed elevator shafts and stairways of faulty constructed buildings.

(Reprint from Globe and Mail).

May 27th, 1940.

Mr. Richard E. Bolton,
1405 Bishop Street,
Montreal, Quebec.

Dear Mr. Bolton:

Your letter of May 20th was awaiting my return to the office today. I have read it with great interest. Of course, naturally I am not critical of all architects as the reference might suggest, but of certain omissions in connection with the planning of public buildings and private homes which allow the spread of fire, fumes and superheated air throughout the entire structure in the first few minutes of the fire and before any report is made.

As per your suggestion, I shall be glad when I have a few minutes’ time to dictate a short article for the Journal of the Royal Architectural Institute of Canada that will, to some extent, set forth our views which are the result of very careful study for a number of years. As soon as the material has been prepared we will forward it to you.

In the meantime, if you happen to have a copy of “Reader’s Digest” for January of this year, you will find therein an article entitled: “Are Your Public Buildings Fire-Safe?” I am

The sensational headline “Blames Fires on Architects”, provoked our Montreal Representative, Mr. Bolton, into writing Mr. Fleming of New York. We publish here Mr. Fleming’s reply and the article to which he refers in his letter. — Ed.

sending, under separate cover, two copies of a bulletin recently prepared on building construction which you may find of interest.

Sincerely yours,

(Signed) T. ALFRED FLEMING,
Director of Conservation.

THE RELATION OF PROPER BUILDING CONSTRUCTION TO FIRE LOSSES

By T. ALFRED FLEMING

Director of Conservation, National Board of Fire Underwriters, 85 John Street, New York, N.Y.

PROFESSOR IRA H. WOOLSON, one of the greatest experts on construction plans, made this startling statement in Chicago a few years ago: “Fifty per cent. of the loss of life by fire and more than that percentage of the property destruction might have been avoided by careful thought at the architect’s drawing board.” At the time this statement was made, Professor Woolson was not only Consulting Engineer of the National Board of Fire Underwriters of New York, but was Chairman of a committee appointed by the United States government for the drafting of a standard code of correct practices in building.

Paul W. Kearney, one of the leading authors on the subjects of Fire Prevention and Fire Protection, in a recent magazine stated: “Two features are most important in building plans: first, fuel and second, drafts. On the consideration given these two phases may rest the future of the building and its surroundings.”

These two statements by unquestioned authorities are somewhat startling. While we all realize that some features of building construction are more hazardous than others, we have frequently failed to realize the vital points in connection with the rapid spread of fire in its incipiency, which places it beyond fire department control and finally results in a conflagration. In the last hundred years there have been eighty-three major conflagrations. The cost of these alone was over a billion dollars. This would be an average of ten million dollars a year chargeable to conflagrations.

In speaking of these tragedies, a leading authority recently stated that: “With the exception of San Francisco, ninety-five per cent. of all conflagrations result from improper and unsatisfactory planning of buildings.”

Careful investigation was made of these statements in an extended survey, and their truthfulness established. We went further, reviewing the causes of all fires with a loss of \$10,000 or over and found that these were largely due to certain ideals of construction which permitted the spread of fire, completely involving buildings before the alarm was given. We found also that although fires of \$10,000 loss or over amounted to one and one-eighth per cent. of the entire total number of fires they were responsible for sixty-three per cent. of the loss in dollars and over sixty per cent. of the loss of life.

An average of 10,000 persons are burned to death each year. Almost half of these have not been touched by flame even enough to singe the clothing they were wearing, proving

that some results of combustion which had spread throughout the building had been breathed by the occupants, searing their lungs and making death inevitable.

