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R.A.I.C.
JOURNAL
JUNE 1947

THIS issue will be a surprise to many people who were not aware that a fully fledged modern movement was to be found west of the Rockies. It would be false to think that it was confined to only domestic buildings because schools, libraries, factories and other buildings in the contemporary manner have been built of a standard of design perhaps not equalled and certainly not surpassed, in the rest of the Dominion. In the domestic field, British Columbia leads the other Provinces: it would be interesting to know why, and Mr. Pratt who organized the B. C. section of the present issue, gives us no real clue in his article. One thinks first of isolation, which has not been a popular word west of the Rockies since the days of the Marquess of Dufferin and Ava whose memoirs we read a long time ago with great interest. We remember that he arrived in Vancouver from San Francisco several years after a railway had been promised, and the disappointment, and indeed rage, of the inhabitants with the Federal Government was made very clear to His Majesty's representative. A Vice-Regal route was arranged with arches on which highly uncomplimentary remarks had been posted, and the procession took a devious course through the city ignoring the arches altogether. We gather that those feelings of suspicion toward the effete east have never been quite eradicated. Certainly the Rockies are a physical barrier that isolates British Columbia geographically. But physical isolation in a world knit by air and radio cannot account for the higher standard of contemporary architecture in that Province. New Zealand is completely isolated and has contributed nothing to the architecture of our time. Russia, before the war, was physically and ideologically an island in Europe and Asia, but, so far as we know, has shown no spirit of adventure in the plastic arts. Its Palace of the Soviets in which one would have expected great and astonishing originality is dated and stereotyped in the manner of the Paris Exposition of 1923. Most of its post revolutionary buildings follow Czarist models.

ONE could point to other examples which explode the theory of a vernacular arising out of a country cut off by mountains or seas from other states. Probably the first modern building in Canada appeared in Vancouver. It was a church and created a sensation at the time. We are writing from the country and cannot check the date, but, if our memory serves us, it was not only modern, it was Anglican; the date was around 1929, and it was heated by radiant heat with coils in the floor. It was rather an angular sort of building which reminds us of St. Augustine's remark on being told that the fair haired Britons were "Angli". He replied "Non Angli sed angeli". This church was more angular than angelic — though for all we know it is evangelical. It is fortunate that its immediate, or later influence, was slight. Contemporary architecture in B. C. is less individualistic, or it would not be noticeable as a movement. We hazard the guess that B. C. owes much to Cape Cod which was "fashionable" there for a considerable period. From that particular manner which has no formality, no symmetry and, in its most romantic aspects, no single dominating material like brick, it was easy to swing to a modern design in which the sun, the view and topography dominated the plan, and superb native materials, like wood, formed the construction. We in the east passed from Georgian or habitant though modernized versions of each, and the break to the free plan has been more painful. We are also hampered by more rigid building codes in urban areas. All this in no way lessens the credit due our confrères in the west. They have proved to their clients present and future, by outward and inward visible signs, that the modern house is the only house for a modern family in British Columbia. Nowhere else in Canada has that proof been given, and it is little wonder that the people in the east have shown so little enthusiasm for contemporary domestic design.

WE should like to endorse the agreement between the R.A.I.C. and the Film Board, which hopes to build up a library of photographs of Canadian buildings, Such a library can be of enormous use to the architects of Canada. We can write with knowledge of a thousand occasions when we have been asked to supply photographs of buildings for magazines or national or international exhibitions. On most occasions we failed lamentably. A library such as that contemplated will provide a reservoir which can be used for all such purposes. It remains now for the architects to supply the photographs and that, on national, patriotic and professional grounds, we are sure they will do. Mr. Hazen Sise deserves great praise for the dogged determination with which he has pursued this matter to its present conclusion. It cannot, to be successful, stop there.

Editor

CONTEMPORARY DOMESTIC ARCHITECTURE IN BRITISH COLUMBIA

By C. E. PRATT

THE development of Domestic Architecture in British Columbia shows a definite trend toward contemporary design. This is certainly true throughout the West coast of British Columbia and the United States. Many people ask why we have been able to convince clients that they should build contemporary houses here when so little advance has been made in public reaction in other parts of the country.

One of the basic causes of the change was that cost of construction prior to the war in British Columbia was considerably below that of the East. This forced any architect determined to support himself financially to undertake houses in the $3,500 to $5,000 class. It was found in carrying out this work that the client who could only afford a $3,500 house had the best approach to contemporary architecture. He was dissatisfied with what he had in the past and by using the simplest form of construction he was able to obtain something more liveable.

In nearly all cases it was difficult to convince the client contemplating a large expensive house to build in a contemporary manner. This client's thinking always reverted to the traditional and no amount of persuasion, propaganda, etc., could jar him from the traditional approach. However, in some ways this was a very desirable type of client. He would have probably a greater cash outlay and therefore the regulations and restrictions enforced by the loan companies would have no bearing. To circumvent these regulations has been the bugbear of the contemporary architect in British Columbia. The flat roof was first attacked as not being practical. Being convinced on this point they reluctantly passed judgment on the elevations as being not good looking. So it was rather an uphill battle and the contemporary architect continued his search for the cash client with a healthy, contemporary view point. Such a catch almost merited mention in the local Journal of Commerce, and was the cause of much glee to the successful architect.

Nearly all houses shown represent a nasty battle with the mortgage companies in the planning stage. It is comforting to know that in all cases the finally erected house has completely changed their viewpoint to quite a degree of mild enthusiasm.

Prior to the recent war domestic architecture was in a rather sorry state. The architectural styles ran the gamut from "Cotswold Cottages" to the *au moderne* of the corner windows, bulls-eye windows, etc. An architectural style indicated the firm of architects, and to borrow or steal this "character" from some architect was frowned upon as unethical. Modifications were made of course to accommodate the conditions attendant upon the Western climate. These modifications consisted of larger drain pipes, etc., to take care of the heavy rainfall. The three popular styles were Tudor, Cape Cod and Georgian, and the architects who championed these three styles, of course, were famous and enjoyed a very lucrative business. This then, was the situation that confronted the young and enthusiastic architect, aspiring to persuade an unappreciative public to build in a more logical way.

The photographs of the following Vancouver houses are examples of some contemporary efforts. They have been completed to a stage where it was considered worthwhile to photograph them. There are now being completed several houses that should have been included in this article, but are not adequately finished to be photographed. These houses do indicate the influence of various schools of modern thought. However, it is particularly fortunate that some effort has been made to make these houses indigenous to British Columbia, irrespective of their leanings toward any one school of thought.

The problems particular to British Columbia that influence its architecture are:—

(a) Rainfall: There is an average annual rainfall throughout British Columbia of 30 to 40 inches. The months of November, December and January are very depressing as the rain falls for weeks on end without let up. The house, if not properly planned, can become a prison. It is necessary that the occupants of the house can walk completely around the house and yet be sheltered. One reason for integration of the car porte is that it affords a suitable play area for children during the wet weather.

An overhang for a one-storey house with an 8'-0" ceiling can well be from 4 to 5 feet, depending on how much sun is required or not required on the glass face. It is very difficult to obtain an overhang of this extent with a pitched roof. Some architects and contractors who have been timid in the use of the flat roof have tried to obtain this overhang with pitched roofs, but only with the perfect rectangle or symmetrical shape does it work; even then it does indicate greater cost. The recent rise in the price of cedar shakes (so dear to the heart of the average British Columbian) may still further force the hand of the home builder into the flat roof. A generous overhang also cuts down overhead costs as the weather in British Columbia is very hard on painted surfaces. The overhang is particularly required on the east and north walls as protection against the driving rains.

(b) Sunshine: All examples shown have wide glass areas. In most cases the glass areas are divided by

vertical structural wood mullions with the glass beaded in with quarter round. This form of construction probably arose due to the shortage of steel during the war. In such cases where two stories occur if no overhang is provided on the lower storey the summer sun is too strong and heats up the lower floor excessively. A solution that makes possible the easy circulation of air around the windows is now being constructed for house page 184. These are shutters 2' x 4' individually hung on a rod running the continuous length of the house. They are placed 4'-0' out from the window face and can be individually adjusted to the comfort of the owner. Glass areas have been appreciably increased over older methods of construction. There has been, however, a concentration of glass on the one view or desirable aspect, and blank walls where no glass is required.

(c) View and Aspect: A view is accessible in nearly fifty per cent. of houses erected in British Columbia. In Vancouver the varying heights of land make possible some view in one or more directions in most cases. Some houses, however, are unable to obtain a view at all. In certain cases this has not been cause for a defeatist's backyard, usually seen in most cities with upturned ash can and overgrown with weeds. This condition is seen and statistically substantiated on lots on the north side of an east-west street. The shade cast by the house on the north side makes the shade area un-usable. In this particular respect an amusing incident occurred while the house shown in photo, page 192, was being photographed. The neighbour across the street could not understand why a photograph should be taken of a "cow shed", as it was termed. During the course of his wrathful condemnation, it subsequently turned out he was only indignant that the owner of the new house was not interested in keeping tab on the passerby in the street, nor by any manner of means looking at the "critic's" house, but more interested in the view obtained from an adjoining golf course. This thinking is probably a left-over from the frontier days (not long distant) when the cabin was always orientated to the trail so that the gossip columns could be maintained.

(d) Exterior Treatment: Natural unpainted cedar boards untreated and left to weather is a serviceable wall covering. On several of the accompanying photographs this is shown. However, it has to be treated very carefully because it can become very boring and uninteresting if the house is completely submerged with the rough siding. It can become quite charming if contrasted well with more sophisticated materials which should be used in the more protected confines of the exterior. Exterior treatments are also used in interiors. The house in photo, page 187, utilizes the 3" painted drop fir siding indicated on elevation for one whole wall of the dining room. This is one continuous area running past the glass area to the outside.

The house in photo, page 184, uses bevelled cedar siding for portions of the outside and continues in around the kitchen and dining room wall. There again it has to be delicately handled in contrast with more intimate objects such as built-in bookshelves, buffets, etc. Masonry is not used to any great extent as its cost prohibits its use. A type of masonry wall not unlike the stonework seen in Brazil is used and very successfully. It is not erected by masons but by labourers using a sliding form and "tucking" the granite chips flat to the form and filling all the voids with mortar. This is a very cheap wall and very effective.

(e) Plan: In the past issues of the *Journal* it has been noted that many of the eastern houses illustrated do not indicate the flexibility and open feeling of the contemporary plan. Individual photographs of different rooms do indicate a contemporary plan, yet the mock up shows a more or less cellular type plan. The plans shown do indicate a tendency to eliminate all unnecessary interior partitions. There is a feeling that the southern or view aspect is welcome and not shut out. In one case that comes to mind, the house is planned to have no curtains on the south side. They are expensive and bleach when exposed to the sun, so the owner plans to erect a curtain wall 40'-0" from the south face of the house. This curtain wall is a thick, neatly trimmed hedge of holly. At night when curtains are normally drawn, a spotlight will focus on the holly trees and surrounding garden. This eliminates the rather unsightly curtain which at its best gives a closed-in feeling and if not illuminated at the top can be very dull and drab.

Radiant heating has influenced the plan to a great extent. The economy of the radiant heating system depends a great deal on the number of zones required. An economical system might have all rooms on the one zone. This forces all partitions to be installed after the house is finished. Cupboards are on castors and can be easily moved to make the room larger or smaller as required. Partitions are thin and designed to act only as a baffle. Exponents of the copper and wrought iron pipes have widely circulated information on the merits of each. For a one-storey house, if copper is used the heating generally is in the floor slab. There are merits to each but it is found that heating the ceiling gives a greater flexibility of plan, in that furniture and rug placement can be quite flexible and not have to be pre-determined.

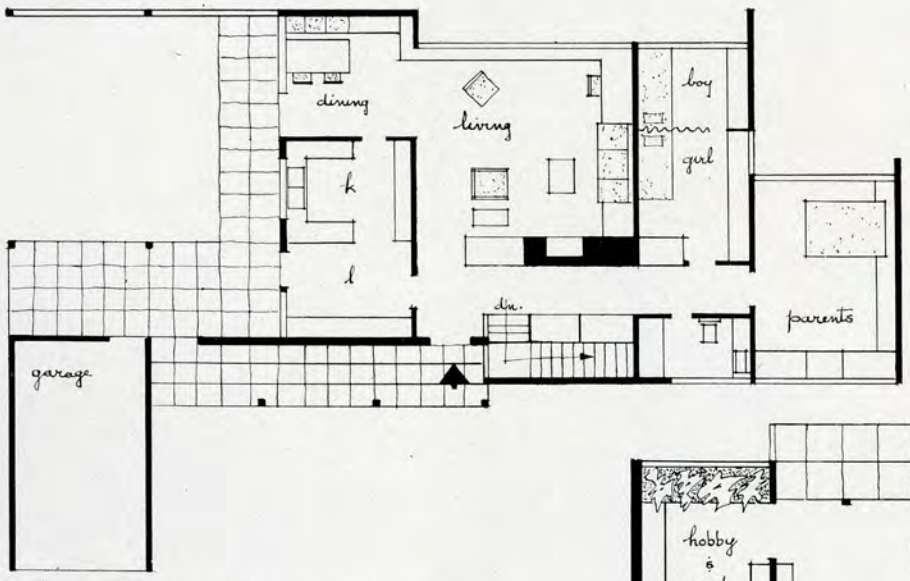
The title heading of this article would infer that national boundaries, topographical and climatic differences do influence architecture. It is hoped that this article indicates what these differences are, and some of the solutions attempted by local architects. However, so that one would not be led to believe this would eradicate the possibilities of pre-fabrication, it is to be emphasized that these differences are essentially details and have no more bearing on the structure and plan than the addition of two windshield wipers for a car shipped to a rainy

(Continued on Page 219)

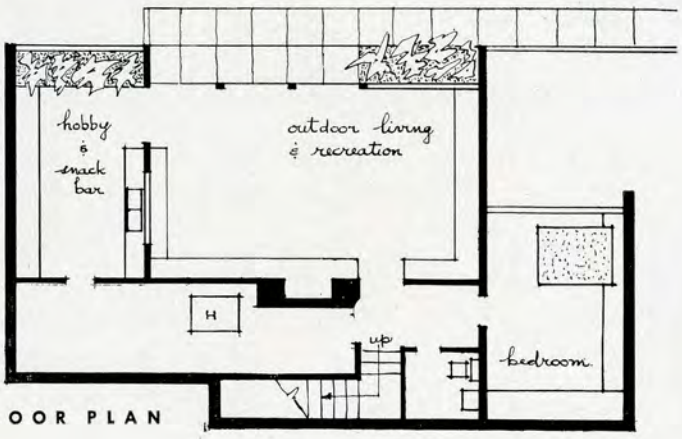
Photograph by Tony Archer

HOUSE OF MR. AND MRS. R. A. D. BERWICK, WEST VANCOUVER, B. C.

R. A. D. BERWICK, ARCHITECT



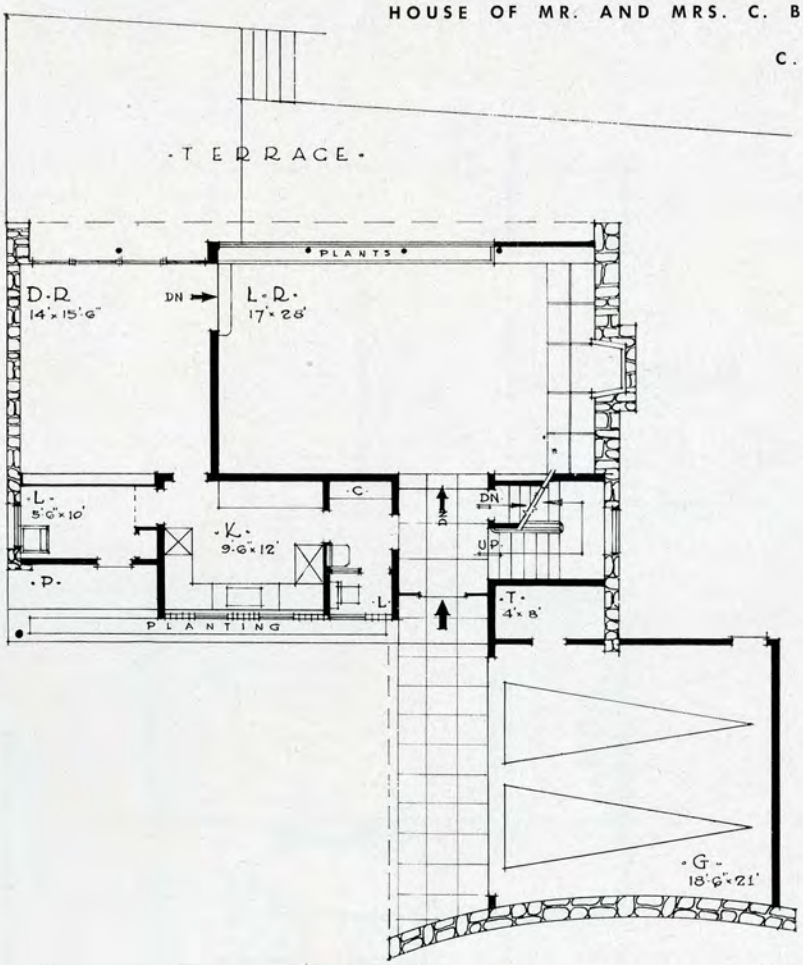
MAIN FLOOR PLAN



LOWER FLOOR PLAN

HOUSE OF MR. AND MRS. C. B. K. VAN NORMAN, VANCOUVER, B. C.

