

THE "TYPICAL" RESIDENTIAL SUBDIVISION IN CANADA
Controlled Suburban Residential Developments
Around Major Cities From 1945 To The Mid-1970's

A Thesis
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Master of City Planning
in the Department
of
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Thomas Gordon Young
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DEDICATION

To my wife, Wynne, for her
encouragement and enthusiasm.

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Thomas G. Young

ABSTRACT

This thesis is an analysis of certain problems of the "typical" residential subdivision which was mass produced at the suburban edges of many major Canadian cities during the post-World War II period.

Its purpose is to:

- 1) define and demonstrate the "typical" subdivision in the context of the general suburbanization phenomenon,
- 2) examine and explain the relationships and evolution of various elements of the "typical" subdivision,
- 3) illustrate some of the major problems that the mass production of "typical" subdivisions has contributed to and how they could be remedied,
- 4) show an alternative way of proceeding with subdivision design, and for what reasons.

The steps in the thesis comprise

- 1) a review of basic literature to establish concepts for "subdivision", "suburb", "suburbanization" and "typical" subdivision along with basic assumptions regarding their use in this thesis;
- 2) a historical analysis of post-World War II suburbanization to demonstrate the contexts from which "typical" subdivisions evolved;
- 3) a study of the elements of the subdivision (ie., the house, the lot, the street, etc.) as well as affiliated community and commercial facilities. (This indicated that despite

minor changes in its detail the "typical" subdivision retained its primary role as a site for detached single family housing. That role overwhelmed attempts for developing a sense of community and urban belonging.);

- 4) an analysis of issues in land, energy, economics, and sociological aspects, and their relationship to mass produced subdivisions in suburbia to illustrate some of the failings of the "typical" subdivision, and the current issues they must face;
- 5) a summary of the findings critically examined so as to lead toward a new approach to subdivision design;
- 6) A proposal illustrating a new direction that might be taken for subdivision design in the future.

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INTRODUCTION

INTRODUCTION

This thesis comprises a study of the "typical" subdivision in the context of post-World War II suburbanization in major Canadian cities. As its first objective the thesis explores the general suburbanization phenomenon in Canada in order to distinguish historical and contextual references for a-typical and "typical" subdivisions. Chapter II, entitled "Suburbanization", examines the general historical aspects by focusing upon clusters of events which affected suburbanization in three periods. The first period, the War, is seen as a period which brought economic prosperity and technological innovations, initiated the return to urbanization, and created a potential for suburbanization after 1945. The second period, 1945-1959, is seen as one in which general economic prosperity continued and in which few controls were placed upon suburban expansion. The third period, 1960-1970, is seen as a period of growing economic upheaval in terms of the general economy and in terms of suburbanization.

The second portion of Chapter II examines the contexts in which "typical" and a-typical subdivisions are distinguished.

Essential to the understanding of the demonstrations of Chapter II are a number of definitions, assumptions and background views. These prerequisites form the discussions of Chapter I. Included are definitions of suburbanization, subdivision, the image of a "typical subdivision", and an outline of the factors which were chosen to illustrate the historical aspects of suburbanization in Chapter II.

The second objective of the thesis is to examine further the

physical features associated with "typical" subdivisions and their evolution in the two post-war periods. Chapter III undertakes this task by examining the housing, the lots and lot designs, the streets and street furnishings, the grouping of houses, and the subdivision as a whole.

The third objective turns the focus to present and future concerns of many people, that the "typical" subdivision does not represent a good-fit with the needs of our society for the 1970's. While this concern can not be fully explored and tested in the course of this thesis, Chapter IV reviews the statement in discussions on energy, land, economics in land development and housing, and sociological concerns.

As a final objective the thesis undertakes a design proposal based upon hypotheses evolved from Chapter IV in the four areas of energy, land, economics, and sociology. The proposal is sited in St. Vital, Winnipeg. The design of the proposal has been restricted in time and so it does not purport to be a "solve-everything" solution. As such the thesis concludes with an assessment of the proposal as well as a summary of the thesis in its entirety.

As this thesis encompasses a wide frame of reference and entails an historical review it has relied heavily on other sources in its data gathering approach.

BACKGROUND TO THE ISSUES AND ASSUMPTIONS

- Definitions of Suburb and Subdivision
- Factors Affecting Post-World War II Suburbanization
- The "Typical vs A-Typical" Debate
- Major Issues Affecting Subdivisions of the Seventies

CHAPTER I

CHAPTER I

BACKGROUND TO THE ISSUES AND ASSUMPTIONS

A. Definitions of Suburb and Subdivision

The two terms, "suburb" and "subdivision" have accumulated with them a host of myths and blurred understanding. Although they have both been used to refer to the same or similar physical features they are not synonymous. As both terms are employed extensively in this thesis it is important to distinguish them early and to explain their use as employed in the chapters which follow.

"Suburb" is a relative term used to describe the setting for some type of human activity or activities beyond an existing urban form where, in comparison to the latter, homogeneity, openness, and specialization are its distinguishing physical features. The suburb's affiliation with an urban system distinguishes it from being labelled rural. Its relationship in form and intensity of activity, being somewhere between rural and urban, is similarly expressed in its geographic location between the two. These features have been associated with suburbs of many cultures and down through many centuries from Ancient Egypt and early Biblical times to the present (Sobin, 1971: 16). Hence, the term suburb is defined here as a type of lower urban unit distinguishable from a truly urban form geographically and in the sense of having more homogeneous, open and specialized form and activities. As noted by S. D. Clark, an urban sociologist studying suburbs of the early 1950's around Toronto, suburbs may not have strict boundaries delineating them from the urban center

and the rural environment. Rather, they may flow into the countryside and the city in a smooth transition.

In distinguishing "suburbs" from "subdivisions" in a broad sense it is essential to note from the above the urban-suburban-rural context in which the former term is contained. "Subdivision", on the other hand is exempt from the necessity of such an affiliation. While it, too can be compared to urban form and rural settings, a subdivision need not be associated to a particular city geographically or activity-wise. Thus, it is possible to find a subdivision in an isolated rural setting around a lake. Upon comparing the physical characteristics of the subdivision, however, they could resemble that of a suburb, and in fact are "sub urban" (ie, less than urban in the physical sense).

"Subdivision" is employed in reference to land division. It can either be the process or a product of the process of dividing up land for particular purposes. As defined by Kevin Lynch (1962: 229), "subdivision" is "the process whereby vacant land is divided into lots and public rights-of-way, providing sites for future individual buildings. . . ." The focus of "subdivision", therefore, has traditionally been land.

"Subdivision", related to "suburbanization" is simply the method by which suburbs grow. Each time a parcel of land in the suburban area and adjacent rural area is "subdivided" a new subdivision is created and the suburb is expanded.

The focus of this thesis is upon residential suburban subdivisions which have been produced around or just beyond major Canadian cities in the post-war period. More specifically it is the more controlled developments, those created by plans, which are the issue.¹ Subdivisions of this

1. Generally there are three descriptions given to the methods of

type can comprise a multitude of features from various housing types, to various types and levels of services, to the layout pattern of streets and public rights-of-way, to the organization of churches, schools, parks, and commercial facilities. The features focused upon in this thesis extend from the three basic elements of Kevin Lynch's definition and from other publications of which V. J. Kostka's Planning Residential Subdivisions is particularly significant. In the latter, the subdivision comprises individual lots, streets, and layout patterns for housing, schools, parks and other community facilities (1954).

B. Factors Affecting Post-World War II Suburbanization

The factors affecting post World War II suburbanization are numerous and complex. As well, they may be described from various points of view. There are, for example, technological factors such as the improvements made to the automobile and the subsequent effect on prompting widespread, low density development. There are also economic factors which range from general economic prosperity initiating urbanization and suburbanization, and lower land values on city outskirts which favor development there. Political factors also can be isolated in terms of housing policy, planning responsibility and other issues. There are institutional and organizational factors such as the influence of large builder conglomerates and the Central Mortgage and Housing Corporation, as well as parks and recreation departments, and school authorities. Finally, there are social factors such as the values associated with home ownership, and suburban living. Summed up, suburbanization after

subdivision. These are 1) metes and bounds, 2) townships or river lot system, 3) explanatory or subdivision plan. Of these only the third description is associated with production of controlled subdivisions (Haggerty, 1976: 143.).

World War II was a result of many societal factors and influences. It would be impossible to explain all of these intricate factors through the course of one thesis. An alternative approach considered here is to explain the essence of the phenomenon during the post-war period up to the 1970's. Toward this end, the following specifies the phenomenon as perceived in this thesis.

Suburbanization in its most basic sense, is dependent upon a continued flow of people to the outskirts of urban areas. This is a result of 1) growing pressures in urban areas for expansion and 2) the favorability of the outskirts to accommodate that growth. With regard to the former, increased mechanization and industrialization during the war led to rural-urban migration. This influx of people combined with a severely restricted housing construction industry to produce an enormous pressure for expansion of housing in the urban areas.

From the above the first of the two basic ingredients for suburbanization was afforded during events of the war. The second ingredient - creating a favorable atmosphere for development in the outskirts - was also partially afforded during the War Years. In 1944 the federal government passed the National Housing Act which emphasized house ownership and production of detached single family homes. The federal role was primarily to leave the building and planning of housing developments to others (private industry and local governments) and to merely share in the financing of such activity. The fact that it provided most of its money for home ownership, however, attributed to the favorability of developing the outskirts to the inner areas. This was further complemented by the availability of relatively low priced land on the outskirts which was prevalent at the end of the war.

The type of suburbs created, however, depended upon more than merely pressures for growth, low land values, and home ownership. Generally speaking, any of the vast majority of developments that were primarily low density depended also upon the private automobile as the primary source of transportation. Potential for expansion of the automobile was made possible during the War in conjunction with Canada's involvement with the war effort. In addition, further discoveries in oil and gas after the war played an important part in retaining the automobile and promoting its widespread use. Costs of petroleum fuels also favored their use for heating homes. This attributed further to individual unit heating in housing.

The other prominent factors affecting suburbanization depended largely upon those persons and agencies most directly involved with the production of subdivisions. In some instances these people comprised municipal, provincial and federal authorities in conjunction with private financiers, developers, builders, and planners. In other instances it was primarily the private developers, realtors, financiers, and builders in conjunction with prospective home buyers. In the former case, developments tended toward a more organized community appearance while in the latter, developments were spotty, sprawling and disorganized. Also in the former, schools, parks and small commercial establishments were often a part of the development whereas in the latter only housing was usually visible.

It is important to observe the above forces on a national level in order to distinguish periodic trends relating to suburbanization, as well as on a more local level to witness the exceptions and specifics within the general tendencies. It is through these two perspectives

that Chapter II elaborates the essence of post-World War II suburbanization in Canada, and distinguishes contexts in which "typical" subdivisions and a-typical subdivision was created.

C. The "Typical vs A-Typical" Debate

Much of the recent literature on suburbs is centered around the debate of whether there exists a typical suburb or not. Generally earlier post-World War II literature, focusing upon American suburbs and written largely by sociologists and novelists, assumed that there was and set out to describe it. Such well known authors as Sectorsky, Reismann, Fromm, Whyte, Forest and Keats added substantially to this view hypothesizing a typical lifestyle, behavior pattern, political beliefs, and other social aspects that corresponded to the typical form. A composite picture extracted from these writings depicts the typical suburb with rows of ranch-style homes with large picture windows facing wide streets and "barren" boulevards; minimal landscaping where lawns and small trees and shrubs offered little contrast to the empty surroundings; neat little gardens located in the back of standard sized yards; carports or garages aside single storey houses both flanked by a small stretch of sideyard empty space; and giant supermarkets, schools, and churches located in isolated fashion by roadsides, parking lots and barren open space.

Further research expanded upon the assertions of the typical suburb in many other respects. However, amidst the growing volumes of studies there evolved the belief that many suburbs actually exhibited very different characteristics, physically and socially. Well known authors such as Herbert Gans, Bennett Berger, Dennis Sobin, and John Kramer dispelled the beliefs that a "typical" suburb existed.

They claimed that such beliefs had originated from overgeneralizations, and false assumptions emulating from "popularist" sociological studies. They labelled these early studies "popularist" as they felt that such studies had little scientific basis to their approach. Conclusions of the latter group are summoned up and stated in the remarks of John Kramer (1972: XVI).

"Indeed, the suburban settlements are so diverse that they defy the creation of a realistic and exhaustive typology."

In Canada a similar difference of view on the issue has arisen. Seeley, Sims, and Loosely in Crestwood Heights claimed that there existed common materialistic values installed in children which grew up in a typical suburban environment very much like that which was depicted in earlier "popularist" writings of the Americans. E. T. Rashleigh, after a two year personal survey of Canadian cities, claimed that there was a blurring together of form among the cities and that this was a result of the typical post-war suburban expansion. The latter, Rashleigh describes in almost identical detail as the "typical" American suburb. Murray Jones in describing suburbs around Toronto, and numerous other planning publications (see, for example, the Community Planning Review series listed in the references in this thesis) have added further to the claims of a typical suburb.

Yet there is growing in Canada a group who strongly hold that suburbs are very diverse. The City of Montreal, in a study of their post-war suburbanization and S. D. Clark, studying suburbs around Toronto point out significant variations in density, type of housing, levels of services, layout patterns, and relationships among the open space, buildings, and transportation subsystems. Clark (1966: 15),

for example, found that out of fifteen suburbs that he focused on, "six fairly distinct types" could be accounted for.

The disagreement in the debate appears to be based upon confusion over the definitions of subdivisions and suburbs, and thus the criteria for measuring what is "typical". Descriptions of the popularists who singled out housing type, front yards, street scenes, and so forth apply more to the elements of subdivisions. Depending upon how strictly such criteria are applied to various subdivisions the concept of typical may or may not be applicable. Generally speaking, however, there are indications that suggest many controlled subdivisions exhibit typical features such as listed above. This thesis examines the concept of "typical" in connection with features of subdivisions as it was applied by the popularists. The major task is to demonstrate the existence of features of these subdivisions, to note trends in these features, and to discuss their relationship with a selection of current issues relevant to new subdivisions of the 1970's. The following section elaborates the issues selected for the 1970's.

D. Major Issues Affecting Subdivisions of the Seventies

Just as numerous and complex factors have impacted upon suburbanization and the creation of subdivisions in the past so it is expected that future subdivisions will be influenced. However, for the purposes of this thesis the future is anticipated from the perspective of 1) land, 2) energy as used for heating and transportation, 3) economics, and 4) sociological factors as they relate to the "typical" subdivision and its emergence into the 1970's. Within each of the above four areas there exist a number of issues related to various points of view of those directly involved with creating subdivisions. With respect to land, for example,

issues can include broad moral concerns of whether everyone or anyone should have the right to own and develop land. Alternatively, they may include various legal issues concerning control of deeds and the future of land use. Economic issues may be deemed important in terms of management and manipulation of the land during its development. Technical issues related to servicing are important. In some spheres the environmental effect of urban expansion is also of primary importance. Finally, the above issues may become the subject of political debate and therefore may take on a strong political base.

In terms of the remaining three aspects there are, as well, a host of issues and perspectives from which they may be considered. This thesis approaches all four aspects from the viewpoint of site planning.² The intentions are to evolve from the discussion of the factors input into an alternative synthesis to the "typical" subdivision.

With respect to land the predominant issues are its use as per the "typical" subdivision, trends that support or reject the continued use of it in such a manner, and the subsequent impact upon the urban system. The issues with regard to energy are similarly perceived. In economics the issue is centered around the affordability of the detached single family home, and the consequences of general costs of "typical" subdivisions to the whole urban community. The fourth issue studied, sociological factors, is viewed primarily in terms of the effect that planned environments and planners may or may not have upon social interaction and the sense of community. This fourth issue is more elusive

2. Site planning here refers to that portion of physical planning that emphasizes relationships of vehicular and pedestrian movement systems; and the siting of major public buildings, public open spaces, and housing in the subdivision.

and problematic to planning. However, it is an issue that planners need to confront. They have dealt with the issue in the past even if they were not aware of doing so. They must, therefore, become atuned to the possible social consequences of their actions.

SUBURBANIZATION

- A Historical Review of Post-World War II Suburbanization
- Controlled and Uncontrolled Contexts for Subdivisions

CHAPTER II

CHAPTER II

SUBURBANIZATION

This chapter reviews the post World War II suburbanization from the perspective of periodic national trends and from the local perspective of contextual trends distinguishing "typical" and a-typical subdivisions. In the former instances three periods are documented in terms of clusters of events implementing the ensuing urbanization and suburbanization. These periods are 1) the Second World War (1939-1945); 2) the post-war 'Boom Period' (1945-1959) characterized by rapid, uncontrolled growth; and 3) the 1960-1970 period, subjected to problems inflicted by the previous period together with economic uncertainty affecting housing. Factors influencing suburbanization in each period begin with those mobilizing urban growth pressures and follow with those influencing the subsequent suburbanization.

From the local perspective, the creation of typical subdivisions are a result of greater planning and institutional controls whereas a-typical subdivisions are a product of the free market and socio-economic forces. As a significant and observable exception to this, the chapter also cites the case of Winnipeg's Wildwood Park subdivision.

A. A Historical Review of Post-World War II Suburbanization

1. The Second World War 1939 - 1945. Many factors helped to establish and reinforce the unprecedented urban and suburban expansion in Canada which followed World War II. Of these factors some of the more significant ones associated with the war included a more buoyant and diversified economy which provided employment opportunities in urban areas, mechanization

in farming techniques, and technological changes related to the automobile industry.

With regard to the economy the war helped to encourage investment in secondary as well as primary industries. Prior to the war, Canada had still been largely an agricultural nation which suffered under the combined effects of the drought and the depression in the thirties. As unemployment prevailed in the urban areas there was no mass migration off the farms (Porter, 1968: 19). At the outbreak of fighting in September 1939 the economy had just begun to recover. Investment had begun to climb but in a mood of great caution (Creighton, 1970: 248). With the war, however, a large new demand for Canadian goods was produced. This was followed quickly by a rise in prices which further stimulated production. In agriculture the demand for cattle and grain resulted in higher prices for prairie farmers (Stahl, 1970: 65-66). Similar situations occurred in industrial production which increased employment opportunities in the urban areas. The cities, therefore, offered an attraction which initiated a pull on the younger more mobile people from the farms.

In terms of technology the war brought further change. One of Canada's greatest contributions to the war effort was in the production of armoured and transport vehicles (Creighton, 1970: 248-249). With the aid of American subsidiaries production capacity in that industry was increased and the internal combustion engine was improved. The latter was applied in some instances to farm machinery. This combined with new discoveries in insecticides and fertilizers to bring about mechanization and greater yields in agriculture. Mechanization and the high costs of machinery were more suited to larger farms so that the trend toward

consolidation was encouraged. In the process many smaller farmers sold their land to move to the cities. In addition, the technological advances and greater production capacity in the motor vehicle industry provided a latent force for the mass production of peacetime automobiles. When combined with more prosperous economic conditions the private automobile was made affordable to many more Canadians. This further set the scene for suburban expansion and its dependence upon widespread use of the automobile.

With the above factors providing the "push-pull" on people to migrate to the cities the rate of urbanization began to increase. This is illustrated in Table 1 below which shows a decrease in the percentage of rural people of 0.6% between 1931 and 1941, but a decrease of 2.4% the following decade.

Table 1

Changes in Rural Population as a Percentage of the Total Population; Canada, 1871-1961.

YEAR	Rural Population as % of Total	YEAR	Rural Population as % of Total
1871	80.4	1931	46.3
1881	74.3	1941	45.7
1891	68.2	1951 (a)*	43.3
1901	62.5	1951 (b)*	38.4
1911	54.6	1956 (b)	33.4
1921	50.5	1961	28.9

SOURCE: (Porter, 1968: 19, Table IX)

* '(a)' is based on the 1941 Census definition of rural, namely unincorporated areas.

'(b)' is based on the 1951 Census definition of rural, namely places with populations less than 1,000.

In addition to the war, a national effort to avoid an anticipated depression after the cease fire contributed to other factors which magnified the potential urban and suburban expansion. In 1943 many politicians and economists felt that Canada would have to embark upon a "reconstruction" of its own. Although the nation had not suffered the destruction that was in Europe, its economy was particularly vulnerable to the effects of a cease fire which many believed would produce a reduction in demand for Canadian goods. It was felt that this loss of "war-generated" demand would lead to a slowing down in production and consequently a significant rise in unemployment. Aggravating these problems further would be the return of thousands of servicemen who would be seeking employment.

In addition, one of the industries which was excluded from the favored effect of the war on increasing production, was the housing industry. While demand still increased for housing, much of the materials needed for construction were directed toward armaments and installations. Often such materials were used for military barracks and factory workers' accommodations. The result was a large and growing backlog in housing for the general Canadian public. This problem, again, would be further magnified when the war was over and young servicemen returned to start new families.

As a result of these concerns there grew a national effort focused on "reconstruction" of the economy. These efforts were organized primarily in 1943 with the formation of the Advisory Committee on Reconstruction and spanned the following years to about 1945 and 1946 with the Dominion-Provincial Conferences on Reconstruction. As a significant part of these efforts in housing, with its implications on suburbanization, the federal government passed the National Housing Act (NHA) of 1944. The Act

supported and encouraged the production of single family detached houses by providing \$100 million toward sharing losses in respect to loans with the lending agencies and by broadening the definitions of such institutions.

Since that time many critics have attacked the federal government for its approach to housing in the 1944 Act. Among these critics, Manitoba Housing and Renewal's Frank Fedoruk cites the following as one purpose in the Act which he claims illustrates the government's preoccupation with unemployment and its lack of consideration for a rational housing policy

"Promote the expansion of employment in the post-war World" (Fedoruk, 1971: Appendix B, 5).

Another critic, Dr. A. Rose (Fedoruk, 1971), suggests that the government did not have a housing policy at all. A brief look at the housing industry at that time does provide some support to these views. The war had left the industry critically short of materials and skilled labour while demand for housing had continued to grow. These tendencies would suggest that construction of multiple family dwellings would be more appropriate than detached single family housing. In addition, under the federal tax policy, municipalities had relinquished their right to income tax levy, and were having problems with public utility costs, providing school services, police, and other such services (Bettison, 1975: 82). These costs were especially high in low density areas. Thus, by supporting the production of more single family detached housing without altering the tax system or providing money for added services, the government was adding to the financing problems of the municipalities.

On the other hand, there were arguments supporting the government's policy. Even in municipalities where financial problems were being encountered with respect to servicing, there was pressure for

the federal government to support home ownership. The Canadian Federation of Mayors and Municipalities in 1941 presented the government with statistics showing that in 25 cities with populations over 30,000, 61 percent of the people were living in rented accommodations (ibid.). Traditionally, homeownership was linked with detached and semi-detached single family housing units. These types of housing had been accepted and had been regarded as well suited to young families. They offered privacy, freedom, and a suitable compromise between city and country life style. The high consumption rate of land and energy were not considered prominent issues at that time as both were relatively available. In addition large and rapid production of such accommodations required a large labour force which was a positive feature for returning servicemen looking for employment.

It must be concluded that there was a rationale behind the federal government's 1944 National Housing Act. However, that rationale indicated an unwavering acceptance of the traditional form of home ownership in housing, and present and short ranged economic concerns. No alternatives to the single family detached homes appear to have been significantly promoted. Neither was there evidence to indicate that the federal government had an understanding of the longer ranged impact of their policy upon urban and suburban expansion.

Housing was not the only area where the government's "reconstruction" efforts had an impact upon urban and suburban growth. The Conference on Post-War Reconstruction in 1945 was one of two conferences which was most instrumental in providing a shift in the national outlook from an agricultural society to an emerging industrial state (Gertler, 1972: 70). The above conference recommended that the federal

government take on the responsibility on a nationwide scale of surveying and researching Canadian natural resources for their "conservation, development, and management." (Gertler, 1968: 120). This led to a new impetus in resource development and industry, both of which saw a growth in urban development.

In taxation the federal government's control over personal and corporate taxes which it had acquired for financing the war, was scheduled for termination in 1945. This became the subject of a growing concern for the government's "reconstruction" efforts. Provincial opposition for continuance of the system was mounting because of disparities brought on by the depression and the war. The provinces had held out until 1947 when a new five year agreement was signed. The new agreement allowed the federal government to continue its levy. This, in turn, allowed the government to provide special tax concessions for industry and resource development, thereby, reinforcing the transition to a more diverse peacetime economy. (Brewis and others, 1965: 274-275).

In conclusion, the above illustrates some of the technological, political, economic, and social conditions which were established during the course of the war and right after. These conditions produced a climate which heavily favored urban and suburban expansion. The economy was generally prosperous, and it was shifting toward industrialization; technology had produced improvements in the automobile and the potential capacity to mass produce them was increased; mechanization led to the consolidation of farms prompting migration to the cities; and employment in the cities had greatly been increased from the depression thereby providing the attraction needed. Added to these conditions were a series of government measures reinforcing the trend toward prosperity

and industrialization. In addition anticipated problems of returning servicemen looking for work and housing had been planned for, and this fact produced particularly attractive conditions in the urban areas.

2. 1945 - 1959 - The 'Boom Period'. While the events during the war and "reconstruction" plans of the mid-forties created a favorable technological, political and economic climate for urbanization and suburbanization, events in the early post war period helped to set this potential in motion directing the expansion toward the suburbs. In the general sense it was the continued prosperity in the economy that allowed much of the previous period's impact to occur. In addition, however, the return of servicemen, the continued push-pull effect of rural and urban areas on the rural population, the government's "open-door" policy in immigration, and discoveries of new oil fields provided the new streams from which the urbanization flowed. Suburbanization was effected through a series of other factors which ranged in their impact from a national level to a micro-level involving specific urban situations. In the first fifteen years it was the combination of the war's impact, continued economic prosperity, forces behind urbanization, and factors directing urban growth to the suburbs which produced the masses of suburbs around the larger cities.

With respect to the economy a slow recovery of British and European agriculture and industry resulted in continued demand and high prices for Canadian goods after the war. This allowed many of the government's "reconstruction" policies to take hold and relieved their concerns of large segments of the population being unemployed. In 1945 and 1946 unemployment did increase but not to the extent anticipated. The following

year unemployment dropped to levels comparable to those during the war. Thus, even with the return of servicemen the continuation of a productive economy did not allow large-scale unemployment to exist. This trend was particularly significant in reinforcing urbanization in a nation which was focusing upon industrialization.

With continued mechanization on the farms the rush to the city continued. An annual average of 39,000 farm workers migrating to the cities was recorded from 1946 to 1958 (Porter, 1968: 20). This migration was so large that the prairies pressured the federal government to provide measures in its immigration policy to attract farm workers. Economic conditions on the small farms worsened to the extent that by 1951 many farmers were operating at marginal and sub-marginal levels. To offset these conditions smaller farms were consolidated making the use of larger more efficient machinery economically viable. This led to further rural-urban migration by those who sold their land to the consolidating farmers. In 1958 economic conditions in Canadian agriculture generally worsened with the recovery of European agriculture and the subsequent drop in demand for Canadian products. Thus, again, the push to the city was effected.

With regard to immigration, the government attempted through an "open-door" policy to attract immigrants to rural areas and to positions where workers were needed. The result was that about one-third of the nation's net national population increase to 1961 was attributed to post-war immigration and that this accounted for about one-half of the net increase in the labour force (Richmond, 1968: 31). However, most of these people eventually found employment in manufacturing industries in the urban areas (ibid.: 33). Thus, the policy had a strong impact

upon urbanization for that period.

Events related to the discoveries in the petroleum fuels industry and in natural resource development also had an impact upon urban expansion. In 1947, the first major oil discovery was made in Alberta. During the next few years the "rapid and large-scale development of oil and gas" (Gertler, 1968: 89), led to major increases in the populations of Calgary and Edmonton. Edmonton newspapers described a "mushroom growth" and a city "bursting its seams" (ibid.) in 1949. The initial Leduc discovery, and other subsequent discoveries altered the whole structure of Alberta's economy through primary and multiplier effects (Baine, 1973: 30). Primary effects comprised new exploration, production, servicing and process industries directly related to the petroleum industries. The multiplier effect included new financial businesses and service industries not directly related to the petroleum industry (ibid.).

Despite the dramatic impact that the discoveries in oil had upon the western provinces and cities the outflow of oil was restricted in capacity and direction by international companies who wanted to supply eastern Canada with their more economically developed reserves overseas. This conflict, between the international companies and the smaller independent companies was never totally resolved. A partial solution which saw the formation of the Trans Canada Pipeline for transmitting natural gas to Ontario (Creighton, 1972: 292) and the creation of the National Energy Board in 1957 (Gertler, 1968: 142-143) had the effect of expanding the market to places west of the Ottawa Valley. However, most oil in Montreal and elsewhere in Quebec was still imported from foreign sources by the end of the fifties, a situation that persists today.

To this point the above has focused upon the four major sources of population growth in the larger Canadian cities during the first few years after the war. The first was prompted by a buoyant economy and mechanization in agriculture, leading to a strong rural-urban migration. The second was the end of the war which saw the return of servicemen who married and formed new families. The third source was the federal government's immigration policy. Finally, there was the oil discoveries in the West and the various policies related to resource development. Oil discoveries was perhaps the most significant in terms of the effect upon particular cities as this prompted the enormous growth on the prairies and more specifically in Alberta. As a result of the four streams of growth, the populations in major Canadian cities and metropolitan areas proceeded at virtually unprecedented rates. This was partially indicated in table 1 of section A.1 above. Table 2 below illustrates this growth in eleven Canadian cities by percentage for the years 1951 to 1961.

Table 2

Per Cent Population Growth for Eleven Canadian
Cities from 1951 - 1961

Metropolitan Area	Growth of Population	
	1951 - 1956	1956 - 1961
Halifax	22.6	12.0
Montreal	18.6	21.0
Toronto	24.3	21.3
Vancouver	18.3	18.8
Ottawa-Hull	18.1	24.4
Hamilton	20.7	16.8
Winnipeg	15.5	15.6
Regina	25.9	25.0
Saskatoon	36.8	31.2
Edmonton	44.1	32.5
Calgary	41.3	38.8

SOURCE: (Baine, 1973: 85).

With the large increases in population indicated in table 2 there occurred in the urban centers an enormous pressure for land, housing, services of various types and an assortment of community facilities. These pressures, like water, responded to the easiest outlets. The easiest outlets were the suburban and rural areas around the cities. This was effected through economic conditions, through various government and private institutions related to housing and land development, through the availability and affordability of the private automobile, and through a number of social factors. How these various factors influenced the suburban expansion during the first fifteen years after the war is the focus of the remainder of this discussion.

In the events after the war it was essentially the quest for housing that set others in government and private spheres to respond. With enormous demand for housing, the costs of existing housing and rental accommodations rose. Supply was short and demand kept pushing prices up. As a result of these conditions and the lean of the 1944 National Housing Act toward detached single family housing, developers, prospective home buyers and lending institutions were obliged to look toward the rural and urban-fringe where land was relatively cheaper and more readily available. Many small farms in these areas had already been operating at marginal levels so these were the areas most quickly acquired. In addition land bordering highways and in smaller municipalities around the larger cities were particularly attractive. The smaller municipalities at this time encouraged such growth for more tax revenue and to stimulate the growth of business in their communities. Many facilities such as schools, police, fire, and basic commercial facilities had already been established so that this offered an attraction to the new developments. In the case of land along the highways, accessibility to the city was the important attractive feature. Both cases also offered a semi-rural attraction.

Finally, there was the question of controls. Few controls in the outlying areas beyond the cities were imposed. With regard to the smaller municipalities, as stated above, they were more than eager to attract the business and tax revenue which they felt the new developments would bring. The results became quickly apparent around the three large centers in Canada; Toronto, Montreal, and Vancouver. S. D. Clark, reviewing early post-war suburbanization around Toronto noted that there were many ribbon-like developments along the highways and small spotty

developments in surrounding municipalities which had varying types and levels of servicing (see, for example, Clark, 1966: 26-27). The Lower Mainland Regional Planning Board of British Columbia, in its analysis of new suburbs around Vancouver, stated that the surrounding municipalities did all they could to attract the new growth by zoning vast areas for development (Lower Mainland Regional Planning Board, 1968: 3). These and other observations in other cities illustrate the "wide-open" policy of the surrounding municipalities which attracted much of the developments of the fifties.

While the new developments were attracted by this "wide-open" policy, they also received much assistance through the municipal tax levy system on land. The latter had an additional effect of encouraging speculation in the land development industry.

Developers from 1945 to 1955 were small so that the purchase of large land tracts was not usually possible. However, under the above system land could be acquired and retained as part of an investment with little cost to the developer, provided no improvements were made. This formed a part of the speculative market that quickly developed, and drove land prices up. Many individuals and companies recognizing the large demand for housing and land around the larger urban centers entered into buying and selling land to developers at profits. Through the above tax system they, as well, could purchase and hold land without making improvements and without suffering the tax increases. The longer and the more land that was held onto, the greater was the demand and subsequently the greater was the price. The speculation assisted developers in recycling their profits into their business thereby increasing its capacity. The ability of developers to grow in size depended upon their

ability to acquire land, develop it, and sell it for profits large enough to enable him to purchase more and higher priced land than before. By purchasing land beyond the high-priced tracts adjacent to the existing suburbs developers were able to make their profits and expand their business. The impact of this was the growth of many small developments scattered beyond vacant land tracts closer to existing suburbs, a trend that became known as "leap-frogging". The consequences of this type of development were far ranging. Of particular significance, however, were the following: servicing was often inadequate; where it was adequate it was extremely costly; the new developments, later when they were merged by other developments, offered little systematic flow of streets, and traffic; and commercial and other such community facilities were often not available or poorly incorporated later.