It is important for us to know that over fifty per cent. of all fires have their origin in the lower areas, particularly in the basement. Fire cannot burn for five minutes with the usual combustible material available without generating superheated air up to 300 to 500 degrees. This hot air will rise immediately through vertical passageways to the upper sections of the building only to be breathed by occupants who have not even been advised of the fire's existence. This causes immediate death. When the fire continues unmolested for a period of about ten minutes, superheated air is generated up to 800 to 1,000 degrees. This heat rising through stairways, vertical shafts and other vertical openings, will concentrate in the upper sections of the building and will set fire to anything that is burnable in that area. Thus, the entire structure becomes involved before fire department response. Fires of large loss, or conflagrations, are those which assume great proportions before the department arrives and make it necessary for the men to centralize their service on the protection of adjoining properties.

In schools, hospitals and other public buildings, where superheated air, smoke, carbon monoxide and other results of combustion are able to reach hallways and stairways to the different floors, exit is rendered almost impossible. In the application of the same principles to the construction of homes, it can readily be seen that our homes are not built to satisfactorily cut off the basement, where the greater fire hazards are found, from the upper parts of the building. If we understand what really happens when a fire starts, we will be able to construct our buildings so as to cut off entirely by fireproof enclosures the known hazards of the structure, making it impossible for death-dealing fumes to reach any avenue

to the upper part of the building, and by the operation of a fire detector in these dangerous areas will be able to secure immediate knowledge of an outbreak so that the department may be called.

The necessity for enclosing stairs and elevator shafts with fire-resistive partitions and fire doors is generally well understood. This is of absolute importance in all types of structures. No fanlights, door panels or windows of any kind should be permitted in such shafts. The stairway protection should be so complete that once a person is within the shaft he is safe until he reaches the street exit.

What we have said about stairways and elevators is equally applicable to all types of ventilating or warm air ducts. The best fire department in the world will be handicapped in combatting a blaze that has these available openings for its spread. No vertical shaft should discharge into an attic but should be continued through to the outside.

In the application of some air conditioning systems, we have found many of the rules of correct fire-resistive construction violated and after many serious losses, the following standards of construction for air conditioning have been evolved:

First: all ducts which require insulation must be lined with a non-combustible material.

Second: all air passages must be equipped with automatic dampers which will release on the presence of heat.

Third: automatic means must be supplied for stopping the fan system in case of fire.

Fourth: nothing less than the consistency of spun glass can be used in the filter system.

Fifth: it is exceedingly advisable that all refrigerating units be installed outside of the general duct system and the cooling effect transferred by the circulation of brine or similar product.

NOTICE

The Executive Committee of the Institute wishes to advise the membership that arrangements are being made with the Dominion Fire Prevention Association for the circulation of a pamphlet entitled "Building Codes: Their Scope and Aims," published by the National Board of Fire Underwriters and containing the latest information on fire prevention.

PROVINCIAL PAGE

ALBERTA

The lack of security for the repayment of loans in the Province of Alberta steadily makes the shortage of housing more and more acute. The total loans in Canada under the National Housing Act now amount to over fifty-two and a half millions of dollars of which Alberta has received just nothing. The city officials of Calgary got something of a shock when a woman, in all seriousness applied for permission to install water, gas and sewage facilities for a dog kennel which she proposed to convert into a dwelling for herself. Permission being refused, one is left to wonder what is her next resort. There are numbers of persons in the cities of Alberta living in more or less adapted garages. This is, of course, contrary to regulations. It reveals the situation.

This extreme lack of housing accommodation is arousing public attention more and more. The chambers of commerce both in Edmonton and Calgary are examining the situation and various private interests are also making tentative efforts to set on foot some practicable scheme.

In Edmonton the contract for the fourteen room Westmount High School has been let to H. G. Macdonald & Co. for about \$119,500; that for the four room Glenora Public School has been held over for reconsideration. At the Edmonton Auto Camp preparation is being made for additional accommodation for housing twenty parties in five units of four sections each at an approximate cost of \$25,000.

The town of Vermilion is showing considerable activity. In place of the fine High School which was destroyed by fire some months ago a new High School is to be built at a cost of about \$33,000. Messrs. Rule & Wynn of Edmonton are the architects. Other new works in Vermilion are, the Vermilion Hotel, a meat market, a repair and machine shop and a furniture store. The provincial government department of public works is establishing a plant for road making equipment and for the repair of road making machinery. It is expected that the town will be served with natural gas before the beginning of October.