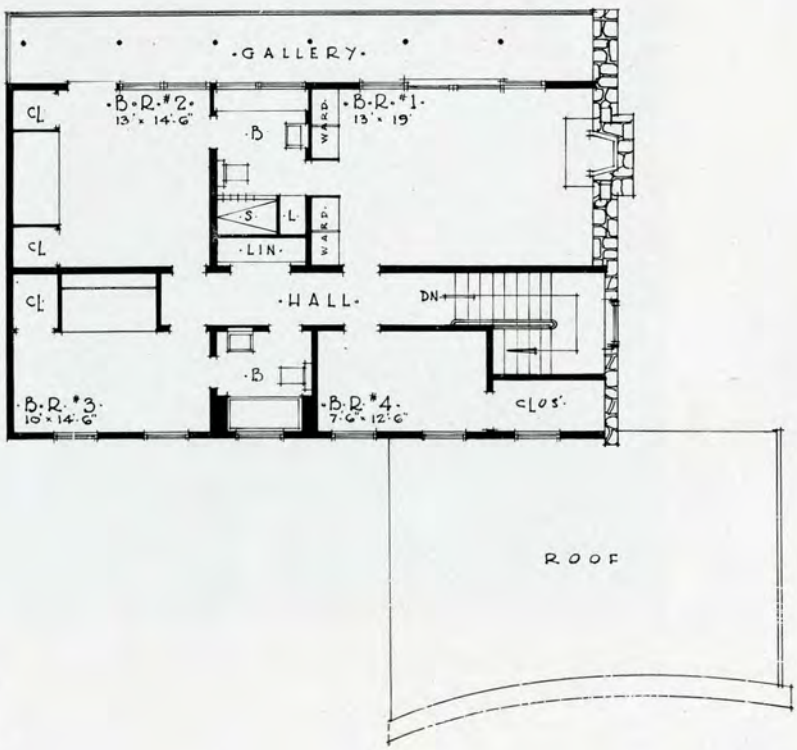
C. B. K. VAN NORMAN, ARCHITECT



GROUND FLOOR

Photographs by Tony Archer

TERRACE ELEVATION

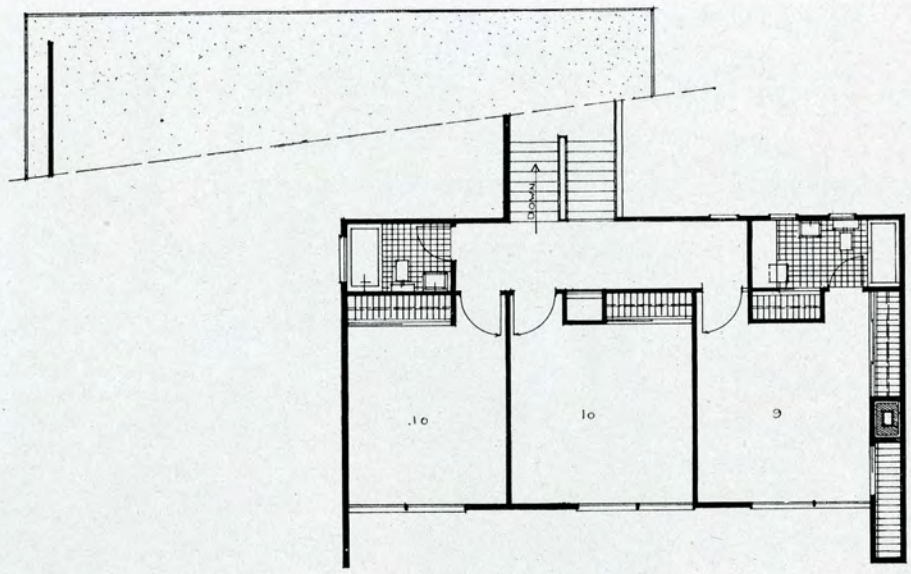


SECOND FLOOR

Photographs by Tony Archer

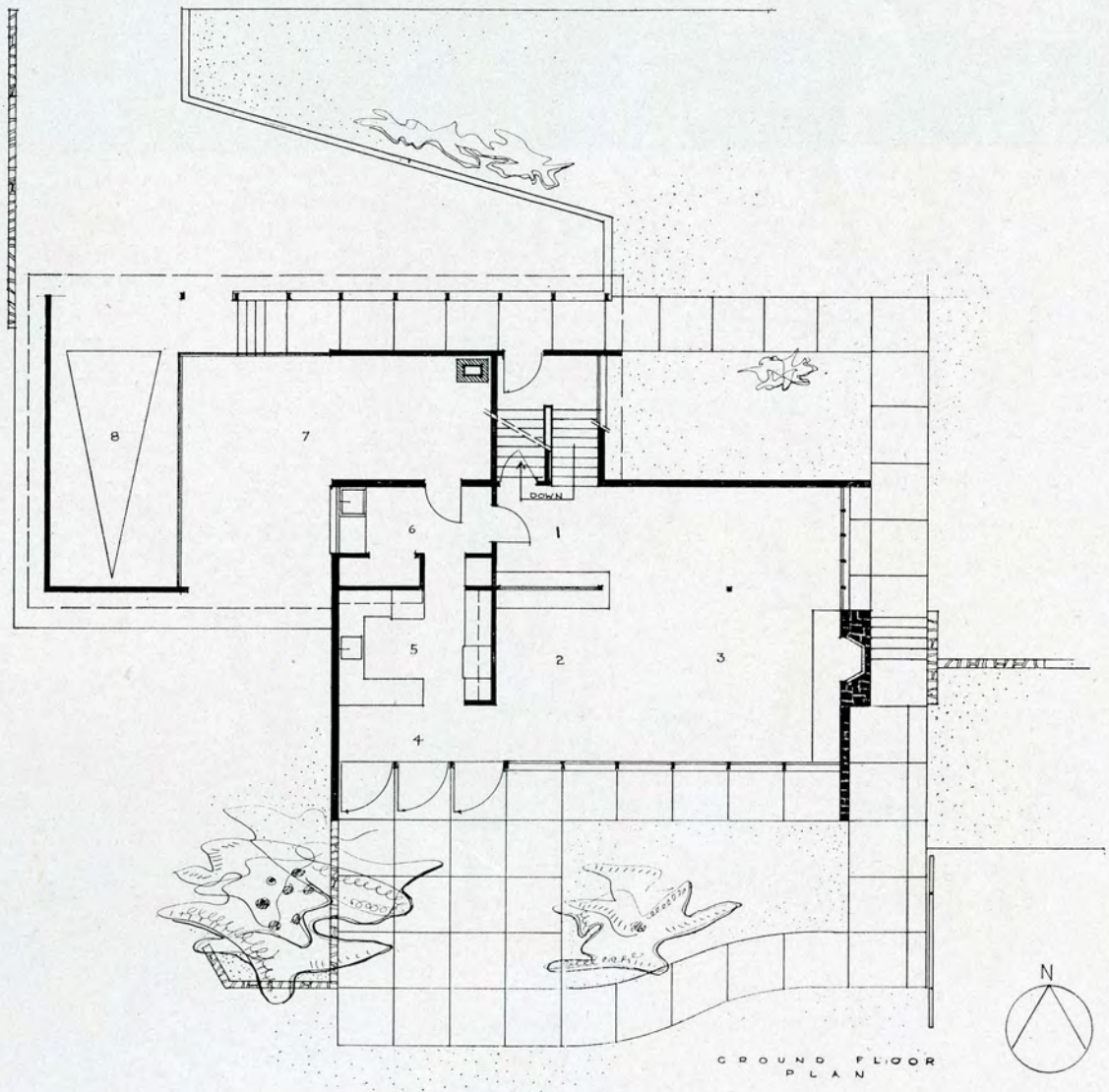
HOUSE OF MR. AND MRS. C. E. PRATT, WEST VANCOUVER, B. C.

C. E. PRATT, ARCHITECT



1 Entrance Hall
2 Dining Space
3 Living Room
4 Dinette
5 Kitchen
6 Laundry
7 Service Court
8 Car Port
9 Master Bedroom
10. Children's Bedrooms

SECOND FLOOR PLAN

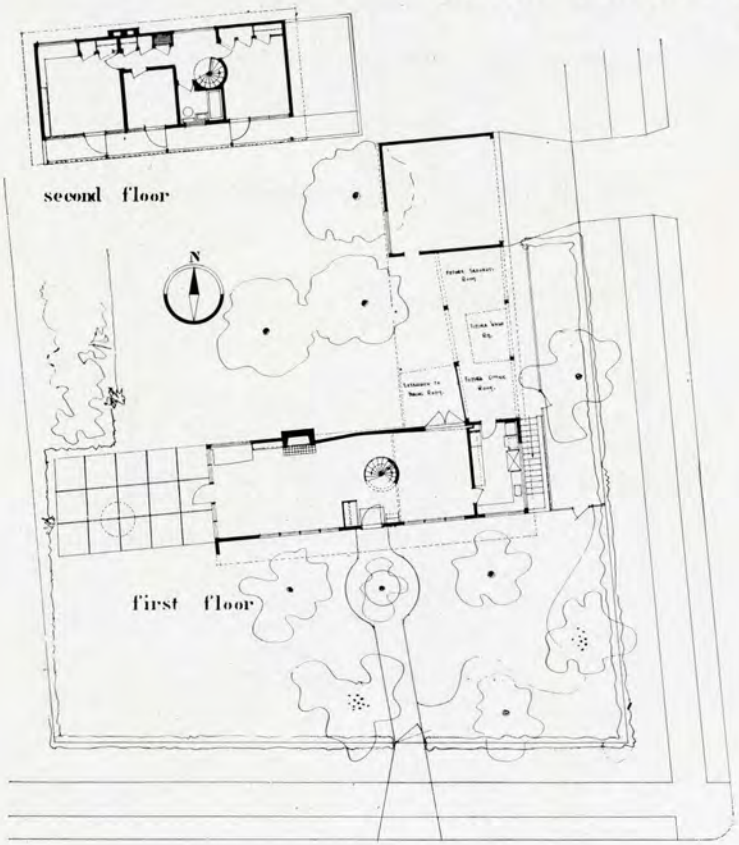


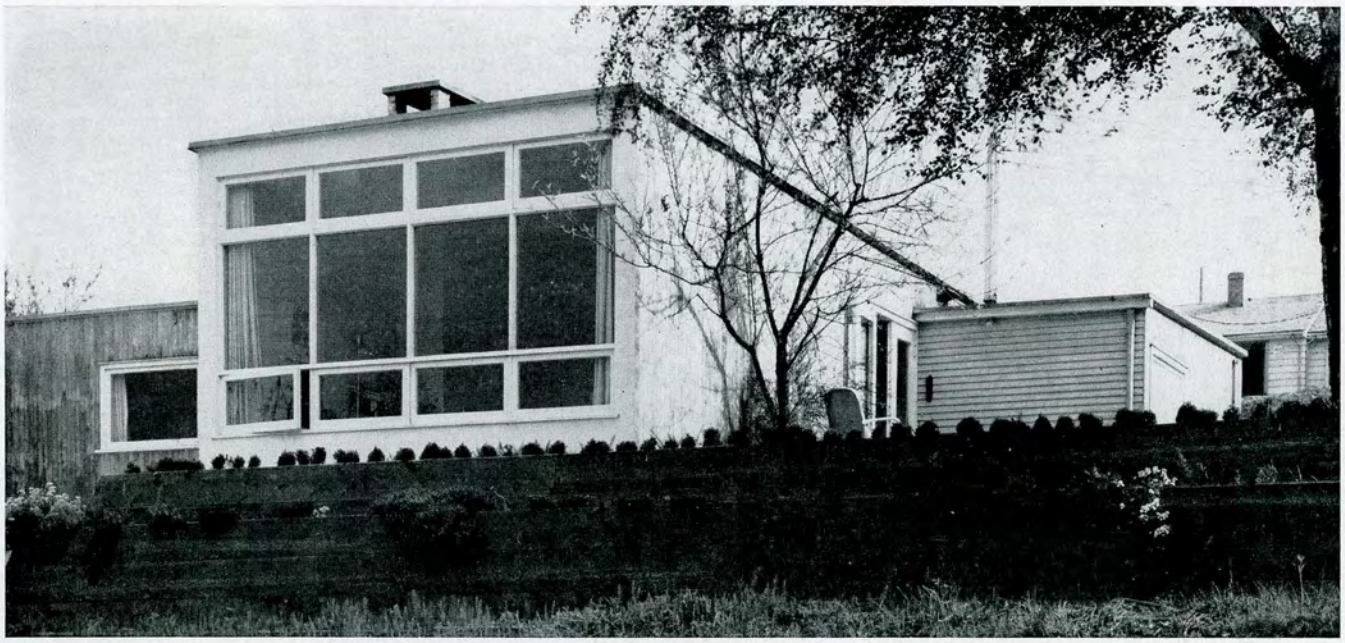
GROUND FLOOR PLAN

Photograph by Tony Archer

HOUSE OF MR. AND MRS. PETER THORNTON, VANCOUVER, B. C.

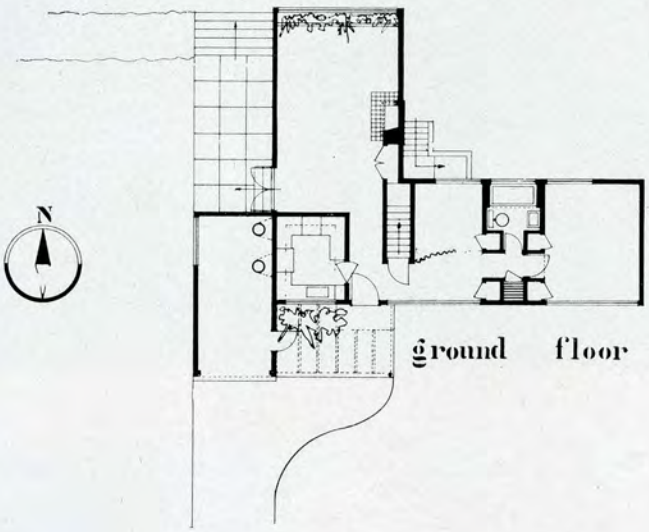
PETER THORNTON, ARCHITECT

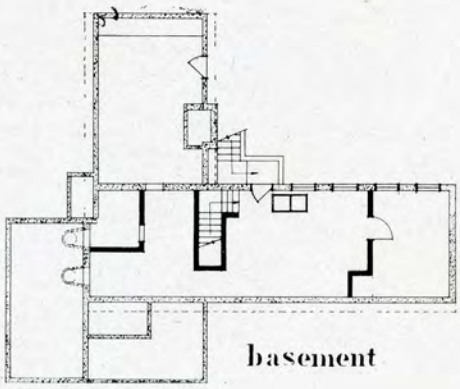




Photograph by Tony Archer

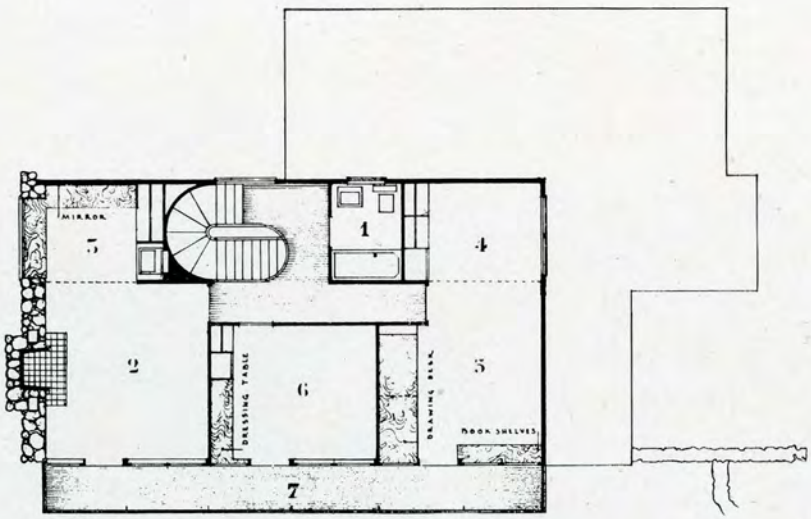
HOUSE OF MR. AND MRS. J. NEWMAN, VANCOUVER, B. C.
GARDINER AND THORNTON, ARCHITECTS



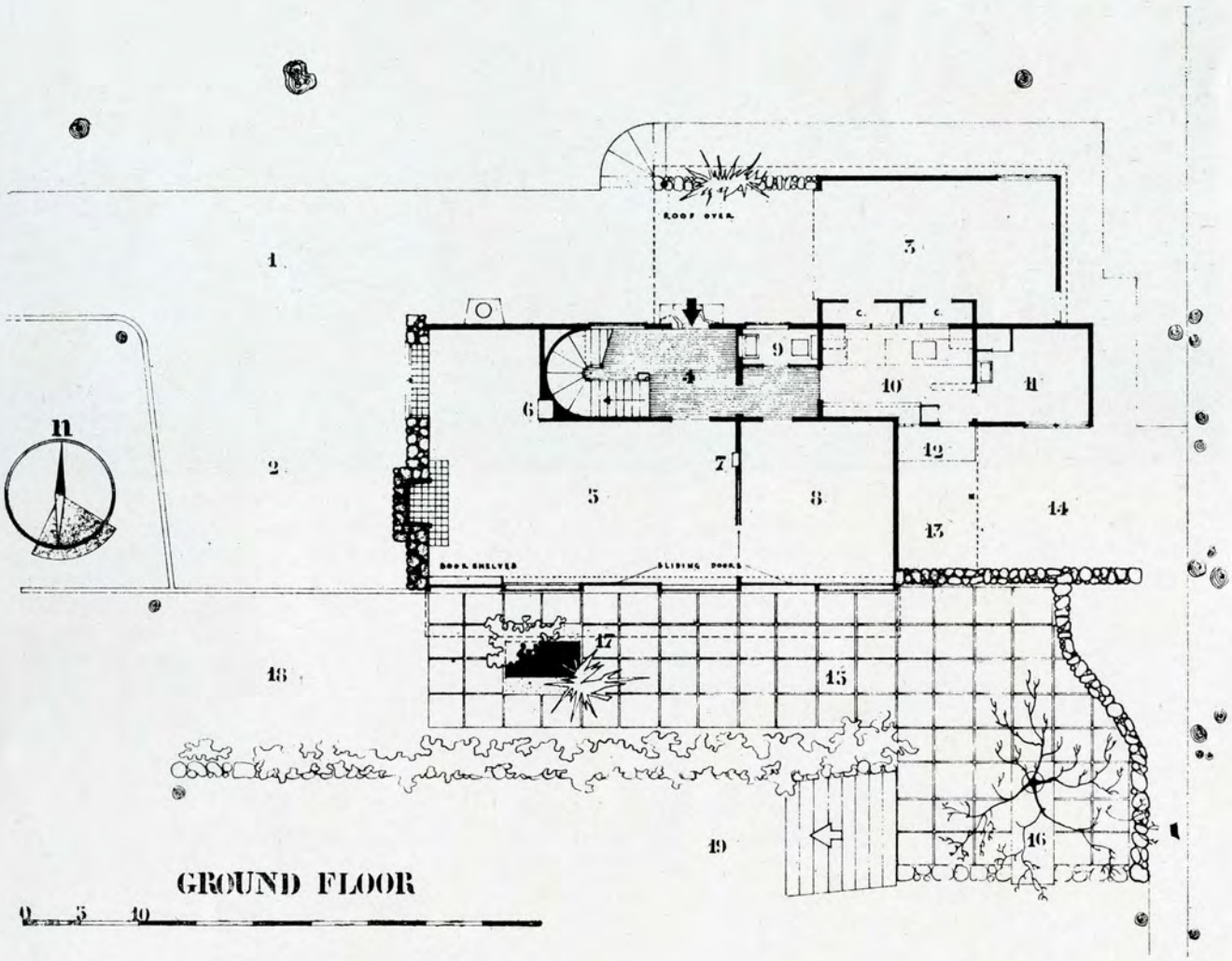


HOUSE OF MADAME RUNGE, CAULFIELD, WEST VANCOUVER, B. C.