The growth and establishment of larger developers for the ensuing period was assisted also by those who controlled the mortgage money. Such institutions, as well, exercised a control over the developments. Among those controlling the money were private lending institutions and the Central Mortgage and Housing Corporation (C.M.H.C.), the government body established in 1945 to administer the National Housing Act thereby taking over most of the responsibility formerly entrusted to the Minister of Finance. C.M.H.C. as it was established, was not to determine housing policy but rather to administer it through the N.H.A. It was to act much like a central bank in providing a source for buying and selling long-term lending money to other lending institutions who might otherwise run out of mortgage money (Bettison, 1975: 92). Thus, through this corporation mortgages were given greater liquidity on the lending market.

Any lending institution can to an extent exert an influence upon

suburbanization in general, and upon developments in particular by influencing the amount and direction of money flowing into the housing market. The influence that they exerted depended upon their assessment of the risk they were taking. The risk was determined largely by the market for various housing accommodations, and the proposal by the borrower. In assessing the borrower's proposal, in principle at least, the lending agency would consider the entire project, its location, site and layout features, etc. (Title Insurance and Trust Company, 1963: 34). In actual fact, however, it was found that throughout Canada houses of similar sizes but in different environments were given similar mortgage arrangements (R.A.I.C., 1960: par. 71). This suggested that in reality it was the individual housing unit which was the prime factor involved. Thus, as long as the demand for a particular type of accommodation appeared to be supported in the market, lenders would be more inclined to issue loans for those types of accommodations.

Control, however, was also in the hands of C.M.H.C. and the federal government through the N.H.A. Mortgage money was not entirely unlimited. The federal government allotted what it felt was necessary to C.M.H.C. In addition, however, through the N.H.A. the government could prescribe the interest rates on various types of mortgages as well as the amount to be allotted for the various types. In those areas of housing where there was little mortgage money available or where interest rates were high, developers were restricted. Through its adjustments in the amount of money allotted to particular housing types and by adjusting interest rates the government could influence the amount and type of housing when it felt the stimulus was needed. Throughout the fifties the government, in the above manner, was able to stimulate the large

production of home ownership, detached single family housing. This was first initiated in the 1944 National Housing Act which provided large funds toward that type of housing. In 1954 the government allowed banks to enter into NHA Mortgages and adopted the "insured loans system" (C.M.H.C.b, 1971: 15). Together the two changes enabled banks as approved lenders to invest in government insured loans. C.M.H.C.'s buying and selling of such loans with the approved lenders gave mortgages even more liquidity. Within eighteen months the banks added \$475 million in approved N.H.A. loans (Bettison, 1975: 108). The Act again directed most of its resources to single family detached housing, the production of which had seriously suffered during the Korean War (1950-52). The effect of the 1954 measures, however, was short lasting and in 1957 a shortage of mortgage money prompted the government to re-enter as a major lender for single family detached housing.

An additional measure of influence in the housing industry on the part of the federal government's 1954 N.H.A. was established by making C.M.H.C. the inspecting agency of all new housing under the Act. This was to ensure that new housing was built to standards deemed acceptable under the N.H.A. While such inspections had previously been done by lending institutions it was felt that the banks were not in a position to perform this duty. Furthermore there was a greater need to provide such service with new trends toward larger mass production. The impact of this measure, suggests sociologist David G. Bettison (1975: 110), was "a centralized inspectorate that came to dominate the whole building field from construction plans to planning in general."

C.M.H.C. and the government's National Housing Act had, therefore, a tremendous potential for impacting upon the new suburbs. Their continued

support of the detached single family home was noted even when, in traditional lending areas, there was a tendency toward multiple family housing.

N. H. Lithwick observing this suggests that the government throughout the fifties had in fact influenced the public's taste (Lithwick, 1970: 24).

Lithwick has been supported by many others who have come to criticize the federal role in housing. While such arguments are contestable, the tendency of N.H.A. loans and C.M.H.C.'s inspectoral powers toward a standard stereotyped house are reflected in table 3 below.

Table 3

Estimated Production of Various Dwelling Types in Canada
For the Year 1959

Production Financed Through Private Loans	Dwelling Units
1. Detached or semi-detached	50,000
2. Attached	40,000
Production Financed By N.H.A.	
1. 3 Bedroom bungalows	40,000
2. Other detached or semi-detached	7,500
3. Attached	1,250

SOURCE: (R.A.I.C., 1960: table under par. 75).

The above table indicates that housing financed through private lenders was almost 50% attached whereas housing financed under the N.H.A. was less than 2% attached. Further, approximately 82% in the latter case were in the form of three bedroom bungalows. This, added to detached and semi-detached single family housing in the private lending market, almost doubles the production of those housing types.

Under the various influences above, urban growth was economically and politically obliged to proceed to the rural areas beyond the cities.

This, however, could not have occurred in the widespread form that it did, without the private automobile whose mass production has already been linked with wartime improvements in technology. The low density suburbs and the private automobile were in fact mutually reinforcing. As the suburbs expanded further from the city centers the necessity of the automobile was strengthened. As long as people could afford cars, the new developments could expand without many restrictions. Car ownership doubled between 1950 and 1960 (Creighton, 1972: 308). The result was an irregular pattern of developments comprising mostly single family detached housing and streets. In some instances a community appearance was noticeable but in other instances there was only a conglomeration of houses, lots, and streets. Thus, the automobile promoted greater freedom in what and where developments took place.

Previously when suburban growth depended upon street cars for transportation they formed more corridor-type developments along the street car routes. Lots were generally smaller (25-33 feet in width), and packed closer to the transportation corridors. The effect of the private automobile was that more people were no longer dependent upon public transit routes and thus development could spread out between the corridors in more random fashion. Lots were generally larger, as well, within this new freedom of movement afforded by the car.

Finally, there was a significant social factor behind suburbanization. Partially based upon truth and partially based upon myth the suburbs were sold as a beautiful place to live and raise a family to enjoy the freedom, privacy, quietness, security of land ownership, spacious surroundings, and pleasant greenery. This image represented a direct contrast to the smells, congestion and tightly packed image of the city;

and it produced a push-pull that prompted the migrants to move, expanding the suburbs further.

3. 1960 - 1970-The Period After The 'Boom'. The year 1960 did not mark any radical changes in the way the events began to influence the suburbs or their expansion. The changes that did occur were more gradual, beginning around the mid and late 1950's and continuing into the early sixties for most areas in Canada. Nevertheless, 1960 and 1961 do bear a distinct position marking the years of certain events concerning the economy, resource development, and housing. These two years also mark the approximate turning point in suburban development on a national level.

In the first instance, 1960 was the year when housing starts dropped drastically to a level unmatched since 1953 and the years of the Korean War. The drop was due partly to a general economic recession that began in 1958 (the year of European post-war recovery in agriculture) and continued through until 1961. Unemployment in that year reached a level unprecedented since 1939 (Creighton, 1972: 314). The government countered these trends with expansionary measures in various areas. "Large sums of money were put into the development of natural resources, and the promotion and rationalization of primary industries." (ibid.). Along with these measures, new wheat sales to Russia and China helped to facilitate a recovery in the economy. In housing C.M.H.C. and other approved lenders responded with increased lending in 1961 bringing up housing starts and prompting a reaction by other lenders in the following year.

Also in 1961 the Resources for Tomorrow Conference was held. The atmosphere of the Conference was at least noble in intent as it emphasized

for economic planning in the sixties, an attitude of conservation. As the story of the sixties unfolded, however, the events would soon indicate that conservation was not the guiding forces in terms of land and energy.

In terms of the forces behind urbanization there was not a great change in the 1960's. Although the period was not characterized by a sudden influx of servicemen returning from war, the pressures for urban expansion had not dissipated. Immigration and rural-urban migration continued as it had in the previous period. In addition, the increase in population of the cities from the previous period added to their potential natural growth. The western cities of Alberta were still experiencing the secondary effects of oil discoveries with new businesses locating there. Finally, the general prosperity of the nation during this period allowed construction to continue and businesses in the cities to expand, despite inflationary trends; and industrialization had become a fact of influence as well.

The growth during the previous period, however, afflicted the sixties with a number of problems which induced certain changes. Suburbanization under the wide-open policy around the larger cities had resulted in large land speculation. In the largest centers the impact began early in the fifties. Toronto, where expansion was one of the greatest in Canada in the early post-war years, illustrates the impact of land speculation on subsequent developments. There, prices in the early fifties ranging from \$300 to \$1,000 for single lots rose to \$4,000 for "good lots" in only a few years (Clark, 1966: 42). After the initial waves of development had left a spotty pattern around Toronto due to speculation, another wave followed which began to fill in the vacant areas. This second wave

responded to a trade-off between continued outward expansion which was making access difficult and servicing costly; and the higher land prices closer to the city. In some areas, the larger developers which began to emerge by virtue of their scale of operations, were able to acquire larger tracts of land for development. In these instances the newer developments were larger and closer in toward the city.

On a national level the larger developers became more prominent in land development after 1955 and more into the late fifties and the sixties. By 1960, of 4,000 firms which "managed on-site construction of houses" about 200 were completing nearly half of the new N.H.A. dwellings (R.A.I.C., 1960: par. 47). Thus, in land development there was no longer numerous small developers competing equally in the market. The larger corporations that were evolving around 1960 established greater economic power and control over the newer developments.

Speculation and the wide open policy of the 1950's also played a role in effecting a trend toward construction of more multiple family dwellings. The consequences of speculation and irradic low density suburbs was high land values and high servicing costs. These helped to shift the flow of conventional lending to the multiple family dwelling market. In Toronto by 1952 a trend toward more multiple family dwellings was becoming apparent while in Montreal spotty developments exclusively of single family detached homes persisted until the mid-fifties and beyond. Around that city it was not until 1958 to 1960 that more developments comprising significant numbers of multiple family dwellings emerged in the suburbs (Krueger and others, 1970: 63-66). On a nationwide level the early sixties was the turning point with 1964 marking the first year that, in housing starts, multiple family dwellings outnumbered single

family dwellings. Thus, by the early sixties generally high land values prevailed, larger developers controlled more of the proportion of the land development market, housing prices and servicing costs were escalating and more multiple family dwellings were altering the suburban skyline.

Although economic indicators suggested the developments that had occurred in the fifties were becoming extremely costly, and although the 1961 Resources For Tomorrow Conference stressed conservation, the sixties did not see a strong change in the outlook of housing in new developments, nor a reduction in energy consumption. In 1961 production of oil and natural gas climbed dramatically (Baine, 1973: 57). In addition, while the suburbs generally showed more multiple family dwellings, the new developments still retained their low density character, especially on the prairies. This was partially due to the continued support of the federal government in single family detached housing. In 1966 when inflation mounted and production of single family homes dropped, the government increased its financial commitment in that type of accommodation. The following year the government, through a series of steps, removed a large block to private lenders by allowing N.H.A. interest rates to be adjusted quarterly (C.M.H.C.b, 1971: 75). This prompted further investment in single family housing.

The relationship to energy of the low density suburbs and the masses of single family homes is reflected largely in heating and the widespread use of the private automobile. Statistics Canada (1974: #53-219), for example, showed that throughout the 1960's automobile registration increased at either a constant or increasing rate. As a source of heat, gas and oil predominated with 76.9% of all homes being heated by one or the other in 1968 (Business International Corporation, 1972: 48).

As the country entered the second half of the sixties it did so with a "heated" economy and ever rapid urbanization. In 1967 the Economic Council of Canada (E.C.C.) recorded that the country "had the fastest rate of urban growth among the industrially advanced countries." (Jackson, 1973: 7). The pressures for housing and related services were still extreme. However, economic problems and the government's responses to these during the last half of the sixties imposed some restrictions on production of housing.

In 1968 a dollar crisis prompted the government to implement an easy monetary policy despite growing inflation. It reduced interest rates on lending and this resulted in further increased productivity; but it had the effect of adding to inflation also (Wilson, 1972: 38). The Bank of Canada and the Federal Government were at odds in their policies with the result that their measures tended to counteract one another. Thus, while one was fighting unemployment the other was fighting inflation. The result was a rise in both trends. In the latter half of 1968 compelled by a growing concern for inflation the government raised its interest rates. This new trend of a tight money policy continued through 1969 despite warnings from the E.C.C. which had maintained that inflation was not a result of increased demand but rather of rising costs. Dr. A. Smith, (ibid.: 46) Chairman of the E.C.C., pointed out that rising shelter costs had played a leading role in the inflationary trend. His argument was based upon the fact that the costs of shelter had contributed to about 30% of the increase in the consumer price index from 1966 to 1969 despite its comprising only 18% of the price index (ibid.). Thus, he pointed out that policies of high taxes, and high interest rates to which housing was most sensitive, would lead to a drop in housing production. The

next year, the government reversed its tight money policy, and C.M.H.C. increased its financial support for housing; but starts dropped.

As the sixties unfolded there was much concern over housing, transportation, and expanding suburbs as they all related to rising costs. However, whereas the sixties had started in one sense with a strong concern for conserving natural resources, this concern was never really translated with regard to land or energy in the new developments. Although the new suburbs were often better equipped with commercial facilities, and public services, car ownership with its inefficient use of energy was still an essential aspect. Much of the basics in developments of the fifties appeared to be carried on throughout the sixties despite indicators suggesting problems related to them. The innovations that were made, appeared in a greater housing mix; greater controls on servicing; more orderly developments; and generally more controls established from C.M.H.C., larger developers and their mass production techniques, and the municipal approval process. These features are illustrated in the following discussion and in chapter III.

B. Controlled and Uncontrolled Contexts for Subdivisions

The previous section discussed urbanization and suburbanization in a general sense. It explored some of the more significant events of two periods after the war which had an impact upon suburban growth. This discussion focuses more upon the subdivisions in these two periods, and the situations which distinguished "typical" subdivisions from atypical subdivisions. The former is based upon the images found in many writings which saw them in a very stereotyped way. Briefly the "typical" subdivision is characterized by rows of detached single family homes, with large picture windows facing wide streets and vacant

boulevards with minimal landscaping; standard sized front and sideyards; and where large supermarkets, schools and churches are located in similar barren surroundings, isolated from the housing by roads, parking lots and open space. Subdivisions which exhibited these characteristics throughout the post-war period were generally those subdivisions which were created in the contexts of large developers' holdings, planning legislation, C.M.H.C. and N.H.A. controls, the prairies, and geographically within the confines of larger cities where such controls were more easily administered. Atypical subdivisions, on the other hand, grew where socio-economic factors predominated as the forces and occurred most in rural areas and small municipalities beyond the large cities. These principles are illustrated in the following discussion.

1. Contexts Within the 'Boom' Period. When the suburbs first began to expand they did so at an enormous rate, especially around the larger cities. Beyond the administrative boundaries of such cities there was little control over development. Thus, large areas in the surrounding towns and countryside fell to the suburbs in sequence of their economically attractive characteristics. The result was that around these cities development exploded in an almost endless sprawl that often linked urban centers more than 15 miles away. The lack of legislative control over these developments was a major factor leading to such a result. The Lower Mainland Regional Planning Board (1968: 4-5), for example, commented that under a "wide-open" policy the "sprawl" of suburbs in the Vancouver area was allowed to expand freely during the fifties, thus creating a haphazard environment. Of the Toronto area in 1953, Clark (1966) found a similar situation. Further evidence shows that this was true for

Montreal as well (City of Montreal, Feb. 1968: 8-30). Thus, around Canada's larger cities a disordered sprawl was a fact.

In the absence of political and planning control suburban sprawl responded to the geographic, historical, social, and economic factors of the surrounding country. In the Toronto area, Clark found that individual families and small developers comprised the first wave of people looking for land and housing. These people purchased land wherever they could at the cheapest prices which fit their needs and desires. Resulting from these early "developers" Clark (1966) observed that there grew a variety of types of developments, which reflected in many ways the socio-economic circumstances of the developers and home buyers. In some instances lower income families moved into surrounding municipalities where schools were operating at below capacity enrollment, and where stores had suffered from a loss of business due to out-migration of families during the war. In other instances the lower income families settled in summer cottages which they had converted from summer use to permanent use (ibid.) In such areas, pollution or overcrowding had caused the wealthier predecessors to vacate their summer resorts. Thus often when the lower income families began to move they did so in search for lower cost housing and in many cases had to accept something less in the way of services, or facilities when they found it.

Middle income groups had a greater choice and often moved where accessibility, land and housing prices, and numerous other factors offered a 'good' trade-off for them. Such groups often moved to areas which were developed along highways in ribbon or isolated forms. Clark (ibid.) observed that even in these developments servicing varied.

Upper income groups often moved to acreages where, for example,

the spaciousness offered even more privacy, quietness, freedom (to do as one pleases on his property), and the 'good clean life of a rural setting.' Such ideals formed the motives behind other income groups moving, as well. In the realities of the situation, however, those in the lower income groups had to settle for trade-offs as land and housing costs were escalating, many services became a luxury unaffordable to many, and commercial facilities, schools, and parks were accessible only by car. The above image of suburbia was therefore a "mystique" as only the upper income groups could afford it, and even they had to give up many services and proximity to facilities.

From the perspective of the existing rural and small town environments the various developments affected them in different ways. Some spotty, older developments were re-subdivided, some were simply offered better services, and others were merged together by new developments comprising rows of detached single family homes and streets. The result around Toronto, Clark observed, was neither rural nor urban (ibid.).

Clark's picture of the Toronto subdivisions shows diversity in many respects. Beyond some certain similarities in single family homes, large lots, and numerous expanses of roadways, there were diversities ranging from the type and size of lots; type, amount and quality of servicing and community facilities; and in some instances differences in housing type (detached, semi-detached, apartments), condition and age. In many cases the suburbs were initially subdivided and partially built up before the war so that with the new construction, the old mixed with the new.

The diversity of subdivisions observed around Toronto was not unique to that city. It occurred wherever suburbanization was extreme,

controls few, and developments created in a relatively free market. Around Vancouver and Montreal the same kind of sprawl is observable. In Winnipeg, which at that time comprised a conglomeration of municipalities with differing characteristics, the sprawl of diverse subdivisions was again recorded. These subdivisions were not typical of one another and are therefore considered to be atypical as a group.

Elsewhere on the prairies subdivisions took on a more "typical" appearance. Saskatoon and Regina were not the centers of a highly urbanized area as was the case with Toronto, Montreal and Vancouver. The former were amidst rural farm land where the next urban center was much lower in scale of size. In addition, the growth around these cities, while percentage-wise was greater than the eastern cities, in magnitude was much less. These two factors allowed for greater control over the developments. The cities, by "annexing" or extending their corporate boundaries to include the outlying areas, could exercise the same planning controls there as with developments already within their boundaries. This, along with the fact that speculative ventures were not as strong as around cities like Toronto resulted in more orderly and standard developments occurring.

In Alberta, after the initial waves of expansion, control on the type of growth was administered through the neighbourhood unit concept. The concept was patterned after Clarence Perry's initial six principles which he, in turn, had developed after the sociological ideas (see, for example, McConnell, Vol. IX, No. 1, March 1959: 82) which he had developed using the sociological ideas of Charles Horton in 1939. Through annexation of surrounding municipalities the City of Edmonton could bring the growth in these areas under their planning controls of which the neighbourhood

unit concept was one. Under the concept the city was able to control the general relationships of streets, their function in terms of carrying local or regional traffic, the relationship of new subdivisions to surrounding properties and facilities, and the type and general location of facilities to be implemented in the new subdivision. When these controls were combined with the many other controls such as the type of housing, and the design standards for streets and lots, the subdivisions in that city took on a very "typical" look. Thus on the prairies, and especially in Alberta the "typical" subdivision was more prevalent in the fifties.

2. Contexts Within the Period After The Boom. Around the three large centers growth had extended some ten to twenty miles beyond them during the fifties. This growth fused nearby towns and villages together but left much acreage still vacant of housing (Clark, 1966: 23). Around Toronto, Vancouver, and Montreal, therefore, there occurred much infilling in and between the scattered developments of the fifties (see, for example, City of Montreal, February, 1968: 8-30). In addition, generally larger developers were enabled to acquire and hold larger tracts of land so that their developments covered much more area. Clark (1966) claimed that of many of the developments in the sixties around Toronto there was generally greater legislative control imposed. In addition developers were producing "packaged" suburbs which corresponded closely to the images produced by earlier writers which he had accused of promoting the "suburban myth". The "packaged" suburb was a larger subdivision which was developed with primarily single family detached homes, on standard lots facing barren boulevards, wide streets; and where full servicing was available and where commercial facilities, schools, and churches were

planned and developed as part of the "package". Portions of Don Mills of Toronto, and the Whitmore Subdivision of Regina, and the many subdivisions of Edmonton and Calgary exhibited these very similar characteristics of the "packaged" subdivisions built by the larger developers in the later fifties and the sixties around Toronto. Thus, the new "packaged" suburb was another example of the "typical" subdivision.

The scale of suburbanization and high land values that occurred around Canada's big three cities resulted in many developments comprising highrise apartment blocks and other forms of multiple family dwellings. This trend was more evident in the sixties and resulted in greater housing mix for most subdivisions of this period.

On the prairies it was not until later in the sixties that cities such as Edmonton and Winnipeg grew to a scale where they began to feel the pressures that the big three had in the fifties regarding sprawl. Small communities such as St. Albert around Edmonton, and Selkirk and Lockport around Winnipeg began experiencing greater growth as developers turned there to avoid the high land values around the larger cities. Between the surrounding communities and their central cities, spotty ribbon and pocket subdivisions grew adjacent to the highways. In these areas neither of the two communities had much control over development. The larger cities, therefore, began to feel the sprawl that had plagued and continues to plague Canada's three big cities. Annexation was no longer an adequate means of controlling developments five and ten miles beyond the existing city borders. While provincial planning authorities could control such developments to some degree, in ensuring the inclusion of adequate street widths, access routes to highways, and basic servicing; generally there was no control for planning and ensuring that other

community facilities such as parks, schools, commercial facilities and churches were provided. Many such subdivisions could grow by "metes-and bounds", a method of subdividing land into two lots at a time, thereby avoiding many controls placed upon other subdivisions. The situation has led Mr. Mackie, Assistant Deputy Minister for Municipal Affairs in Saskatchewan, to conclude that government policy to control such developments is a major concern in Canada and is becoming especially a concern for the prairies in recent years (C.P.A.C. Workshop, Winnipeg; February 23, 1976).

In addition to the sprawl, the prairies began also experiencing the trend toward greater control of outlying properties by larger builders and developers. This, in economic terms, produced an oligopolic situation, the effect of which is often closely linked with monopolistic controls which drives prices up in a market. The significance to the new developments, also resulted in greater production of "packaged" suburbs which when created under conglomerate management produced schools, parks, servicing and some commercial facilities along with the rest of the development as a whole package. Such packages, however, were very standard and became characteristic of the "typical" subdivisions of the 1960's. These were particularly noticeable in Calgary, Edmonton, and Regina where their mass production was suited to the cities' rapid growth.

3. An A-typical Subdivision in a "Typical" Context. Not all subdivisions that were "packaged" or were controlled and planned by central authorities such as municipal and provincial bodies were "typical". One such example is illustrated in Wildwood Park, a subdivision in Winnipeg that was patterned after the American Radburn Plan. It did exhibit some typical features such as a predominance of detached single family homes, rigidly

aligning the streets, full servicing, and added community facilities. However, the organization of such facilities and the scale of the street were not typical. The Wildwood subdivision and the Radburn model after which it was patterned are focused upon in the following to illustrate how certain stereotyped elements such as the detached single family dwelling, and streets and boulevards were altered to create a non-typical subdivision.

Radburn, had been conceived in a different time but a similar context as existed during the fifties and sixties in which "typical" subdivisions in Canada were produced. The automobile was thought to be an excellent form of transportation and the detached and semi-detached single family home, the most desirable forms of housing. However, Radburn had synthesized these elements into a system that was radically different in its view of subdivision living.

Of prime importance to the designers of the Radburn layout were the separation of pedestrian and vehicle movements by the superblock in which houses were interlinked by a footway system and landscaping to an interconnected parkway and to community facilities along the system. Thus, children going to school could do so without every crossing a street. Where footways met streets in the plan, they went beneath grade level and were never intersected. Figure 1a illustrates the general layout of this system.

Minor streets aligned with small groups of single family detached and semi-detached homes served much the same function as alleys for businesses (McMichael, 1949: 222). All motor-oriented servicing and deliveries were made to the backs of the buildings (see figure 1b). The front of the house (i.e., where the living room was located) faced the landscaped and pedestrian system.

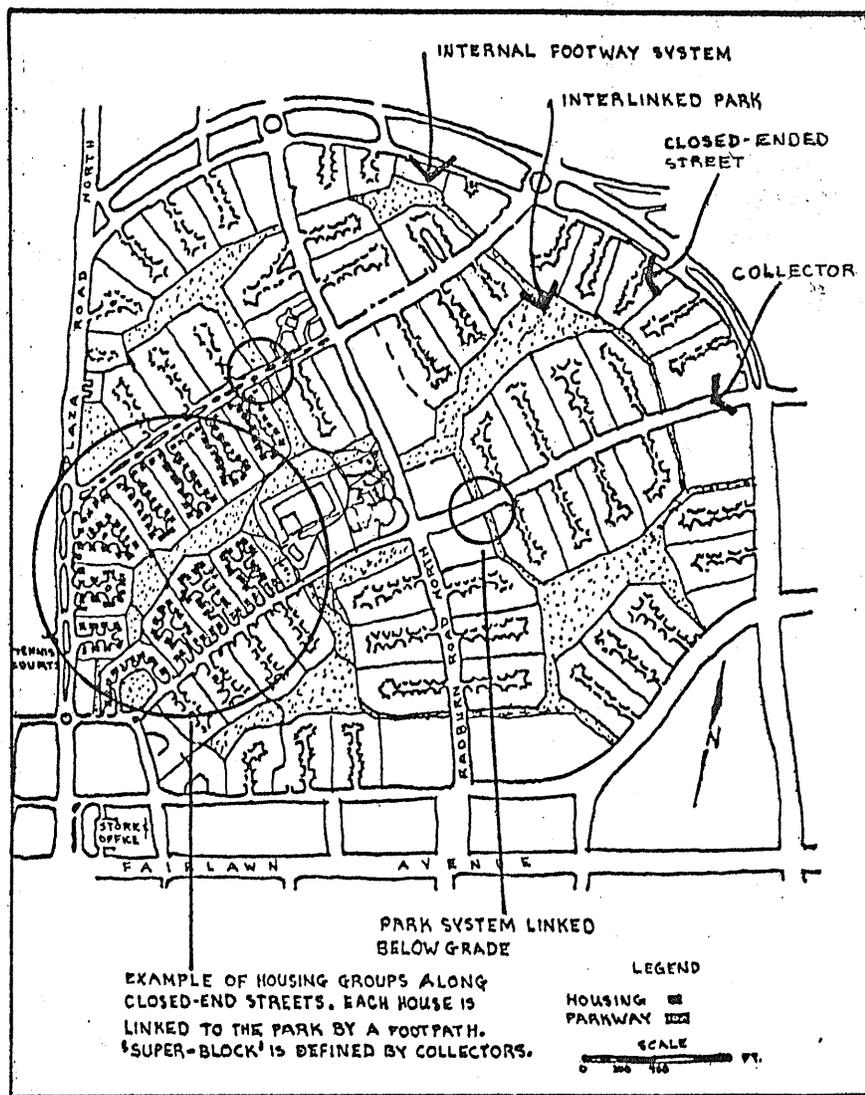


Figure 1a. The Radburn Plan

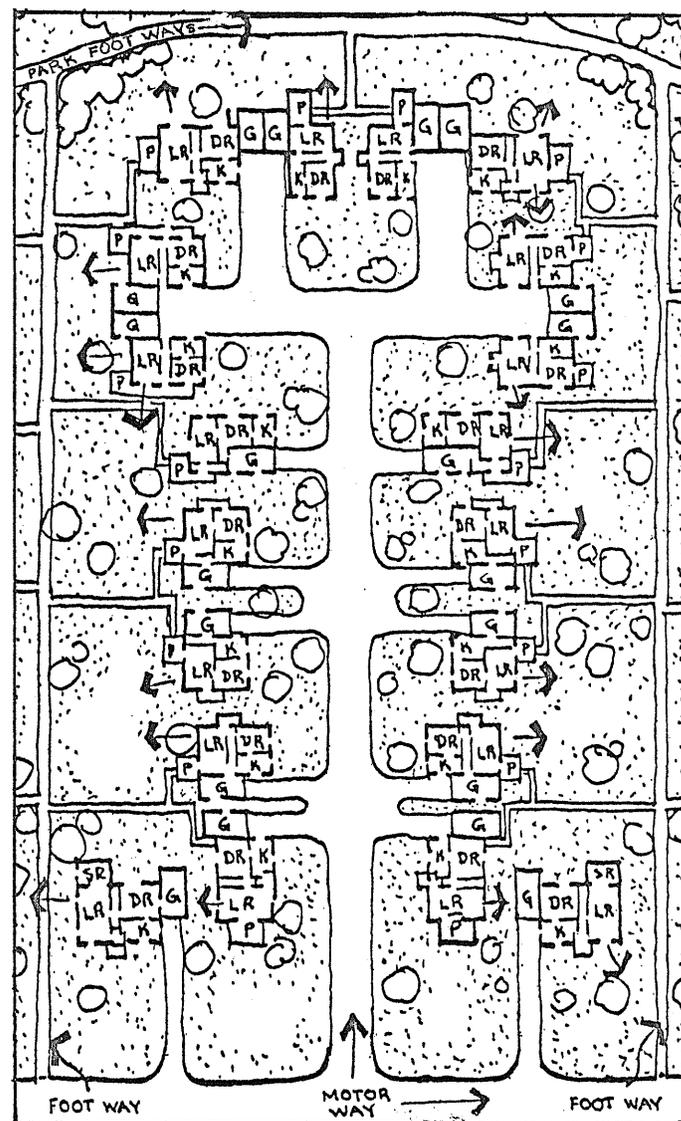


Figure 1b. A Typical Street of the Radburn Plan (McMichael, 1949:224)

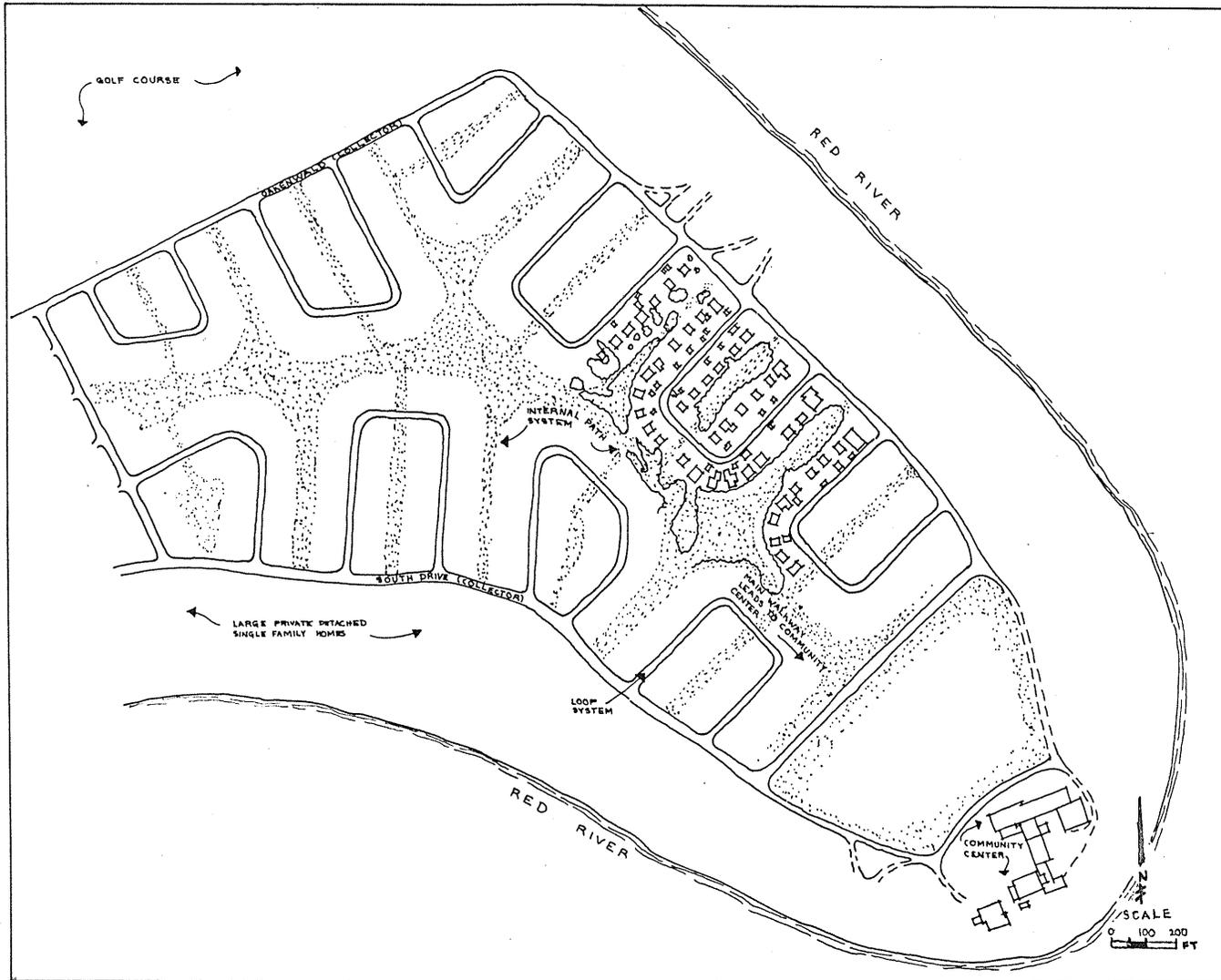


Figure 2. The Wildwood Park Plan

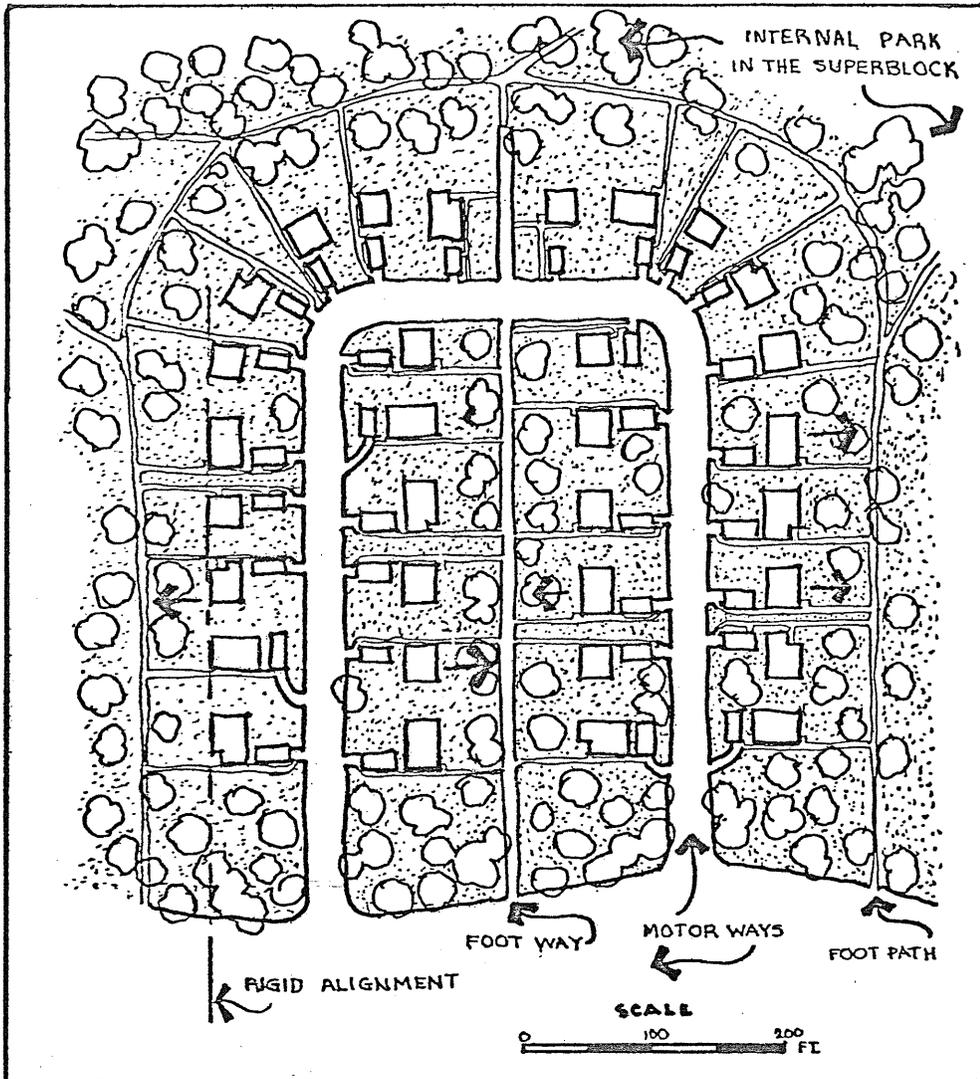


Figure 3. A Typical Loop in the Wildwood Plan (Kostka, 1957:107)

In addition to the automobile-pedestrian separation principle, Radburn also followed a more informal grouping of houses where architectural and landscaping considerations were critically important as unifying elements. Along the 'closed-end' streets of Radburn ten to twenty houses were loosely sited backing the street (i.e., the living room facing away from the street and at varying distances to it). Sometimes adjacent garages were attached to one another and sometimes they were not, creating other variations along the street. Figure 1b illustrates this informal arrangement in terms of a typical 'closed-end' street.