—*Cecil S. Burgess.*

BRITISH COLUMBIA

War clouds have no power to dampen the enthusiasm of the Y.M.C.A. in Vancouver. At the outbreak of the last war, the Association was embarked on a building programme, which ended disastrously owing to the failure of finances. Now, after many years, its building urge has again blossomed to be greeted by another war, but undaunted it goes forward, and a building contract has been awarded and work begun on a reinforced concrete structure designed in accordance with the most modern Y.M.C.A. requirements by architects McCarter & Nairne.

We wish the Y.M.C.A. complete and deserved success in its second attempt to provide the city with a building worthy of its standing.

Another building project of importance is the new Shaughnessy Military Hospital which will involve an outlay of approximately \$720,000. The new buildings will be of reinforced concrete construction, comprising a four-storey hospital building, a three-storey administration building and a one-storey attached auditorium, designed by architects Mercer & Mercer.

This is the seventh major hospital project that has been undertaken since the early part of 1939. Hospital construction for this period involves an outlay of several million dollars.

Two months ago we commented on the influx of young men into the Institute, seven members being added to the register in one month. The tide gives evidence of rising higher, judging by the number of applications for admission to the final examination of the Institute which will be held this month.

—*David Colville.*

MANITOBA

As our council meeting was quietly meandering through its routine business and we were leisurely speculating how soon we could get away, we were aroused into activity by one of the members of council who was aggressively waving two sheets of paper in the air and irately asking if any of the members present had read Housing Administration Bulletin M.S.40-2. We discovered that not only had we not read the bulletin, but that not one of the architects present had so much as received a copy through the mail.

Bulletin M.S. 40-2 is called "Foundations in the Winnipeg District" and was issued "because of unusual foundation conditions encountered in the Winnipeg area." Briefly summarized, the following regulations are to be enforced:

- (1) Inspection of site by a competent authority when the excavation is completed, followed by a first report recommending the type of foundation suitable for the site, if necessary a foundation plan, after which the competent authority is to make a second report certifying that the recommendation submitted to the owner has been faithfully performed; wherever possible, proper foundations will be designed before excavation begins.
- (2) "Competent authorities" are those "architects or engineers only who are able to prove by experience and ability that they are competent to determine and design proper foundations."
- (3) A regular fee of \$3.00 is recommended although the competent authority has the option of arranging for a more remunerative fee.
- (4) The bulletin concludes with a list of competent authorities approved to date; a list of seven names among which is one firm of architects; a list which may be added to from time to time.

The bulletin is a step in the right direction. We endorse any move to improve construction in the small house field; but we feel that in a matter of this kind the architectural and engineering associations might have been consulted. We regret also, that the Housing Administration, by singling out only one firm of architects as competent authorities to date, should have conveyed the impression that all other members of the association will have to prove their competence in one of the most elementary requisites of a registered architect.

Since government loans are now limited to \$4,000, this bulletin is primarily concerned with the small house in the \$2,000 to \$6,000 bracket. It is in just this class of home that economy is one of the chief considerations and excepting for special locations such as river lots, filled in lots, etc., we have found in Winnipeg that a foundation of reinforced concrete walls and reinforced spread footings properly designed, is the most suitable for sound economical development. The great deal of unfavorable comment which has been made about Winnipeg soil conditions is based to a large extent on faulty construction by our earlier home builders. There is very

little trouble due to settlement where a house, in the cost limits referred to above, has a properly reinforced spread footing; the trouble usually results from heaving of basement slabs due to increase in the moisture content of the soil immediately beneath the basement slab. But this is a condition which might occur with any type of foundation—even the most expensive.

Perhaps the best solution for the proper supervision of small house foundations would be the establishment in Winnipeg of a branch of the Housing Administration. This office would not only pass on all western Canada loans, which would also speed up the granting of loans, but could take over the inspection of foundations. We might also suggest that an office of this kind would be in an excellent position to keep soil and foundation records and perhaps by co-operating with those of the building trades most familiar with foundation work, establish over a period of years, a comprehensive analysis of local soil conditions which would be of scientific value.