GARDINER AND THORNTON, ARCHITECTS



FIRST FLOOR



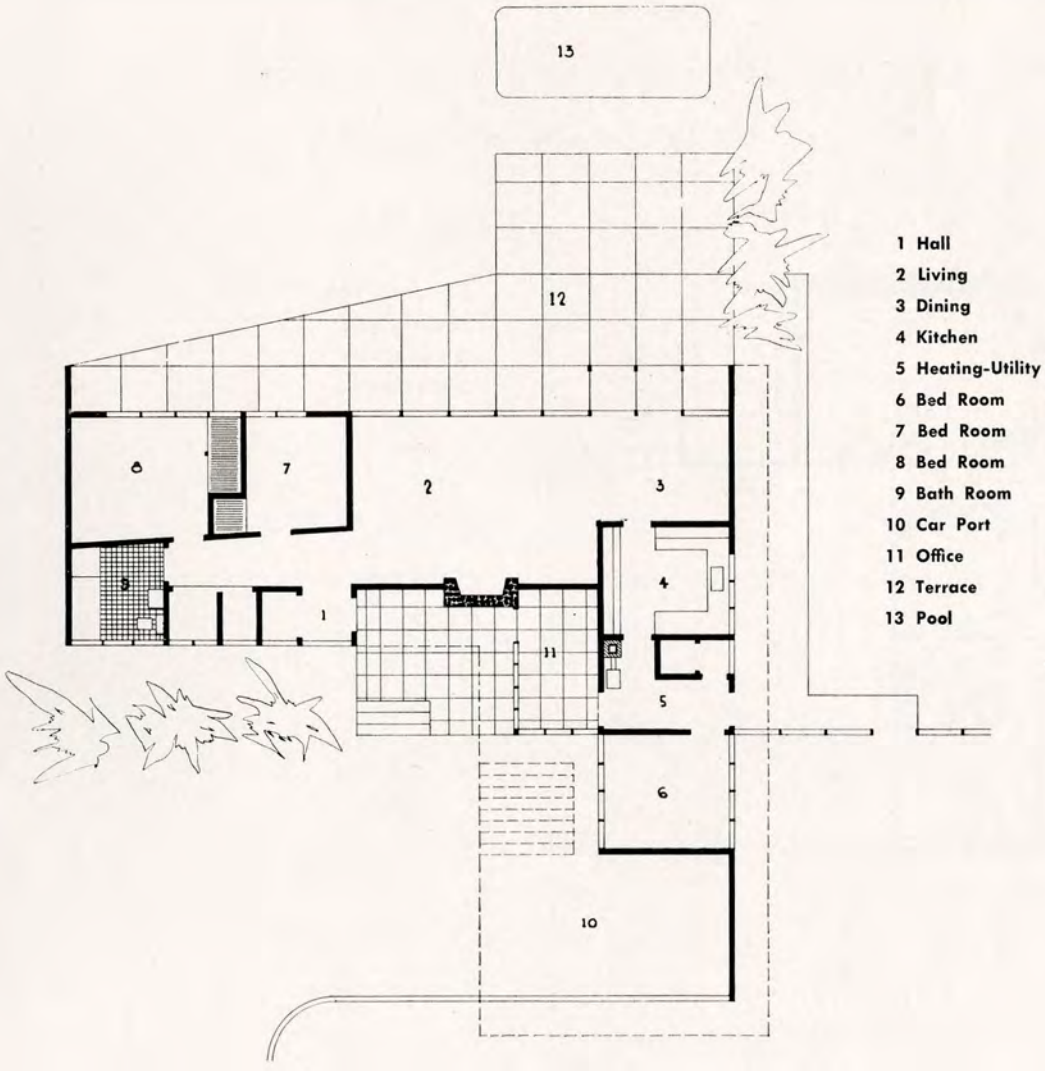
GROUND FLOOR

HOUSE OF MR. AND MRS. J. ERIC ALLEN, CAPILANO HIGHLANDS, VANCOUVER, B. C.

SHARP & THOMPSON, BERWICK, PRATT, ARCHITECTS

Photographs by Tony Archer

TERRACE ELEVATION

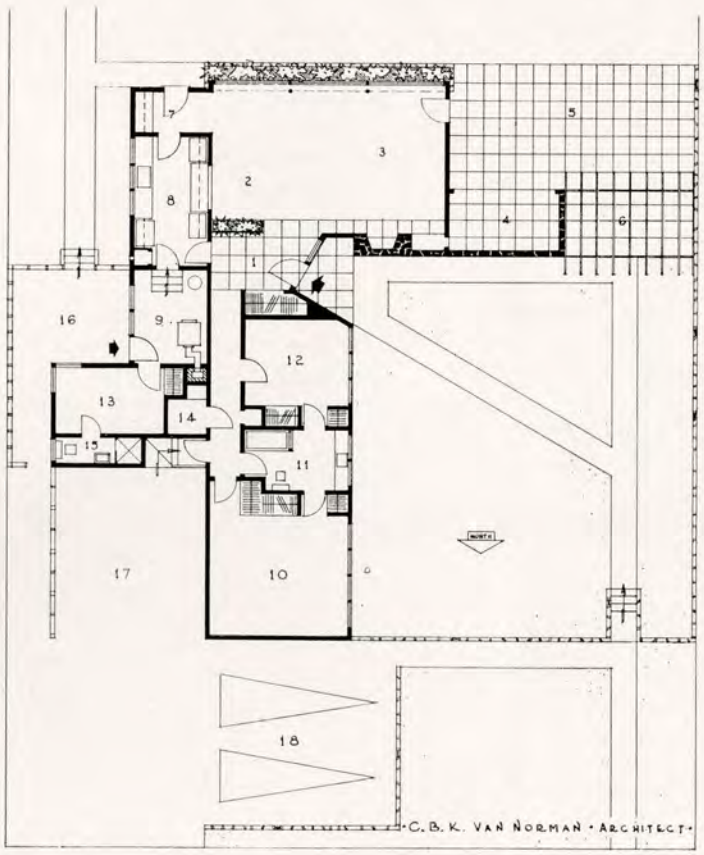


1 Hall
2 Living
3 Dining
4 Kitchen
5 Heating-Utility
6 Bed Room
7 Bed Room
8 Bed Room
9 Bath Room
10 Car Port
11 Office
12 Terrace
13 Pool

Photograph by Tony Archer

HOUSE OF MRS. GUNNAR TORNROOS, VANCOUVER, B. C.

C. B. K. VAN NORMAN, ARCHITECT



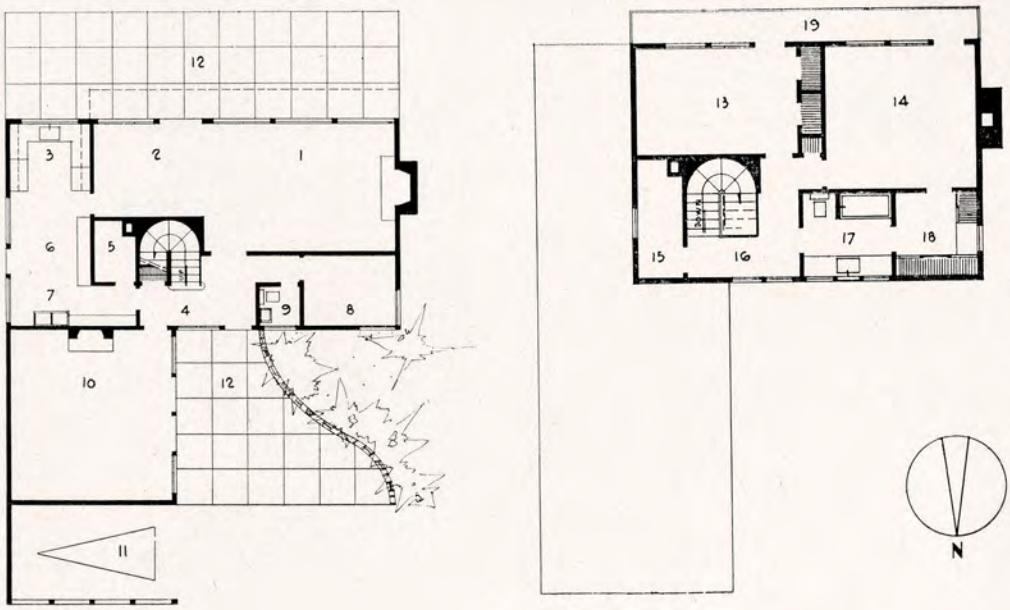
1 Entrance Hall
2 Dining Area
3 Living Area
4 Garden House
5 Terrace
6 Arbour
7 Bar
8 Kitchen and Laundry
9 Utility Room
10 Master Bedroom
11 Bathroom
12 Bedroom No. 2
13 Servant's Room
14 Storage
15 Wash Room
16 Service Yard
17 Car Port
18 Motor Court

Photograph by Tony Archer

HOUSE OF MR. AND MRS. HOWARD WALTERS, NORTH VANCOVER, B. C.

W. H. BIRMINGHAM, ARCHITECT

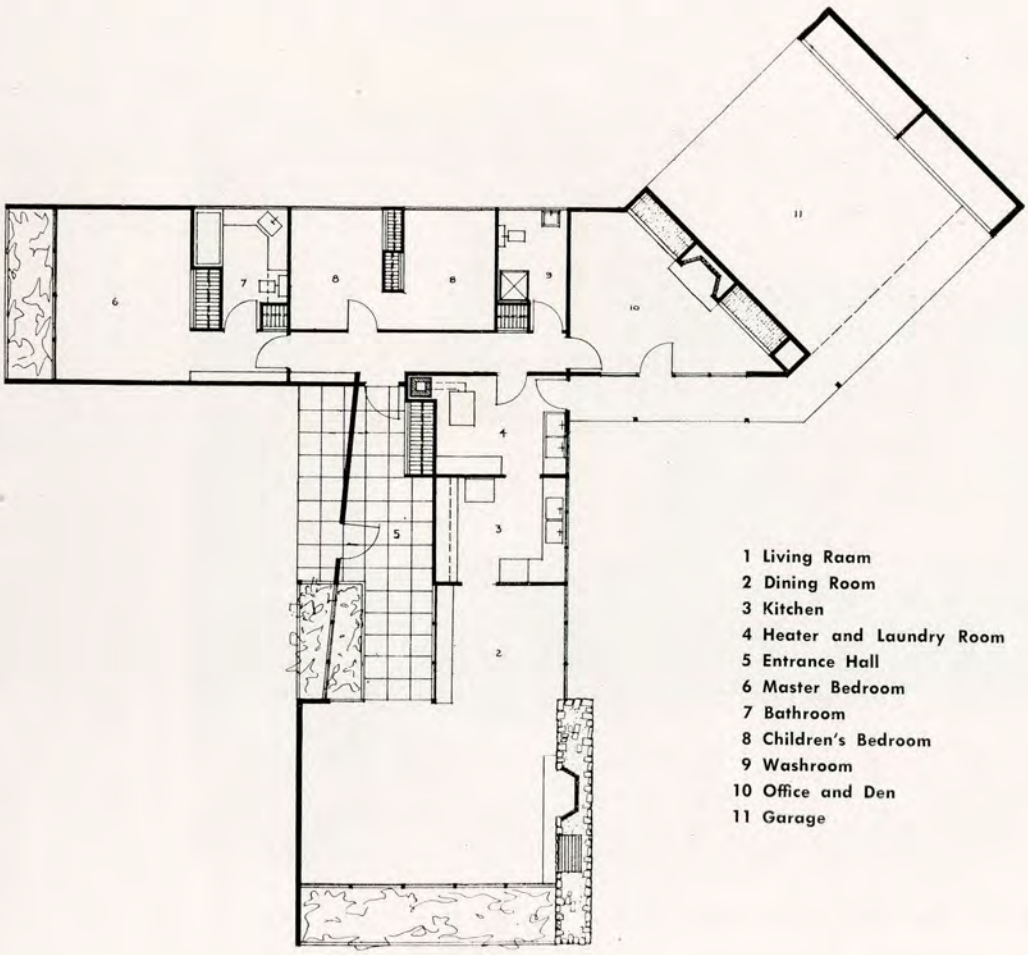
1 Living
2 Dining
3 Kitchen
4 Hall
5 Furnace
6 Nook
7 Laundry
8 Den
9 Washroom
10 Recreation
11 Car Port
12 Terrace
13 Bed Room
14 Master Bed Room
15 Storage
16 Hall
17 Bathroom
18 Dressing
19 Balcony



HOUSE OF MR. AND MRS. CARL MILLAR AT GLEN EAGLES PARK, WEST VANCOUVER, B. C.

SHARP & THOMPSON, BERWICK, PRATT, ARCHITECTS

Photographs by Tony Archer



1 Living Raam
2 Dining Room
3 Kitchen
4 Heater and Laundry Room
5 Entrance Hall
6 Master Bedroom
7 Bathroom
8 Children's Bedroom
9 Washroom
10 Office and Den
11 Garage

Photographs by Commercial Photo Service

HOUSE OF MR. AND MRS. GEORGE FITCH, SENTINEL HILL, WEST VANCOUVER, B. C.

C. B. K. VAN NORMAN, ARCHITECT

HOUSE OF MRS. GEORGE MARTIN, VANCOUVER, B. C.

C. B. K. VAN NORMAN, ARCHITECT

HOUSE OF MRS STUART ROSS, CAPILANO HIGHLANDS, NORTH VANCOUVER, B. C.
GARDINER AND THORNTON, ARCHITECTS

HOUSE OF MR. AND MRS. GEORGE SHERWOOD, CAPILANO HIGHLANDS, NORTH VANCOUVER, B. C.
GARDINER AND THORNTON, ARCHITECTS

Photographs by Tony Archer

HOUSE OF MR. AND MRS. E. D. ARMSTRONG, WEST VANCOUVER, B. C.

SHARP & THOMPSON, BERWICK, PRATT, ARCHITECTS

SPECULATIVE HOUSE AT GLEN EAGLES PARK, WEST VANCOUVER, B. C.

SHARP & THOMPSON, BERWICK, PRATT, ARCHITECTS

NEW TOWNS—AN APPROACH TO URBAN RECONSTRUCTION

By H. PETER OBERLANDER

INTRODUCTION

The following essay is a first attempt to formalize ideas which grew out of a collaborative study undertaken during last year by a group of students at the Harvard Graduate School of Design, of which the author was a member.

For many ideas expressed and tested here, individually and collectively credit is due to them all. The author is especially indebted to Prof. G. Holmes Perkins and Prof. Martin Wagner of the Department of Regional Planning for many valuable thoughts on the original concept of a New Town, as well as specific points of the discussion.

More than eighteen months have passed since final armistice was declared and "post-war" reconstruction is fully upon us; at least in its time element. Many phases of our economy indeed have reconverted and begin to live up to some of their wartime promises of production.

The building trade has not yet reached its desirable maximum in providing Canadians with the kind of physical surrounding they were led to expect. Yet we are standing on the threshold of an immense building boom. Six hundred and six thousand dwellings have been estimated as the total "Canadian housing requirements during the first post-war decade"[1]; 535,000 units or almost 88% of the total are to be built in "Urban Areas". These figures lead us to expect an annual residential building activity far in excess of anything Canada has known in the past, including the "gilded" twenty's.

The outstanding fact confronts us: we are building and are going to build an immense number of new homes during the next decade – by one method or another –; most of these are going to spring up in and around existing urban settlements; "nolens–volens" we will be faced with a huge increase of houses with insufficient thought as to the innumerable ancillary functions of present city life which also must grow and expand.

The following constitutes an approach to come to grip with some of these social, economic and administrative problems. It attempts to highlight some of the key issues involved and hopes to stimulate further discussion and clarification of many of its controversial proposals; it is not a solution but merely a point of departure.

It is in this spirit that the study is here presented.

Editor's Note:

Mr. Oberlander wishes to give credit and thanks to the National Research Council, which entitled him, by Scholarship, to take post-graduate work in Town Planning at Harvard.