Reflections of the Radburn plan are apparent in the Wildwood subdivision with the superblock and internal pathway connecting the homes and a landscaped public open space system. In addition the houses face this system, thereby turning their backs to small streets. These features, themselves, represent a strong divergence from the "typical" subdivision where parks are sited in individual plots and houses, with large picture windows faced broad streets. However, certain divergencies from the Radburn's automobile pedestrian separation, links the Wildwood Subdivision with "typical" subdivisions. Rather than informal closed-end streets, the Wildwood subdivision employed the more rigid loops. In addition to contributing to a typical-like image this alteration meant that many houses would be isolated by the streets from the superblock, and community facilities. Thus, the pedestrian automobile separation of Radburn was only partially realized in the loops of Wildwood.

A further criticism often directed at the Wildwood plan is that it used basically a typical housing design in a non-typical context. Specifically, the vehicular access to the lot was in the back, while the main entrance to the house faced into the block. From the perspective

of visitors this relationship resulted in infrequent use of the front or main entrance.

FEATURES OF THE "TYPICAL" SUBDIVISION

- A Model of the "Typical" Subdivision
- Housing Types
- Houses, Lots, and Lot Design
- Streets and Street Furnishings
- Small Housing Groups
- The Subdivision as a Whole

CHAPTER III

FEATURES OF THE "TYPICAL" SUBDIVISION

In the previous chapter two periods were distinguished in terms of the general suburbanization phenomenon in Canada. In addition, two groups of subdivisions, "typical" and a-typical were distinguished in terms of dominating forces in their development. The objectives of this chapter are to elaborate upon the features of a "typical" subdivision, to observe the controls on these features, and to illustrate that despite certain minor changes the "typical" subdivision of the second post-war period was very similar to that of the booming fifties.

Observations in this chapter extend from a general outline of the physical components of the "typical" subdivision as introduced in chapter I and which was summarized in a general descriptive model presented in part A of this chapter.

A. A Model Of the "Typical" Subdivision

In this thesis the "typical" subdivision is modelled as rows of detached single family houses sited in a standard way on individual lots linked together by public rights-of-way (r.o.w.) comprising paved roads, boulevards, and sidewalks laid side-by-side. In addition, ten percent of the subdivision is used for public open space, most of which is included near or at the geographic center of the subdivision. Basic features comprising the "typical" subdivision include:

- 1) Housing - At least 70% of all dwelling units are detached single family houses on lots which occupy about 60% of the total site. Characteristically the houses are one storey

dwellings, with sloped roofs, front entrances with a step, and a large picture window facing the street.

- 2) Individual lots - Houses were sited on individual lots about 30 feet from the front and at least four feet from each side property line. The area of the lot is about 6500 square feet and is rectangular in shape (about 2:1 width to length). Access onto the lot is either through the front where a driveway is located to one side, or through the rear. Garages or carports may or may not be included.
- 3) Streets and Furnishings - Residential streets were very standard in appearance. Legally termed public right-of-way they include a) boulevard for siting certain utilities, snow storage, traffic signals, and small tree planting regularly spaced; b) concrete sidewalks for pedestrian movement; and c) paved roads for automobile traffic. Some public right-of-ways may also be included in back of the lots where they are much narrower in width (about 20 feet), unpaved and lined with telephone wires and poles.
- 4) Small Housing Groups - Small groups of individual houses are separated from one another by the street system and form rectangular blocks, bays, cul-de-sacs, or curved blocks.
- 5) Public Open Space - Most of the 10% dedication of the site is located at the geographic center of the subdivision.

Figure 4 illustrates the model of the "typical" subdivision as described above. An expanded model is as well presented here to describe

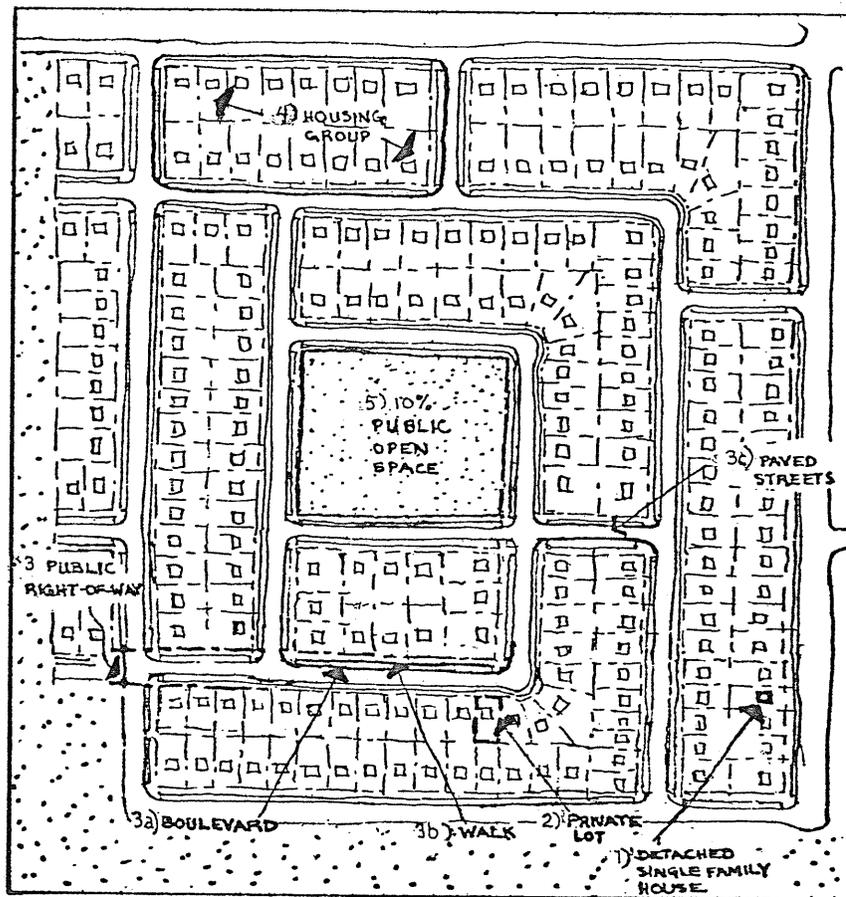


Figure 4. A Model of a "Typical" Subdivision

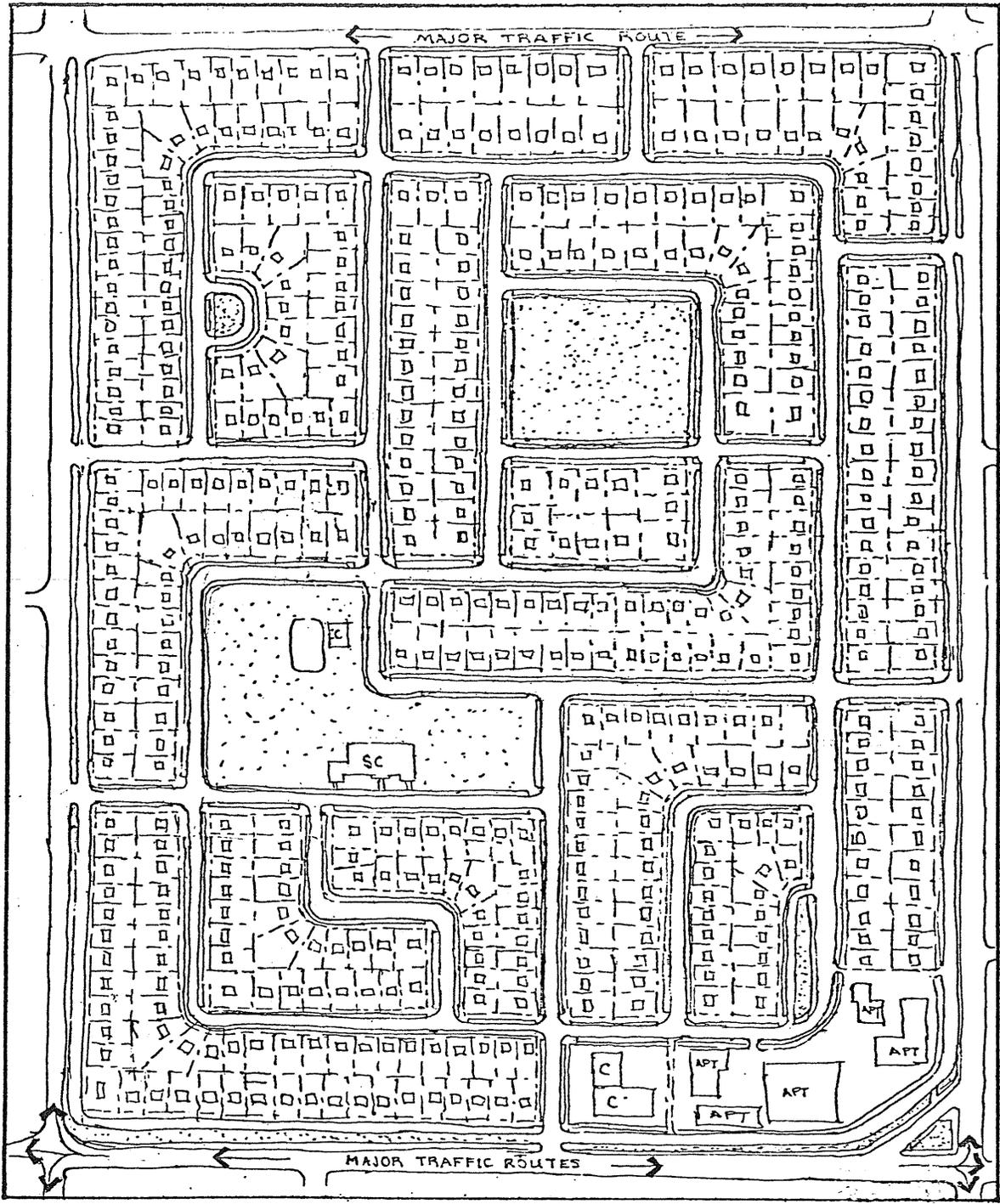


Figure 5. The "Typical" Subdivision, an Expanded Model for Larger Developments

better the larger subdivisions, and is depicted in figure 5. Aspects of the expanded model indicate that on 5-10% of the site are schools, churches, and commercial facilities. The school is located at or near the center of the subdivision with most of the public open space. Commercial facilities are located peripherally near a prominent intersection or along a bordering street. In addition other housing types such as apartment blocks, row houses, and duplexes are sited next to major traffic routes and near commercial facilities. These housing types may comprise about 30% of the dwelling units, but are not sited on more than 10% of the subdivision's area. Exceptions to these characteristics are possible, but generally the above features make up the two models considered to be "typical".

B. Housing Types

One of the strongest cases that can be compiled in searching for a typical feature comprising subdivisions of the first ten to fifteen years after World War II lies in housing. Evidence shows that types, designs and sizes were often standardized and lacked very little, if any, regional difference. An article published in the Canadian Planning Review by the Community Planning Association of Canada, (C.P.A.C.) shows a three page display of representative housing built after the War. (C.P.A.C., Vol. V.11, No. 3, Sept., 1957:111-113) Featured are a number of photographs illustrating a preponderance of single-family detached homes. Of the total representation the article states that houses were strikingly "typical" of those built from Newfoundland to Vancouver Island, that in such housing there was a "complete lack of local expression" (ibid.). In addition to featuring such housing in isolation the display also showed vast portions of land where housing

was exclusively single family detached homes. The repetition and striking similarities of each house as shown from an aerial perspective was like a pattern on a fabric. Although comments were not directly related to such photographs, the display in its context strongly suggested that such developments were very typical. Further indications that the single detached home was an almost ubiquitous feature of subdivisions in the fifties come from a variety of other articles subsequently published. Further, in 1960 the Royal Architectural Institute of Canada (R.A.I.C.) found that "Of one million houses built in the 1950's, .700,000 were detached single houses" (R.A.I.C., 1960: par.70).

Nearing the end of the fifties there was a decreasing trend in the proportion of detached single family homes built as compared to the total number of dwelling units constructed. By 1960 about two-thirds of all housing being built comprised detached single family homes. This trend, however, was accompanied by a densification in the inner city areas as well as some densifying nodes around major shopping centres in the suburbs and aligning major roadways along a commercial strip. It is safe to say that still by 1960, well over two-thirds (66%) of the housing in the "typical" subdivisions comprised detached single family homes.

Housing statistics for the country as a whole clearly showed a continued trend in the sixties toward more multiple family dwellings. Starts for single family detached houses numbered 67,171 in 1960, or about 62% of all starts (C.M.H.C., March 1975: 9-table 9). Throughout the sixties single family detached starts never exceeded the 1969 level of 78,404 or 37% of the total starts (ibid.). To project these proportions to the suburbs and the expanding subdivision would, however, not

yield an accurate picture. Much of the higher density accommodations were developed near the city core areas, along major arterials or around major shopping centers. Edmonton, for example, experienced an influx in the mid-sixties of high-rise apartments near the older and central areas (City of Edmonton, 1967:44). Such trends have been attributed to a number of factors ranging from a changing population structure toward young couples, older couples and fewer children (and thus a trend toward more multiple-family accommodations), to planning and zoning policy, and the economic return on higher land values at those specific sites.

Stated in the Edmonton General Plan of 1967, "New areas are still predominantly single family in character with apartments located near shopping centers and transportation nodes" (ibid.). In Winnipeg some new areas were still being developed with 90% of the housing comprising single family houses (Metropolitan Corporation of Greater Winnipeg, Sept. 1970:120 and Jan. 1971:78). In other areas of Winnipeg, St. Vital and Fort Garry for example, pockets of various multiple family accommodations were developed in a similar situation as in Edmonton or along major arterial roads. In Vancouver, Toronto, and Montreal similar occurrences can be cited (see for example Montreal's Urbanization, technical bulletin no. 5, November 1966 and Toronto's Boomtown for photos and descriptions). Thus during the sixties and to a lesser extent the fifties, the low straight suburban skyline became broken in spots by high-rise apartments. Furthermore, there occurred more medium density (such as duplex and townhouses) accommodations being built. In most instances, however, these housing types appear to have developed less as part of the expanding subdivisions and more

as isolated and separate entities linked with major roadways and commercial facilities.

The degree to which other housing types were introduced into the subdivision was not directly attainable. What is clear from various Metropolitan plans and general plans for cities, however, is that subdivisions of the sixties were still predominantly single family detached homes in character.

Design of the detached single family homes were also very similar throughout the fifties and during much of the sixties. It was reported by C.M.H.C. (1956:17) that for new starts in the early and mid-1950's the most popular designs were the bungalow and the split-level models. Furthermore after these alterations were made subsequent innovations were largely in economies of production rather than design (ibid.). Builders were buying their materials in bulk, tools were more mechanized, dimensions became standard, and houses were being mass-produced for a growing middle class. These trends suggest, therefore, that emphasis was on production rather than design, thus creating very similar end products. C.M.H.C. (1958:vi-5 -- vi-8) claimed that by 1955-56 eight out of ten single family homes being built were bungalows, that most of these had sloped roofs (hip or gable ended); that more and more houses were fit with picture windows; and that 90 percent of the houses were built with full basements. In 1960 the R.A.I.C. reported that despite a C.M.H.C. effort to stimulate innovations there prevailed only a few basic plans, and that the three bedroom bungalow had evolved as the typical form.

The sizes of housing during the fifties generally increased. This trend was in spite of increased housing costs and other economic pressures. It has been suggested, therefore, that this may have resulted

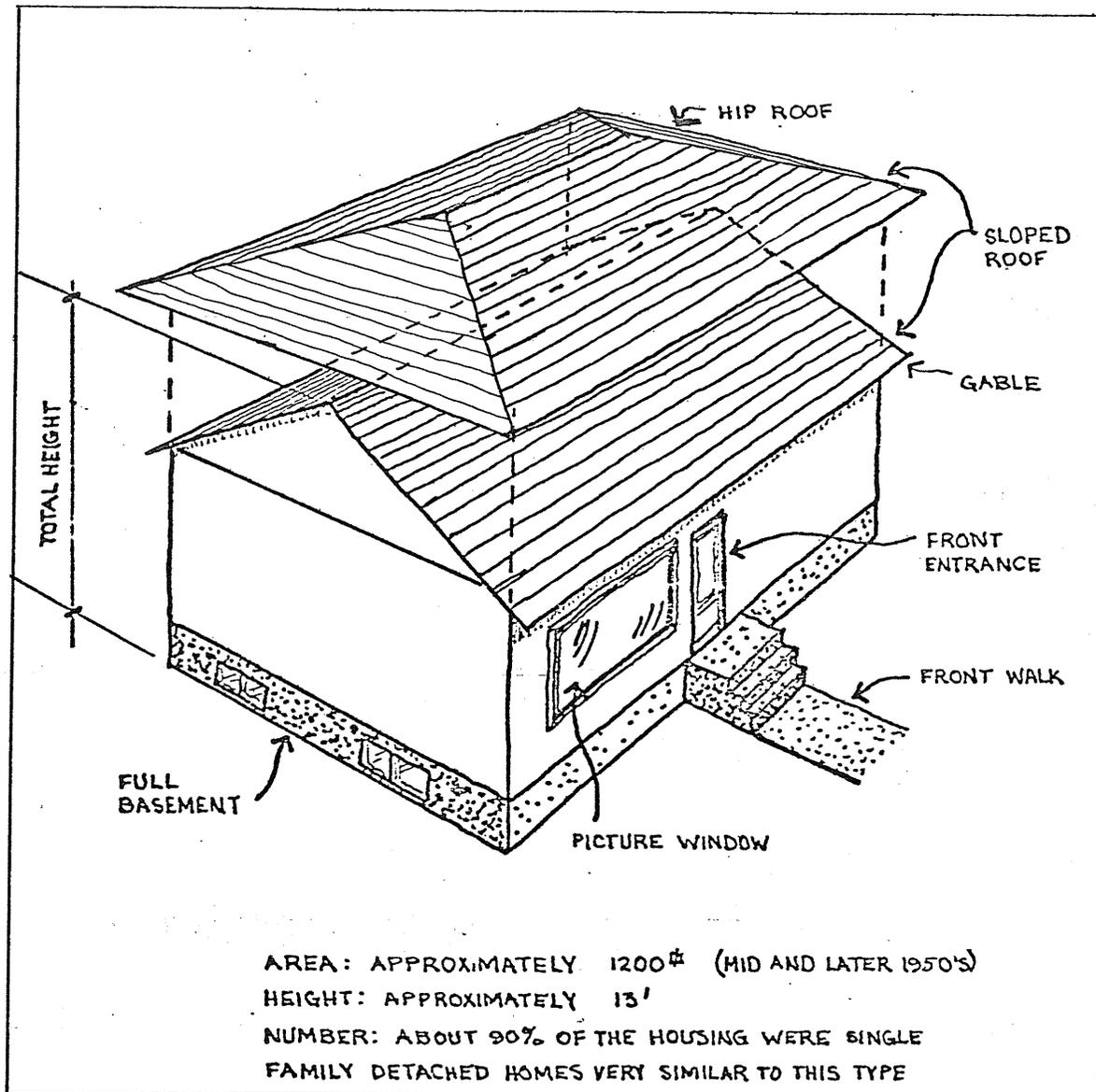


Figure 6. The Typical House

from increased standards associated with zoning by-laws and other land-use regulations which were adopted by provincial and municipal planning bodies. There is evidence of such an association. In the St. Catherines' by-law, for example, under rezoning a minimum size of 1200 square feet of floor area was imposed on housing built on 60 foot front lots (Jackson 1973:110-111). Regardless, however, the houses did not increase much beyond the average that C.M.H.C. estimated for starts from the private sector in 1957. This average was 1150 square feet.

Using the above data one can conceptualize the shell of the "typical" house found in the developments of the fifties and in many of the developments of the sixties. This is illustrated along with the basic external features in figure 6.

C. Houses, Lots, and Lot Design

The siting of houses onto single lots of similar design and size was another typical aspect evident in the C.P.A.C. photographic display of 1957. Illustrated in those photographs were rows of single family detached houses in very regimented and strict patterns. They suggested that common dimensioning between the house, the lot, the neighbouring house, and the house across the street were rigidly implemented throughout vast areas of developments. This was observed to be the case across Canada as noted also by the R.A.I.C. (1960).

This standardization in masses appears to have derived from the developer's desire to reduce servicing costs by placing the house as close to the front of the lot as possibly allowed through municipal by-law regulations controlling front-yard and side-yard set backs. Often municipalities, metropolitan areas, and sometimes, whole provinces adopted the same minimum standards thereby limiting any regional or local variations among subdivisions. Generally the R.A.I.C. (ibid.) found

that a minimum of 25-30 feet from the road allowance was commonly legislated for the front and that this corresponded to what was commonly built. In Ontario, Hugh Owen (1956:49) claimed that in 1956 a 20 foot set back was common. Although there were some variations as to the exact number the range was relatively small and in the urban settings the same numbers were used with such repetitiveness that differences seemed unnoticeable.

The fact that legislation continued to designate set backs despite rising economic pressures that would tend to eliminate set backs, indicates that the cost of these developments was not the most powerful factor in determining the design at this level. There was in fact other intervening factors. These included legislative controls and the N.H.A. Whether such controls reflected rational planning practices, or simply an adherence to unnecessary and outdated standards is debatable. The issue is still questioned today with many people suggesting that such standards lead to wasted land in front and beside the houses.

A further reflection on variables intervening in the economics of the subdivision can be seen in the tendency for the producers to increase the lot sizes during the latter half of the fifties. C.M.H.C., (1958:vi-6 -- vi-7) reported that the average lot size had grown to 6000-7000 square feet. It is difficult to say for sure whether the larger lots were due to larger homes, or whether the reverse was true; and to what extent they responded to legislative and consumer preference factors. What is important, though, is that there was a trend toward larger homes and lots and that this trend was accompanied, in some instances with zoning by-law regulations corresponding to the changes. It is important also to see that these trends were negatively associated with economics.

With regard to the newer lots not only were their areas larger but their fronts were wider as well, adding to the servicing costs. C.M.H.C. (ibid.) found that the average front width was 60 feet in 1958.

The general layout of the lot in terms of space was very common among subdivisions of the fifties. E. T. Rashleigh, after a two year personal survey of Canadian cities, found that the "typical" suburbs contained the following:

"...the popular standard lot layout—front lawn, back lawn, path to front door, driveway to one side of lot, low hedge if any, not much garden, a picture window unobscured" (Gertler, 1968: 194).

Although some lots, especially those developed in the first half of the fifties, were served with back lanes and back yard garages, Rashleigh's depiction of the typical layout is generally supported in numerous C.P.A.C. and other publications on suburbs.

It is indicated from the above that there was a relationship between zoning legislation and economics, and the typical lot that was produced during the fifties. This relationship was extended through the sixties as well. In 1967, H.P. Oberlander conducted a study of building and zoning laws across Canada. His findings were that there existed a striking similarity in the "magic" numbers regarding zoning and the dimensions of lots across Canada. He concluded that legislation indeed played a significant role in the typical lot and its relationships with the siting of the home and the neighbouring lots. The "magic" numbers of which Oberlander spoke concerned the front set back, and the sideyard regulations as well as the maximum coverage of the lot (usually 35%) by buildings. These figures were essentially the same as those observed by

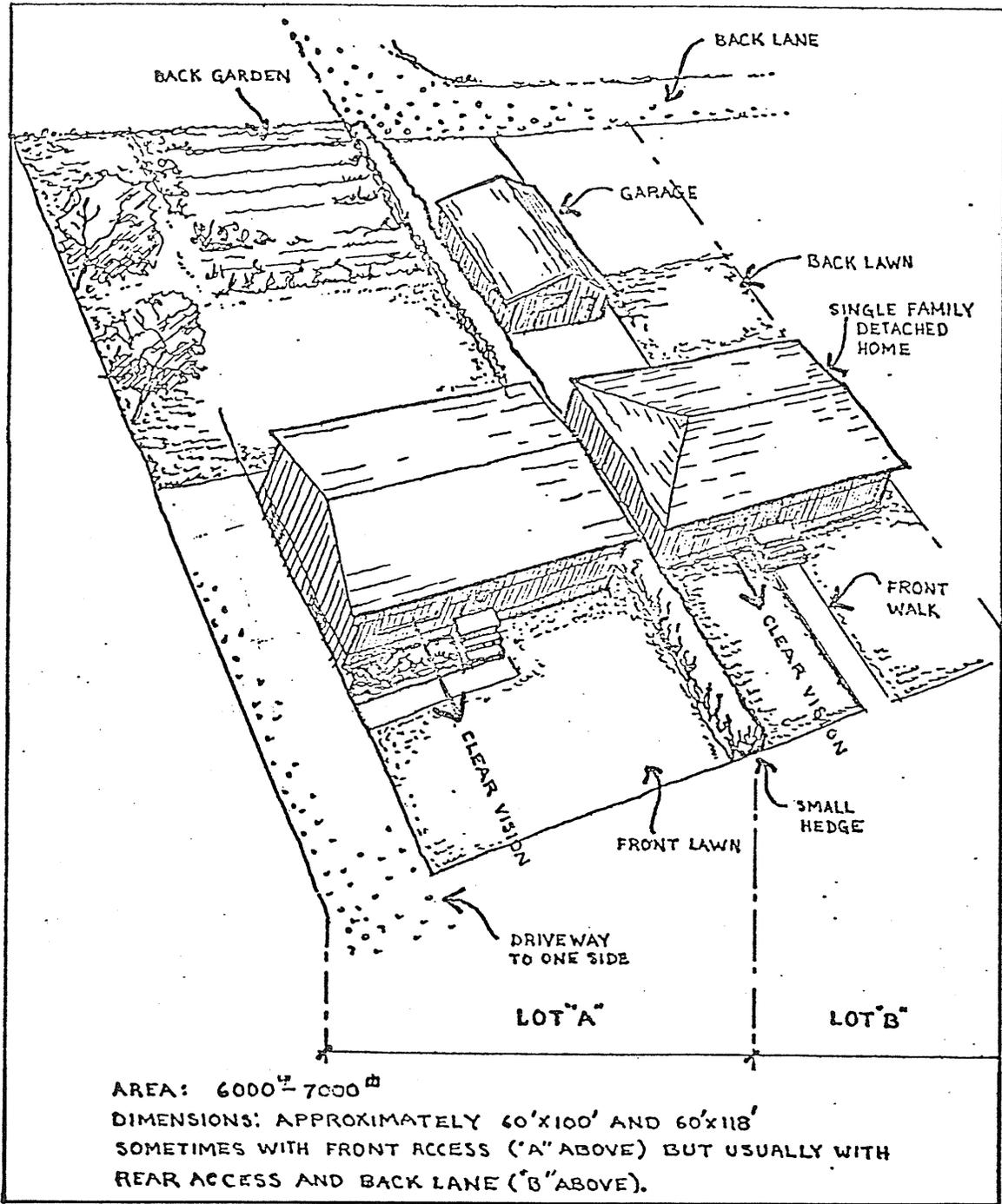


Figure 7. Components of the Typical Lot

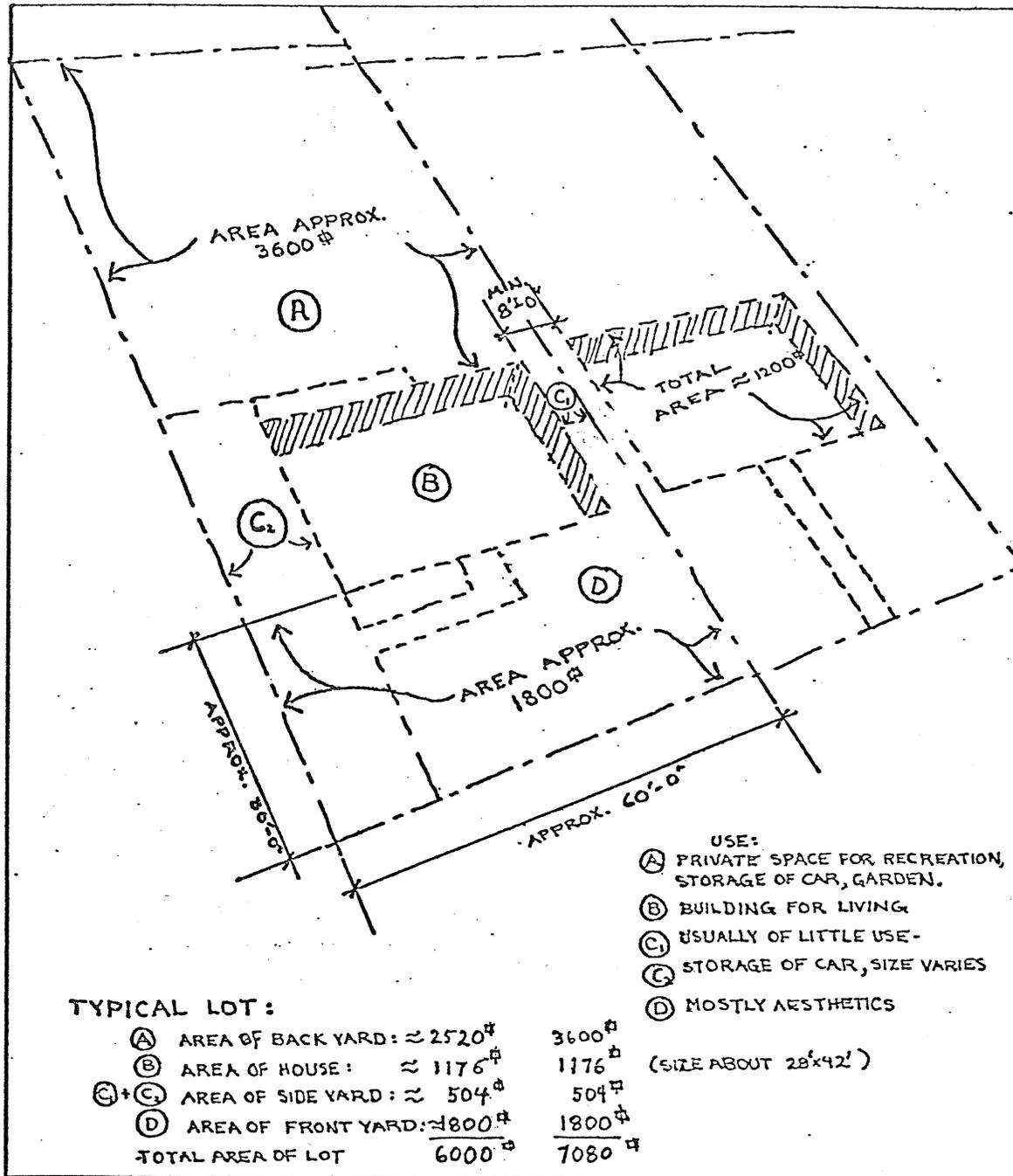


Figure 8. Dimensions of the Typical Lot

the R.A.I.C. as typical in Canadian cities, and which J. N. Jackson found to be true in his study of St. Catherines' subdivisions.