—*Peter Dobush.*

ONTARIO

The position of the construction industry in relation to the war effort was discussed by the National Construction Council at its annual meeting in Toronto recently. The Council repeated its offer of last September to place its personnel and organization at the disposal of the Federal Government, in the belief that they could be of material assistance in the handling of the many and varied projects required to meet the needs of the hour. The future of the industry also was discussed; with particular reference to the conservation of skilled labour, the training of apprentices and the difficulties of transition to a peace-time economy. These problems were submitted to the incoming executive. The elections to the executive include A. S. Mathers, (2nd Vice-President), Burwell R. Coon and Gordon M. West.

The Council of the O.A.A. has decided to add to its number one more member from the Toronto District, in order to overcome the occasional difficulty in obtaining a quorum. The new member is R. Schofield Morris.

The annual meeting of the Toronto Chapter was held at the Military Institute, and was followed by dinner and free-for-all entertainment. The new executive consists of Jocelyn Davidson, (acting Chairman), R. R. Moffat, Bruce H. Wright, W. L. Somerville, John Parkin, R. A. Fisher, Earle L. Shepard (honorary secretary), and the writer. Eleven members of the Chapter on active service were not forgotten; and the secretary was asked to write them, expressing the good wishes of all.

We regret to record the death of Willam F. Sparling, whom many architects will remember as the winner of the competition for the design of the Masonic Temple, at Yonge Street and Davenport Road, Toronto. After apprenticeship with Burke and Horwood, he became a member of the O.A.A. in 1905. Among the other Toronto buildings for which he was responsible are the Granite Club on St. Clair Avenue, and the Metropolitan Building at Adelaide and Victoria Streets.

—*Gladstone Evans.*

QUEBEC

It is a bit difficult to sit down and write at this trying moment, involved as we are in the most serious war of all history, the outcome of which holds the utmost significance for our civilisation and way of life. While this is being written the situation is grave but we must have confidence in ultimate victory for our side and its just cause and in the meantime carry on such tasks on the home front as may best hold the empire and its institutions together, even so humble a task as the Provincial letter.

The new rooms of the Association have been occupied for a month and all who have seen them are well pleased with the work of the Committee which with limited funds but unlimited energy and imagination have transformed office space into attractive quarters suitable for the purpose of a profession such as ours. We appreciate particularly the work of Messrs. Bostrom, Smith and Wiggs as well as others who have assisted.

Ten names have been added to the Register since the beginning of the year and we understand there are several who have made application to sit for examinations in the near future. The urge to enter our polite profession seems to grip as many as ever and we only hope they all find useful employment in their chosen field.

It is with great regret that we record the death by accident on May 17th of George E. Auld a short time after he had departed for service in the Royal Canadian Air Force. His plane crashed while on a flight with some other officers from the Trenton Air Field. Our deepest sympathy goes to his family.

Mr. W. S. Maxwell left on May 10th for an extended visit with his daughter who is living in the near East. He sailed on the Italian liner Rex and for some time we were concerned about the possibility of outbreak of hostilities on his course of travel, but we now know definitely that he arrived safely at Rome on the 20th instant, and we trust that from there on nothing untoward has happened. Before his departure the Arts Club gave a dinner in his honour and his friends came out in force to wish him a safe voyage, good luck and a speedy return. It was an evening long to be remembered with its camaraderie and exchange of good cheer and reminiscences. A number of Maxwell ex-employees were there as well as "ancients" of the good old days and when the dinner and its speech-making was over they broke up into groups and talked to a late hour.

—*Harold Lawson.*

R.I.B.A. LIBRARY CATALOGUE

The Secretary wishes to draw the attention of the members to the R.I.B.A. Library Catalogue, containing a complete index of all books, periodicals, etc., in the R.I.B.A. Library, which has been purchased by the Institute and is now in the R.A.I.C. office, 74 King Street East, Toronto.