1 Advisory Committee on Reconstruction "VI. Housing and Community Planning; Final Report of the Subcommittee." Ottawa, 1944, part II, pp. 149.

THE rapid growth of cities and towns during the past forty or fifty years has become proverbial; communities all over the world have mushroomed into existence and many towns in the process of becoming a city have developed into metropolitan entities. The spot-concentration of people with all their ancillary activities caused our cities to swell and spill over their boundaries, sprawling into the countryside. Political growth and adaptation often did not keep pace with physical expansion. Organic growth of former communities, commensurate with a gradual increase of related functions of life, became superseded by sporadic expansion of certain urban elements.

The metropolitan community has become the characteristic form of urban life in our century and during the lush twenty's the rate of expansion reached unparalleled heights that were to inaugurate the unprecedented economic and social millenium; the hungry thirty's soon showed us otherwise.

Canada with the rest of the Western World produced its metropolitan agglomerations; close inspection of the Dominion Census shows that there are twelve such cities; eight of them: Montreal, Toronto, Vancouver, Winnipeg, Ottawa, Quebec, Hamilton and Windsor, clearly belong and have more than 100,000 population; the four smaller ones: Halifax, St. John, London, and Victoria, are below the 100,000 population mark. Since these 12 communities account for almost 60% of the total urban population or 3.7 million people who live in 840,000 dwellings, the majority of Canadians seem to prefer a metropolitan mode of living[1].

Eighty years ago when the Canadian provinces decided to form a Dominion within the British Commonwealth of Nations it was a country with a frontier economy based on simple handicrafts and primary production; it had a predominantly rural and colonial population of 3½ million and many of its present large cities were villages or just idle prairie wilderness. It is these cities more than any other aspect of the Canadian environment that mirror this unprecedented growth and migration; the process of urbanization has become characteristic of Canada's maturity in our time.

This rapid overgrowth of urban settlements has significantly changed the familiar city-scape of our fathers; all major cities face the evergrowing dilemma of a stationary—and at the centre even decreasing—population, and a simultaneous migration into further and further receding fringe communities. This shift of population entails an equally formidable extension of urban services and

1 Advisory Committee on Reconstruction, IV. Housing & Community Planning, Final Report of the Subcommittee, chapter 4, Ottawa, 1944.

an abandonment of existing ones. The rapid turnover of land and its structures in cities was the spectacular if somewhat dubious achievement of the early interwar years. Metropolitan expansion became the superficial sign of progress and indeed it seemed as if the expanding post-War I economy needed more space and could pay for it.

The building boom was of unprecedented scale and naturally enough occurred mainly on the fringe areas of our towns; the urban centres were already choked. Suburbia arose; the signal for land and more land for urbanization in the race of the city sprawl had been sounded. Canada was on the move, at least a large segment of the urban population became footloose once more and nomadism fashionable. The majority of these developments were cut from the same pattern: they were dormitory in character with a few local stores. Selection and discrimination in admitting newcomers and suspicion of any change were means of suburban self-preservation; the *status quo* was the ultimate and the suburbanite was there to defend it to the last consequence.

Suburbia awakened the rampant snob instinct of man and its value-engendering qualities; to live a socially insulated existence—away from it all—fostered the split personality, so characteristic of our age. Flight from responsibilities politically, economically, and socially all became coterminal with flight into suburbia. This insulation quickly led to isolation and spread like an infectious disease into many spheres of human decision. Individualism—to the point of mutual self-destruction—asserted itself; yet the individual showed himself timid by taking refuge behind exclusiveness.

Modern technology made the ever-widening schism between living and working inevitable; new and rapid means of transportation invited this physical and mental escape from the real issues of our times. Suburbs became a refuge from change.

Buildings and their patterns clearly reflect the fabric of a society. It is self-deception or sheer folly to believe that grandiose facades, thoroughfares and monuments can invoke the belief in future generations of the importance or significance of a really small and mean people. Such pseudo-progress and achievements are skin-deep and a little scratching of the surface readily reveals the true character of a civilization. Constructive periods in man's history expressed themselves unconsciously in rationally proportioned communities and their buildings; in cities more than in individual structures. There is more permanence in a settlement, buildings are torn down, they die, but a town goes on living as an entity, its elements may change but not even the worst of war-bombing could erase cities completely.

Genuine progress in an historic perspective is signified by increased interest and insistence on human values; "a better life for more people" may sound a platitude, but ". . . the final test of an economic system is not the tons of iron, the tanks of oil, or the miles of textiles it produces: the final test lies in its ultimate products—the sort of men and women it nurtures and the order and beauty and sanity of their communities . . ." (Lewis Mumford)

Our prevailing philosophy, however, fails to acknowledge this aim of contemporary life; we insist on evaluating our living conditions and eventual progress through a deficiency rating. Benton's "pleasure and pain" theory measures the negative aspect of our physical surroundings and tells us how well we really live. The number of crimes, fires and houses unfit for human habitation, describe our cities; health and fire insurance ratings are based on how bad our health is, and how badly we can meet a fire emergency. We know the condition of our environment through minimum standards, maximum goals still remain vague notions of "long-haired" planners.

We insist on building good and better hospitals — necessary as they may be — to cure ills rather than prevent the incidence of some of the most vicious physical and mental diseases man knows, bred in our neglected cities. Our behaviour as individuals and in a group is conditioned by where and how we live; it seems paradox to build carefully planned schools with all gadgets science and psychology can suggest if children have to spend the larger part of their day and youth in a home without light, air and comforts they enjoyed while studying.

Symptoms for our dubious happiness are manifold and varied. The endless string of theatres, nightclubs, cabarets and bars and their amusement craving clientele are clear indications of a restless, basically frustrated city population. The "brightlights" which attract so many new people each year to our cities also conceal the chronic need of a large number of people to "escape from reality". The physical environment, the home, the place of work, proper recreation, all fail to satisfy them and to provide sufficient outlet for their aspirations in their daily lives.

We must rebuild totally; partial improvements only aggravate conditions, sap our real strength and lull us into believing that we are really gaining on our sordid environment.

Architects and planners of the past twenty years spoke of decentralization as the cure-all for our urban maladjustments; social, economic, and political decentralization was the motto of the progressives, and the suburb fitted roughly into that concept. But this decentralization led to further concentration; since only certain functions of urban life were moved out of the entangled cities and congregated rather haphazardly on another spot. This process produced further congestion since it was unrelated to the daily life cycle of the people. The journey-to-work became the characteristic modern cityscape; it appeared inevitable to have to spend one, two, or even three hours a day commuting for work, for

shopping, for amusement, and for many more simple reasons. Lines of communications were stretched and strained. Straphanging signified technological progress and to visit friends became an overnight excursion; consequently the telephone friendship was the vogue. Transportation of man, material, and thought was misused; technical facilities – the proud achievement of our century – were overloaded. Technology helped vastly and still seems to be on the up; the helicopter promises to enlarge the commuter's range, and make the airways as jammed during peakhours as the approaches to midtown Montreal or downtown Toronto.

Decentralization must be superseded by "deconcentration" and in a rational fashion, to produce, once more the necessary balance between work and living, shopping and play; we had that equilibrium once; remnants are still well preserved in some of our villages in the Eastern Townships and further south throughout New England; they were never allowed to outgrow their human scale. Great Britain has already begun to recapture this aspect of life and its immense reconstruction envisages New Towns, quite apart from the old agglomeration of stone and mortar (or rubble as the case may be). In October 1945 the Minister of Town and Country Planning and the Secretary of State for Scotland appointed jointly a New Towns Committee with specific terms of reference: "To consider the general questions of the establishment, development, organization and administration that will arise in the promotion of New Towns in furtherance of a policy of planned decentralization from congested urban areas; and in accordance therewith to suggest guiding principles on which such towns should be established and developed as self-contained and balanced communities for work and living."

The Committee's various reports led to the New Towns Act, 1946, which was enacted last year and thus made deconcentrated, urban rehabilitation a concrete reality. Canada has very similar problems to solve, although the absence of direct war devastation does not highlight these vital issues to the same degree. The Dominion with its newly gained immense technical resources must also have the willpower to deconcentrate and re-create. Now we have the chance; we stand on the threshold of an unprecedented building boom, we must not stop it, and yet we must not let it become the prey of free interplay of wild economic and political forces; it may prove itself a boomerang; we must channel the flood of new construction so as to produce an environment "fit for heroes to live in"—and we are all heroes. This is the great opportunity of our generation, it may never come again, and those before us have missed it; let us take an object lesson.

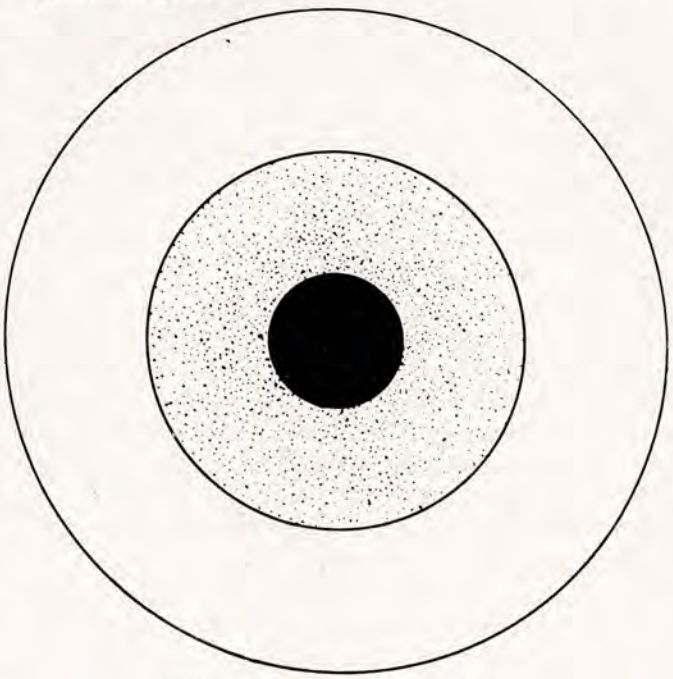
The reconstruction of our environment is the last great frontier of our economy; it is an internal frontier with all of its inherent adventure and success spirit. It should tempt the investor and pioneer alike just as the West did not so long ago. Reconstruction should supplant expansion in our economy and with the same latent vigour, resourcefulness and genuine pioneer spirit it should be a simple matter. Technically we know how; we must also be brave enough to forge the necessary economic and political tools.

There comes a time in the development of every city when the original reasons for its inception have been realized, when its boom days are over and when it has become a stabilized organization whose future growth will be limited to internal development and clarification. Such cities are Montreal and Toronto; their metropolitan population will increase little in the future, they will no longer have to face the problem of providing for influx of new people but they do have to create adequate provision for their present populations.

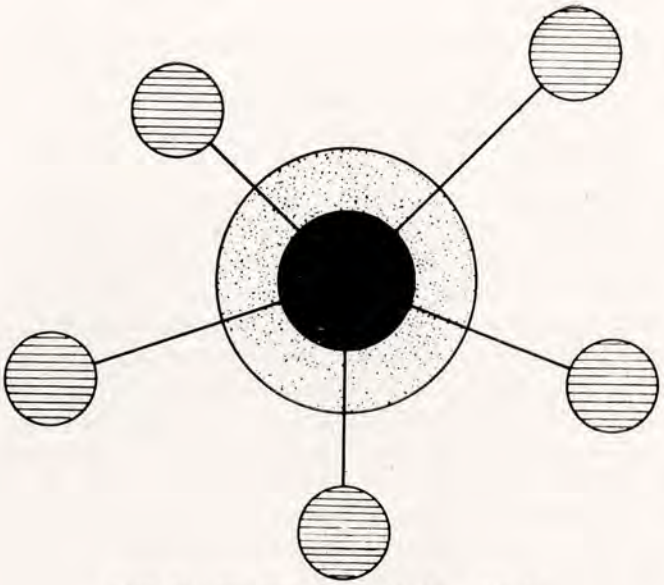
Our metropolitan conurbations grew haphazardly and in spasms; exuberant growth points in nature as well as in man's social formations to parasitism that lives by killing – voracious killing of the sound cells of the physiological and social structures. No building, no road, no traffic means, no utilities in a town can be planned and built to fit both increasing and decreasing use without losing the precalculated economic effect. Every deviation from their planned efficiency entails either waste or want. We are, therefore, forced to imitate what nature does in appeasing "growth", namely, add new cells to the old ones, that is, create New Towns.

Complete New Towns must be built to syphon out the surplus population from our metropolitan cities—first of all—and then to provide the space for internal reconstruction within existing cities.

In the past cities grew by concentric expansion; future extensions must take place through decentralized new growth. (Fig 1.)



CONCENTRIC RING GROWTH — FIG. 1.



DECENTRALIZED EXTENSION GROWTH — FIG. 1.

New Towns must arise, sufficiently small to retain the intimacy characteristic of our earlier settlements and to remain always within the scope of human experience. Let our New Towns return to the human scale of life; they should become an environment where man is the scale of values once again and not alone the rent-engendering quality of a specific investment. And yet these Towns should possess a definite measure of completeness and independence in all spheres of urban life. Their growth must be limited and their initial location well chosen for their own needs and with proper regard to the region and country at large. Lines of communication must be thoroughly integrated with the existing net and rationally proportioned to the Town itself. Scale and proportion must always be the prevailing principle of design and construction of a New Town. Despite its fairly complete plan the Town must remain flexible, its desirable constancy must be achieved by alterations necessary to meet a changing situation. There can be nothing final about the plan of a New Town itself. Only too many of our grandiose plans for communities are still-born and obsolete when they leave the designer's drafting table. They are unrealistic, no matter how hard-boiled and practical they claim to be, they refuse to cope with reality which moves constantly.

The physical pattern of a New Town will recreate a balanced community existence with the utmost privacy and freedom of the individual. A new horizon of urban living would be opened; a declining population will tend to become more stable and satisfied, social and economic strife could be resolved. We know how to wage total war, we have the strength to wage total reconstruction; it also is a struggle for survival.

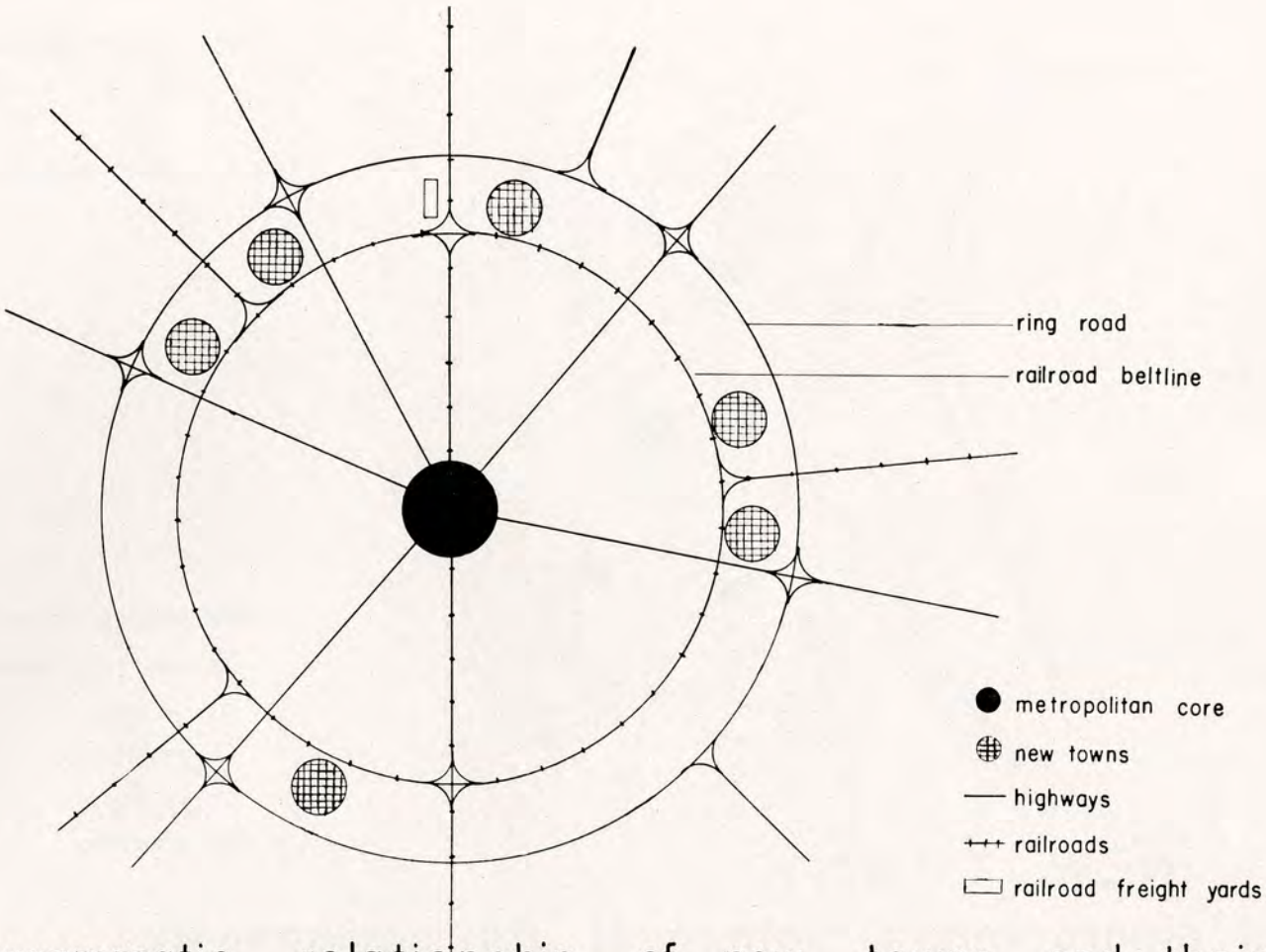
A successful rebuilding of our physical surroundings requires a thorough reorientation in the approach to our cities and towns and what we can do to solve the now chronic dilemma. We must widen our view point and learn to see beyond to-day and tomorrow; we must begin to evaluate true correlations between our sordid environment and our very precarious happiness. Our "suburban mind" must turn into a metropolitan way of thinking which sees the immediate connection between the squalor of intermixed land use that greets us daily on our travel into the urban wasteland we call the city and the closely cropped hedges of well-protected suburbia, although we are residents only of this island on the periphery of the city. One cannot exist without the other, but neither wishes to acknowledge this elementary relationship. We can no longer refuse to consider our cities as metropolitan entities; political boundaries have long become obsolete. Our "megalopoli" from coast to coast are sick organisms, sick as a whole and as such must submit to a surgeon, no mere physician, who will carve out the fested city flesh by the square mile, not the square foot. Individual spot rehabilitation no longer will do; the physical shells of our towns are worn out and obsolete. The great challenge of our era is, therefore, to build anew, to create New Towns, complete in themselves as places to live, work, shop, study and relax.