A noticeable alteration to the typical lot that became more prevalent during the sixties was the elimination of the rear access in favor of a front access (see figure 7, Lot "A"). The Lower Mainland Regional Planning Board of British Columbia reported that this was the trend in the newer subdivisions around 1967. The City of Edmonton stated that access by the front would be their policy in new subdivisions after 1968, except where special factors such as economics altered the situation.

Access from the front meant a trade-off in terms of economics. A front driveway meant that back lanes could be eliminated and thus resulted in some land savings and maintenance costs for the municipality if opposite private yards met at the back. However lots were usually widened to accommodate the front access and the possibility of a garage. This resulted in increased servicing costs per dwelling, as the critical dimension in servicing was the lot width. There was, therefore a saving in the back but there was an increase of costs in the front. Despite these alterations, the "typical" lot was very similar in terms of the other features that were outlined for the fifties (refer to figures 7 and 8).

D. Streets and Street Furnishings

The single family detached house on the typical lot produced a very stereotyped street vista. Again evidence showed a close association between what was legislated and what was built. Ontario by 1956 had uniformly accepted a minimum right-of-way width of 66 feet for all residential streets (Owen, March 1956:49). The R.A.I.C. found this figure to be very common across Canada. The result was an important aspect of scale being imposed randomly on developments. With a 66 foot

road allowance and a further 25 to 30 foot set back imposed on housing, opposite houses along the street were separated by 116-126 feet. This horizontal dimension corresponded to about ten times the effective height of the houses. With such a dramatic relationship in the vertical and horizontal scales being imposed by a central authority (the municipal or provincial government) street profiles were bound to become very monotonous, a criticism so often directed toward subdivisions of the fifties.

The R.A.I.C. (1960) also found that street furnishings were often standardized. Pavement widths, lighting, boulevards and sidewalks often came under the scrutinization of municipal authorities who relied upon commonly accepted standards. The street scene was of utmost importance and was designed primarily for the movement of automobiles, for the convenience of various underground, and overhead servicing, and for the display of the single family home on privately owned property. Houses were consistently car oriented, facing the street with large picture windows and main entrance ways. Boulevards were wide (often 19-24 feet) for storage of snow, underground servicing and to a lesser extent pedestrian-automobile separation. Examples of this hierarchy of criteria can be seen in numerous engineering manuals prescribing standard street widths and their association with gas, electricity, water, sewer, snow removal, and other such servicing. Figures 9a and 9b illustrate "typical" cross-sections and street profiles. Paul Theil Associates Limited (1975:29) claim that such standards traditionally, applied as provincial highway standards, bore little relation to residential traffic on the streets in suburban subdivisions. As many subdivisions of the early fifties

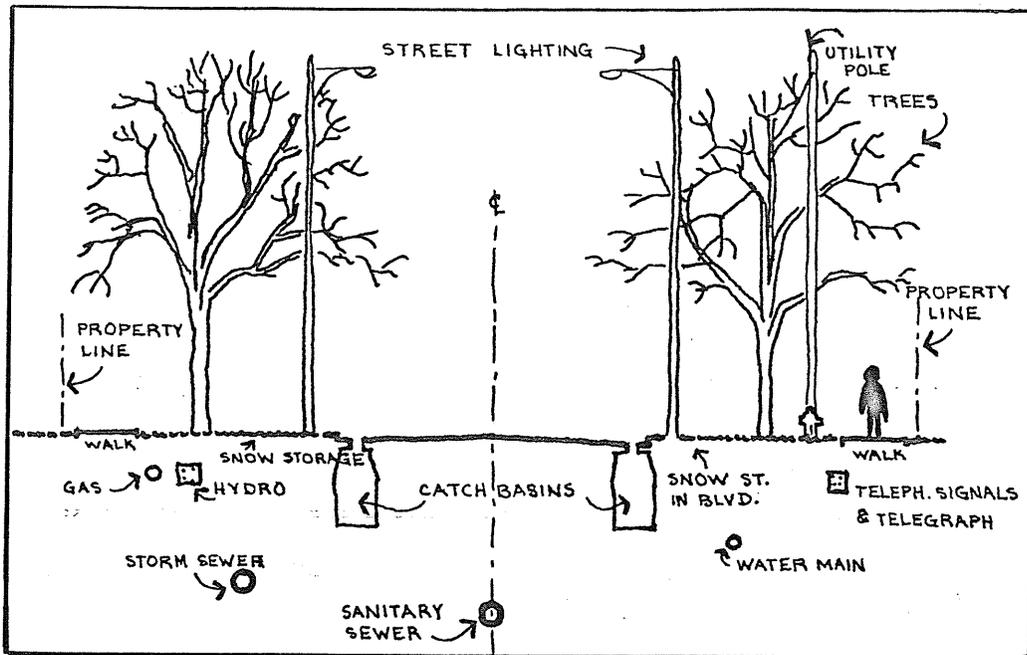


Figure 9a. A Typical Street Section and the Siting of Services
 Adapted from (Greater Winnipeg Underground Structures Committee,
 "Standard Locations for Utility Structures", June 29, 1960)

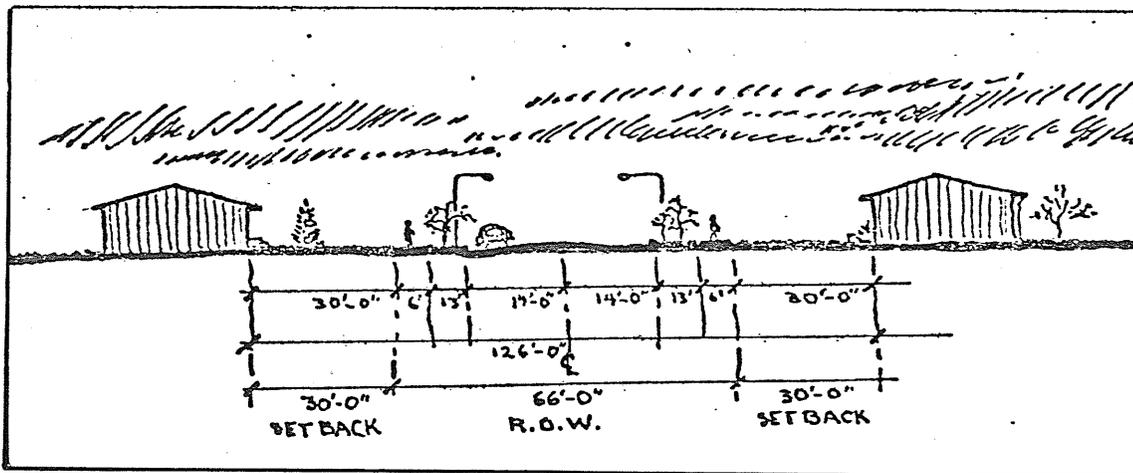


Figure 9b. A Typical Street Profile with Housing

were based upon a rectilinear system of streets (see figure 11a for illustration of this system), there was only a two tier hierarchy of traffic on streets. This added further to the monotonous appearance of the subdivision.

From Rashleigh's cross-Canada survey the essence of the street environment is summarized in the following:

"The typical residential street is dominated by an expanse of road, boulevards, sidewalks, and front yards, against which the single storey house offers insignificant contrast". (Gertler, 1968:194).

Not only was the street vista "typical" due to the unwavering use of standards, but the monotony was reinforced by the developer's "bulldozer" technique of preparing the site. This entailed tearing out virtually all the natural tree growth and removing most of the top soil to facilitate servicing operations, digging basements, and forming the required slopes for proper drainage of the site. Landscaping which was most often done by the owner upon moving into the new home was minimal, comprising (as stated previously in Rashleigh's comments) a front lawn and small trees or shrubs. Sometimes the municipality planted boulevard trees. These were evenly spaced and were small, offering no contrast to the vast horizontal scale of road, boulevard, sidewalk and lawn (eg. see figure 9b).

In most instances a front access was provided for the lot (see figure 7 - Lot "A"). Where this was practised garages or carports and a front driveway also became a part of the street vista. These elements offered some variety in the fronts of the houses. Such variety, however, was a small token, seemingly lost to the eyes of critics such as Rashleigh who felt that the horizontal scale and irrational regimentation of elements, one beside the other, were overwhelming.

Very similar regulations governing rights-of-way set backs and

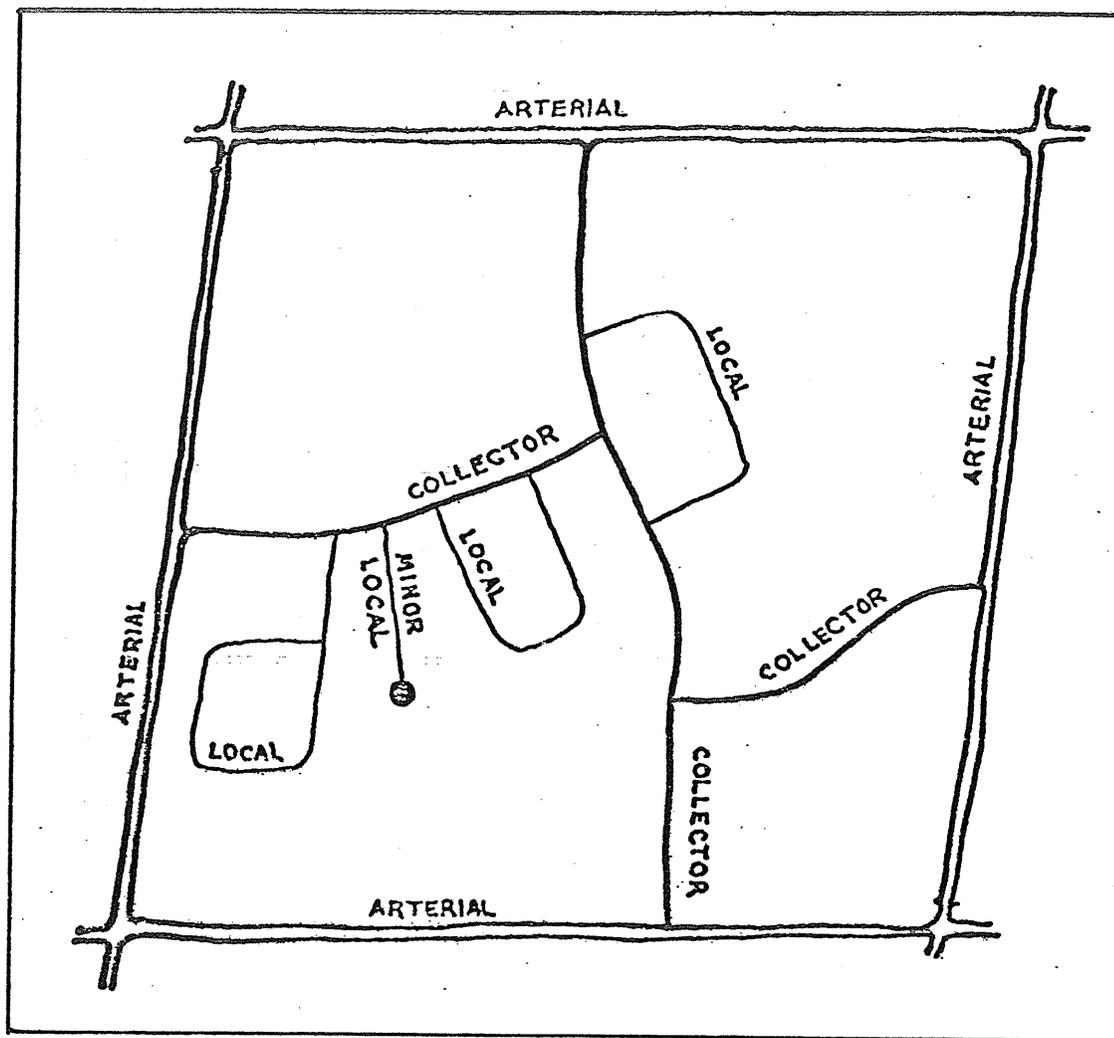


Figure 10. The Typical Street Hierarchy in Later Subdivisions
(Paul Theil Associates, 1975:32)

street lighting, sidewalks, boulevards and pavement widths controlled the street scape of the sixties. This was further reinforced by a continuation of the "scorched earth" policy of the developer in terms of the natural features along the street. However, a more hierarchical patterning of the road system became more prevalent with increased use of curvilinear street systems using cul-de-sacs, loops, etc. This hierarchy was further established in terms of more medium density dwellings and other community services. Figure 10 illustrates the typical hierarchy of roads that was commonly established in many areas.

The local streets served primarily single family detached homes and related in cross-sectional scale very much to the minor residential streets of the fifties. More subdivisions began to use underground services so that the street furnishings were altered in this respect. This was true especially in conjunction with eliminating back lanes where telephone poles and wiring were often located. Sidewalks, boulevards and streets continued to be aligned side-by-side with one another.

Along the major residential streets, or collectors as shown in figure 10, pavement widths were increased, and there was a more varied pattern of housing types and in some instances other land uses. However, the separation of housing across the streets were not much greater than on minor residential streets. Finally, sidewalks, boulevards and pavement were aligned in a similar manner, in most instances, as on the minor streets.

E. Small Housing Groups

Evidence shows that subdivisions of the fifties did differ to some degree with respect to the manner in which housing was grouped in blocks throughout the site. The most common type of grouping, shown in figure 11a, is termed the rectilinear system. This system was easiest

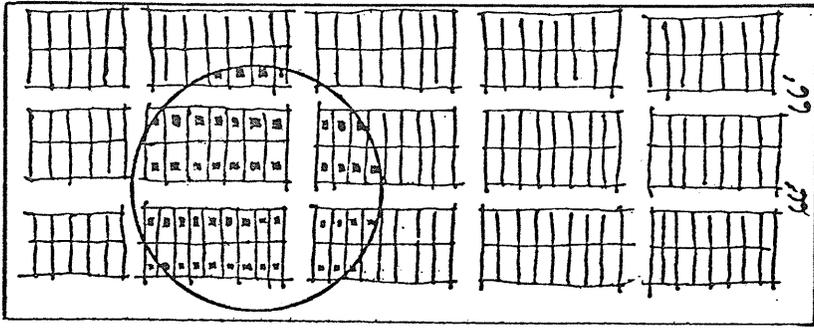


Figure 11a. The Rectilinear System

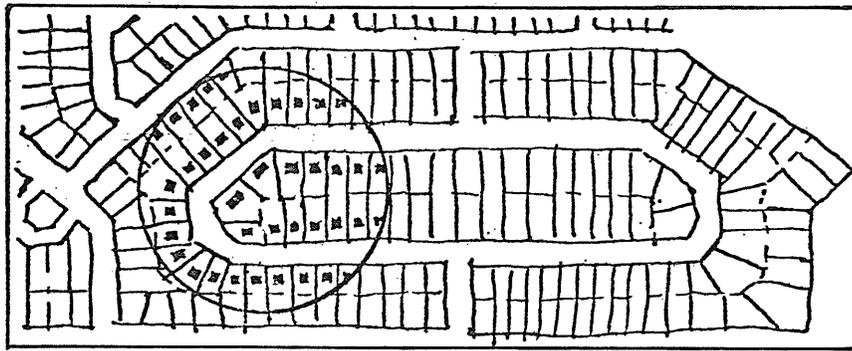


Figure 11b. The Internal Block System

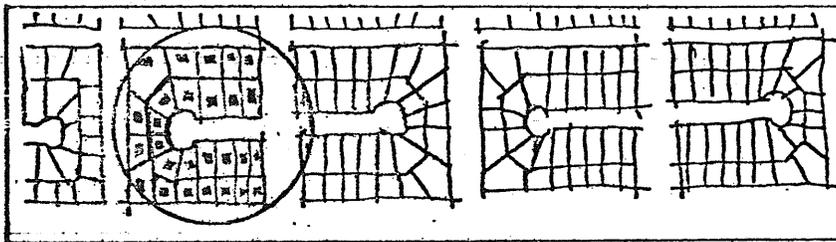


Figure 11c. The Cul-de-Sac System

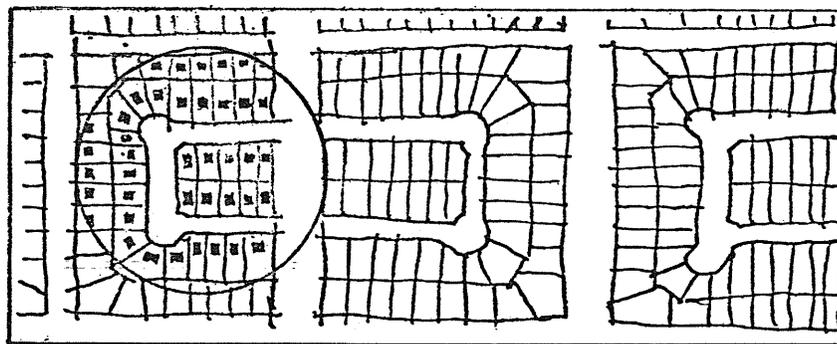


Figure 11d. The Loop System

to survey, draw-up, and often best fit the system of land holdings (This was especially true on the prairies where land was subdivided from sections or townships, and where the land was relatively flat). Other patterns that were used were the internally-developed blocks (figure 11b), cul-de-sac (figure 11c), and loops (figure 11d). Of these systems, V. J. Kostka reported in 1957 that the rectilinear system was the most common and "conservative", and the loops and cul-de-sacs were the most "progressive" forms at that time (Kostka, 1957:64).

Figure 12 shows a map of the City of Edmonton. The more recent (post-1960) direction of suburban expansion are clearly reflected in the areas where curvilinear patterns prevail. The trend toward curvilinear streets with greater use of loops, cul-de-sacs and the other patterns, was advertised as responding to a variety of aspect including privacy, quietness, aesthetics, and economics. Figure 13 is an advertisement publicizing these in the Whitmore Park Subdivision (1957) in Regina. The advertisement illustrates the various types of road systems and the qualities that each is supposed to have. However each system still retained a standard approach to design. Houses on opposite sides of the street still faced one another separated by a wide strip of pavement which was flanked by boulevards with no landscaping other than tiny trees and grass, by a concrete walk and by about thirty foot spans of lawn. The elements were therefore organized in very much the same manner, producing a very similar horizontal scale, and exhibiting a very similar functional appearance where the dominance of the automobile prevailed. Such innovations were, as well, slower in arriving on the prairies and therefore the rectilinear system still remained as the most representative of

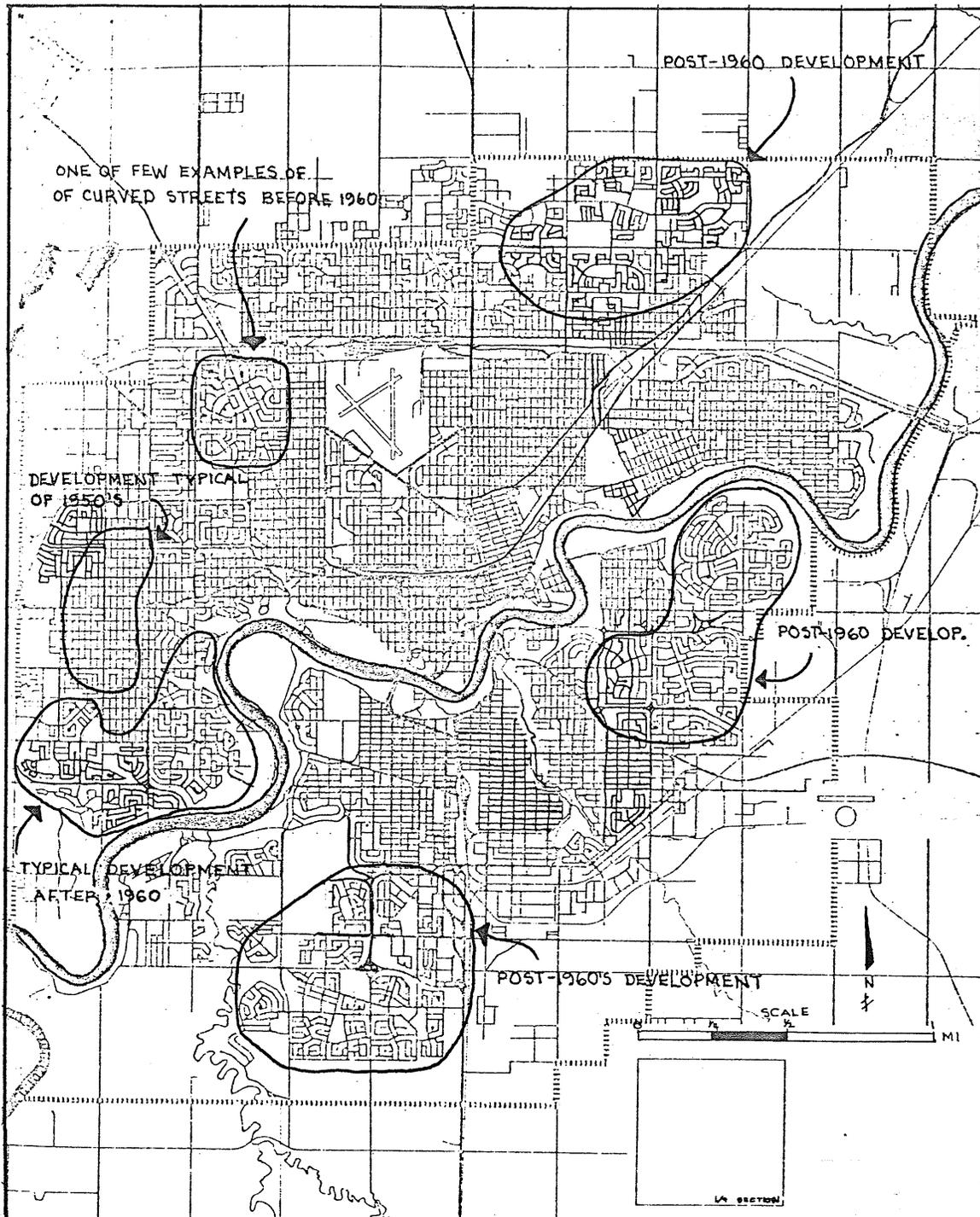


Figure 12. The City of Edmonton and the Trend to Curved Streets in the 1960's

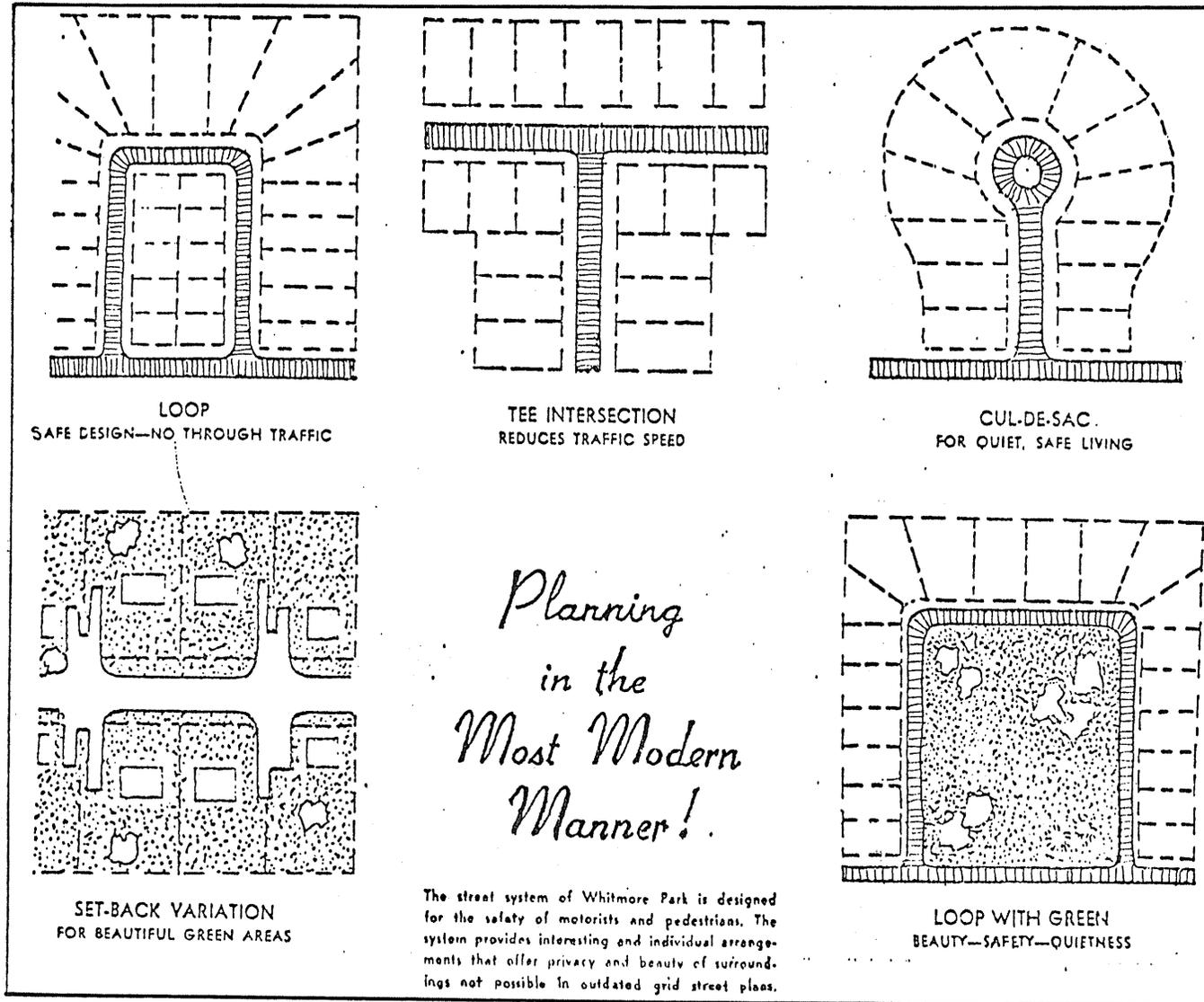


Figure 13. Trends in the Street System More Common to Newer Subdivisions After 1955

developments up to 1955 and to a lesser degree thereafter.

In addition to the trend toward grouping detached single family houses around loops or in cul-de-sacs, subdivisions of the sixties had to consider the grouping of other housing types. These included more duplex (semi-detached), and small three storey walk-up apartments that were considered transitional housing between detached units and other more intense land use sites such as high-rise apartments and commercial centers located most often at arterial intersections. The grouping of these semi-detached and small apartments was done in more than one way. In some instances one or two semi-detached units would be placed in a predominantly detached group of housing. At other times a row of them would be placed on a collector entering the subdivision off an arterial. Often there was no transitional type housing such as the above, separating high rise apartments and single detached housing. Alternatively the latter two could be separated by a road. In this case the single family detached groups closest to the high rise would likely be grouped so that the sides or width of the blocks (or end blocks) of the single family detached groups met the length of the blocks of the high-rise group. This would allow the single family detached houses to face one another throughout the plan ensuring the character of the street was in keeping with tradition.

A more recent addition, especially in the seventies, to the subdivisions have been the row house or townhouse. These groups of housing, like the duplex type, were recommended by many planners as a transitional type of housing between high-rise apartments and single family detached homes. Also, like the duplex, a short row of these houses were sometimes aligned on lots adjacent to a collector intersecting an arterial road. However, unlike the duplexes these houses were often developed separately

as a group. This was especially true when they were developed by a provincial housing corporation for accommodating lower income families in the late sixties and early seventies.

The manner in which traditional zoning was used, as well as the practice of those who produced the plans in the subdivisions limited the integration of various housing types. In general, therefore, the subdivision was still developed for the market of the single family detached home throughout the sixties. Other housing was often segregated or provided a buffer between the less desirable elements (such as heavier traffic, high-rise apartments, sometimes rail lines, and commercial facilities).

F. The Subdivision as a Whole

The subdivisions of the late forties and early fifties were essentially a response to an enormous growth in the demand for housing. The developers, governments, financiers, and those who elaborated the plans for the new developments were therefore largely concerned with fast and short-range economical production rather than innovation. As a result, plans which fell under their influence became very stereotyped in aspects of housing, lot design, streets, blocks, and general layout. These factors became the prime components of the early "typical" subdivision.

When earlier subdivisions contained other elements such as commercial facilities parks and open spaces, and schools they were not grouped so as to create communities. Such elements were scattered in what might be termed a sea of undifferentiated detached housing. There was generally no indication in the street pattern or alterations in the housing groups which suggested that one was approaching a school or park.

This was magnified in terms of strict adherence to one type of layout system in the streets. Figure 14a illustrates this occurrence depicting the effect of the rectilinear system imposed upon the siting of a school and store. Figure 14b which adds some variety through cul-de-sacs and an interlinked footway system illustrates the same point, regardless of such minor alterations. Such occurrences were very typical of subdivisions prior to the First and Second World Wars and continued to some extent after them. Prior to World War I many cities, in anticipation of future growth, had large tracts of land surveyed and registered as subdivisions. Much of this land was developed after World War II and as late as the sixties, thereby perpetuating these types of subdivisions.

In 1953, the Don Mills subdivision around Toronto was heralded as "innovative" and exciting. It was supposed to incorporate all the new practices of planning subdivisions. Its innovations were centered around the issue of creating communities out of suburbia. The random sprawl that preceded it had been attacked for its monotony, and endless repetition. Don Mills was to remedy this by implementing a more varied layout of loops, bays and cul-de-sacs, variations in housing set backs, and communities centered around parks and schools. The layout of these various streets would eliminate through traffic, creating safe, quiet streets for the residences. These innovations answering the issue of random sprawl, were incorporated with increased popularity in the later fifties and into the sixties. Whitmore Park, previously mentioned in relation to Regina, offered all of the above but little else. Similarly Silver Heights in Winnipeg, Glendale in Calgary and various subdivisions under Edmonton's neighbourhood unit concepts adopted various aspects of the Don Mills approach of eliminating the randomization of sprawl.