Let us look at such a New Town in detail. The accompanying diagrams show schematically its layout, components, and relation to the Metropolitan centre and other New Towns. The migration of the central city population into outer areas is prompted by a search for better living accommodations and more amenities commensurate with changing economic and social status in the community. These people usually moved along a narrowly prescribed route and attached themselves to outlying settlements forming and perpetuating a stratified society. Definite patterns of movement thus crystallized the structure of our urban population.

New Towns will follow this tendency, only in a more rational fashion for they will be planned with an overall perspective. New Town sites will be selected in the path of migration where it appears to follow the greatest natural attractions.

Existing small communities could form the nucleus for a New Town development or relatively vacant agricultural land could be selected to found a New Town. Both procedures have their advantages and will find application as the situation requires; in any case thorough investigation and scientific appraisal of the site and its relative position must precede the definite location of a New Town.

These new settlements should group themselves at a 15 to 20 mile radius from the metropolitan core to insure the ready access between the two elements in an expanded metro-area. The metro-core will become the mother unit and provide specific metropolitan services like highly specialized shopping, regional and national commerce, and the seat for higher learning and for metro-administration. (Fig. 2.) Beyond the metropolis the subregion and then the region itself would success-



diagrammatic relationship of new towns and their metropolitan center

FIGURE 2.

ively form the higher levels of service and administration; an organic pyramiding of needs and functions would insure a balanced distribution of all elements of our environment. The New Town with an approximate population of 30,000 will administer only services appropriate to that size and constitute an optimum local service unit. The efficient and economic service level and service radius largely determine the physical boundaries, legal jurisdiction, and population housed in a New Town. A consistent high level of services rendered also delineates physical size and respective spheres of administration. The optimum number of children necessary to support an elementary or high school effectively will help to establish a rational municipal scale. Human activities must constantly guide the scale of our New Town. Thus it is necessary to determine the type and size of unit best adapted to the administration of the more important local services, without concern for any pre-existing organization or boundaries of local units[1].

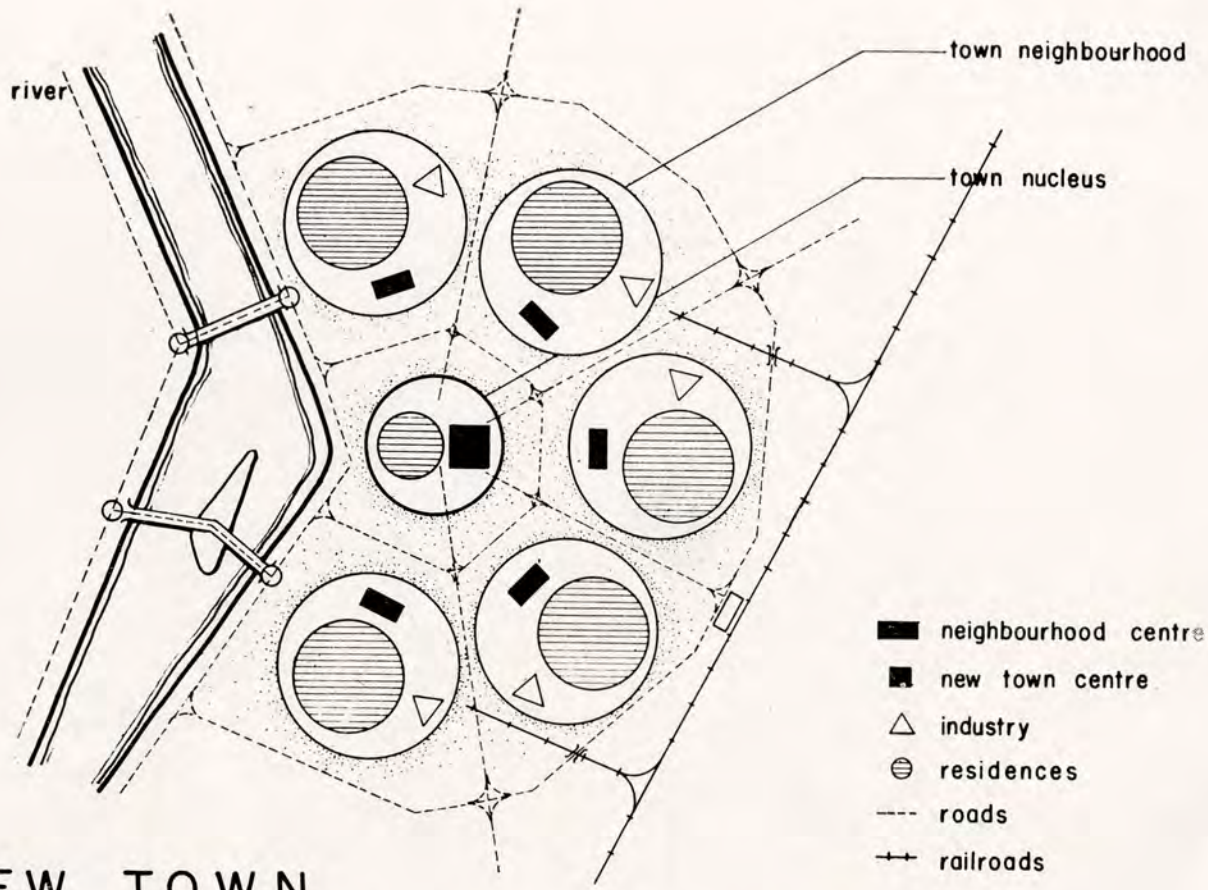
Each New Town will consist of four or five distinct units, depending on the local needs and situation, surrounding a town nucleus which serves as the heart of the entire settlement. Each of these five neighbourhoods in turn has a life of its own, economically, socially as well as politically; this will constitute the smallest urban entity which still functions as an organic whole. (Fig. 3.)

About 5,000 people or 1,430 families, assuming a 3.5 person average per family, will be able to live and work there, within easy reach of daily shopping; children will be able to walk to local nurseries and kindergarten, and the older ones to their respective schools. Special bicycle ways would acknowledge this often neglected means of transportation, particularly for youngsters. A church and spacious community meeting and amusement buildings will complete vital urban facilities at this level of our New Town.

The nucleus will essentially provide facilities and services that cannot economically be afforded by the component units, such as a high school, a hospital in contrast to the local health clinic and specialized shopping and amusement centre. The higher level of administration for the entire Town will be located in the nucleus also.

These institutions symbolizing the orderly integrated

1 "State and Local Finance in the National Economy", Alvin H. Hansen and Harvey S. Perloff. W. W. Norton & Co., New York, 1944, part two, chapter 5.



A NEW TOWN
a diagrammatic pattern of its components

FIGURE 3.

pattern of a community must readily be reached by foot. Their capacity, physical size and radius of operation must be a function of the human scale and determine their respective location in the neighbourhood and the nucleus. The kindergarten, the elementary or high school, the hospital, all must be proportioned to their service area to run effectively and economically. The accompanying diagram (fig. 4) graphically indicates the limitations of the "human radius" and its implication in neighbourhood design. ("Neighbourship" equals a "neighbourhood".)

The greatest emphasis should be placed on the easy accessibility of industry as the work sustaining spine of the community. Employment there will be varied and provide manifold opportunities. The present gap between where we work and where we live, where we live and where we play could be bridged; the old myth of the necessary separation of the two can be exploded. There is hardly a manufacturing industry to-day that cannot be controlled as to its nuisance value, whose productive efficiency could not be increased by better working conditions and pleasant surroundings. Industry once again – like the former craftshops – must become the pride of the community. Many factories can work with smokeless power and disseminate neither smoke nor smell; they need not be relegated to the "other side of the tracks". Employer and employee will be able to arrive at work after a brisk morning walk across pleasant green areas, relaxed and with fresh strength. Their energies will not be dissipated by needless commuting before they even begin their daily routine. In the evening they will be home earlier and still fully able and willing to enjoy their homelife and family, they will be able "to see their youngsters grow up". No jostling in subways or endless traffic jams on arteries will strain their thin patience. And yet both home and work will be thus located as to be easily accessible to rapid mass transportation, or to private car; people must be presented with a choice, many may not want or be able to walk, particularly during the cold season.

Startling as this thought may appear to the average city-dweller in our country it is far from new:

> "In 1790 Boston was a small, closely knit town, any part of which was easily reached by foot. The traders lived fairly closely to their counting-houses and could conveniently return home for the mid-day dinner. There was no great gap between classes, and therefore no desire for sectional distribution."[1]

1 Oscar Handlin, "Boston Immigrants" 1790-1850; Harvard University Press, 1941, chapter 2.

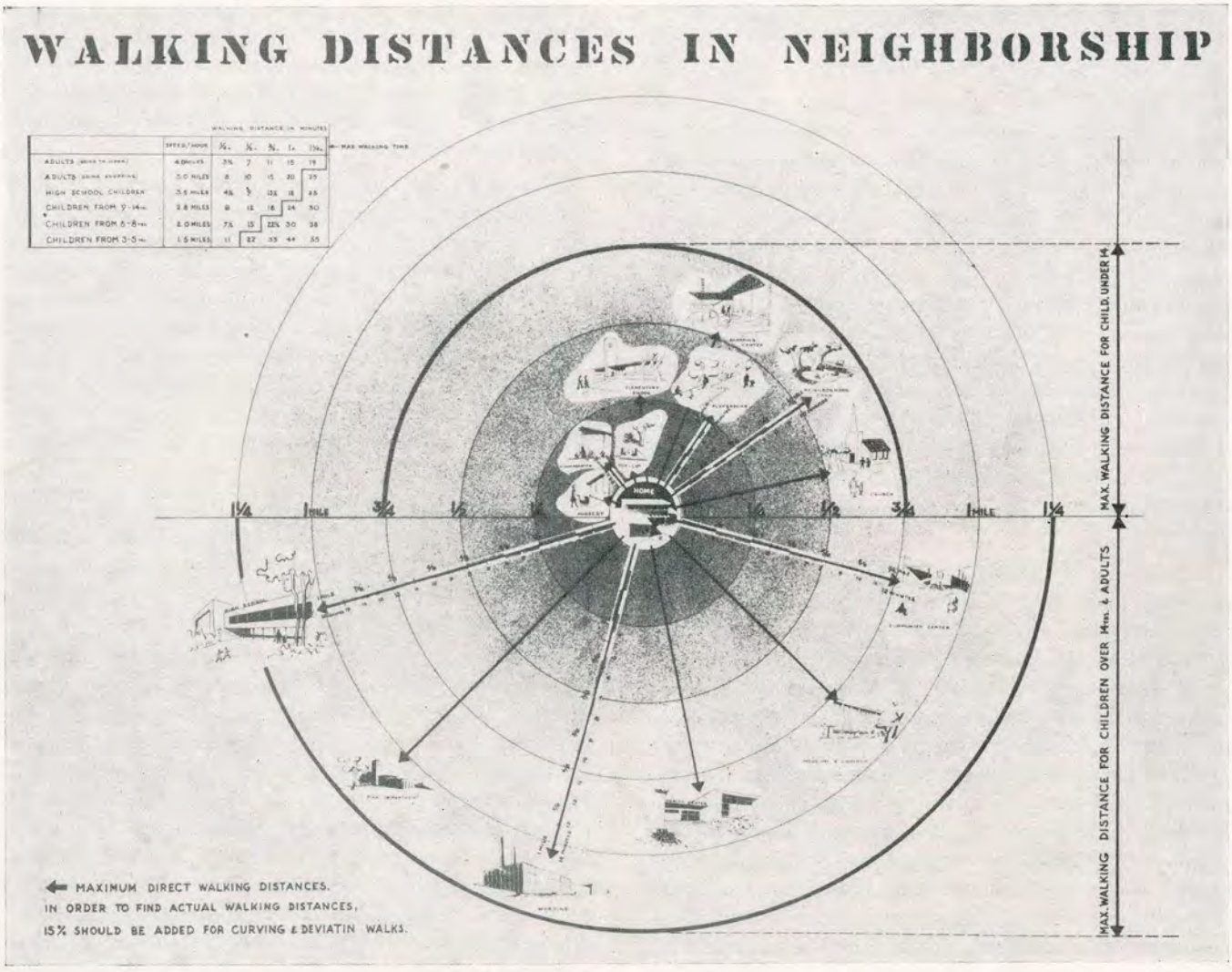


FIGURE 4.

The intimate physical relationship between workplace and home may form the source of a new cellular social structure. Management and labour will no longer be able to remain in their respective isolated spheres of thinking; the artificial barriers between people who work with their hands and those who administer their operations cannot be sustained in such an environment. We are inter-dependent creatures, why not acknowledge it? Our various sectors of society would come to understand each other and then the great myth of difference might be broken; people would come to see their similarities and perhaps underline those rather than harp constantly on their superficial differences. A congenial environment is all important; since "we first shape our world and then it shapes us". No longer would selection and restriction jealously have to guard the sacred *status quo* in our communities. The desired constancy would be achieved through progressive change; if society stands still it retrogresses, it must move on in order to preserve itself.

This element of scale and proximity was characteristic of many European communities in the Middle Ages; it had profound social ramifications which may form a valuable asset even to our New Towns to-day.

Each town neighbourhood will have its own industrial site which will be planned as available floor space with all required technical and transportation services; here the individual firm, large or small, will rent space for its needs and produce almost immediately without tying up any capital in fixed plant facilities. They will be able to expand as the production rises or their technological process changes; utmost flexibility in all facilities provided would encourage a stable industry and industrial employment. Depending on specific circumstances industrial sites of two adjoining town neighbourhoods could be combined to simplify railroad and highway access, both of utmost importance in efficient industrial location. Furthermore, not all industry needs equal facilities; there is a growing number of enterprises that prefer to rely on truck service for all their freight movement. Their product is relatively small, usually shipped in less-than-car-lots quantities and requires rapid flexible trans-shipment over short hauls of about 150 miles. In this radius, railroad tariff cannot economically compete

with modern truck-trailer transportation. In (figure 2) the industrial area of one neighbourhood would provide facilities for such industries, where special railroad sidings are not required.

The inclusion of industry in the New Town and its economic and social ramifications differentiate this approach from most of the planned communities built under private or Government initiative in England or U.S.A. so far; this principle of "economic employment proximity", however, must not develop into a one-industry town. Industry in a New Town must be diversified and every effort in the initial plan must be bent on encouraging young and vital industries to take root in the new community. A full measure of industrial employment will breathe life into the soul of the New Town and insure its healthy existence. Industrial locations in our Town must be absolutely competitive with other available spots within the given geographic area of choice.

Industries now located in central districts of our cities are faced with very serious difficulties of expansion, conversion and a dependable labour supply; transportation difficulties for both raw materials and finished products are mounting every day. Manufacturing industries in the past were forced to remain at their original point of location largely because of the immense capital investment and the need for its adequate amortization. To-day, industry faces a rapidly advancing technology and consequently an increased rate of obsolescence in plant and equipment. Relocation, therefore, has become far more feasible and in terms of increased and higher productivity almost a universal necessity. In our choked cities industries can no longer expand, they are strangled by a broken-down transportation system and suffer from an increasing lack of space for waste disposal.

National industrial relocation has become a vital issue for management, labour, consumer, producer, cities and the country as a whole. A large percentage of urban industries have to move and build again within the next ten years; the north end of Montreal has become a very significant example of this trend. But is this the best we can hope for? An endless strung-out industrial development along a major traffic artery without any relation to the city itself or the people who work there?

New Towns must fill this need for a deconcentration of industries. Once management is faced with the choice of relocating and rebuilding or slow stagnation, it will certainly look towards an area of maximum advantages. A New Town provides these as an integral planned element; a reasonably steady labour market, good housing for management and employees, direct access to all means of transportation, modern efficient production areas with space for expansion and a rent—competitive with comparable rents anywhere within the given area and commensurate with the high level of services in the Town.

Industry will soon recognize the inherent advantages of such an environment in terms of increased productivity and new markets. Again Great Britain seems to be away ahead of us or the U.S.A., in recognizing this enlightened self-interest aspect of New Towns and industrial relocations.

A New Town must attract industries of diversified character which depend on reasonably skilled labour and therefore have a high value-added-per-wage-earner production. Diversified industry will be the Town's own insurance against violent fluctuations in the economic cycle of the region or the country and attract and support a fairly representative cross-section of population in the community. Social and economic diversity is of utmost importance to achieve a balanced organic cohesion amongst the various elements of an otherwise synthetic new settlement.

In constructing a New Town, no less than in its planning a fundamentally free and experimental approach is required to achieve the desired result with all its inherent advantages and to sidestep successfully pitfalls in conventional building.

The construction industry is an industry in name only; actually it is a group of diverse handicrafts, hamstrung by irresponsibility, waste, under-capitalization, and unfair competition[1]. In so large a development as the construction of a New Town a thoroughly organized building procedure and material flow is essential. The closely guided and checked production process in some of our large-scale industries could serve as a pattern. To preserve fully all planning premises, a New Town must be built in one stroke and in as short a period as possible; it is suggested that dwellings, work places, shops, transportation routes and all other ancillary services should be ready for use within two years. It is obvious that the building of a New Town in the projected time will require all the ingenuity of planners, architects and engineers in programming for the orderly flow and use of materials, labour and money.

Several general principles of construction planning would materially aid the final achievement of the project: Avoid peaks in any building activity; there should be a rapid rise and a rapid fall in every phase, so that the maximum activity might extend over the longest possible portion of the building period. Railroad transportation, because of lower costs should be used as much as possible. Building materials should come in building units rather than rough materials requiring further fabrication and handling on the site. Attention in planning should be given the important problem of disposing waste construction materials.

A construction undertaking on such a scale entails a complete reorganization of the customary building process. The accompanying chart (fig. 5) attempts to sum-

1 Charles Abrams, "Good Homes for Everybody", in "What the Informed Citizen Needs to Know", edited by Bliven and Mezerik, Duell, Sloan & Pierce, N.Y., 1945.

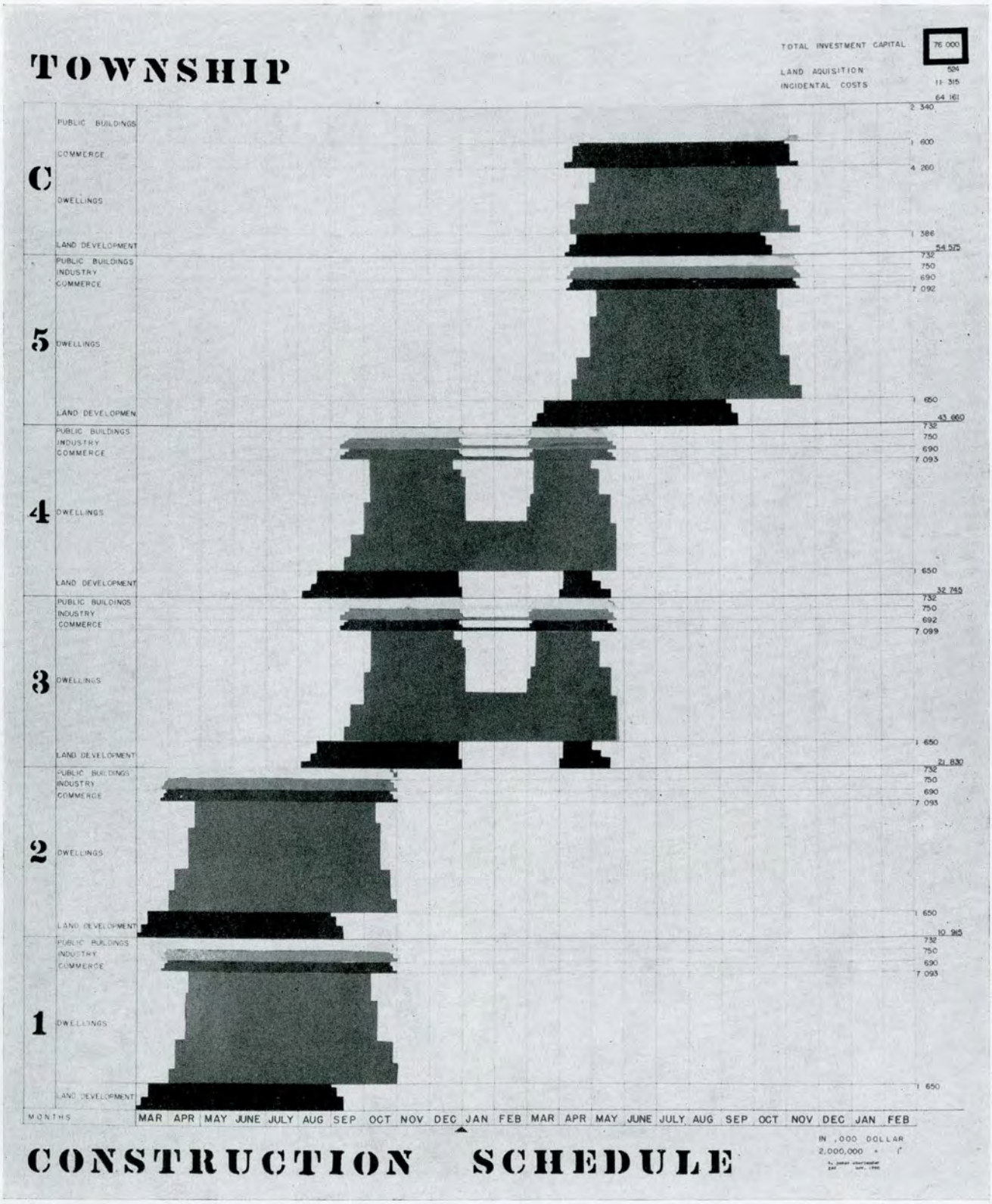


FIGURE 5.

marize the entire building period and illustrates the new approach to large scale construction. (The title "Township" is equivalent to our New Town.) This schedule shows the application of money and labour to the various elements of a New Town in their relation to time. In this analysis the construction starts in March of a given year, presuming that some preliminary work, such as surveying, has been done. It is proposed to construct two town neighbourhoods at the same time, employing a peak labour force of approximately 5,000 men. Due consideration is given the fact that the increase and decrease in employment on each item of construction occurs gradu-

ally. This is shown by the series of steps as the accelerating and decelerating process takes place. Also, consideration was given the fact that diminution of activity takes place in the two winter months of January and February. The diagram of one construction period is allowed to overlap with the next, to indicate that workers who perform the initial stages of a construction operation would be free to move to another location before the neighbourhood which they had started is completed. In this manner, it is possible to project the completion of the job in less than the proposed two years – in fact, by the middle of November of the following year – thus avoiding a second winter, which constitutes an appreciable saving.

Each of the major divisions in the construction schedule, land development, dwellings, community buildings, industry and public buildings represent the sum total of the respective cost of labour, material and overhead. The figures along the right-hand margin of the chart constitute a case example in the cost breakdown of a hypothetical New Town, and the respective time allocation as the construction progresses.

A similar chart must be prepared for the flow of materials and their handling as bulk tonnage. An immense amount of material would have to be allocated efficiently to dovetail closely the above construction schedule; labour and material must compliment each other. Again borrowing figures from the above-mentioned case example the figure of material tons per capita devoted to

Public buildings	2.61
Industry	3.17
Commerce	4.13
Dwellings	19.25
Land development	16.70
TOTAL	45.86 tons per capita

will serve as a rough scale of measurement of amounts of material involved in such construction. A still more striking visualization can be achieved by the fact that 110 three-ton trucks per hour will be required for a ten-hour working day to bring all materials to the site, whether from a railroad siding or from nearby plants. In reality, of course, building materials will reach the site over a variety of transportation means.

The total amount of labour needed to accomplish this task can only be "guestimated". From the above construction schedule diagram can be seen that the total cost of a New Town of 28,000 or 30,000 people approximates $76 million. If we assumed about 36% of the total, or $23 million, to go towards labour costs at an average hourly wage rate of $1.40 for 3.840 effective working hours during the construction period the total number of labourers employed at any given time will be 4,500[1]. This is quite a sizable chunk out of the available building labour force of any city and will have to be considered in the planning of the entire project. The amounts of building materials required will also have their ramifications in the generally available supply. These two considerations may give us an inkling of the economic and social repercussions of the mere building of such a Town or even a group of them in a given area. It represents an immense problem of organization and calls for bold staff work in estimating, procuring and controlling the building process, an experience comparatively new and alien to our construction trade.

Our approach to urban rehabilitation by constructing New Towns outside the built-up metropolitan centres called for new planning concepts, for a streamlined construction procedure and it further demands a challenging new administrative set-up. Who is going to build these New Towns and who will be responsible for the continuance and general running as new independent units? These questions resolve themselves into simple problems of a programme and conviction; little – if any – experience has been accumulated in this field of large scale organization to serve as a norm. Certain premises can be established but these should only suggest an approach to a very complex problem not its solution.

A Building Development Corporation should be formed for the explicit purpose of building the New Town. This can be a private firm, pretty much like a present-day contractor, who is willing to operate under certain Governmental guarantees and supervision on a limited dividend profit basis. The present building-capital market—and the money market as a whole—indicates that building money is cheap and readily available; many *entrepreneurs* are looking for suitable investment outlets. On the other hand a Development Corporation can be wholly Government sponsored – by any of the given levels of administration – and have a status comparable to a Crown Company.

The need for new forms of enterprise adapted to solving new problems can clearly be seen. Methods and means must be found whereby "private business" will be encouraged to build with one of the several Governmental agencies lending a "protective" hand. Building New Towns can perhaps be best undertaken by a "mixed" enterprise effort.

The simple "limited dividend company" with a small equity taking all the risk without possibility of large returns has not all together proved fruitful. A gradual breaking a way from the mortgage system seems to occupy more and more current economic thought, through "100 per cent. equity investment", with Government yield insurance or other over-all guarantee on the entire investment in return for limited profits or rents[2].

Whatever the case may be the Development Corporation is responsible only for the building of the complete

[1] Largely based on mass construction experience in U.S.A., calculated on 1946 dollars.

[2] Catherine Bauer, "Housing in the United States", in International Labour Review, Vol. LII, No. 1, 1946, Montreal, ILO. pp. 16.

town, perhaps even for the acquisition of the land depending on specific conditions, and after completion shall turn over the New Town to two specific, separate administrative entities: the New Municipality, which shall receive all non-rent bearing facilities of the Town, like roads, schools, playgrounds; all other rent-engendering elements, residential, commercial and industrial structures should be transferred to a Limited Dividend Corporation whose shareholders will be the Town-population. Essentially the Municipality and the Limited Dividend Corporation will represent the same body of people, but for administrative and accounting purposes, this division seems advantageous. Public utilities and Transportation financed independently by bond issues could best be handled by a separate Corporation or become part of the Municipality and its operations. The period of transition – between the completion of the Town and a reasonably complete occupancy of all facilities – poses another crucial problem This time lag could best be bridged by a complete advance organization of the various departmental responsibilities in the future Municipality and allowing the Development Corporation to run the physical plant of the New Town until a sufficiently representative population has settled in the Town, to elect a temporary council of provisionary representatives who in turn will formulate an interim municipal charter. England's Garden Cities could serve as a reasonable precedence for this specific problem.

The biggest single question complex in the concept of New Towns undoubtedly is the financing of such an undertaking. A radically new attitude must be assumed towards such accepted and implied words as value, return upon investment, guarantees, mortgages, amortization and many more, in order to transform successfully planning concepts into physical realities. Paper is very patient and many grandiose ideas have been expressed upon it; unless we are prepared to carry an aggressive spirit and will to rehabilitate our cities into the cold realistic world of dollars and cents we are liable to the same criticism as planners are, who prepare scheme upon scheme only to be filed and rest peacefully in some municipal archive.

A full explanation of the underlying hypothesis of the financial structure of a New Town seems somewhat beyond the scope of this paper; yet a condensed resumé would only tend to obscure the principles involved.

Nevertheless, a complete concrete example has been calculated and a breakdown and distribution of costs has fairly conclusively shown the economic feasibility of a New Town. Perhaps it remains for later presentation to outline fully these calculations which strengthen the soundness of the overall planning concept. Indeed it may point towards a radically new approach in financing urban rehabilitation.

The construction of New Towns involves considerable financial outlays and risks. In order to remain as independent of outside financial influence as possible a high measure of self-subsidy should be sought; federal insurance of long term mortgages should be accepted but no other outside financial source.

Through the construction of New Towns, new values will be created and new sources of revenues opened; every insurance should be provided that these increments revert to the entire community and help maintain a higher level of services and living in general.

This aspect of New-Towns-planning approach more than any other single issue admits of a great deal more research and experimentation.

Some of these problems of financing and administrating New Towns will form the key to their ultimate success, and yet only the physical aspect of the undertaking, the actual buildings and roads will testify for and establish the validity of this new approach to urban rehabilitation.

The physical backbone of any settlement, is its streetnet and its means of direct communication; all other components are a function of this overall structure, pretty much like the bones in man support and give meaning to the human body. Transportation ties a city together. The obvious malady of our cities is their broken-down system of transportation. Many a gigantic highway system, elevated or subterranian, has been proposed, to alleviate this growing debacle in our cities; this represents a palliative and not a cure. A radical solution must go deeper. Let us examine the roots of the evil and perhaps reduce some of the traffic engendering functions in cities.

Traffic is created by transportation of man and material; city traffic can further be classified as to its purpose and it may be astounding to know that for Boston, a fairly representative metropolitan area, even for Canadian conditions, more than 40% of the daily passenger intra-metropolitan traffic represents commuting to and from work; the next largest single percentage is shopping traffic, again a result of the sprawling, sporadic growth of our cities. A complete analysis of the total intracity traffic volume further highlights the absurdity of the situation. By reducing the source of such wasteful traffic, namely commuting to work, shopping, and for pleasure, the traffic problem of our complex cities could be solved.

A New Town will eliminate a large percentage of traffic from the outset through rational planning of its components. The "journey to work" will be greatly reduced in volume and distance; the countryside will be close by and ample green areas will be within the urban confines. Adequate provision for the motor car are also an integral part of the Town pattern, but the machine will serve the people and no longer dominate them. In Montreal or Toronto the motorcar dictates life and everything in the path of such pseudo-progress is being vanquished. Transportation routes in the Town can remain on level ground, where they are easiest and cheapest to build and adequate parking space – cal-

culated to serve a fairly stable community, socially and economically – will become a planned part of every shopping area, school, or church.

There are several means of transportation and – although at present everything pushes along a so-called street – there seems no reason why these different vehicles must share the same right-of-way. We insisted that railroad tracks move onto their own land and that subways run in their specific tunnels; the same principle applies to the car, the mass transportation vehicle, the bicycle, the cart, and certainly to the pedestrian. Man has devised machines which can run at sixty, seventy, eighty, and one hundred miles per hour but in our cities these potentialities remain figures on the speedometer.

In the field of mass-transportation the rapid change of technology can clearly be seen: faster and more comfortable and ever-increasing radius of operation – these were the slogans of urban mass movement. The fastest and most economical mover of large masses – under given circumstances – undoubtedly is the rapid subway train which on the average transports 60,000 people per hour, per mile in one direction along a single track; indeed New York, Chicago, Boston and Philadelphia could only grow so large and sprawl so far due to this means of locomotion. Yet it represents an extremely rigid transportation that can never hope to follow the changes of population within the city. It was calculated and designed for a static population; it is chained to its tracks and tunnels and represents a huge capital investment which can only be amortized over a long period of time, longer usually than its useful lifetime. Subways are therefore confined to big cities in Europe and America and could not keep pace with changing patterns of a city and its needs. More and more it becomes apparent that many transportation systems – no longer operating in districts of highest traffic density – are losing out to more flexible – if less efficient in terms of mass-movement – means of transportation. A well-integrated bus system certainly is more adaptable to the changing needs of people and, since it is not bound to tracks or rails, can be switched from route to route as new requirements may dictate. Its main deficiency to-day is that it operates on obsolete streets which severely limit its efficiency. A rehabilitated street-net would give the bus an even greater advantage over all other kinds of mass movers; and the overall reconstruction of streets in our large cities can hardly be postponed any longer.

The railbound transportation in the past had another paramount function, that of moving masses of people at peak hours and in peak areas. The overwhelming number of commuters come into the city in the morning and leave again in the late afternoon. This is an obvious result of our system of work and its "office hours". During the recent war we experimented – in most cases very successfully – with staggered working hours to alleviate concentrated traffic loads. People worked in shifts or at least arrived at work in staggered periods of half hours. Besides avoiding "rush hours" the various systems of transportation, be it subway, tramway, busses or just the street itself, were utilized more fully and operated more economically. There seems little reason why such valuable wartime experience could not be continued in some measure. Even a two or three shift system in certain industries seems reasonable and would produce immense local and national economies in production of goods as well as utilization of plant and equipment. Shift operation would reduce the capital investment charges per worker in favour of higher wages and increased profits and yet a high production of goods would result; more leisure time for labour and management would be a further increment and underline the immense latent need for adequate facilities for increasing active and passive recreation.

Any total rehabilitation of the means and ways of transport must consider all these and many other ramifications of their function; of particular significance is their relation to the building pattern they serve. They must be considered together and form an integrated whole; they are interdependent and complimentary in their functions.

Thus a New Town will have the obvious advantage of being built at one time, as a complete "cell", with all its components related and proportioned to fit the predetermined scale of human activities. Transportation will again be a means to an end and be controlled in the interest of those who use it.

The major street-net will be designed as a free-flow system without any traffic lights; all roads will be one-way lanes to insure safe traffic and a continuous flow of vehicles. All routes of mass-transportation will provide special pull-off islands where the vehicles can take on and let off passengers, apart from the traffic stream of the road. Pedestrians will walk on footpaths, separate from vehicle-roads, which they never cross at grade level. Roads and footpaths will be synchronized to provide a two-sided lot access throughout the residential areas of the New Town, as indicated in the Detail Neighbourhood Diagram (fig. 6) by the thin-line footpath pattern.