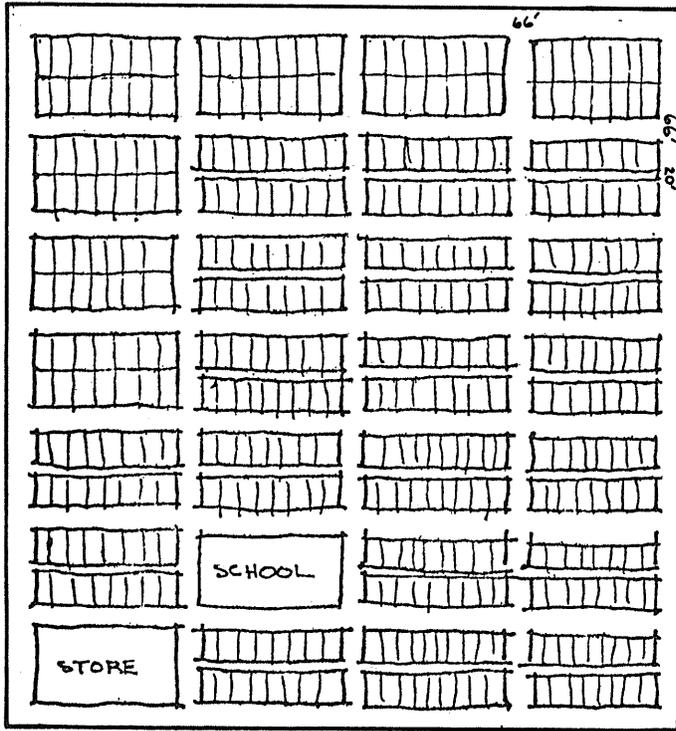


Figure 14a. A Typical Layout Representing Subdivisions of the Early 1950's. (Rawson, 1963: 10)

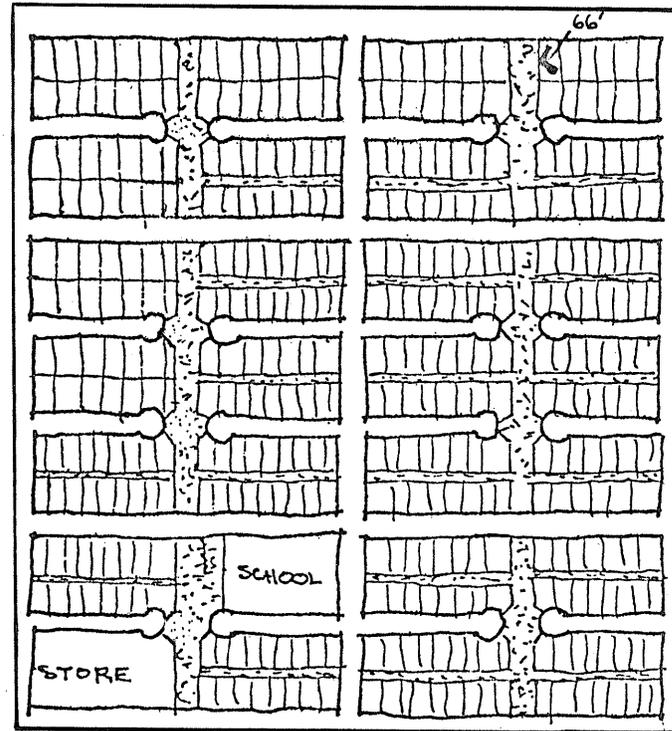


Figure 14b. A Typical Layout System Using Cul-de-sacs (Rawson, 1963: 11)

Together these "new" subdivisions while attacking their predecessors' standards, did little more than group houses in a more rational manner and eliminate much thru-traffic.

Figure 15 represents a portion of Silver Heights of Winnipeg. The street pattern shows minor variations to the rectilinear pattern, there are some variations in the setbacks of houses, and there exists some variations in widths between the street internal to the subdivision and those bounding the subdivision. Finally, on a cursory basis there appears to be a sense of community, in that the subdivision comprises various groupings of houses, not an undifferentiated sea (such groupings are linked internally by minor local streets); and there is a central park and school site which seems to "belong" to those houses contained by the boundaries Whytewold on the East and Ness Avenue on the South, and Silver Avenue to the North and the vacant land to the West. The subdivision stands together with no thru-streets dividing it into parts.

Figure 16 illustrates the old and the new in terms of subdivisions and what planners were proposing with greater frequency during the mid and late 1950's. The innovations have been illustrated above in terms of particular examples, while figure 15, extracted from a Community Planning Review journal of the mid-1950's illustrates the same was being published on a national level by the Community Planning Association of Canada. There was therefore, a definite relationship between what was being built and what was being proposed by planners nationally. The same basic issue as published and illustrated through Whitmore Park, and Silver Heights were being addressed nationally. The result was a very typical subdivision that was being put forth and built.

With regard to schools, parks and commercial facilities, while many subdivision sited the first two near the center of the subdivision

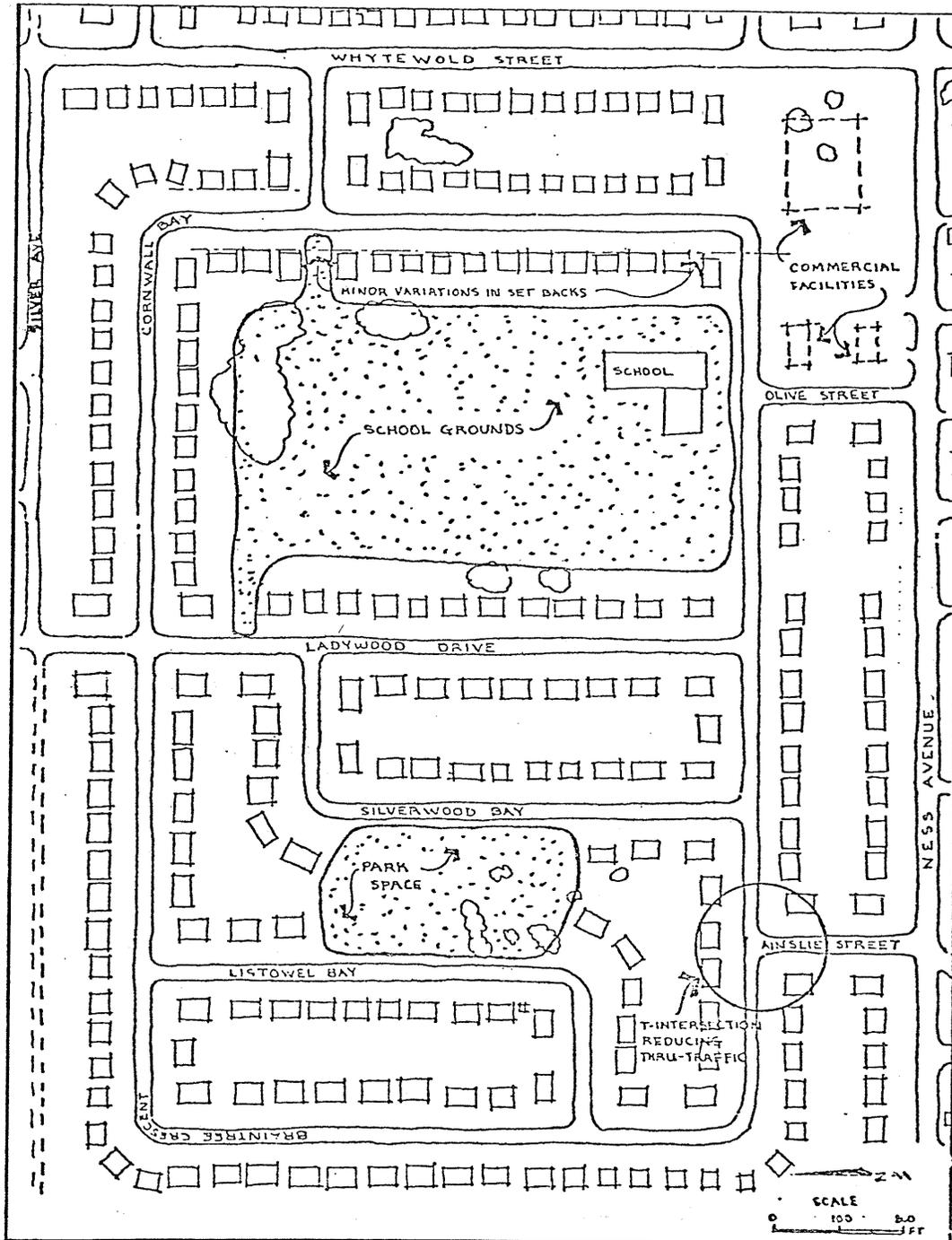


Figure 15. A Portion of Silver Heights, A "Typical" Subdivision of the Mid-1950's

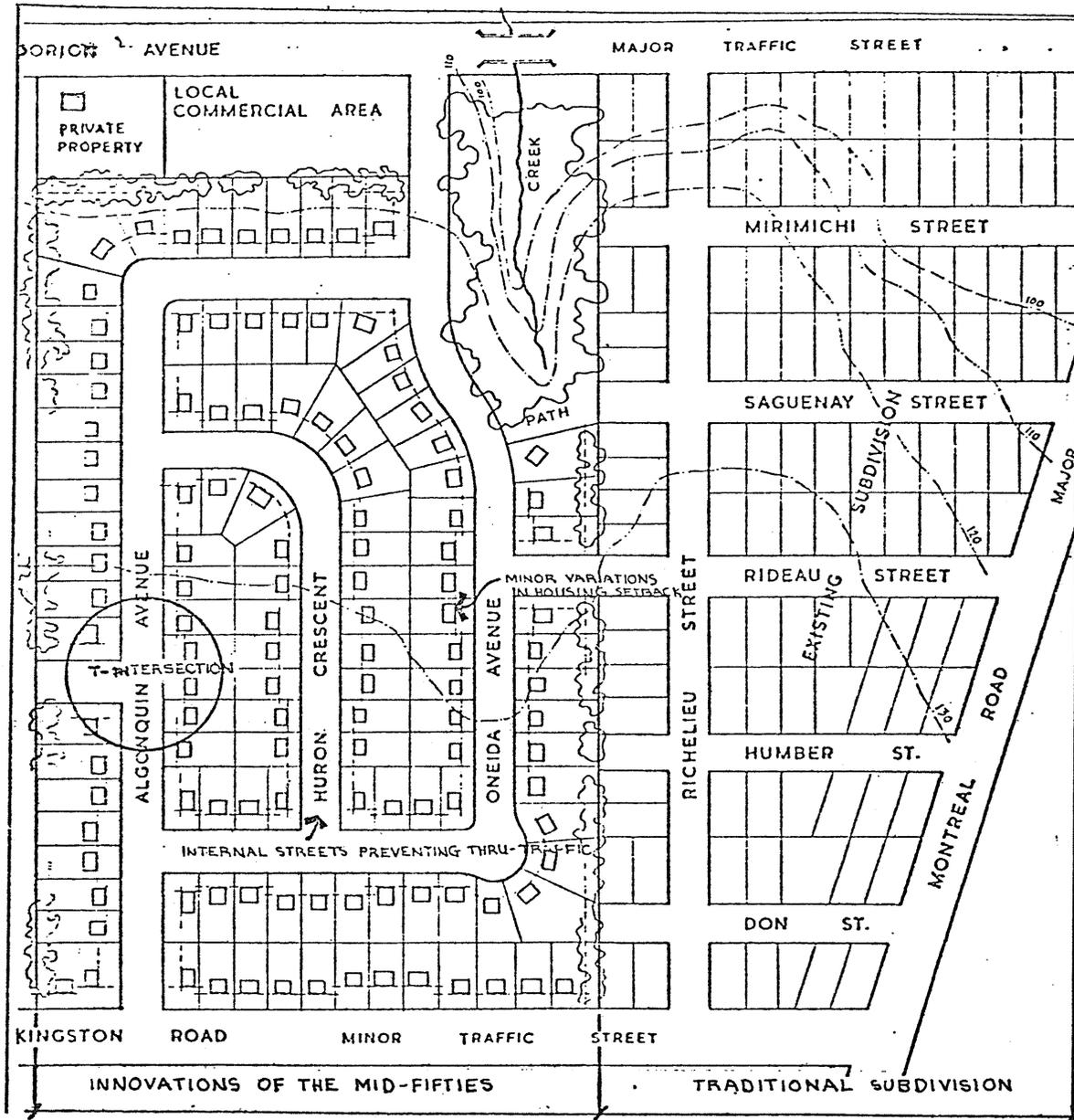


Figure 16. Innovations Typical of the Mid and Late 1950's

and the latter adjacent to a collector or arterial intersection there were some variations to this rule. Their incorporation depended upon specifics of existing facilities within the area, as well as controls and attitudes of municipal authorities and the developers. In some instances such facilities were eliminated from a group of housing contained by major roads. In these cases, pedestrians had to cross the major roads for access to the facilities. Such groups of houses were, therefore, physically isolated from the potential attraction of these facilities.

In illustration of the above, another portion of Silver Heights serves as an excellent example. Figure 17 is a portion of that subdivision located immediately east of the portion illustrated in figure 15. It indicates a group of houses centered around a park, but void of any other community facilities. Children going to the school, or pedestrians going to the commercial facilities have to cross Whytefold. The path to these facilities, by automobile or by walking, is very indirect with T-intersections interfering with a straight route.

Even in instances where other facilities were incorporated in the subdivision they were sited in a void surrounded by open field, and parking lots. Rashleigh, Jones and others noted that schools, for example, were sited in this manner (eg. see Gertler, 1968:194). As such the wide open areas between these and the other buildings were similar to the broad open, horizontal scale that separated opposite houses on a street. Boundaries of school property and the other facilities were often delineated by fences, roads, and alleys thereby reinforcing the single-use approach to land division. In many instances this was even the accepted practice in compartmentalizing community parks and school playgrounds from one another.

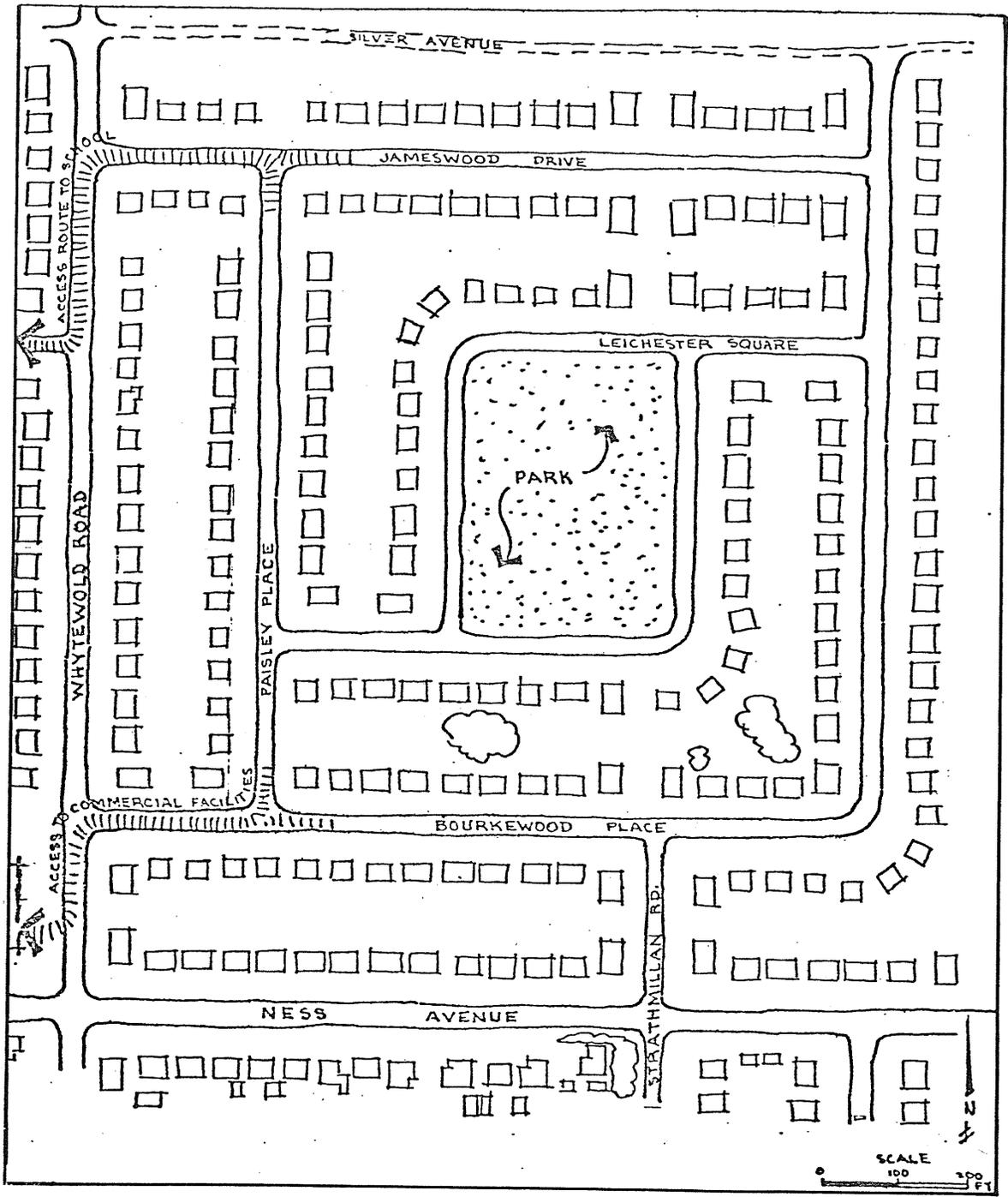


Figure 17. A Portion of Silver Heights with Poor Access to Community Facilities

E. T. Rashleigh (*ibid.*) suggests that it was largely a result of the developer's "scorched earth" policy that nothing was left to fill the voids in the subdivisions. It was more than this, however, that contributed to the isolated and monotonous placement of facilities and buildings. Zoning regulations and their interpretation and application have set the street widths, the set backs, parking requirements, open space requirements and land coverage requirements; but have neglected the quality of the environment in its entirety. Thus, there was no flow within the subdivision of green spaces or parks that linked various housing and other communal elements in Radburn and Wildwood (eg. see figures 1a and 2). Adding to the "typical" subdivision it is important to realize that it met as its first priority the division of land into lots for housing but it neglected any consideration of interlinking buildings, open space and pedestrian movement in a continuous and rational flow.

Observing the "typical" developments of the fifties and those of the sixties one can notice some distinguishing features. Those of the sixties involved more variety in housing, a clear hierarchy of streets, lots were generally larger and wider, and the skyline showed some areas where at least three storey buildings jutted beyond the horizontal masses of one storey homes. However, there was also striking similarities. The single family detached home with all its basic elements (i.e. picture window, basement, sloped roofs, front entrance), much of the design of the single family lot (front yard, backyard, sideyards); the streets (pavements, boulevards, sidewalks, houses, lighting, small plantings, clear vista, front lawns); and the blocks (groups of single family detached homes) still predominated as standard elements in a standard pattern.

Where innovations were employed they were incorporated into the subdivision in a manner that was in keeping with the fifties, causing little interruption of groups of single family detached homes. Thus, for example, when commercial facilities and other housing types were to be implemented, they often formed part of the bordering elements separating the more offensive elements, such as heavy traffic, from the single family detached homes. There were exceptions of course. Churches, community buildings, parks, and primary schools were again often located near the centre of the subdivision. Such elements were rarely integrated in a systematic and continuous flow. They were located such that no major streets separated them from the rest of the subdivision. In addition, in some instances where these facilities were located near the centre, they were accompanied by a small group of convenience shops and small three storey walk-up apartments or single family attached housing (row houses, duplexes, etc.).

The above generalizations, excluding the siting of commercial and apartment clustering in the centre of the subdivision, are illustrated in figures 18 and 19. These figures were constructed from an areal photograph in the City of Edmonton General Plan (1967) and represent a "typical" subdivision of the sixties under construction. The subdivision is being developed as a "package", it has a broader hierarchy of internal streets (collector and minor), it contains a greater housing mix, and set backs are varied (but only to a minor degree), and there is a stronger tendency toward curvilinear streets. Its relationship and strong ties to the Silver Heights and Whitmore Park subdivisions can be seen in the effort to maintain the single family detached character through the grouping of various components of the site; the relatively consistent broad flat

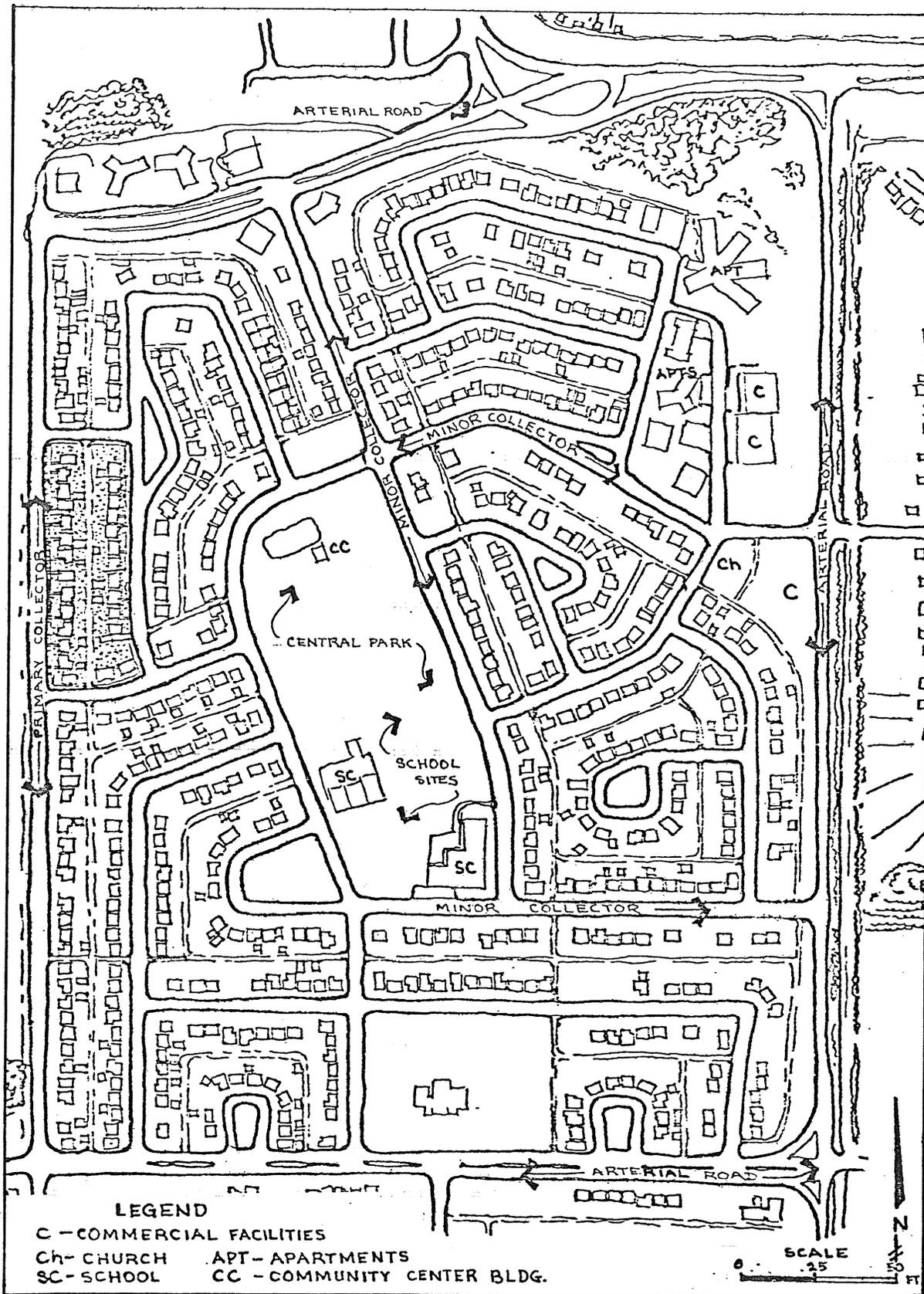


Figure 18. A "Typical" Subdivision of the 1960's (City of Edmonton, 1967:49)

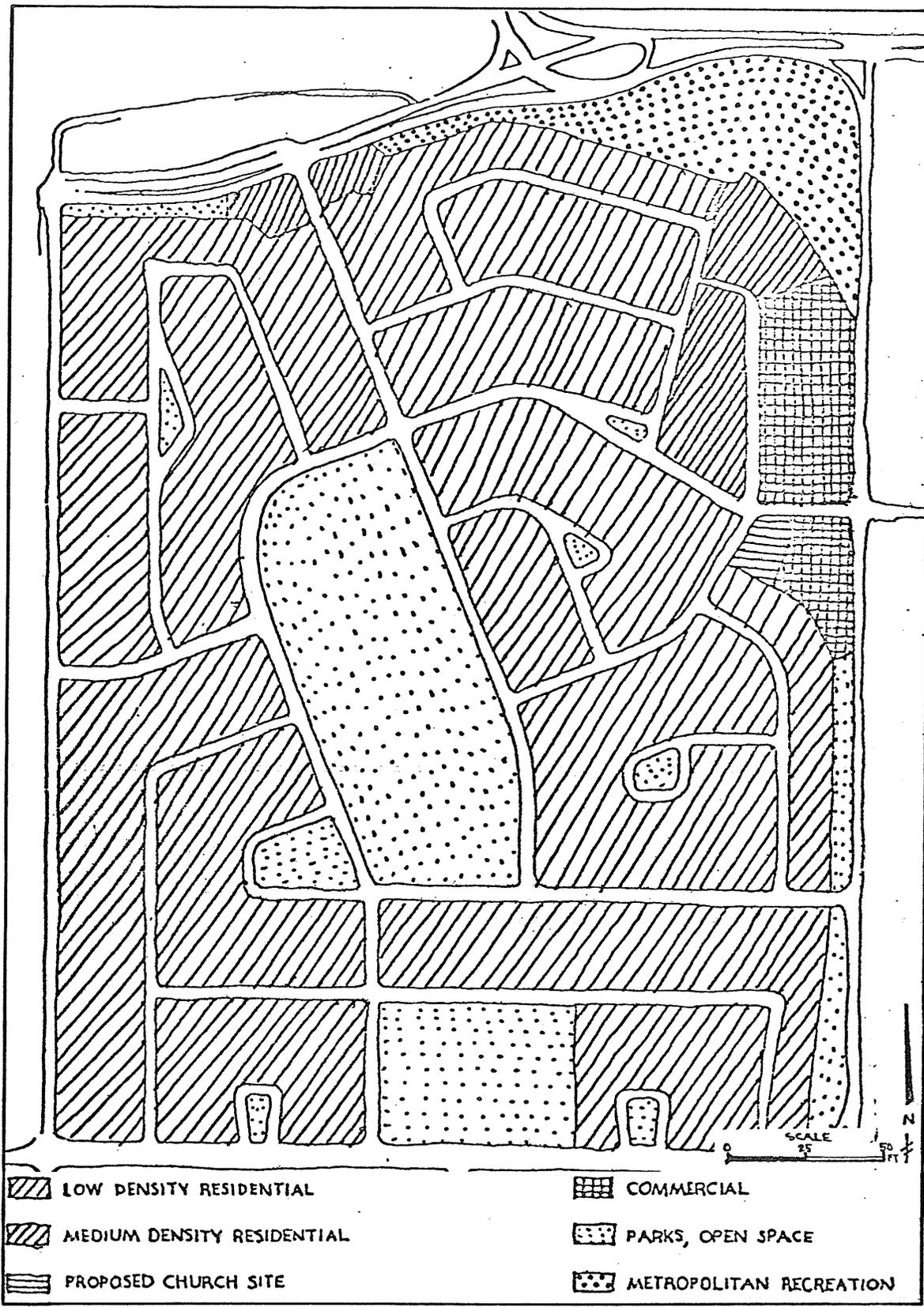


Figure 19. A Typical Subdivision of the 1960's, Land Use (City of Edmonton, 1967:49)

scale inferred from the distance of houses aligning wide streets; the grouping of other housing types, and commercial facilities to external or bordering sites along collector or arterial roads, and away from detached houses; the lack of a continuous flow of parks and open spaces, and other elements which are only synthesized by roads and intersected walks aligning them. Note, for example, the small islands of open spaces without attachment or relation to the larger park in the middle of the subdivision. Also note the organization of the larger park where the community building and skating area is sited opposite the schools. Finally, note the proposed site of the church, on a corner lot isolated from the community buildings, parks, and schools. The parking lots of the stores, the streets and the back lanes isolate the site from the community.

Thus the "typical" subdivision did not appear to alter its basic approach to land division after initial innovations of the mid-fifties which responded with an attempt to create a community from a sea of detached single family houses. The primary purpose was still to market detached single family houses which were very similar in appearance and siting. The newer subdivision provided some support systems such as basic commercial facilities, parks and schools, and in some cases looked more sophisticated but these were only insignificant concessions that were given to the new residents for their convenience and which formed the trade mark of accepted planning practice and salesmanship. In principle the subdivision had not altered its role in the urban context. It still represented a piece of real estate designed in isolation of the needs or even benefits of the community or city to which it was supposed to belong. In that sense it was still a sea of detached single family homes linked to the city by the private automobile.

THE "TYPICAL" SUBDIVISION,
AN ANOMALY IN THE SEVENTIES

- Aspects In Land
- Aspects In Energy
- Aspects In Economics
- Sociological Aspects

CHAPTER IV

CHAPTER IV

THE "TYPICAL" SUBDIVISION, AN ANOMALY IN THE SEVENTIES

This chapter considers a selection of issues in land, energy, economics, and social aspects which are strongly indicative of the anomalous position that the "typical" subdivision has in major Canadian cities at the present. Each issue is addressed through the following questions:

1) What is the basic problem or problems, what are the indications of their existence, and how are they associated with the "typical" subdivision?

2) What are some of the solutions and trends being considered for reducing the problems and what are the implications for the future?

A. Aspects in Land

1. The Land Problem.

a. Shortages and escalating prices. A continuous flow of relatively cheap land has been a prime requirement for the production of the "typical" subdivision. It has, however, also been a major problem with respect to the "typical" subdivision. Indications of this have especially been coming forth through the media, and various planning reports in the 1970's.

In 1973 a study compiled by Denis Cole, Chairman of the Calgary Planning Commission (1973: 18) "seemed to indicate that ample lands are in the hands of developers to meet the requirements of the housebuilding industry for many years to come." In the same report it was cautioned

however, that prices for serviced lots could go up if there occurred any problems in limiting their supply to housebuilders. This caution, since 1973, has been translated into reality across Canada according to a wide range of sources. In a recent news article published in the Winnipeg Free Press (January 29, 1976: 29) housebuilders and land development companies were reported to be concerned over rising land costs and/or shortages of serviced lots in major cities from Vancouver to the Maritimes. In Calgary, for example, Werner Mross, vice-president of Nu-West Development Corporation stated that trends in January 1976 showed prices for detached single family housing lots were "rapidly escalating" (ibid.). In Edmonton the problem was stated as an extreme shortage of raw land due to that city's lack of annexation power over fringe communities where the raw land was prevalent (ibid.).

Further reports indicating the existence of the problem in Winnipeg came from Underwood McLellan and Associates (1973), and a study conducted for the Ministry of Urban Affairs (Carvalho and others, 1975: 32-35). The former concluded that much of the responsibility for the problem lay in the city's subdivision approval process. The latter acknowledged this as a source of the problem, but added that shortages were also due to developers not servicing lots in subdivisions already approved (ibid.).

Finally, a conversation with a senior C.M.H.C. official in their Winnipeg office indicated that a confidential report showed that between 1970-1975 raw land values increased about 500%. The consumer price index during that time, as estimated from Statistics Canada data (Feb. 1975: #62-002, Table 1) and (Feb. 1970: #62-002, table 1), rose from 128.7 to 178.0, an increase of 38.3 per cent. Thus, across Canada there are ample

indicators of a major problem over land shortages and costs. The indications from the above sources suggested that the problem was related to at least two aspects of the land development industry. The following section briefly reviews the general development process to illustrate the areas inherent in the process which, in various situations, delay the marketing of houses and attribute to the land problem.

b. Land and the development process. The problem of availability and price of raw and serviced land is associated with speculation and the "pipe-line" system of the land development process. Traditionally, in that system, land has been treated as a commodity to be bought, reckoned with in some manner, and sold for profit. This attitude extends from individual home owners to municipal and federal governments.

Many consider that the development process does not really begin until a developer has purchased some land and has acted in some manner toward its development. The nature of the problem of land availability, however, extends back to the stage at which a tract of land is first conceived of having potential value for residential development. At that stage land can be bought and sold for profit many times before any alterations to the land are made. Profits from such transactions are generally termed speculative and serve only the individual or corporation involved in the transactions. The result of speculation is a slowing down of the entry of land tracts in the actual development "pipeline" and an increase of the price of land to the developer initiating the development process.

In some instances speculation is associated with the developer. Theoretically, the developer should only purchase land enough to ensure that a suitable inventory is maintained to keep him in business.

Generally speaking it is considered that a piece of land must be purchased between one and three years of its scheduled completed development. This time has been cited as reasonable in an American study of the development process as well as a number of Canadian studies.³ Developers controlling large land tracts of five or more years in advance of their development, and selling them at inflated values are considered a part of the speculative venture.

The ability of developers to act as speculators has been discussed in Chapter II with reference to the municipal tax levy system. In addition, James Lorimer (May 29, 1976: 12-16) attributes much of the blame to the federal tax laws up to 1974: he pointed out in a recent news magazine article that land held by developers could be deducted as losses on federal income tax returns because such holdings cost those firms money in municipal taxes. In an example involving Daon Developments of Vancouver, Lorimer attributes much of \$3,574,000 "extra profit" for that corporation to the above "loop-hole" in the tax system (ibid.).

From the point where land enters the actual development process until it is fully developed with servicing and housing it encounters a number of stages which delay its entry to the market, increase its eventual selling price and therefore adds to the problem of escalating costs and shortages. Lending institutions providing capital to developers charge interest on their loans. Engineering services are required for preparing soil studies, and working drawings of water, sewer lines, systems of drainage, and road details. These require a great deal of time and expense

3. See, for example, (Weiss and others, 1966: 57), (Carvalho and others, 1975: 32-35) and (Cole, 1973: 8).

which are added to the final product. After the designs are prepared their approval is required from various municipal and provincial bodies. This stage also costs money and could delay the intended completion date by months, if rezoning is required or alterations to the plans are deemed necessary. Next, if approval is given the plans must be registered following which construction begins. At this stage, if the market has shifted the developer may wish to delay construction or alter the housing mix or other aspect of the plan. Various parts of the lengthy process may, therefore, be repeated. Thus, the "pipe-line" could be anything but a smooth flow, in many instances causing delays which result in a restricted supply of serviced lots for builders and subsequently increased land values. It is further noted through the Daon case, that private interests can prevail over the general interests of producing lots for housing; as can bureaucratic "red-tape" in the approval process. Thus, the system can not be considered a free market on which many people defend it, nor can it be considered a socially just system.

c. Land in the "typical" subdivision, and urbanity. A second significant problem with land in the "typical" subdivision is associated with its effect upon the rest of the urban system. In demonstrating the problem it is important to characterize the land consumption of "typical" subdivisions and note the significance of it and possible alterations in it upon urbanity. In the first instance recalling the "typical" subdivision of the 1950's it is noted that the land use was approximately 60% detached single family homes, 20%-30% streets, 10% public open space, and 5-10% commercial facilities. Subdivisions of the sixties saw a trend toward greater housing mix and alternative street layouts.

The "typical" subdivision as late as 1968 is depicted with at least 70% detached single family housing and 30% other types. Analysis of the potential effect of this upon the land dedication is illustrated in tables 4 and 5. Results show that the land used for detached single family housing (R1) in the three housing mixes differs by 10%, that the "typical" subdivision may still be depicted as dedicating 60% (\pm 5%) of its land to that use. In terms of the significance of the above alteration upon density, only about one more dwelling unit per gross acre is accommodated by the 1968 model over the model of the 1950's. This, assumes that average lot sizes remained relatively constant. Further indicated in conjunction with observations in chapter III is that most multiple family dwellings were sited as bordering elements, illustrating the point that in altering the housing mix very little impact is made upon the basic land consumption model.

A second innovation of the later subdivisions, altering the street layout patterns to include more curvilinear streets, has often been associated with saving land normally dedicated to that use. V. J. Kostka (1957) attempted to obtain an indication of the impact of various street patterns in terms of land dedicated to roads by re-designing a site using seven different layout systems (an account of these is given in appendix A of this thesis). Kostka concluded by holding as constant as possible lot sizes, school sites, open space sizes, and street widths, that a system using a combination of loops, cul-de-sacs and other streets produced an optimal effect of residential-to-street acreage ratio. However of prime significance here is that by controlling the above factors no system produced a drastic change. Even with Kostka's optimal layout the land dedication was 65.6% residential, 22.0% streets, 12.7% school and

Table 4

Housing Mix Background Data Defining Three Cases
for "Typical" Subdivisions of the 1960's

Cases*	Percentage of the Total Number of Dwellings				
	% R1	% R2	% R2A	% R3	Total
Case I	100	0	0	0	100
Case II	90	2	3	5	100
Case III	70	5	15	10	100

* Each case is based upon the following data:

Site: 80 acres

Net density of housing:

Detached single family housing R1 = 6.5 dwelling units/acre

Semi-detached single family housing R2 = 12.0 dwelling units/acre

Attached (row housing) R2A = 17.0 dwelling units/acre

Three storey blocks R3 = 25.0 dwelling units/acre

Total acreage dedicated to residential use: 65% of 80 acres =
52 acres.

Table 5

Residential Land Consumption, Three Cases for
"Typical" Subdivisions of the 1960's

Cases	Land Consumed, By Housing Density							
	R1		R2		R2A		R3	
	Total Ac.*	%	Total Ac.	%	Total Ac.	%	Total Ac.	%
Case I	52.00	65.0	0.00	0.0	0.00	0.0	0.00	0.0
Case II	49.98	62.5	0.60	0.8	0.64	0.8	0.72	0.9
Case III	44.69	55.9	1.76	2.2	3.66	4.6	1.66	2.1

The above calculations have been based upon data included in table 4, and upon the following equations and definitions:

Tx = Total estimated dwelling units possible for case x

A, B, C, D = Proportion of R1, R2, R2A, and R3 in each case defined in table 4.

$$\frac{AxTx}{6.5} + \frac{BxTx}{12.0} + \frac{CxTx}{17.0} + \frac{DxTx}{25.0} = 52 \text{ acres}$$

*The Total acreage is found using the above equation for each housing type in each case and then the result is calculated as a percentage of 80 acres, the total subdivision area.

The total number of dwelling units yielded by each case are:

Case I - 338 dwelling units

Case II - 361 dwelling units

Case III - 415 dwelling units

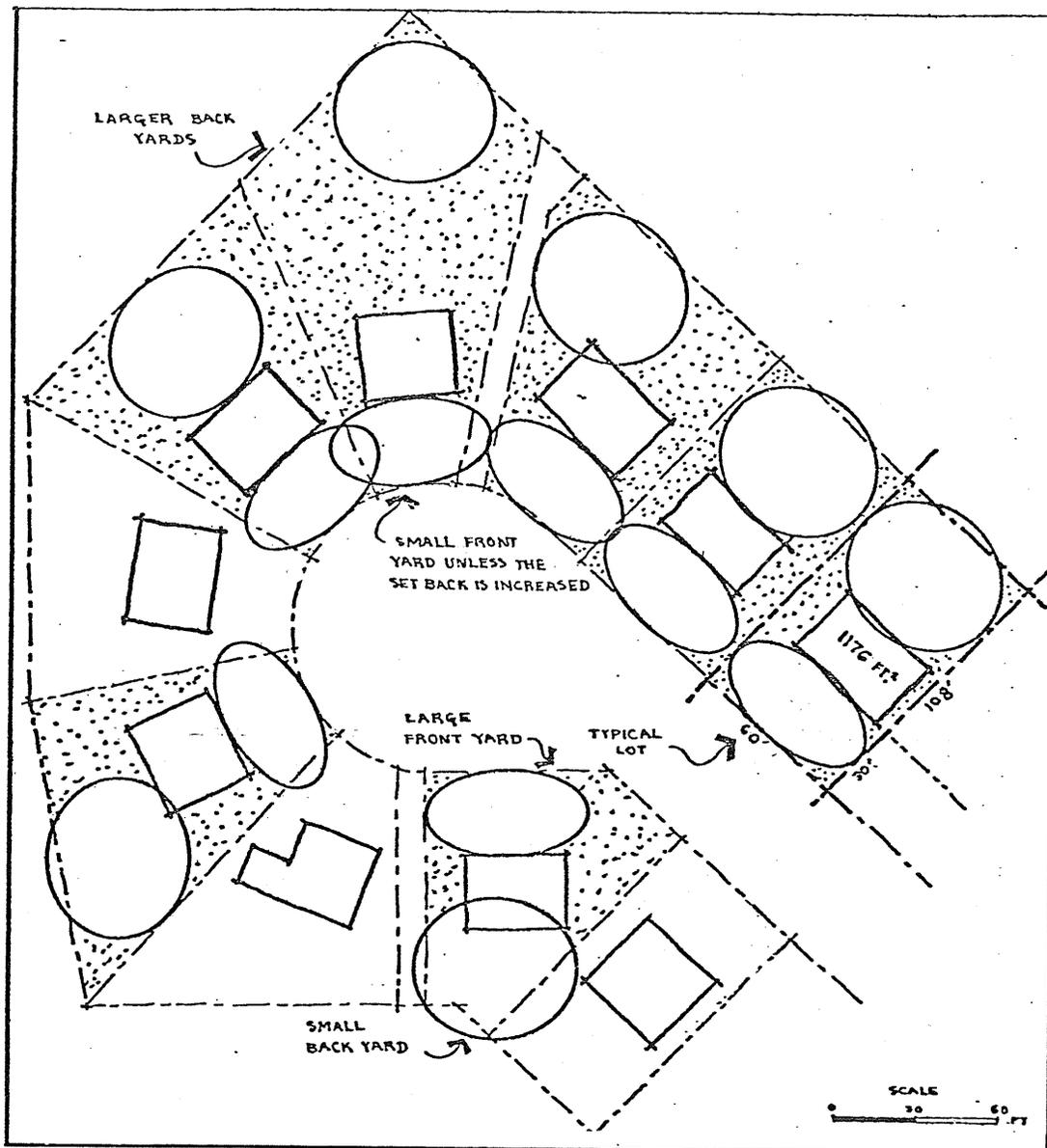


Figure 20. The Cul-de-sac and Yard Spaces for Detached Single Family Houses

open spaces. The conclusion, therefore, is not that one layout system or another alters the land consumption model so much, but that the controls placed upon the systems have an impact that can restrict differences.

Significant changes that can be directly attributed to a particular layout system occur at the individual lot level. Figure 20 illustrates this with a typical cul-de-sac. The oblong shapes superimposed on the lots are used to demonstrate the difference in front yards, and back yard areas. Such differences, however, are only significant to the individual homeowner and have little bearing upon the basic issue of land shortage at the subdivision and urban wide scales.

The above, therefore, characterizes the "typical" subdivision in terms of a rigid land consumption pattern, where minor changes significant to individual residences had little impact upon the basic pattern. The pattern itself appeared self-centered and introverted offering something only to residents in the way of schools, parks, quiet streets, and local convenience stores.

The impact upon urbanity was negative both visually and functionally. Recalling E. T. Rashleigh's observations the new post-war suburbs caused a blurring together of city images across Canada. Thus, any local flavor that previously characterized cities was being detracted from. In addition, the new subdivisions meant massive new road widening, and bridge building schemes. These required that more land be purchased and given over to such uses in an era where land values were inflationary. Furthermore almost as soon as roads were widened and bridges built they were congested. This pattern has prevailed in every major city across Canada.

2. Implications for the Seventies. The impact of land shortages and escalating prices for raw and serviced land is already prompting changes

in terms of two trends for subdivisions in the seventies. One such trend is a further modification in the housing mix. Conversation with developers and private planning consultants in Winnipeg in 1974, for example, indicated that new subdivisions would be incorporating a housing mix of 60% detached single family homes and 40% other types. Furthermore, it was suggested that in the near future 40% detached single family homes and 60% other types would likely be the mix. This trend assumed that standards for lots accommodating detached single family homes would remain constant. Thus, the trend is simply an extension of the past tendency comparing housing mixes of the 60's and their predecessors of the 50's. However, if detached single family housing dropped to 40% of the total dwelling units the resultant impact upon the previous land consumption model could mean an increase of 160 dwelling units over a normal 80 acre site. This represents a 44% increase in the number of dwelling units accommodated (the calculations are included in appendix B). That increase in density would likely have a moderating effect upon the rate of land consumed in the suburbs. However whether such a modification will significantly reduce the negative impact upon urbanity is dependent upon how the new housing mixes are planned in relation to transportation and other urban supporting facilities. If the past pattern is repeated where the automobile is the primary synthesizing factor the negative aspects will likely be magnified. If alternative transportation systems and community facilities become more a part of higher density communities then the negative components could possibly be reduced.

The second trend of the seventies is seen more as an attempt to reduce the standards imposed upon the detached single family dwelling.

In at least five cities, Vancouver, Edmonton, Winnipeg, Toronto and Windsor, "zero lot line" legislation is being proposed. The name is misleading, as there are in fact lot lines designated. Essentially, however, the proposal offers single family detached housing at higher densities and intermingled with semi-detached and row housing units within subdivisions. It is designed to reduce costs of detached housing and to provide greater flexibility in arranging small housing groups together. Figure 21 illustrates a typical series of lots possible under the legislation. Indicated is the return to narrower lots, the potential for eliminating some sideyards and widening others to make them more useful, and the potential for reducing some front yards. The legislation in Winnipeg allows a minimum lot size of 2500 square feet with a 20 foot front, and permits buildings to be built up to property lines.

The impact of the "zero lot line" concept upon the subdivision is to increase the density by about 3.5 to 5.5 dwelling units per net acre. The distribution would likely be fairly uniform over the subdivision and would, therefore, have an impact upon the residents of the subdivision by increasing the traffic on their roads. At the urban wide scale, similar to the previous trend, the impact will depend upon how such developments are planned with respect to other community facilities and transportation modes.

In conclusion, the above indicates that problems with land prices and shortages are contributing to responses in the land consumption pattern of new subdivisions.⁴ At the subdivision level these changes appear to be significant, in some instance almost doubling the gross

4. Rising servicing costs is a factor as well. This fact is pointed out in the section on economics later in this chapter.

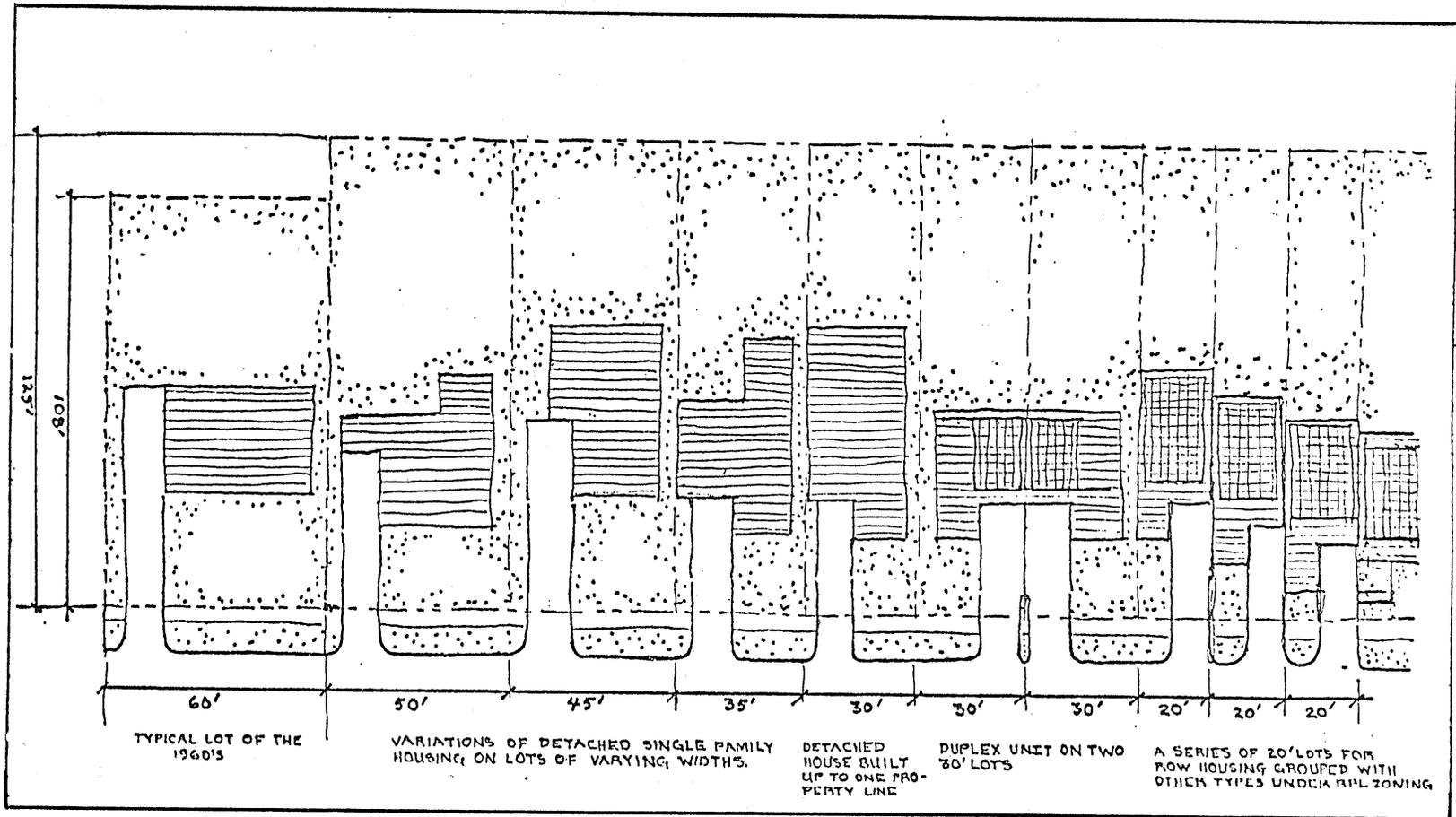


Figure 21. Variations in Housing Under the "Zero" Lot Line Concept (based upon Winnipeg's R-PL zoning by-law)

density from the 6.5 dwelling units per acre of the 1968 models to proposed 12 dwelling units per acre. Depending upon which trends are considered, either toward smaller lots for detached single family housing, or for greater housing mix, or for a combination of both the effect upon urbanity will differ. Furthermore, depending upon how these trends are planned in conjunction with transportation systems and other community facilities the impact upon urbanity will also differ. In the past, and still today, subdivisions are designed primarily for their real estate value rather than their usefulness to urbanity. If this trend continues with regard to the new modifications described above the problems created at the urban scale will continue. The implications, therefore, are that subdivisions must alter their land consumption pattern to benefit urbanity and not just in response to escalating prices. Communities must be planned in conjunction with one another their supporting features and with respect to alternative transportation systems. Only in this way can the new add to the old through enrichment rather than useless and costly repetition.

B. Aspects in Energy

1. The Energy Problem.

a. Indications of the future in oil and gas. Today a further problem facing new subdivisions is the status of Canadian petroleum fuels. Of particular concern are the light oils (for heating) and motor gas (for transportation).

Government and public attention on the oil and gas issue really emerged in the early 1970's when prices began escalating and rumors were spreading of a pending energy shortage. In response, the National Energy

Board (N.E.B.) of Canada undertook a study to monitor the situation more closely. In a report published in 1972 the N.E.B. forecasted that the "producibility" of conventional reserves in the Western Provinces would not be sufficient to meet the domestic market by 1986 (National Energy Board, 1972: 16). Its definition of "producibility" at that time was as follows:

"the estimated average annual ability to produce, unrestricted by demand but restricted by reservoir performance, well density and well capacity, oil sands mining capacity, field processing and pipeline capacity" (National Energy Board, 1974: 2).

It predicted as well, that by 1973 the total potential demand from all markets would be restricted by "producibility".

In 1973 the N.E.B. forecasts became outdated when hostilities in the Middle East broke out resulting in an Arab boycott of oil exports to the Western World. The boycott in turn, produced a higher than normal demand for Canadian reserves. The federal government, concerned for Canadian reserves to meet domestic demand, sequentially imposed export restrictions on crude oil, motor gas, and propane butane and heavy fuel oils. As a result of these events the N.E.B. undertook a comprehensive study of the new situation. While their study depended heavily upon data offered by private companies, an often questioned approach, it does represent the most comprehensive study that is available to date.

The new study redefined "producibility" to include the "potential" or producing level of reserves which could be achieved within 90 days notice (ibid.). The forecasts by the N.E.B. showed a decline in the "producibility" of total reserves (conventional and non-conventional) up to 1984 when it was predicted the oil sands would begin to raise the potential. Relating the "producibility" schedule to forecasts in demand the N.E.B. predicted that by 1981 domestic demand would be restricted by

the producibility of Canadian reserves. Even, if a conservation schedule was followed the Board anticipated that by the mid-1980's demand will be restricted by the capacity of Canadian reserves (National Energy Board, 1975: 46). These findings were supported by Frank Spragin, Chairman of Syncrude of Canada, in a recent article when he predicted that even with a \$2 billion Syncrude plant in production in the oil sands, gasoline rationing will occur by the mid-1980's (Winnipeg Free Press a, February 6, 1976).

The above forecasts are based upon a large number of assumptions in terms of economic, technological and political factors affecting the future supply and demand schedules (see, for example, The National Energy Board, 1975: 32-45). The British Columbia Energy Commission and the Alberta Energy and Resources Board working under slightly different assumptions estimate a slightly brighter future. However, recent articles in the media have suggested that escalating costs in pipeline construction and a large reduction in the estimates of "recoverable oil reserves" and "natural gas" may result in a sharper decline in producibility than originally indicated by the Geological Survey of Canada (Winnipeg Free Press b, February 6, 1976) and (Winnipeg Free Press, April 28, 1976).

In conclusion, it must be recognized that the predictions of the N.E.B. are subject to a number of factors and, therefore, could alter. However, predictions of others are in agreement that shortages in our oil and gas supplies will be experienced sometime between the present and 1990. Thus, all indications are that we have reached a critical stage in our energy supply where conservation is essential as is the search for new forms of energy. Whether our petroleum fuels last to 1985 or to 1990, or even if there is a major breakthrough that would

make them last longer the present situation has made it clear that heavy dependence upon one source of energy is a risky venture.

b. The energy problem and the "typical" subdivision . The association of pending energy shortages with the "typical" subdivision lie primarily in heating and transportation components. The fact that at least 70% of the housing comprise detached single family dwellings; the fact that most of these use oil or gas for heating; and the fact that the primary form of transportation is the private automobile, directly link these aspects to the energy issue.

In terms of the detached single family home it is obvious that there is a great deal of waste in heating. To illustrate how this waste is associated more specifically with that type of housing an American study published by the Department of Housing and Urban Development (HUD) offers the necessary indicators.

The HUD study first conducted a survey of the Boston/Washington area to synthesize a "characteristic house" (for details see HUD, 1973: 5). Of primary importance here are the parameters which significantly affected the amount of energy consumed and which were related to design. These included the number, construction, orientation, and area of external walls; the size of the dwelling in cubic feet; and the dimensions of the dwelling in terms of length and width. It was discovered, for example, that by increasing the insulating value of the wall by 12%, an energy saving of 9% was possible; and that by reducing the window area by 10% a saving of 11% of energy was possible. Together, these two factors could contribute to 20% savings in energy (HUD, 1973). It is worth noting, further, that there was not a significant difference in savings by altering the house from a two-storey structure to a single storey ranch-style structure of

comparable finished floor area and relatively square exterior (that is, length-to-width ratio near 1.).

In terms of the fuel source itself, the mere fact that about 77% of all homes in Canada used gas or oil furnaces in 1968 indicates the significance of the association between heating in the "typical" subdivision and the petroleum fuels. In the past the primary reason for this association was economics. Despite the fact that electricity was considered 100% efficient and natural gas only 70% efficient, the lower cost of gas favored its use.⁵ Today this cost factor still prevails as indicated by the following conclusions to a study conducted by the Greater Winnipeg Gas Company.

"Very definitely then, natural gas is the most economical system to consider for residential heating purposes." (Greater Winnipeg Gas Company, 1976).

With regard to transportation, once again, it becomes obvious that the "typical" subdivision was wasteful in its use of petroleum fuels. Masses of low density, specialized land use developments at the outskirts of larger urban systems required long transportation links. In addition, the very qualities of low density and specialization had the effect of destroying the economic feasibility of mass transit accommodations. The result was a desire, and subsequently a need, for more individual forms of transportation. Even during the seventies when the energy issue came to public view car registration continued to increase at unprecedented rates (Statistics Canada, 1974: #53-219, table "Registration 1912-1974").

In terms of the individual, the private automobile allows much

5. The statistics were offered in a telephone conversation with Jerry Kruk, a Greater Winnipeg Gas Company official, 1976.

more freedom in the route to follow, the departure time, and also the number of destinations that can easily be accommodated from the time of departure until the time of return. Thus, as long as the private car remains as the overwhelmingly dominant form of transportation today and as people at large continue to accept the congestion and social costs of road widening programs; the need to plan and organize the environment remains in the background.

2. Implications for the Seventies. The implications of probable oil and gas fuel shortages in Canada, our exclusive dependence upon these energy sources, and our wasteful use of them in "typical" subdivisions clearly indicates a need for exploring alternative syntheses for our heating and transportation requirements. The Building Code of Canada has recently raised its standards for insulating values in houses that are approved under the N.H.A. (Canada, 1975: 80-83). This will have an impact of reducing heat loss associated with housing. As well, the trend toward higher densities will help reduce wasted heat. In addition to these trends, the possibilities of using other energy sources such as the sun, wind, refuse, industrial waste heat, nuclear energy, hydro electricity, and coal, and the application of these various sources in district heating have been explored. Detailed analyses of the costs and benefits of these alternatives is not within the scope of this thesis. It suffices to state some of the overriding problems with regard to these sources.

In terms of harnessing solar energy and wind energy major drawbacks have been the architectural impact of large heat absorption structures and windmills, along with initial costs of conversion and storage devices. With regard to refuse as a source the drawback lies primarily in efficient and practical methods of sorting and collecting burnables

from non-burnables. Industrial waste heat has been explored in Sweden and has received increased attention in Canada. However, this requires stable industries, and a great deal of cooperation among government and industry in order that the system be applicable. Nuclear energy has become popular in some spheres, but uncertainties of the dangers involved with reactors have limited their introduction in Canada. Hydro-electricity has yet to become economically favorable to gas or oil and, therefore, has as well been limited in its use. New technology in coal suggest that potential for its use may increase as the possibilities in transporting it in sludge form through pipelines become more feasible. However, environmental impact of mining, and pollution aspects of burning coal have been cited as drawbacks.

District heating, "the production and distribution of heating in bulk" (Von Sydow, 1976) has been widely explored in Sweden and is being considered further in Canada. Sweden has used hot water as the heat transporting medium while in the past Canada has used steam. The feasibility of district heating appears to be resting upon organizational and institutional problems for the most part. Presently, as power and heat are produced under different utilities, these separate companies pose a problem in uniting power and heat production, a requirement for efficient district heating. Furthermore, district heating requires municipal decision as to a long range plan for staging purposes. Financing and reluctance of governments to take upon themselves the responsibilities of this decision has been a major drawback.

In the final analysis the restricting factor in the above alternatives has been the favored cost of gas and oil. As long as this cost advantage is retained it seems doubtful that any major changes will

occur. Indications are that the 1970's will continue as an era of refining new alternatives and implementing conservation methods in housing. Private automobile registration among Canadians has continued to rise in the seventies, the automobile engine is more efficient, and people are still putting up with congestion. Consequently, despite the anomalies associated with the "typical" subdivision and the energy issues, it appears that people and our institutions are content with introducing minor changes rather than implement anything radical in terms of heating or transportation.

C. Aspects in Economics

1. The problem of Escalating Costs. Economic problems associated with the "typical" subdivision range in scope from social costs at the urban scale, down to costs absorbed by the individual home owner. With regard to the former, N. D. Lea Associates Limited of Ontario compiled a report (1971) in which they sought to relate transportation costs to city size. Their study illustrated that for three characteristic Canadian cities of different sizes personal transportation costs were relatively constant (ibid.: 4p4). However, in terms of total urban transportation costs of moving goods and people, larger cities showed marked increases. This, the authors, attributed to the expanse and segregation of the city and its various components.

In another Canadian study, Dr. N. H. Lithwick (1970: 62) concluded that public expenditures, in general, increase more than proportionately with the size of the city. Thus, as cities continue to expand by means of low density subdivisions and segregating land uses, the social costs can be expected to be magnified. These include, for example,

garbage disposal, police and fire protection, recreation, and ambulance service.

Recent claims in the media and elsewhere in the land development industry have suggested also that the "typical" detached single family home is becoming too costly to be afforded by the average Canadian. A comparison of trends in the estimated average family incomes and the estimated average cost of detached single family N.H.A. homes shows that the latter in fact increased at a greater rate since 1972. While such analysis was only possible for N.H.A. housing, C.M.H.C. (1974: xvi) found that their prices for N.H.A. homes was comparable to the "New Housing Price Indexes" published by Statistics Canada and, therefore, represented a fair indication of the market. The conclusion is, therefore, that the increase in housing costs are making them less affordable to the average Canadian.

Further analysis of the major costs contributing to increases in housing costs show that construction, servicing, and raw land costs are most significant. In terms of the land, "the average cost of urban serviced land . . . increased by over 300 percent" between 1949 and 1965 (Bettison, 1975: 178). This compares with the increases in housing costs of 100% and other financing costs of 45% for the same period (ibid.). Up to 1966, therefore, serviced land prices was the most significant factor.

In recent years, from the late sixties to the mid-seventies, reports of rising land and servicing costs would again support the suspicion that past trends have continued. Examining construction costs for N.H.A. homes in that period also indicates a dramatic increase in the construction factor. Figure 23 illustrates this trend (Statistics Canada indicated that trends in land costs of the N.H.A. homes were not indicative

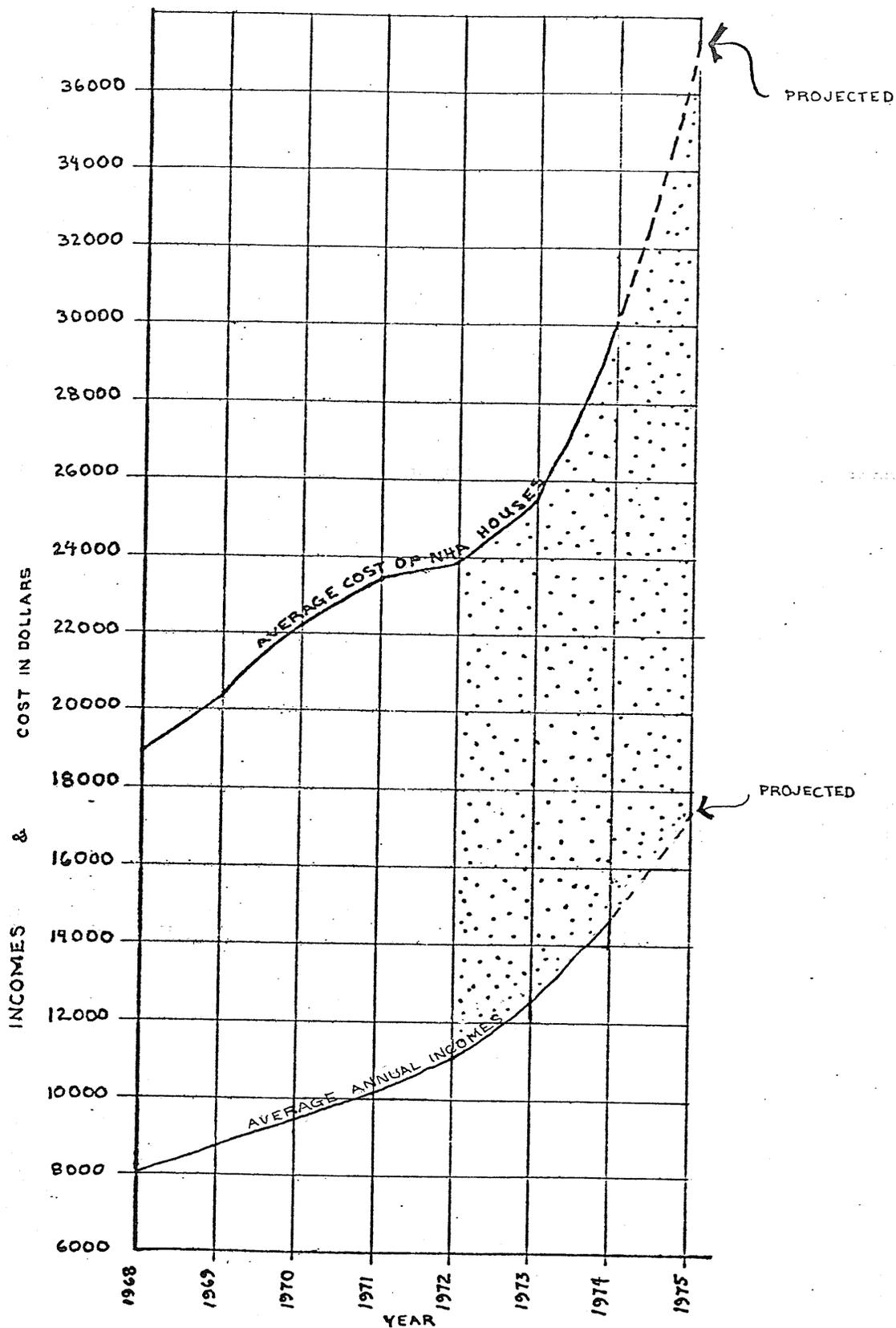


Figure 22. A Comparison of Average Family Incomes and Estimated Costs for Detached Single Family Homes Under the N.H.A. (Statistics Canada, #13-208, table 1) and (C.M.H.C., Canadian Housing Statistics, Respective years.)