The former "front" of the lot will be served by the road, whereas the "back side" will be accessible from the footpath-system. Shopping, school, nurseries and all other communal facilities will also be served by these two independent nets and restore to the pedestrian as well as to the motor car its rightful domain. Intercity traffic will be at a minimum and the accessibility of all parts by foot will encourage and enable people to walk, rather than use a vehicle of transportation. At least they will be presented with a choice and that constitutes the paramount principle of planning such a radically rehabilitated environment, a truly democratic environment where man can again make an intelligent choice and not have to accept compromise solutions continually; living in the kind of cities most of us were sentenced

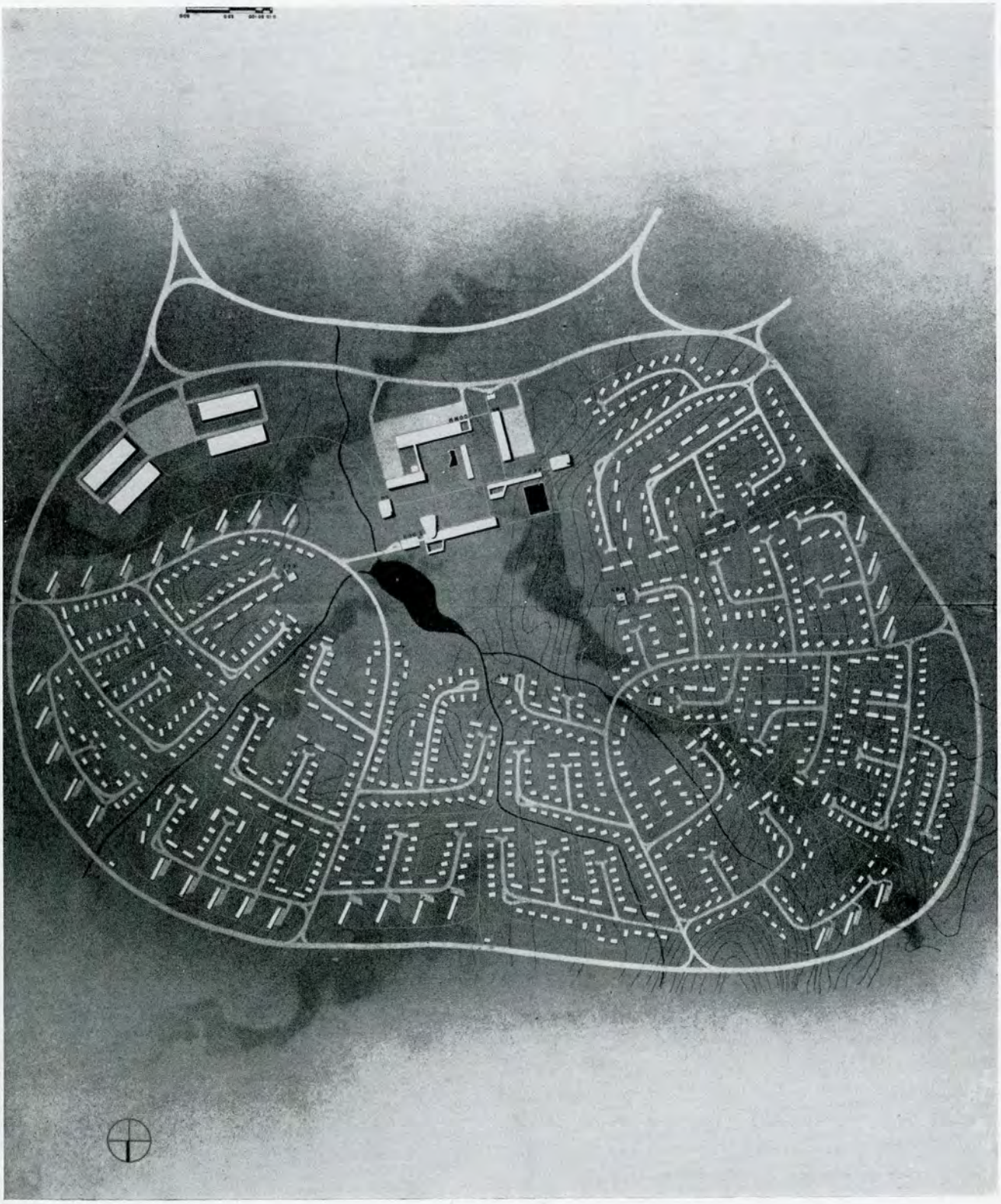


FIGURE 6.

to exist in, has made us docile and clouded our perspective of a basic freedom of a democracy: that the needs of the individual human being are supreme and must find clear expression within his community. Cities must reflect this spirit of erect citizens, proud to be free and aware of their rights and responsibilities towards themselves and their neighbours, expressed in an intelligent selection of a given choice in all ways of living.

ULTRAVIOLET LAMPS FOR DISINFECTING PURPOSES

By W. W. COBLENTZ, Ph.D., D.Sc.
Washington, D.C.

Reprinted from the Journal of the American Medical Association

THE "Regulations of Acceptance of Ultraviolet Lamps for Disinfecting Purposes"[1] adopted and used by the Council on Physical Medicine have been in force a sufficient time to show that they serve a useful purpose in securing and maintaining a high standard of performance of ultraviolet germicidal lamps.

In my opinion the Council acted wisely at the outset by placing the responsibility on the lamp manufacturer and the distributor for the adequacy of the lamp installation for purposes of radiant disinfection of the air and for the adequacy of the protection from injury of the occupants of the space irradiated.

With the use of ultraviolet disinfecting lamps in their fixtures, as now made and attached to the side walls of schoolrooms, two types of avoidable injury have recently come to my attention. The first type of injury consisted of conjunctivitis and erythema, caused by the ultraviolet rays reflected by the lamp fixture horizontally across the schoolroom into the face of a person standing on the rostrum. Obviously, with a little forethought, this could have been avoided by installing the lamp fixture at a higher elevation or by adjusting the lower edge of the reflector so that the rays could not shine into the face of a person standing anywhere in the room.

The second type of injury reported to me consisted of burns by ultraviolet radiation reflected from the ceiling of a schoolroom on the bald head of the teacher as well as on that of the investigator who made the ultraviolet intensity measurements. In this case the lamp fixture was of the type made to project the ultraviolet rays vertically (thus impinging on the ceiling) as well as horizontally; and, since the ceiling was made of sound-proofing material that allegedly could not be painted with a material having a low reflectivity of ultraviolet radiation, the intensity at the level of the top of the head of a person standing erect was sufficient to cause erythema and burns. In both cases the intensity of ultraviolet radiation, at the location in the rooms where the injury was reported, was much higher than the maximum permissible value specified by the Council. It is gratifying to know that in both of these instances remedial action was taken. Obviously, if the lamps had been properly installed and measurements of intensities of diffusely scattered ultraviolet radiation had been made before occupancy of the room, these injuries would not have happened.

In addition to the aforementioned types of injury is the slow photochemical action caused by low intensity ultraviolet radiation on the skin, producing desquamation of the epidermis of some of the nurses and infants, reported in the Council's "Acceptance."[1] This was remedied by painting the walls and ceiling with a decorative, light blue paint that absorbed these rays. Incidentally, it is relevant to note that many paint vehicles (also drapes, wall paper and the like) will be burned brown by ultraviolet rays.

The Council's specification of maximum acceptable intensities of ultraviolet radiation incident on an occupant of a room is based on my radiometric measurements in the aforementioned nursery after it was painted. Of course, there has been a wail that the Council's maximum values of acceptable intensities are not "sacred". However, from my contacts with people in nurseries equipped with disinfecting lamps I am fully convinced that the Council's specification of an intensity of ultraviolet radiation of wavelength 2,537 angstroms not exceeding 0.5 microwatt per square centimeter (0.5 μ W/cm.^{2}) incident on an occupant for seven hours or less, and not exceeding 0.1 microwatt per square centimeter incident for twenty-four hours a day, is a fair and reasonable requirement that should remain unchanged. This is substantiated by the aforementioned measurements of intensities of ultraviolet reflected from the schoolroom ceiling, amounting to only about four times the Council's specified value (0.5 microwatt per square centimeter) for an occupancy of not longer than seven hours. Nevertheless, erythema was caused, showing the low margin of safety that prevailed before the lamp fixture was modified.

The Council's requirements for acceptability of ultraviolet disinfecting lamps (that the concentration of ozone near the occupants of the room shall not exceed one part in ten million) should continue in force.

A recent improvement in germicidal lamps consists in the use of a glass that is highly transparent to the powerful emission line at 2,537 angstroms and is practically opaque to wavelengths shorter than about 2,300 angstroms that generate ozone. This improvement in lamp construction is a tacit recognition of the importance of preventing the generation of ozone by germicidal lamps. Since certain of these lamps do not generate ozone, or at least generate less ozone than other lamps, this could be regarded as an advance in sanitary ventilation.

About three decades ago an elaborate attempt was made to disinfect water on a large scale by ultraviolet lamps, using hot quartz mercury arc lamps. The presence of suspended matter made ultraviolet radiation an uncertain method of sterilizing water. With the advent of the low vapour pressure, mercury arc germicidal lamps the proposal to sterilize water, particularly individual water supplies (canteens), has been again revived. Laboratory tests show that while cysts of Endameba histolytica can be killed by radiation from a low pressure mercury arc (wavelength 2,537 angstroms) lamp, since the effectiveness of such radiation depends on the depth and turbidity of the water, there is no evidence of the practicability of using this method as an adjunct in the sterilization of drinking water. Hence, the point of view expressed in the Council's "Acceptance"[1] regarding the sterilization of solids and of liquids (water) does not require modification.

The outstanding perennial problem is the prevention of classroom air-borne spreading of childhood contagions (chickenpox, measles, mumps) and colds by the killing action of ultraviolet radiation, using the newly developed germicidal lamps. The uncertainty of the effectiveness of ultraviolet radiation in preventing colds seems about as great at this date as it was some two decades ago when irradiation of the body with "hot quartz" mercury arc lamps was tried.

There are several reasons for this uncertainty: (1) "The futility of trying to stop colds among school children by irradiating only their classrooms"[2], because their surroundings cannot be controlled while they are not in the classroom, and (2) the total intensity of germicidal radiation emitted by each lamp in its fixture, and the total number of lamp units used must exceed a minimum value in order to be effective in reducing cross-infection, as noted in the Council's "Acceptance".[1] This is shown conclusively in the studies carried out at the U.S. Naval Training Center, Sampson, N.Y., where observations were made on large groups of recruits housed in barracks that were (1) irradiated with high intensity germicidal lamps, (2) alternate barracks having low intensity germicidal lamps and (3) barracks used as controls in which there were no germicidal lamps.

The results of this investigation,[3] which extended over a period of six months (December to May) are impressive and instructive in showing that the incidence of respiratory illness in the barracks irradiated with low intensity ultraviolet lamps followed the same undulations that occurred in the adjacent control barracks, whereas in the barracks irradiated with a high intensity there was a definite reduction in the incidence of respiratory illness — a reduction estimated at 25 per cent. for the entire period of observation of respiratory illness in the high intensity irradiated group as compared with the control group, "and not due to chance." Hence, while ultraviolet radiant disinfection of air can be substituted for actual air displacement in reducing cross-infection in chickenpox, measles and mumps[4], and with less certainty in reducing the incidence of colds, there is no evidence that will justify high pressure sales promotion of ultraviolet disinfecting lamps as a cure-all or sure-shot preventive of respiratory illness. Disinfection by ultraviolet radiation can serve a useful purpose, but it has its limitations. In this connection, it is a satisfaction to record that at least one manufacturer is issuing to its salesmen and distributors a printed guide setting forth factual information regarding ultraviolet disinfecting lamps and some of their shortcomings. Whether this is for self-protection (because an "employer need not ask an employee to cheat for him", as the vice-president of one large lamp manufacturing concern once remarked to me, years ago) or for altruistic reasons, the booklet should serve a useful purpose in guiding over-enthusiastic salesmen as well as the consumer.

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NEWS FROM THE INSTITUTE

Income Tax Exemption for Salaried Architects

Some months ago, the attention of the Institute was drawn to a recent decision, whereby a Winnipeg lawyer in the employ of the Provincial Government claimed the fees paid to his Bar Association to be deductible from his taxable income. This brought to the fore the right of a professional employee to deduct from his income for income tax purposes, the fee which he pays to the licensing body in his Province.

The decision in this case was favourable to the lawyer, and the Institute was requested to ascertain whether it also applied to architects. The Income Tax Department at Ottawa has now confirmed the fact that this ruling does apply to salaried architects, and therefore, fees paid by salaried architects to maintain their membership in their Provincial Associations are deductible from income for taxation purposes. Such fees might be shown in Item 25 of the T.1. Returns under the head of General Expenses applicable to the profession, and described thus: "Fees paid to maintain membership in the . . . . . Association of Architects in order to have the right to practise as an architect."

Duty on Plans

The Institute office has recently received several inquiries concerning the duty payable on architectural plans entering this country from the United States. The November, 1945, issue of the *Journal* carried a copy of the Appraisers' Bulletin under which plans, drawings and blueprints are valued. There were also printed with this Bulletin copies of correspondence with regard to the question of duty on plans. The following brief summary of the situation is offered for the information of any interested members.

At the time of entry of such plans, an appraiser values them for the purpose of levying duty. If the plans are for a building whose estimated cost is less than $10,000, they are valued at the architect's usual charge for furnishing such plans. If, however, the estimated cost is $10,000 or over, then the plans are valued for duty *provisionally* at 3 per cent. of the estimated cost of the building. In such a case, when the construction is completed, the importer files an affidavit as to the actual cost of the finished building with the Customs Department where the plans were valued, and any adjustment for underpayment or over-payment of duty is then made.

The duty payable on such plans is 20 per cent. of the appraised value, plus 8 per cent. Sales Tax on the duty value paid, payable at the time of entry. Specifications, if they are handwritten or typewritten, are admitted duty free as "manuscript". However, if the specifications are mimeographed, they are considered as "printed matter", and are subject to duty at 27½ per cent. of their appraised value. Such appraised value will be reached by consideration of the time spent in their production, the labour involved, and so on.

Engineers' plans are valued for duty at 1 per cent. of the estimated cost of the construction, and the duty payable is 20 per cent. of the appraised value. At the last session of Parliament, an amendment to the Customs Tariff was introduced, whereby certain engineering plans are admitted to Canada duty free. However, this new clause, Item 180e, was most specific in excluding plans for "office or other buildings" from the provisions of the amendment, and to date there has been absolutely no indication of it affecting architectural plans or blueprints.

It might be noted that, once duty has been paid on an original set of blueprints or drawings, they, or copies, can be entered at the cost of production, provided that suitable and satisfactory proof of the first duty payment can be produced. The Customs authorities, both in Canada and the United States, are most reasonable in dealing with the transmission of drawings and specifications back and forth between the Client and the Architect, for the purpose of communicating information between them.

Pan-American Congress of Architects

The Pan-American Congress of Architects is holding a large Assembly in October, 1947, in Lima, Peru. The National Library of Lima is presenting an exhibition of books of American Architecture and Town Planning, to be held in conjunction with the meeting of the Congress, and an invitation was extended to the Institute to submit a selection of books and photographs for inclusion in the exposition.

This invitation was considered at the last meeting of the Executive Committee of the Council, and the question was referred to the Editorial Board of the *Journal*, with the request that they supervise the preparation of suitably bound Issues of the *Journal* for submission to the National Library of Lima. Action will also be taken, through the National Film Board, for the preparation of a photographic exhibit.

ALBERTA

It is understood that the Royal Architectural Institute of Canada is investigating the examination and entrance requirements for the architectural profession in the various provinces with a view to ensuring some standards in the matter.

To some people the word standardization is as a red rag to a bull. It spells to them the negation of individuality and of that variety that is of the essence of art. To others it appeals as a blessed word signifying a better and more economical way of getting work done, an escape from the anarchy of excessive individualism and

the introduction of that order that is also of the essence of art. Much may be argued on both sides. But since our Associations do and must hold entrance tests of some sort, the only question that remains is how to preserve individuality within a certain wide standard framework.

It seems a duty on the part of the R.A.I.C. to give some lead in regard to the entrance qualifications for the profession. Programmes for these no doubt exist in each of the provinces. These programmes require to have a certain permanence. If they were changed every year, applicants for admission would be at a loss as to what to prepare for. On the other hand, such programmes should not be entirely static. They require periodic revision. Architectural practice is not an immutable thing. In institutions, such as universities, where examinations form a regular part of routine, there is always some dissatisfaction with the examinational system. No sort of examination can be devised which is a perfect test of ability. Some valuable modifications may be employed. The single pass-or-fail written examination is the poorest form. A progressive series is better. The writing of theses and the production of testimonies of study is still better, so long as it can be ensured that these are the genuine work of the individuals concerned.

The Royal Institute of British Architects has progressed along these lines in its examinational requirements. They have three stages of membership – Probationers, Students, Associates. For the first stage only some evidence of knowledge of drawing and of a good general education is asked. For Students, testimonies of study are required consisting of eight drawings, three of which must be working drawings of a building. In addition, these students sit for examination in five distinct subjects. For the final stage candidates must gain approval for four set Problems in Design. They must submit a Thesis showing advanced individual work dealing with one of four suggested subjects. These are—Historical Architecture; Design, including Decoration; Science (acoustics, electrical or engineering) as Applied to Buildings; Town Planning. In addition there are five distinct subjects in which these candidates must sit for examination. It is the policy of the R.I.B.A. that all those entering the profession should attend schools of architecture and they grant varying degrees of exemption from their own examinations according to the quality of the work done in these schools.

Great changes have in recent years taken place in the materials and resources that an architect has at his disposal. Corresponding changes have consequently taken place in the content of what every architect ought to know. Text books on building construction have, or ought to have, undergone great modification and expansion, probably to such an extent as to require several volumes more. Some of the subjects that continue undergoing important changes may be mentioned:

In the use of timber much knowledge and experience has been acquired and many new processes have been introduced. The seasoning of timber is now more perfectly understood. New methods are in use for preservation against fire and rot. New processes have been introduced for laminating, plying, glueing, bending, and connecting. Synthetic wood has achieved some importance. We learn more about the qualities of timber. New species are coming upon the market.

The study of illumination, natural and artificial, has yielded many serviceable results. Related to this is a revolution in the glass industry and in electrical appliances. The physical and psychological effects of light have now to be taken into consideration.