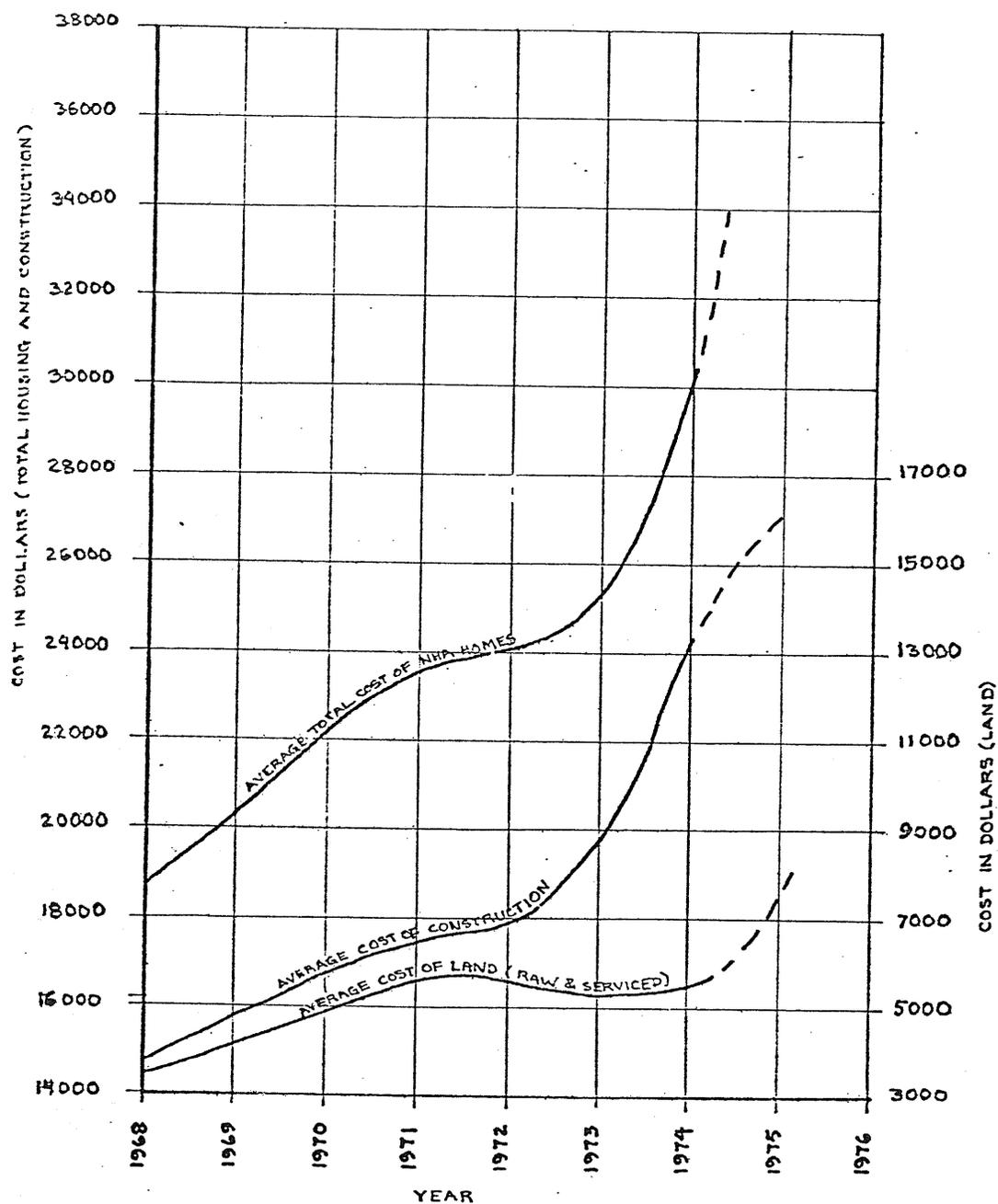


Figure 23. Total Average Cost of Detached Single Family Homes Under the N.H.A., Average Cost of Construction, and Average Cost of Land, 1968-1975 (C.M.H.C., Canadian Housing Statistics, Respective years.)

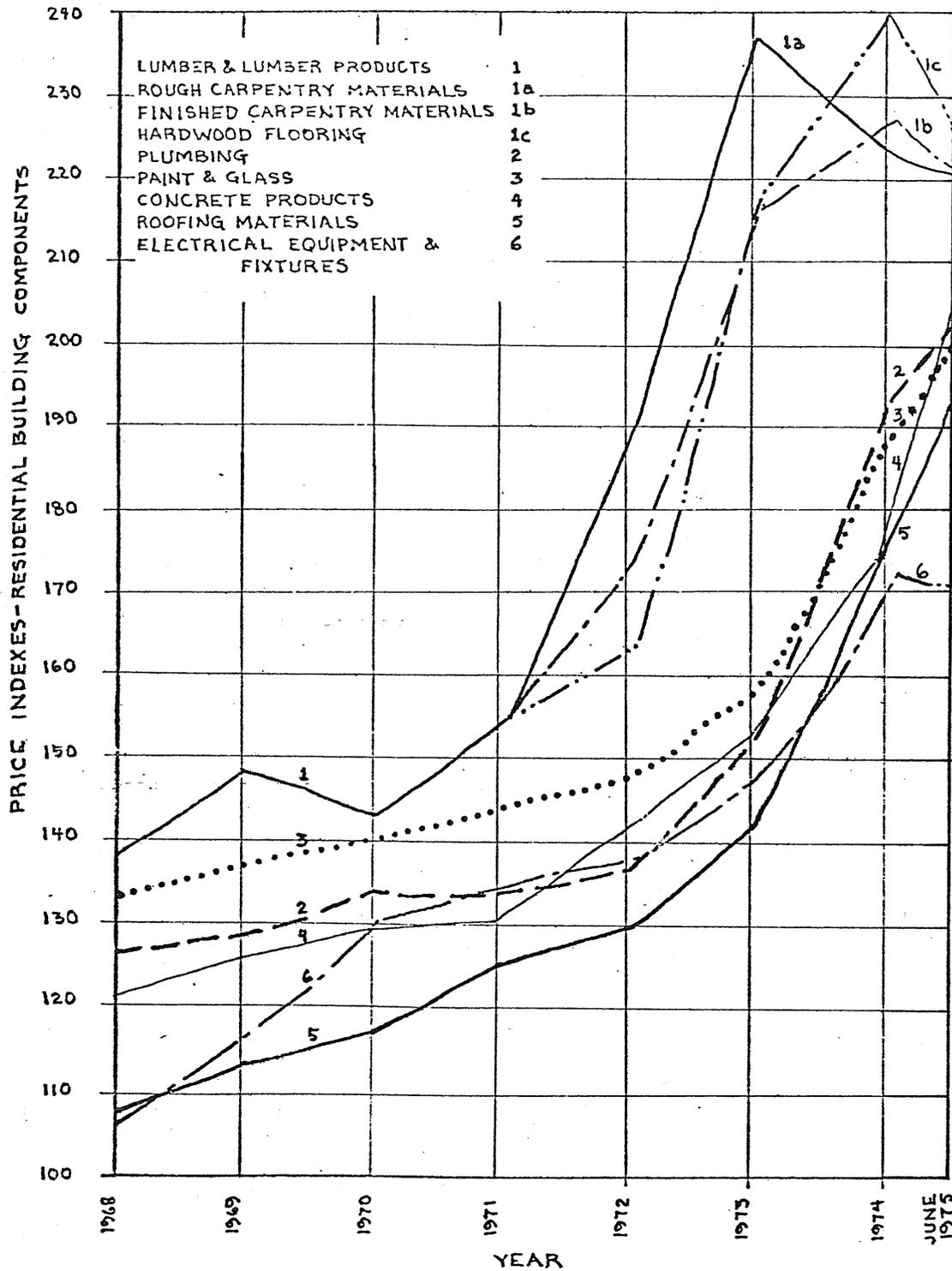


Figure 24. Price Indexes for Residential Building Components, 1968 - 1975 (Statistics Canada Dec. 1972: #62-002) (Statistics Canada, 1975, #62-008)

of the overall market and therefore are not considered in the analysis). Much of the increases can be attributed to material costs as illustrated by figure 24.

Average costs across Canada for the years, 1975 and 1976 were not available when this study's analysis was underway. However, some indications in the trends point out that land costs are more significant. Indications from figure 24 show that the price indexes in construction materials have either dropped or have increased less dramatically during 1975 (concrete products is an exception). This suggests that the effect of construction costs in housing would be moderating from the previous three years. In addition recent news articles suggest that prices of serviced land across Canada are dramatically increasing. In Calgary where residential lots are in extremely short supply the price increased 15% to 20% between January 1975 and January 1976; in Regina and Saskatoon where lots were estimated to be in adequate supply, prices increased 10% over 1975 (Winnipeg Free Press, January 29, 1976). Conversation with a senior official in C.M.H.C.'s Winnipeg office revealed that in that city raw land costs between 1971 and 1976 have been the most significant component of residential housing cost increases. In conclusion, it is difficult to determine at the present whether servicing, raw land, or construction costs are most significant in pushing housing prices up. Depending upon exactly which years are considered the results will differ. What is certain, however, is that in the first half of the seventies all three components have been significant.

2. Implications for the Seventies. The implications of escalating social costs, and escalating component costs in housing are that cities must begin looking for new methods of expansion other than the "typical" subdivision.

Two trends in subdivisions already acknowledged in the seventies are, greater housing mixes and the zero-lot line concepts. The fact that both trends increase the density suggests that new developments employing these innovations will not be as costly to urbanity as their predecessors, at least not at the present. With respect to the zero-lot line concept discussion still prevails as to whether the concept is benefitting developers and new residents more than it is alleviating social costs. In reference to the Winnipeg by-law, known as R-PL zoning, much concern was expressed in the debate preceding its passage as to whether the new standards would simply result in mass production of slums. The proposal was attacked because some suggested that it merely allowed developers to develop more lots per acre and, therefore, facilitate their returns on their land. Economically the by-law will benefit the developer by allowing him to cut servicing costs per lot. In addition, the developer will be able to produce and sell more lots (about 3.5 - 5.5 per net acre) per acre. From the perspective of the home buyer, he will be able to purchase a detached single family home at lower cost, but with lower standards than before. How long the cost will remain low is an important issue yet to be resolved. As noted in a previous section of this chapter, the development process has a great potential to increase costs or delay the serviced lots reaching the market. If the new trend does not speed up the production of lots or ensure that such lots will retain a moderate price level relative to incomes, then in the near future these new "standard" lots will experience the same problems as the 1968 lots of area 6700 (+) square feet.

In terms of social costs the zero-lot line could reduce costs if subdivisions are planned in accordance with supporting community facilities

and other subdivisions in their proximity in an overall plan. If, however, lots are simply laid out in a similar mechanical way as the "typical" subdivision and irrespective of synthesizing subdivisions through a community plan, then it is unlikely that social costs will be significantly reduced. The need, therefore, is a community plan that integrates transportation, residents, and wider community facilities.

Other possibilities to the "typical" subdivision include redeveloping the inner city with high-rise apartments, and redeveloping the old suburbs adjacent to the inner city. The former had begun in the mid-sixties in many cities. The latter is being considered in various forms such as spot infilling, and neighbourhood improvement projects. Detailed analysis of these alternatives is not within the intended scope of this thesis. However, such trends are of most importance in conjunction with urban expansion and reducing the negative aspects of suburban expansion by possibly reducing the need for the latter.

D. Sociological Aspects

1. Social Interaction in "Typical" Subdivisions. The basic problems of the "typical" subdivision in terms of sociological aspects is that social interaction has played a very minor role in its design. The earlier post-war subdivisions were little else than rows of detached single family housing with a few supporting facilities -- schools, public open space, and minor commercial facilities. Of the latter, schools and open spaces were often sited on land which had least potential for residential development. Commercial facilities were sited near heavy automobile traffic routes to attract customers. Houses and lots were designed in a very standard way as noted in chapter III. The result, suggests

Herbert Gans (1968), was clearly a lack of "sense of community" and an overwhelming prevalence of family centrism (ie, the family as the most important social unit).

With the introduction of new planning practices throughout the late fifties and the sixties the subdivision made some crude advances toward attaining a sense of community. Through-traffic was discouraged, the park and school was usually sited in the center of housing developments defined by major traffic arteries, and housing was grouped in various cul-de-sacs, loops, and internal block arrangements. The fact that in many developments houses were grouped around the school and park in the above manner did have the effect of encouraging social interaction among the residents. Friendship patterns among children going to the same school were more likely to occur and this, according to many sociologists, often led to social interaction of the parents. In addition, various parent-teacher, community groups, and social events often developed with the school as the nucleus and, therefore, encouraged a sense of community centered on the school. The fact that a park was often sited so that no major roads passed between it and the people for which it was developed encouraged parents to allow their children to play there. This, again, encouraged friendship patterns and social interaction.

It is worth noting, as well, that the above innovations were, for the most part, adopted from the neighbourhood unit concept as conceived by Clarence Perry in 1939. Perry derived the concept from sociological ideas of Charles Horton (McConnell, Vol. IX, Number 1, March 1959). Subdivisions in many places were developed to form such units in the late sixties, especially throughout Alberta where the concept

had been retained since 1949.

In terms of the newer street layouts it was often advertised by developers that the cul-de-sacs, loops, and internal blocks were quieter, more private and safer (see, for example, figure 13, page 78). Such claims are in fact debatable. In some instances these values could be increased while in others the opposite could occur. In terms of social interaction, again, they could have more than one impact. Whyte (Michelson, 1970), for example, suggests from his studies that smaller and more enclosed groupings tend to promote friendly and happy associations. Herbert Gans (*ibid.*), however, suggests that while such groupings do promote more frequent interaction within themselves, the quality of interaction is dependent more upon the homogeneity of the people residing there. Michelson, a Canadian sociologist from Toronto, lends further support to Gans' theory in citing a study conducted by Leo Kuper where the latter found that residents in cul-de-sacs were generally dissatisfied with their housing (*ibid.* : 176). All of the above, however, concur that the placement of windows, doors, driveways and sidewalks are critical, especially in small groupings. What such elements do is "expand people's awareness of other people" (*ibid.*: 178). It is generally agreed that people who desire privacy at the family level would not feel as comfortable in settings where their doors, windows, and driveways are more exposed and closely situated with respect to one another.

In terms of the "typical" subdivisions windows, doors and driveways were sited in very standard places and at very similar distances from one another. These resulted in many respects from by-laws regulating sideyards, front yards, and other distances. Subdivisions in the past were locked into very standard appearances also because of the mechanics

of the development process. Developers purchased land parcels, subdivided them into equal sized lots for convenience sake, and added services as required by the municipality. In most instances the developer then sold the lots to house builders who produced standard houses on the previously standardized lots according to standard regulations imposed by municipal governments and the National Building Code (whose standards were enforced by C.M.H.C. prior to financing the builder). The designer of the site plan had little or no power to site buildings in a rational manner. These were regulated by the above and zoning by-law. In addition, the disjointedness of the process between builders and developers promoted further standardization. For example, when lots were serviced and had to be sold to builders they were very standard so that they could be sold readily on a mass market. Differentiation meant that builders would have to redesign their houses to fit the peculiarities of the site, and these would have to pass through the various approval stages again.

One further trend of the newer subdivisions was the impact of large developer-builder companies that emerged since the mid-fifties. On the one hand this produced greater standardization, but on the other hand, it allowed variations to evolve. In the first instance the larger-scaled form of the developers was oriented more to mass production as noted from chapter III. On the other hand, the new companies formed a more cohesive link between the home builder and those who were developing and servicing the lots. In many instances this allowed greater potential for modifying the housing designs. While this potential was not always carried through, it nevertheless existed. Thus the placement of doors, windows, and driveways could be planned together with the sites.

2. Implications for the Seventies. Evolving in the seventies is a greater potential for creating communities from subdivisions. The new zero-lot line concept, combined with a more cohesive relationship between the people subdividing the land and those building the houses provide greater potential in planning the relationships of neighbouring private outdoor spaces and houses. These, if combined further with the planning of housing groups around schools and public open spaces, could be positive aspects for new subdivisions.

However, the provisions for central schools and public open spaces as well as more flexibility in siting houses do not make communities. With regard to the former many sociologists and recreation people maintain that it is the bleak, flat school grounds and basic standard playground equipment that have resulted in many such features rarely being used. Further, it has been commonly suggested that to children especially, the travel to play areas is as important as the play areas themselves. Thus, if public open spaces and school areas are sited without any stimulus provided for residents travelling there or without any stimulus provided once they arrive, such elements will not be much of a community nucleus. Also, there must be a variety of stimuli provided for a variety of people to make such facilities useful. These include imaginative recreation facilities, possibly combining churches and some commercial facilities into the community nucleus, and sensitive design of various spaces for the public use.

With regard to the trends toward higher densities and the zero-lot line concept there is also the danger of losing a great deal of family privacy. In both cases the higher densities will be restrictive in allowing the amount of private space allotted per family. Thus the

planning of these spaces and the housing in terms of landscaping, entrances, windows and other such elements will be crucial if privacy is to be attained.

With regard to all of the above, as long as developers are allowed to invest their money, develop the land, and then pull their profits out without any further responsibilities, subdivisions will likely remain simply real estate ventures. Furthermore, as long as planners remain powerless to plan potential communities the designs of the new subdivisions will likely remain little more than rows of houses. As such these environments are a negative factor to urbanity.

A SUMMARY OF THE FINDINGS AND
AN ALTERNATIVE TO THE "TYPICAL" SUBDIVISION

*A Summary of the Findings

*An Alternative Approach to the "Typical" Subdivision

CHAPTER V

CHAPTER V

A SUMMARY OF THE FINDINGS AND AN ALTERNATIVE TO THE "TYPICAL" SUBDIVISION

A. A Summary of the Findings

The past has shown that the "typical" subdivision after World War II began as a response to a critical housing problem. Amid concerns for providing housing and employment for masses of people migrating to cities, the basic issue of urban expansion was overshadowed. Consequently the longer ranged and adverse impacts of "typical" subdivisions added to increased traffic congestion, escalation of municipal costs for utility expansion over low density areas, and general increased costs of very low densities spread across land with rising values and increased remoteness from inner city amenities. Thus, in its concept the "typical" subdivision failed as a component of the urban system.

In detail, the "typical" subdivision was a rigid, mechanical product pre-determined through the inter-play of widely accepted development standards, minor planning involvement, and the economic concerns of developers. For example, standards were set up and commonly accepted recommending minimum distances for siting houses adjacent to one another and the street. Furthermore minimum right-of-way widths were established for siting utilities and laying out side-by-side pavement, boulevards, and sidewalks. In summary, such standards established minimum relationships between houses and edges of lots; adjacent houses; and between houses and sidewalks, boulevards, the street and the houses across the street. In conjunction with the developers' interests for keeping capital costs down these minimum standards became the applied standards. Added to

these aspects were the common practices of zoning vast areas for single family detached housing with specific recommendations on lot sizes and coverage; and of dedicating a 10% of the site toward public open space near the center of a group of houses designed to eliminate through-traffic and restraining unorganized sprawl. The result was clearly a standard product where regional variations and individual divergencies were not included or became insignificant. The "typical" subdivision, therefore, in detail lacked a great sense of belonging and a specific community feeling.

Reviewing the trends in the "typical" subdivision had revealed that newer more sophisticated looking subdivisions of the 1960's still retained many of the above problems. Their sophistication was reflected in the following aspects which had largely been in response to economic pressures. Often mass produced by larger developers who controlled larger land tracts, the new subdivisions were often developed as "packaged suburbs" with typical detached housing, essential services, various community amenities (commercial facilities, a school and park), and other housing types. In addition, trends toward fewer backlanes and alternative layout systems were incorporated to update it stylishly and economically. Such innovations, however, did not alter the fact that the "typical" subdivision was still a setting for producing and promoting the detached single family home as the ultimate goal for most Canadians. The detached house occupied the more central locations near the school and park, and resisted through traffic. The details of the street, the detached home, its relationship to other houses and the plot on which it was sited remained virtually unchanged.

Issues in energy, land, and housing in the seventies, along with

growing concerns for social aspects in the subdivision, revealed that the "typical" subdivision was further, a short-sighted, consumptive product built primarily for the benefit of individuals. Evidence showed that it was no longer realistic to promote the detached single family home in the framework of its protective set of standards. The wide lots, side-yards and large frontyards were a luxury unaffordable to more and more Canadians. Furthermore, large tracts of land subdivided for such housing was placing an increased burden on the general tax payer who had to accept the many consequences of increased road building and servicing programs. Such practice of subdividing was also contrary to conservational practices in energy. Individually serviced homes at very low densities wasted much energy, depended heavily on the fuel-consumptive private automobile for transportation, and resulted in the high development costs. Socially, the "bull-dozer" technique of clearing land, the barren school grounds and parks in the middle of individual houses, and the siting of other higher density housing types as bordering elements isolated from the public park reflected a lack of inspiration for social interaction. Added to the above were broad rights-of-way comprising sidewalks, boulevards and pavement that were frequently intersected as the means of access to the park. Thus, the parks became even less inspiring as a social attraction. In terms of the seventies, therefore, the "typical" subdivision showed disconcern for some of the basic issues of growing importance to the future of individuals, urbanity, and society in general.

What the seventies and the past have indicated, therefore, is that an alternative approach to the "typical" subdivision is needed;

that the approach should alter the general concept of the subdivision, as well as its details. The past has shown some minor alterations in both, but the seventies have made it clear that these minor alterations are insufficient to meet the issues of the present decade.

B. An Alternative Approach to the "Typical" Subdivision

1. The Basic Objectives. The following comprise the basic objectives from which criteria defining an alternative approach to the "typical" subdivision are evolved.

- a) Provision for a more rational approach to urban expansion by considering better transportation and function links between the urban, suburban, and subdivision entities. Segregational methods of zoning and overwhelming independence upon the automobile are inadequate and too problematic.
- b) Provision for greater conservational methods for using energy resources by considering alternatives to the private automobile as the essential form of transportation, and the detached single family home as the ultimate goal for housing most Canadians.
- c) Provision for a more rational approach to land division and use, based upon greater emphasis on social benefit and reducing costs and waste.
- d) Provision of the basic amenities of the detached single family home and lot at lower costs, and provide other types of housing within the community as acceptable alternatives.
- e) Provision for a greater potential of a sense of community, identity and belonging. Housing should be made a part of a

completed and well integrated urban system.

In response to the above objectives, and focusing upon the primary components of the "typical" subdivision and related problems or failures already summarized, the following outline an alternative approach to the "typical" subdivision.

2. The Criteria for the General Concept.

a) Transportation:

(i) The subdivision should avoid conflict with existing and planned arterial roads, in the area and enhance suburban nodes. Only a few collectors should link the subdivision to the arterials and suburban nodes. Such links should be as direct as possible.

(ii) An alternative form of transportation(s) should be planned for efficiently linking the subdivision, the suburban nodes, and the downtown. Small-scale public transit should be employed within the subdivision so as not to be a disruptive element (e.g. the scale of Winnipeg's Dial-a-Bus vehicles) and should link focal points and more densely populated sections of the subdivision to the suburban nodes. Suburban nodes should be express-type stops for larger scaled public transit systems linking the nodes to the downtown.

b) General Development Concept

(i) Community centers and highlights of the subdivision should sequentially link pedestrian, bicycle, and vehicular flows to them, housing groups, and the suburban nodes.

(ii) Targets within the subdivision should be of a lower

scale (e.g. elementary school, church, minor athletic facilities, convenience stores, etc.), should be grouped to create socially attractive sites, and should be accessible to housing of all socio-economic groups.

3. The Criteria for the Details of the Subdivision.

a) Transportation

- (i) The subdivision should reflect a system of collectors, and minor residential roads which efficiently funnel traffic to the arterials.
- (ii) No on-street parking should be planned in relation to the collector roads. This will facilitate movement, reduce road allowances, and increase safety.
- (iii) Public transit and the planning of higher density housing clusters and elderly persons housing should be coordinated.
- (iv) Internal movement in the subdivision should stress bicycle and pedestrian flows and their targets by:
 - providing a pedestrian-bicycle system that has few intersections with higher traffic flows of collectors sited between residents and the community centers.
 - providing walkways and bicycle ways with added landscaping, lighting, benches, and small places for stopping and talking.
 - creating good pedestrian links between major pedestrian flows and their targets.

b) Community Identity

(i) An identifiable community focus or focii should:

- provide residents with common facilities such as an elementary school, community recreational center, and public meeting hall.
- be distinguishable in providing other facilities (e.g. churches, convenience stores, clusters of higher density single family housing, or three storey apartments, etc.) where applicable.
- be distinguishable also through relationships established with walkways, the organization of facilities on the site, natural features such as small gulleys, treed areas, etc. and the organization and siting of other community buildings.
- be of a size (not necessary pre-determined at 10% of the subdivision site) related to facilities required for the residents, and those facilities already on nearby sites.
- be readily accessible by walkways leading from all housing types.

(ii) Land should be considered more as a resource of the community by:

- providing more public spaces sited to increase possible social interaction.
- providing smaller individual lots and coordinating them with public open spaces.

c) Recreation

- (i) see "b)(i)" and "b)(ii)" above.

- (ii) Recreational activities in the subdivision should be varied. In cases of special housing groups (e.g. elderly persons housing) special accommodations should be provided with good access.
- d) Housing
- (i) Single family housing should not be sited immediately adjacent to or have direct access to major urban elements such as arterial roads, major shopping complexes, and high density housing.
 - (ii) All housing types should be readily accessible to community centers and target areas by a pedestrian and/or bicycle system.
 - (iii) All housing types should strive for a southern exposure for siting major windows, where applicable.
 - (iv) All housing types (but especially detached single family houses) should be provided with greater insulation value.
 - (v) Detached single family homes should be provided at lower costs by reducing set backs, lot widths, and lot areas.
 - (vi) Greater integration of small groups of attached single family houses should be incorporated into the plan (e.g. R-PL zoning of various areas in a rational manner with other community elements).
 - (vii) In places where a number of small lots are located together they should be accompanied with a small public open space for pre-school children to play and for others to sit and talk.

- (viii) In groups where lot sizes are reduced or where attached housing is employed greater landscaping and architectural detail should be employed to preserve privacy.

4. The Design Proposal and Explanation. This section serves as an illustration of how the above approach may be applied to create an alternative subdivision. For illustration purposes a site for the expansion of Winnipeg's St. Vital Community was chosen. Figures 25 and 26 outline the general context to which various subdivisions in the area must relate. Figure 26 has been evolved as a result of previous work in the area with others in University projects, summer employment (see specifically references pertaining to St. Vital listed in this thesis) and scrutinization of a District Area Plan for the region. The predominant features of the plan that relate to the subdivision are as follows:

- a) A rapid public transit system linking a regional commercial node on St. Mary's Road (an arterial road) to the C.B.D.
- b) A major east-west access route that combines commercial, institutional, and recreational developments across the Red River through the planned community of South St. Vital and across the Seine River.
- c) The development of St. Mary's Road as a traffic artery with combined commercial and high density housing aligning it.
- d) St. Anne's Road developed as another arterial but of lesser significance commercially.
- e) Designated residential areas and retained treed areas.
- f) Possible public transit system linking subdivisions to St. Mary's and St. Anne's Roads.
- g) Directing vehicle traffic from the existing St. Vital Community to St. Anne's and St. Mary's Roads before moving south to the

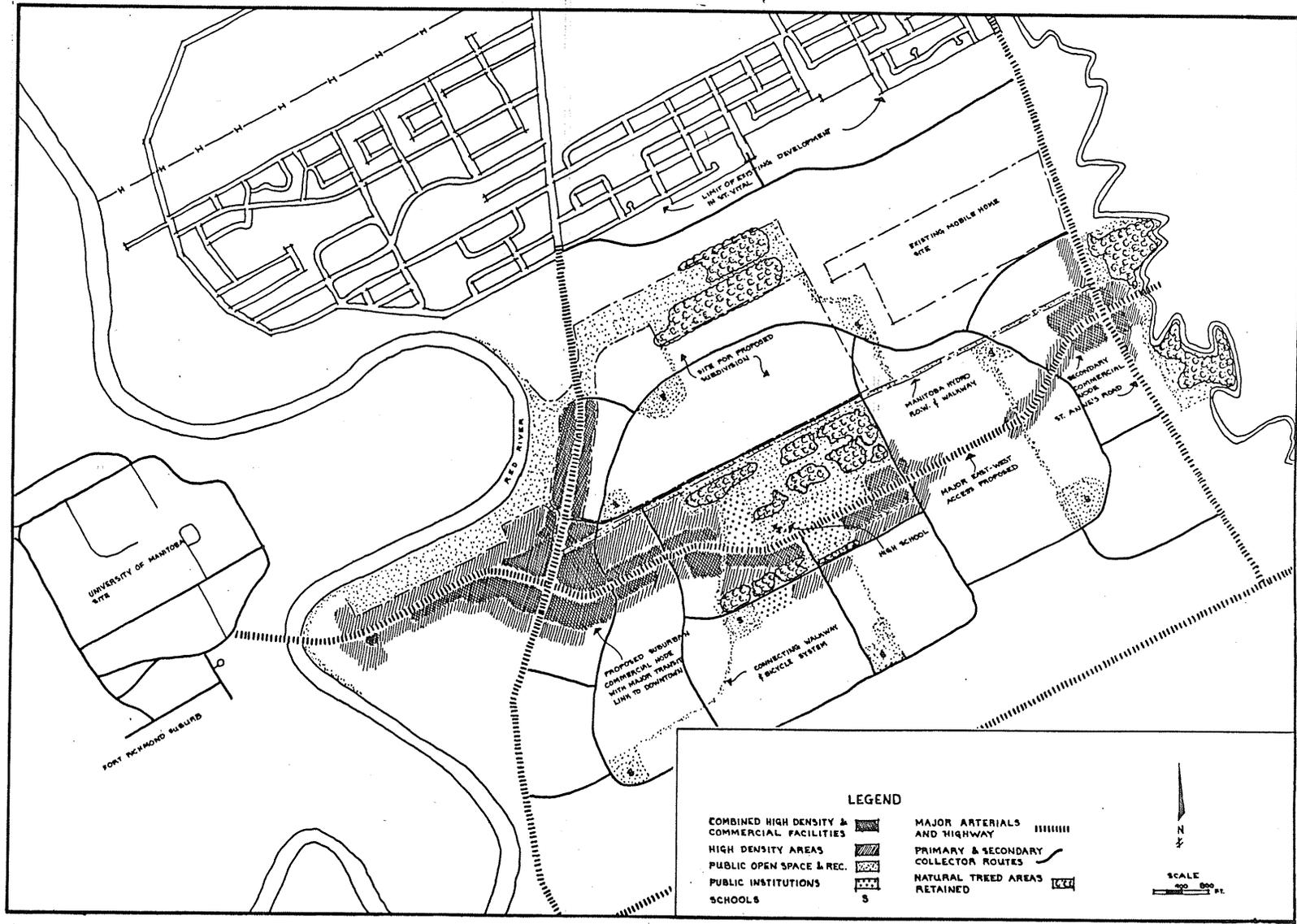


Figure 26. The Conceptual Plan of Major Elements in the Expansion of St. Vital

regional commercial node on St. Mary's and the east-west access route.

The entire planned community in South St. Vital comprises approximately 2200 acres and proposes a population of about 4400 people.

Figure 27 illustrates the existing conditions of the proposed subdivision site. It is indicated that most of the area is essentially flat and is contained to the north by significant tree stands and a more pronounced contour variation and to the south by the Manitoba Hydro right-of-way and further treed areas. The east has no real significant features, while the west is bounded by an arterial road, beyond which lies the Red River.

Figure 28 illustrates how the above have been considered with respect to the subdivision as well as portraying the major features of the subdivision. The significant tree stands have been retained for parks, the subdivision is set back from the arterial with interceding commercial and highrise development (pedestrian links would form connections in the north and south extremities of the subdivision across St. Mary's to the river and recreational facilities there).

The road system is based upon an hierarchical system that begins with the siting of the collectors outlined in figure 26, the regional plan. These streets are designed to carry heavier traffic flows of the subdivision to St. Mary's Road and the regional suburban commercial node to the south west of the site. Minor residential streets leading from these collectors further establish the simplicity of the pattern.

With the simplicity of the design an efficient public transit system could easily be designed to carry passengers to the regional node. The rhythmic siting of attached housing, the pedestrian system and the community center would naturally facilitate such a system.

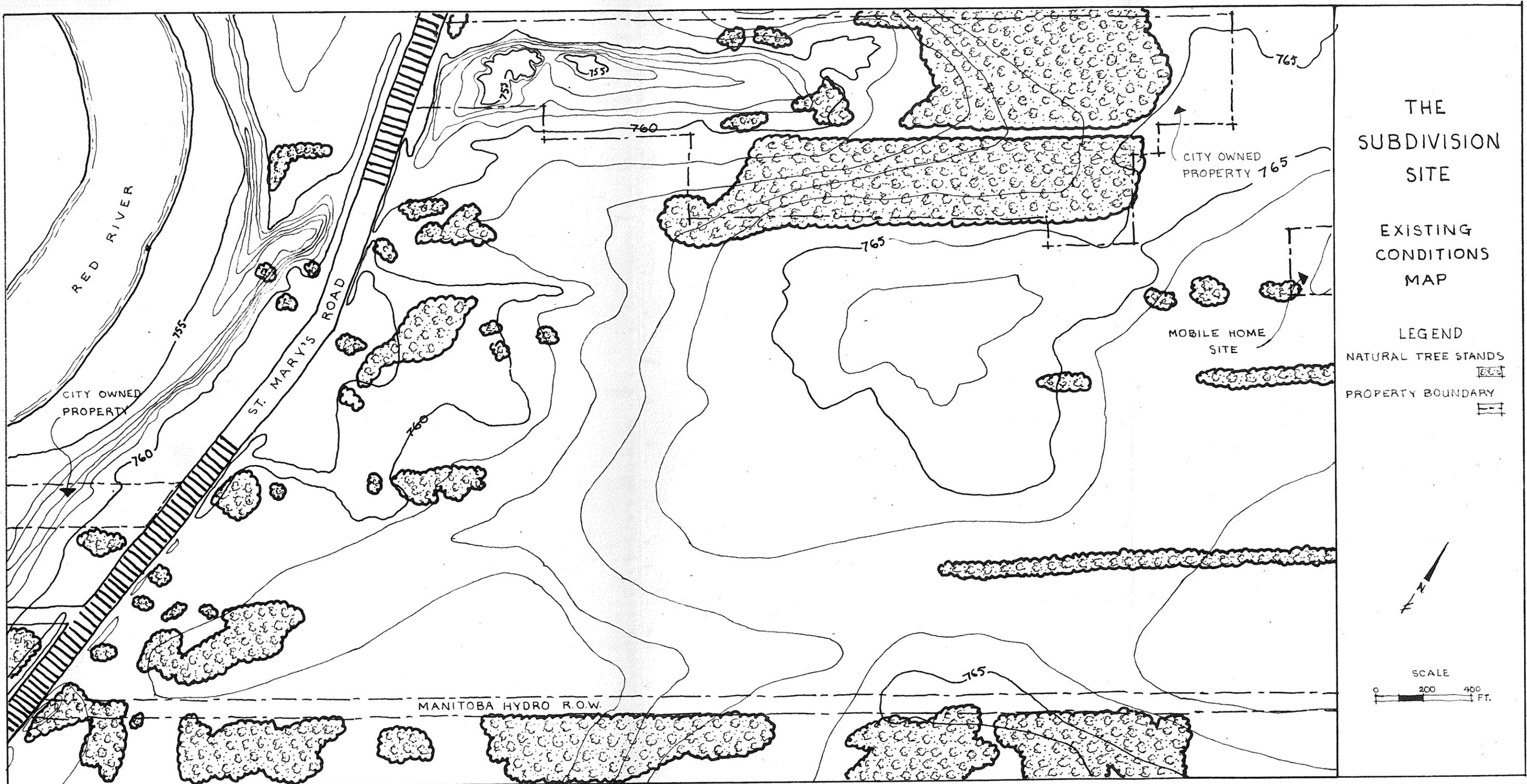
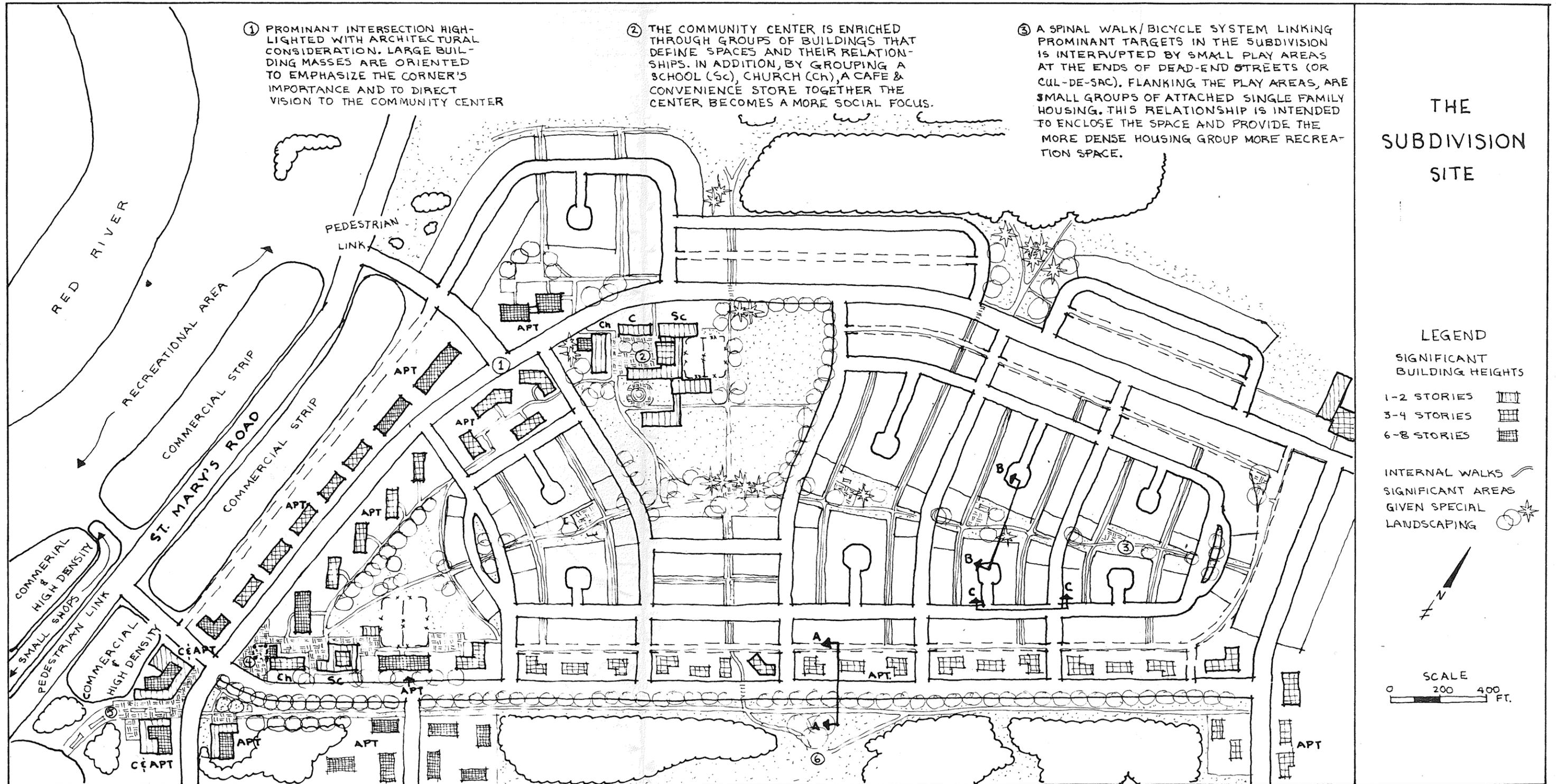


Figure 27. The Subdivision Site and Existing Conditions for a Design Proposal



① PROMINANT INTERSECTION HIGHLIGHTED WITH ARCHITECTURAL CONSIDERATION. LARGE BUILDING MASSES ARE ORIENTED TO EMPHASIZE THE CORNER'S IMPORTANCE AND TO DIRECT VISION TO THE COMMUNITY CENTER

② THE COMMUNITY CENTER IS ENRICHED THROUGH GROUPS OF BUILDINGS THAT DEFINE SPACES AND THEIR RELATIONSHIPS. IN ADDITION, BY GROUPING A SCHOOL (Sc), CHURCH (Ch), A CAFE & CONVENIENCE STORE TOGETHER THE CENTER BECOMES A MORE SOCIAL FOCUS.

③ A SPINAL WALK/BICYCLE SYSTEM LINKING PROMINANT TARGETS IN THE SUBDIVISION IS INTERRUPTED BY SMALL PLAY AREAS AT THE ENDS OF DEAD-END STREETS (OR CUL-DE-SAC). FLANKING THE PLAY AREAS, ARE SMALL GROUPS OF ATTACHED SINGLE FAMILY HOUSING. THIS RELATIONSHIP IS INTENDED TO ENCLOSE THE SPACE AND PROVIDE THE MORE DENSE HOUSING GROUP MORE RECREATION SPACE.

THE SUBDIVISION SITE

LEGEND

SIGNIFICANT BUILDING HEIGHTS

- 1-2 STORIES [diagonal hatching]
- 3-4 STORIES [horizontal hatching]
- 6-8 STORIES [vertical hatching]

INTERNAL WALKS [dashed line]
SIGNIFICANT AREAS GIVEN SPECIAL LANDSCAPING [tree symbol]



SCALE
0 200 400 FT.

⑤ THE MAIN PEDESTRIAN LINK TO THE COMMERCIAL NODE OF THE REGION IS HIGHLIGHTED BY AN

OPEN-AIR MALL ⑤. THE MAIN ENTRANCE TO THE SUBDIVISION IS GIVEN SPECIAL

ARCHITECTURAL CONSIDERATION. HIGHER BUILDINGS DEFINE A HARD SURFACE SITTING AREA ON THE N.E. CORNER. A 6-8 STOREY APARTMENT (APT.) AND

A CHURCH LEAD PEDESTRIANS INTO THE SPINAL WALK SYSTEM WHICH BEGINS WITH A GREEN OPEN AREA AND SCHOOL.

⑥ MAJOR PARK SITE AND RECREATIONAL AREA THAT OPENS ON THE E-W ARTERIAL TO THE SOUTH.

Figure 28. The Conceptual Plan for a Subdivision Proposal in St. Vital

The size of the subdivision, and its proximity to higher density housing near St. Mary's Road and the regional node suggest that two significant focal points be established for the subdivision. The first one marks the entrance to the subdivision, its connection with the suburban node, and serves the higher density housing near it. The second focal point marks the internal community center. The two foci are linked by a spinal bicycle/walk system that carries the pedestrian traffic through a sequence of spaces (i.e. small internal green areas, the community park, the green area near the subdivision's entrance, and the small public hard surface at the entrance) to the regional commercial node. Buildings are oriented around the community focal points to better define them as enclosed spaces and to consider the approaches to them from the street and pathway systems (e.g. see figure 28).

Other details of the subdivision are summarized as follows:

- a) Three storey apartments aligning the primary collector are set back with tree plantings and landscaping added to retain the privacy for the residents, and to add continuity to the street profile (see figure 28 and 29).
- b) A spinal bicycle/walk system opens into small regularly sited play areas for pre-school children and for adults to socialize (see figures 28, 30, and 32). At such points small groups of attached housing define the space. The play areas accommodate the anticipated added recreational needs of these housing groups.
- c) A system of rib-like walkways link other housing in the subdivision to the spinal network (see figures 28, 31, and 32).

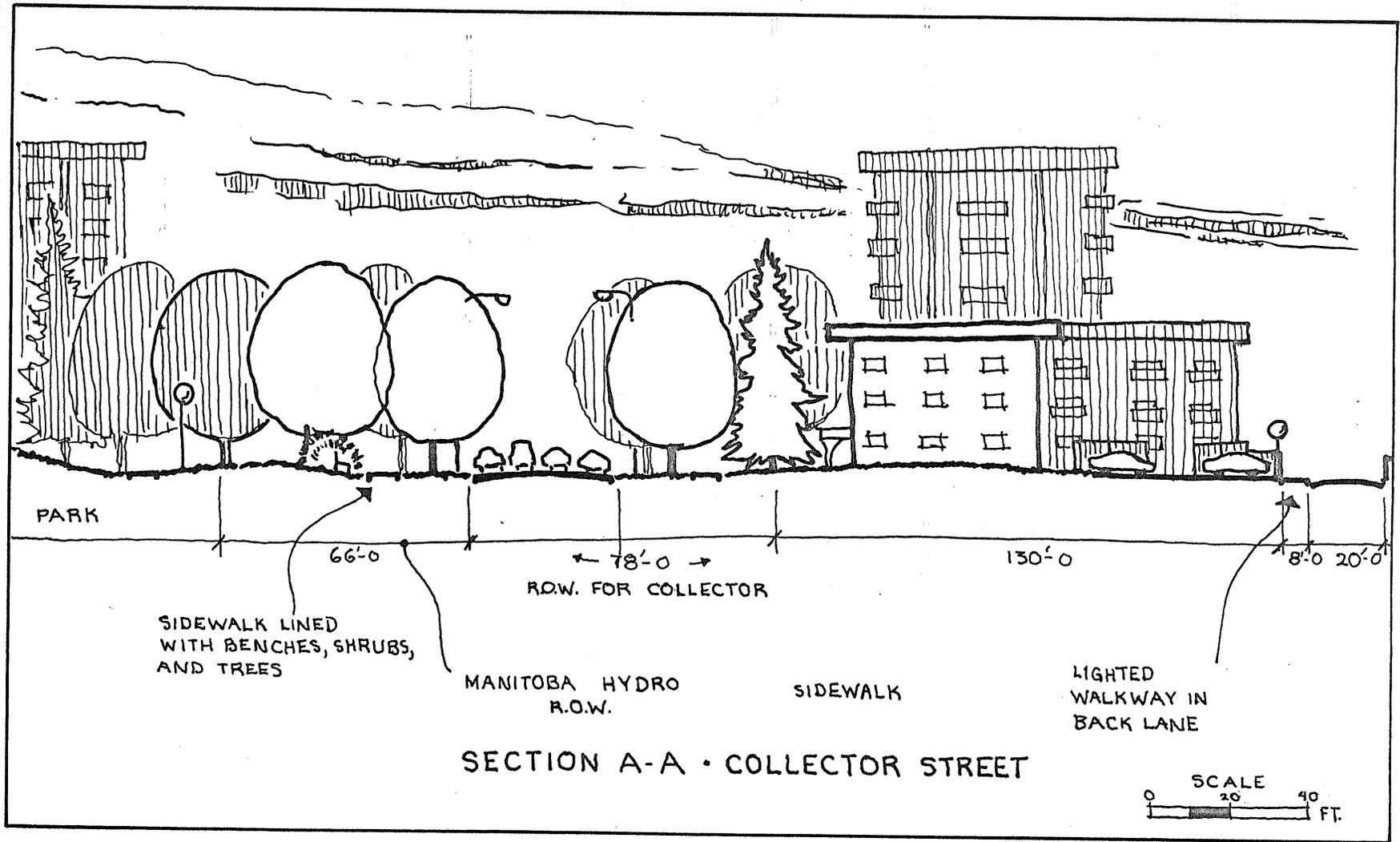


Figure 29. A Profile of the Prime Collector Street in the Subdivision Proposal

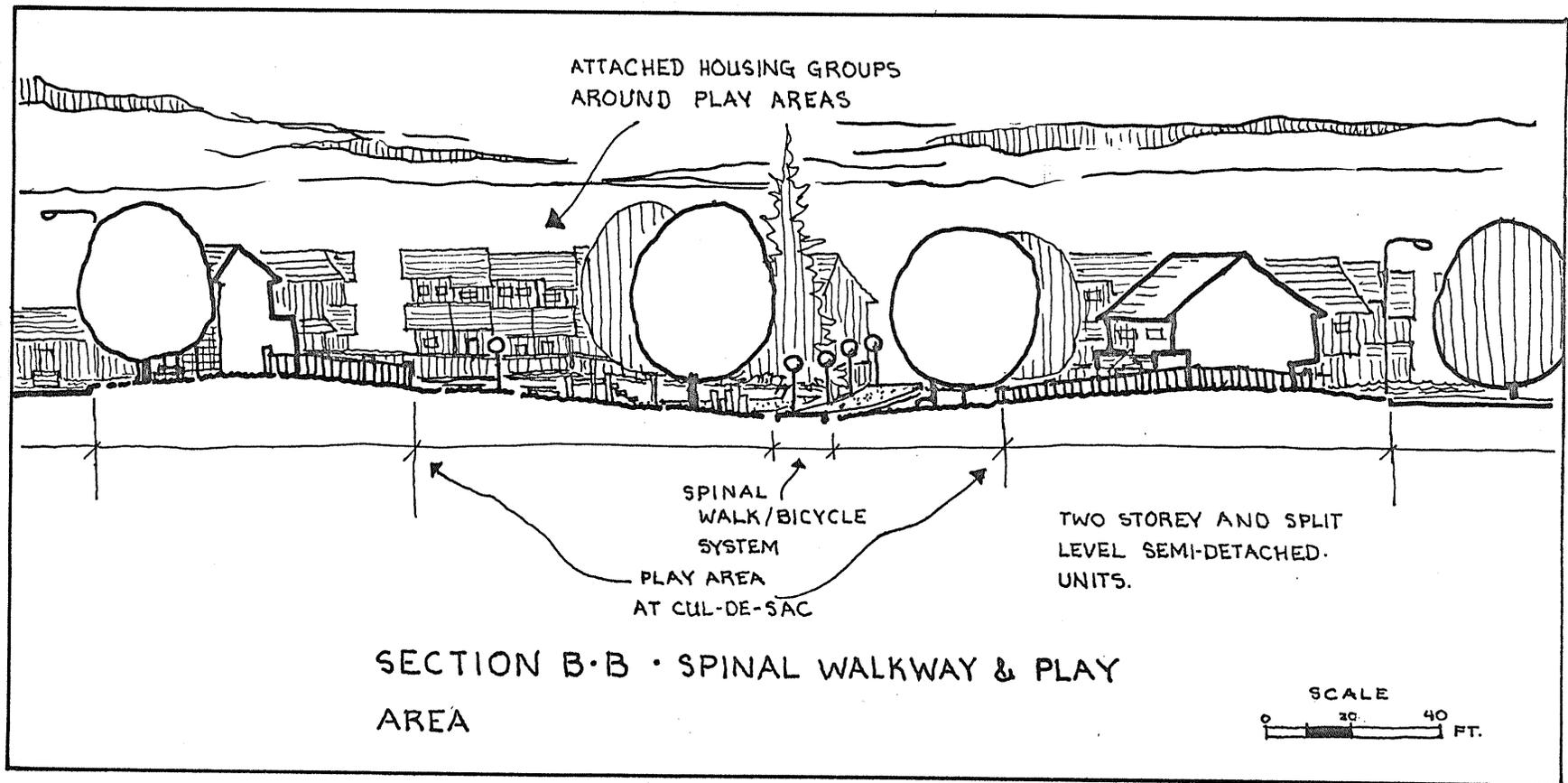


Figure 30. A Profile of a Small Play Area and Housing Along the Spinal Walkway

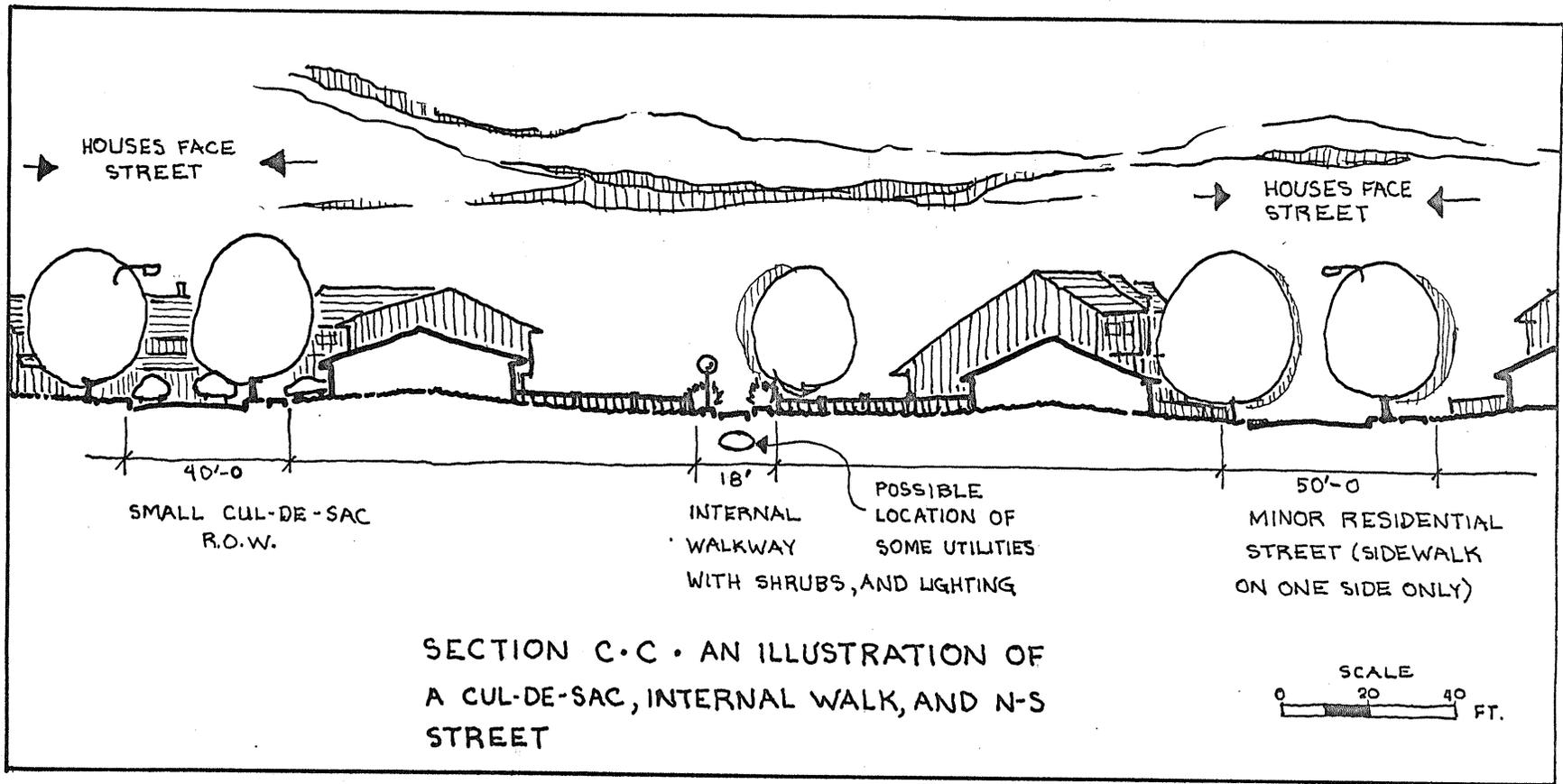


Figure 31. A Profile of a Rib-like Internal Walk, and Street System Linking Housing to the Spinal Walkway

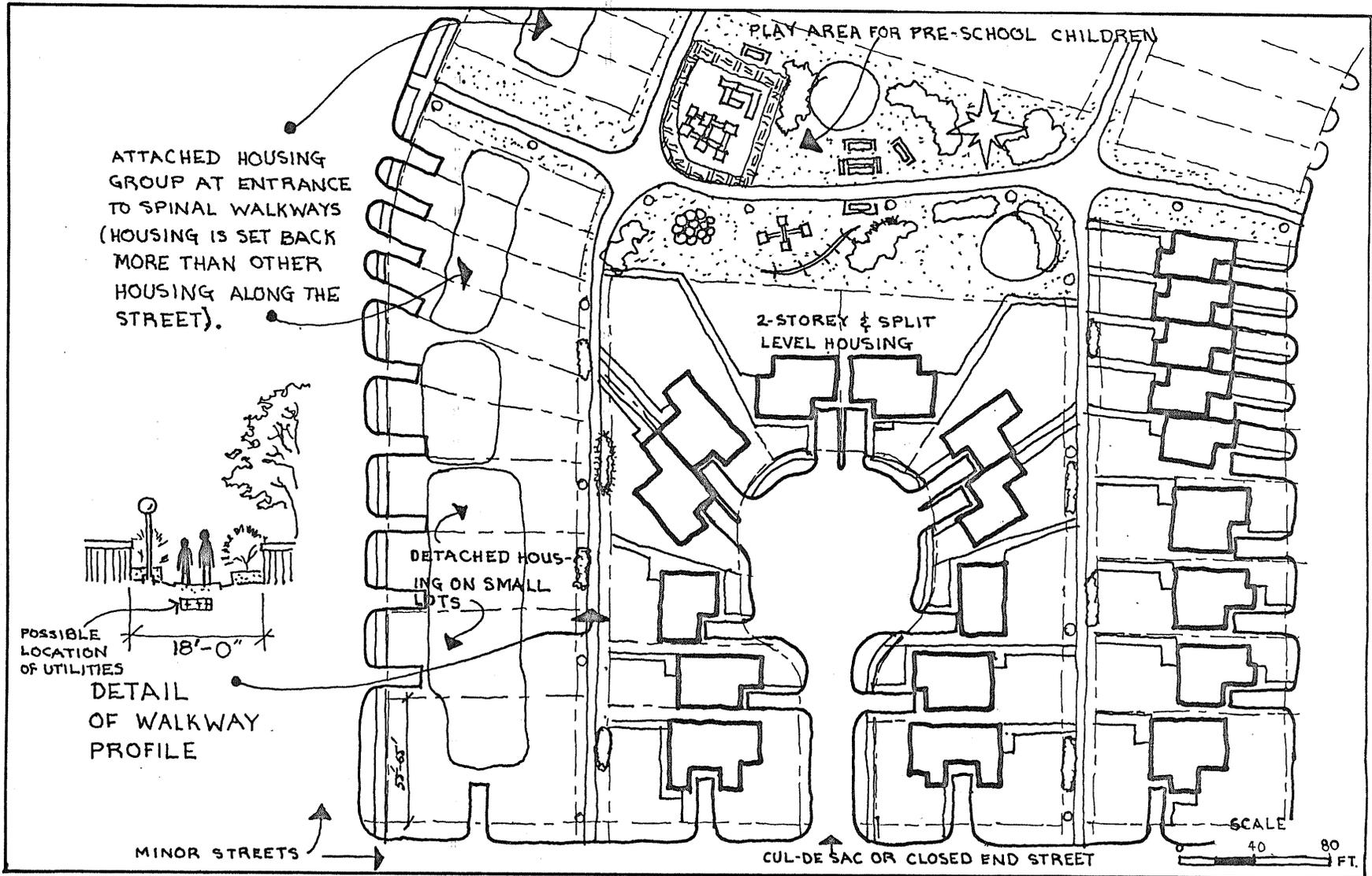


Figure 32. A Detail of the Prototype Relationship of Housing, Walkways, and Streets

d) Other economic and energy conscious details not explicitly stated in the illustrations include reduced set backs for housing, more narrower lots, greater numbers of attached single family homes, and rational linkages between housing, walkways and targets (i.e. stores, schools, parks, etc.). Added insulation values of housing and greater consideration for orienting large windows in housing toward the south would constitute some of the architectural details to be implemented. As well, the linking of the bicycle/walk system to major targets throughout the subdivision, and to the suburban commercial and recreational nodes; and the consideration of small scale and express public transit provide alternatives to the private automobile within the subdivision and to the suburban and urban centers.

It should be noted that the proposal has been limited in scope and, therefore, does not necessarily represent the most optimal alternatives in all of its aspects. Its limitations are based largely upon the implications of Chapter IV. In that chapter it was indicated that various governments and the organization of our public utilities were major barriers (along with economics), for considering radical changes in energy sources and utility servicing. Furthermore, within the context of the City of Winnipeg, that city has not made any such commitments. Thus any attempt at the subdivision level of implementing radical changes would require an in depth economic and technological study neither of which are part of the scope of this thesis. Similarly present zoning laws limit the architectural and land use changes possible for the subdivision.

Finally, the economic implications and uncertainties of radical changes in servicing, energy sources, and architecture have suggested that more radical changes would be anticipated during the later 1980's. Thus, the proposal above has restricted itself to changes that from this thesis' analysis appear more plausible within the realities of the mid-1970's. It is concerned primarily with the concepts and design aspects of site planning which hypothesize a better-fit in the above context.

CONCLUSION

CONCLUSION

The analysis in this thesis of the "typical residential subdivision in post-World War II suburban areas of many major Canadian cities:

- 1) defined and explained the "typical" subdivision historically;
- 2) demonstrated that it evolved largely as a site for single family housing;
- 3) demonstrated that it has been problematic and is irresponsive to major issues of urbanity, energy conservation, economics, land conservation, and sociological concerns; and
- 4) demonstrated an alternative approach to the "typical" subdivision, which considers more the suburban subdivision's role as a community and an urban entity; and is more responsive to basic issues of the 1970's.

From an historical analysis of post-World War II suburbanization it was shown that "typical" subdivisions, as well as being molded by many factors behind the general phenomenon of suburbanization, were particularly explainable by the impacts of larger developers, planning legislation, C.M.H.C. and the N.H.A., and in the context of the prairie regions. An analysis of the basic features of the "typical" subdivision indicated that some alterations were made to its detail giving later subdivisions of the 1960's a more sophisticated appearance. However, despite such alterations examples showed that the "typical" subdivision of the 1960's still served primarily as a site for single family housing. The community aspect had not evolved to any appreciable extent since the mid-1950's. An examination of various reports and documents of the early 1970's served to indicate that housing costs, servicing costs, land costs, the energy issue, the sociological aspects of a community and of relating the suburban sub-

division to urbanity were major issues facing subdivisions of the 70's. In addition, these were shown to be some of the major problems to which the mass production of the "typical" subdivision had previously contributed.

In fulfillment of its final objective the thesis established a set of criteria based upon the findings of the previous chapters, and proceeded with developing these criteria into an alternative design proposal for a subdivision. The criteria and proposals were based heavily upon the need established previously, introducing a community aspect into the subdivision. In addition, the concept was based upon the suburban subdivision as an entity of the urban system. Thus, the major links between the subdivision, the suburb, and the major "organs" of the city were established and introduced as the context for which the subdivision was designed. The alternative in detail was chosen, as well, to correspond with implications outlined in Chapter IV, which called for somewhat less radical changes toward issues in economics, land, and energy, than what other alternatives for the later 1980's may require. Details of servicing, architecture, engineering, and economics were not included as a part of the scope of the design. Such considerations would naturally follow from this thesis which proposed only the concept.

APPENDICES

Table 6

Alternative Street Systems and Land Dedication

ITEMS	ALTERNATIVE SYSTEMS AND LAND DEDICATION													
	1		2		3		4		5		6		7	
	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%	AC	%
TOTAL SITE	184.7	100	184.7	100	184.7	100	184.7	100	184.7	100	184.7	100	184.7	100
SCHOOL SITE	7.0	3.8	7.0	3.8	7.0	3.8	7.0	3.8	7.0	3.8	7.0	3.8	N/A*	N/A*
PUBLIC OPEN SP.	18.1	9.8	18.5	10.1	18.0	9.7	(23.0)	(12.4)	(21.8)	(15.6)	18.0	9.7	23.5	12.7
SCHOOL & OPEN SP.	25.1	13.6	25.5	13.9	25.1	13.5	(30.0)	(16.2)	(28.8)	(18.4)	25.0	13.5	(23.5)	(12.7)
STREETS	51.9	28.1	51.6	27.9	49.3	26.7	50.3	27.2	49.3	26.7	(53.7)	(29.1)	(40.7)	(22.0)
RESIDENTIAL	114.7	62.0	114.6	62.0	117.5	63.6	(111.7)	(60.4)	(113.6)	(61.4)	(113.4)	(61.4)	(121.1)	(65.6)
NET DENSITY **	5.9	N/A	5.89	N/A	5.42	N/A	5.72	N/A	5.72	N/A	5.94	N/A	5.45	N/A
NUMBER OF LOTS	677	N/A	675	N/A	637	N/A	639	N/A	650	N/A	673	N/A	660	N/A

Adapted from (Kostka, 1957: 80). Percentages calculated from raw data given.

* This system used a common site for school and public open space use.

** Density is in dwelling units per net acre.

LEGEND

- 1 • Long block system
- 2 • Internally developed blocks
- 3 • Culs-de-sac
- 4 • Loops with ends open to parks
- 5 • Loops with ends closed to parks
- 6 • Rectilinear system
- 7 • "Creative System (ie. a combination of various systems to fit the land)"

Despite certain differences in the amount of land dedicated to one use or another as circled above, by holding lot sizes, public open spaces, and street widths constant, the resultant dedication schedule is close to what has been defined as the "typical" subdivision. While this conclusion may seem rather obvious, it nevertheless illustrates the point that with such controls placed upon subdivisions, as for instance by municipalities, the result is that little potential is available for altering the dedication schedule -- if the subdivision is to be profitable.

APPENDIX B

AN INDICATION OF THE IMPACT OF TRENDS IN
GREATER HOUSING MIX UPON LAND CONSUMPTION
IN THE "TYPICAL" SUBDIVISION

Table 7

Two Cases in the Seventies Indicating Trends in Housing Mix
and Their Impact Upon Land Consumption in the "Typical" Subdivision

	LAND DEDICATION FOR RESIDENTIAL USE								
	R1		R2		R2A		R3		TOTAL D.U.
	AC	%*	AC	%	AC	%	AC	%	
A 60% Detached	41.2	51.50	3.72	4.65	5.26	6.58	1.79	2.24	446.7
B 40% Detached	32.0	40.00	8.68	10.8	9.19	11.49	2.08	2.60	520.8

* % is the percentage of the entire 80 acre site.

- R1 • Detached single family housing • Net Density 6.5 D.U./AC.
- R2 • Semi-detached single family housing • Net Density 12.0 D.U./AC.
- R2A • Attached housing (row housing) • Net Density 17.0 D.U./AC.
- R3 • Three storey apartments • Net Density 25.0 D.U./AC.

The above cases illustrate the impact of reducing the proportion of detached single family housing to 60% and 40%, levels comparable to many subdivisions of the 1970's. "A" above illustrates a hypothetical case where other aspects of the land schedule (ie, 10% for parks, 22% for streets, 3% for commercial use and school use) remain constant and the housing aspect is altered due to a housing mix of 60% detached, 10% semi-detached, 20% attached (row), and 10% for apartments. "B" above represents the effect of a similar situation, but with a housing mix of 40% detached, 20% semi-detached, 30% attached, and 10% apartments.

Comparing the above cases with the model of 1968 (assuming 70% detached, and 30% other) reveals a decrease of about 8.5% of the site dedicated to detached single family housing for "A" and a decrease of 20% for "B". The total number of dwelling units yields in the 1968 model was calculated to be 360. Case "A" above yields 446.7 and case "B" above yields 520.8 dwelling units. The increase of 160 dwelling units from the 1968 model to the "B" case is a significant change.

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