Production by machine is becoming an increasing necessity. In some cases this is a matter of health as in the case of machine dressing instead of hand dressing of stone and other such processes. In other cases it is a matter of economy. A large proportion of the labour on a building is now done in the workshop. This entails a closer co-operation between the architect and the constructors themselves so as to eliminate the wastage that has so far been taken as inevitable in building operations.

The science of acoustics is a comparatively recent development and covers not only insurance of good hearing in halls but also questions of the deadening of air borne and contact noises. As in the case of lighting, this has considerable physical and psychological importance.

The above are a few only of the many subjects that might well form matter for students' theses. No man can know all about everything; but a well considered treatment of one or two such subjects would display ability to deal with others.

It may well be questioned whether special study of Town Planning should form part of an architect's entrance requirements. This is a very extensive field for which a special profession is required. Its inclusion by the R.I.B.A. is probably a good practical policy to aid in recruiting a profession to which architecture is fairly nearly related.

It might be supposed that the subject of Historical Architecture is of an unchanging nature. This is far from being the case. History requires re-writing for each generation. Gibbon's splendid history is a record of the 18th century's view of the past. It will always stand as a classic of literature. But the outlook of each generation varies and its interpretation of the facts of history and the value to it of these facts similarly varies. So it is in the history of architecture.

Cecil S. Burgess

BRITISH COLUMBIA

Construction in British Columbia is now at the turning point. At this time when the greatest demand for new projects in the history of the Province is with us, it seems that the increasing cost may jeopardize the whole programme. There is no doubt that a similar situation has developed in other parts of Canada and in the United States.

Home Building Permits in the city of Vancouver have now dropped to fifty per cent. of the 1946 level. Houses costing $4.00 per square foot in 1939 are now running from $10.50 to $11.00. It is now rumoured that carpenters are coming out for 40¢ an hour increase in June. How far cost can go before we reach the breaking point is anyones guess, but there is no doubt that house costs have now risen far beyond the means of the middle income group.

There seems some hope in the situation, in that a construction slow down may allow the material manufacturers to catch up on production which may reduce some of the inefficiency in construction, and competition may again develop. It is estimated that if the inefficiency were eliminated that costs could be reduced at least twenty per cent.

Probably the clearest indication of the condition here, is that the speculative builder has come to the point where costs are greater than the selling price. Several builders have now left the market.

The majority of practising Architects remember vividly the depression of the "Thirties". This profession seems to be subject to all the ups and downs of labour inefficiencies or disputes, material shortages and speculative markets. There seems, on the surface, little that the Architect can do about it. But is there something the Architect can do to provide housing and accommodation for the group who needs it most? Is this not the place where we have fallen down in not campaigning for something better?

Most of us know that cheaper housing is possible but only by the elimination of certain by-laws and standards which applied mainly to design and materials of twenty years ago.

It is not considered that the writer is in a position to offer a solution. Whether the problem can be solved, by prefabrication, unit design for future expansion or reducing housing to a simpler form than so far developed, it is considered that it is up to the Architect to produce the ideas, design and promotion so that the public can turn to our Profession with respect.

Families are living in crowded, deplorable conditions and they cannot understand why they have to live in dirty hovels, with children in danger each day from traffic hazards when a preferred few can build houses at any price in ideal locations.

Whether the solution is by Government Subsidization or by Private Enterprise, it is still a challenge to our profession to show the lead.

It is suggested that a research committee formed and sponsored by the R.A.I.C. might be a start in the right direction, but whatever is done it must be done immediately, before it is too late.

The problem is not confined to British Columbia, but there is real hardship developing throughout this province. If the Architectural Profession cannot provide a solution to whom shall these people turn?

R. A. D. Berwick

ONTARIO

It appears that the cost of living, which was understandably high during the war, has not yet shown any marked tendency toward a return to peace-time levels. Indeed, we are informed by a reliable source that food prices in particular have risen sharply in the past few months. And now the final blow has been dealt our staggering economy. The lowly chocolate bar occupies the spotlight of notoriety through the bland announcement that henceforth its price will be eight cents. *Eight Cents!*

This was too much for Young Canada.

Now, the schoolboy lives in a world of his own. The worries and responsibilities of maturity have not yet been laid on his shoulders; he wisely leaves them alone. Reconversion means nothing to him. An unfavorable balance of trade leaves him cold – Dad can take care of it. Show him a tax form and he asks what is it? You cannot frighten a schoolboy by shouting "Abbott!" or "Ilsley!"

But a rise in the price of a staple commodity is a different matter. From one end of the country to the other, Young Canada expressed its feelings in no uncertain terms. Thousands took place in spontaneous demonstrations against this outrageous attack on the adolescent budget. Mass meetings were staged in Montreal, Toronto, and many other places. As we go to press there has been little or no bloodshed, and the crisis seems to have passed. The girls and boys have learned that such demonstrations are frustrating. Everyone concerned with the crime protests his innocence to the skies, and the villian in the piece is difficult to identify. There is no one to hang in effigy.

The results, however, are quite positive. The buying public – of all ages, evidently – have steeled themselves against temptation. Candy counters are piled high with unsold bars. If you were to purchase one to-day it would probably be stale. The drop in sales is no doubt a closely guarded trade secret, but it must be sensational.

Will the price therefore, come down? If it does, there may yet be hope for housing.

There is an obvious parallel between the five-cent chocolate bar at 8 cents and the five-thousand-dollar house priced at $8,000. There is already a definite indication, in the United States, of a buyers' strike in the housing field. The *need* is still as great, but need alone will not sell houses. There must be an *effective demand* – a willingness to buy. Grossly inflated prices and shoddy workmanship have dulled the edge of that demand. The general impression is that building prices have reached their peak, and will fall off to some extent by the end of this summer. If enough people believe this, the strength of that belief may itself be a powerful influence. Cause and effect are not always easily distinguishable.

The high costs of building are capable of profound analysis, which we have no inclination to attempt. But we think that the importance of labour is sometimes under-emphasized. Usually construction costs are expressed in terms of two general headings – material prices and labour rates. But *practically the entire cost of a house is labour* if you carry the analysis far enough. Take any building material, trace it to its source, and it is clearly evident that the building dollar goes into the pocket of labour. Lumberjacks, miners, truckers and a host of others get their share long before the materials are delivered at the site. Native raw materials cost us nothing; they are there in the mines and the forests, waiting to be taken.

The price of a house, therefore, depends upon the cost of labour in a multitude of different industries. Although the post-war increase in labour rates has been phenomenal, it does not account for the whole difference between pre-war and present costs. The dislocation of supply is an important factor, of course; but probably the worst aspect of the picture is the inefficiency and discontent all the way down the line. An hour's work to-day at 75¢ does not produce as much as a pre-war hour at 45¢.

No doubt our argument is over-simplified. But it seems to us that high prices – in housing and everything else– can be largely attributed to one regrettable factor. A widespread disinclination to do a good day's work.

Kent Barker

QUEBEC

". . . Whatever a man soweth,
that also shall he reap."

Galatians VI, 7

Before your correspondent was born, Frank Lloyd Wright was publishing plans and perspectives of small houses in American popular magazines. Since then it has become the custom of our bright young men and even some of our elder statesmen to publish their residential work in non-technical journals. The results have been altogether good and to-day the architect is the acknowledged authority in the field of "made to measure" houses, with the result that the standards of design and accommodation have been enormously improved. Each month the magazines show new plans and feature articles dealing with some aspect of residential design. It is interesting to note how the luxury house has shrunk in size during the last forty years, so that now the "custom made job" is little larger than the minimum standards permitted by housing acts and building by-laws. Here is where confusion starts – the floor plans of specially built dwellings are sometimes indistinguishable from those intended for low cost housing. The real difference is that the latter should be built in very large numbers from standardized parts with less consideration for the whims and design preferences of the occupant and considerably more scrutiny of the cost of each small item.

To most people a plan is just a plan – something with white lines on blue paper which can be clipped from a magazine or bought in a number of different ways and at different prices. Perhaps we have not been careful enough with our definitions, explaining that the plan is only a directive to the men who will do the building and that a plan is a good one only insofar as it takes into account all factors of the problem to be solved. In the case of low cost housing, a plan which concerns itself with the construction of one dwelling when the problem is to build ten thousand units, is no plan at all. Such an undertaking requires drawings, progress charts, labour conferences, orders with manufacturers of building materials, and intricate co-ordination of the design, construction and financing techniques. These are the occasions when plans mean much more than a set of blue prints yet how rarely is this aspect appreciated. One has only to recall the closing banquet of our Annual Assembly when the Vice-President of the Central Mortgage and Housing Corporation made an eloquent plea for our contribution in solving Canada's housing problems. The help we were asked to give was more plans for small houses at a lower cost per set of plans.

Since the inception of the Dominion Housing Act nearly fifteen years ago, architects have been invited to submit designs for small houses in government sponsored competitions, programme requiring that a certain number of rooms and other spaces be provided within a stipulated maximum cubic content. Some excellent little houses have been designed to fit these conditions and many Canadian families are indebted to the government and the participating architects for houses which are far above the standards formerly prevailing. It must be remembered, however, that the competition programmes limited contestants to the design of single houses and that it was on this basis that awards were made. In the field of finance, the government housing acts have extended credit and have placed mortgage lending on a sounder basis than ever before, but still with no solution to the problem of providing dwellings for those unable to embark on a venture requiring an initial outlay of some thousands of dollars. Some years ago the spokesman of the National Housing Act administration told us that we had not done our part and implied that the relative failure of the housing expansion programme was due to our inability to provide designs for houses which would cost less. We applauded the speeches and promised to try again. Did anyone really believe these assertions and do we believe them now? Shall we pull out the drawing board again and design a smaller size room house, making the poche of the walls paper thin in order to reduce the cube and (by implication) the cost of plumbing fixtures?

It is frequently stated that the construction industry is in the horse and buggy era. In a limited sense this may be true but that part of the industry which has produced our hospitals, office buildings, factories and other large undertakings need make no apologies when compared

with similar work done elsewhere in the world. On the other hand, we have lagged behind the United States and Europe in our ways of building low cost dwellings. Our aims are not clear and our techniques are antiquated, being unduly influenced by the traditions of speculative building and small scale operation.

One need not look far to find the causes of present conditions. Until quite recently we were content to have our urban poor living in the cast off dwellings of the newly rich. As population continued to grow and old houses fell into disrepair, they were replaced by miles of dwellings erected by men unacquainted and unconcerned with the benefits of good social and architectural design. Even to-day, in a city like Montreal, the average new dwelling is of a very low order. In the years between the two wars, when the advances made in European housing gradually became known in Canada, the clamour for government assistance resulted in the passing of the Dominion Housing Act. Those who expected comprehensive housing legislation were disappointed to find that the new act dealt almost exclusively with the financing of individual dwelling units and that the provisions for financing rental units did not greatly increase the number which were built. Nevertheless our housing acts were operative and functioned well within their limited objectives. With the outbreak of war and the large migrations of industrial workers, something more than *laissez-faire* was required to provide dwellings for them. There have been many criticisms of Wartime Housing without much understanding of the peculiar conditions which made temporary housing necessary. It is my opinion that, with all its supposed deficiencies, Wartime Housing was a most opportune and realistic achievement.

In the field of national housing the architect seems to be in much the same position to-day as he was before the war. He is the man who must be paid for drawing plans of "prettier and more convenient than average" houses. The knowledge, skill and organization which produced the housing estates in England, the public housing in the United States and the great public buildings in our own country exist within our profession and the building industry. Real progress in housing, as distinguished from mortgage lending, would seem to require that those best qualified be given the means and the responsibility for carrying out the programme.

We have been accused of neglecting small house competitions and commissions because they are less profitable than other work, a strange reproach in a country of free enterprise. The truth is, of course, that large scale developments which require an immense amount of study can be done at very low rates whereas individually designed minimum houses are unprofitable even at exhorbitant fees. This is the principle which permits the Post Office and the chain stores to operate and there is nothing unusual about it. The difficulty seems to be in convincing the Ministries that we, as a profession, are capable of anything more than the production of individual small buildings suitable for those in the middle income brackets. Such buildings are the direct descendants of magazine houses with which we are now so familiar. Must we reap forget-me-nots when our countrymen need grain?

Richard E. Bolton

CONTEMPORARY DOMESTIC ARCHITECTURE IN BRITISH COLUMBIA

(Continued from Page 180)

climate as compared to its complete elimination for cars shipped to other parts of the country.

Whether or not contemporay domestic architecture has made more progress in British Columbia than in other parts of Canada is probably a justifiable cause for argument. However, eastern architects visiting the coast often exclaim that contemporary housing is easier to apply here due to the more moderate climate, thus allowing more glass area to be used. Glass areas have not been increased, they have merely been concentrated. In other words, glass area per floor area has remained the same over the past 20 years.

In conclusion, it is desired to point out that these houses represent untiring efforts on the part of the architects to persuade the client into the contemporary frame of mind. It would have been probably far easier and more lucrative to build exactly what they wanted. It is very difficult to sell the contemporary plan to the average client who is accustomed to looking at drawings that have a balance of voids and solids on the elevations. Only the more imaginative can visualize a situation whereby the glass front on plan represents only a screen and the elevation travels around the inside perimeter, thus making vases, books and furniture and even ash trays as an integral portion of that elevation.

Mr. Tony Archer is to be thanked for his efforts during the past six months. Photographs are difficult to obtain due to uncertain weather conditions this spring.

OBITUARY

F. MERRILL CAMERON

Merrill Cameron passed away in his office on April 30th, 1947. Serious illness last year apparently had been surmounted, but a recurrence resulted in his death, literally in harness.

One of the younger architects in practice in Ottawa, Merrill was a happy warrior in the cause of an architecture uncluttered by shams and shibboleths.

As Chairman of the Ottawa Chapter, his simplicity, sincerity and influence in matters both architectural and musical combined to make an enduring remembrance.

We, his immediate associates, pay tribute to a soul gallant in adversity, modest in success, and to all who appreciate essential goodness, a man beloved.

A. J. Hazelgrove and *S. Lithwick*

OBITUARY

HUGH G. JONES, F.R.I.B.A., R.C.A.
1872 — 1947

The architectural fraternity in Canada, and more particularly in Montreal, was fortunate over a period of nearly forty years, in having as one of its members Hugh G. Jones —the man, the architect, the artist.

As a man, he was of inestimable value to his chosen friends and contemporaries on a wide range of interests. Fortunate indeed were those with whom he was on intimate terms, since he was on the whole more interested in accomplishments than in people in general and consequently was not active in many groups. At the same time his circle of friends included many leaders in the world of business, transportation and the fine arts.

His qualities of sound judgment, good taste and clear thinking were most appreciated by those best qualified to judge—his fellow architects and artists.

In his primary interest—"Architecture"—he did much to raise the standard of achievement. No efforts were spared in research and patient study to obtain the best results within the limitations of time and cost, and this will become evident upon examination of the detail of his works. Perhaps one of his greatest qualities, as a master in architecture, was a marked ability to arouse enthusiasm and to obtain the eager co-operation of the groups with whom he worked. At all times he eschewed the personal pronoun while actually leading, yet never withholding credit when due and his influence still persists among the many who had the good fortune to be associated with him and his efforts.

The Montreal Windsor Station extension, with its well known Tower, for the Canadian Pacific Railway, was his first important work in Canada, after his arrival from New York in 1908.

He was commissioned by the same Railway Company around 1913, to study the problems of a Union Station in Toronto, and subsequently became the leading spirit in matters of design, in a separate organization created to carry out the work. His executed work included the Station and Office Building for the C.P.R. in Moose Jaw, Sask., in which he struck a new note in Railway Station planning by separating the public sections from the office requirements, while at the same time creating a group of some distinction.

Among other works of note which might be recalled are the Fulford Memorial Home at Brockville, Ont., Dominion-Douglas Church, Westmount, P.Q., and St. John's Church, Moncton, N.B.

The Central Area of the Canadian National Railways' Montreal Terminal Development was the last architectural work with which he was actively connected. He was the directing force behind this project until it was postponed in 1932.

It is given to the few to gain distinction in the fields of both architecture and painting but such can be said of Hugh G. He had a lifelong interest in water colours and in later years took up oils. His production was simply amazing and covered a very wide range of subjects in Canada, the United States, England, France, Italy, the Dalmatian Coast and Algiers. His technique and sense of form and colour were expressed by an artistry of very definite distinction. Some of his works are to be found in the permanent collection of the Montreal Art Gallery; in addition to these, a comprehensive collection of water colours has been bequeathed to the Gallery. The Libraries of the Art Gallery and McGill University have been enriched by many fine volumes from his well chosen collection. Among later interests was his collaboration in the writing of a history of the Royal Canadian Academy.

He was a fellow of the Royal Institute of British Architects and an academician of the Royal Canadian Academy.

He was born at Randolph, Wisconsin, U.S.A., on December 3rd, 1872, and died at his home in Montreal on February 16th, 1947.

STINSON KENNEDY SINCLAIR

We regret to record the death of Mr. S. Kennedy Sinclair, B.Arch., which occurred in London, Ontario, on April 11th, 1947.

Mr. Sinclair was born at Toronto, Ontario, and received his early education in British Columbia and at Jarvis Collegiate Institute, Toronto. Later he attended the School of Architecture, University of Toronto, and graduated with the Degree of Bachelor of Architecture in 1927. Following graduation, Mr. Sinclair entered the office of S. B. Coon and Son, Architects of Toronto and remained with that firm until 1932. He had been a member of the Ontario Association of Architects since 1935. During the war, Mr. Sinclair served with the Royal Canadian Air Force, enlisting in January, 1940, and was discharged in February, 1945, with the rank of Wing Commander.

Following his discharge from the Armed Forces, he opened an office for the practice of Architecture in London, Ontario, and practised his chosen profession in that city until the time of his death.

Mr. Sinclair is survived by his widow, Mrs. Irene Sinclair of London, Ontario, and by his mother, Mrs. Ethel Sinclair of Toronto.