

THE UNIVERSITY OF MANITOBA

MOBILE HOME PARK : AN APPROACH TO THE PHYSICAL DESIGN

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## THESIS ABSTRACT

TITLE : MOBILE HOME PARK : AN APPROACH TO THE  
PHYSICAL DESIGN

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SUMMARY OF  
THE THESES :

Mobile homes have become well accepted by certain segments of the population in North America as a decent form of housing and the recent mobile home market trends indicate a rapid growth in demand.

All mobile homes in the Metropolitan Winnipeg Region are located on mobile home parks. Three mobile home parks are selected for the case study and their quality of physical environments is evaluated. The most critical physical problems of these parks are: the poor locations; the unimaginative patterns of layout; and the poor standards of development.

Implications of the governmental policies and regulations are evaluated. The governmental policies and regulations had been rather negative in approach and discriminatory in nature. However, the recent indications are that all levels of government are considering some major changes in their policies and regulations to cope with the ramifications of mobile home park developments in a new and positive direction.

An approach to the physical layout of mobile home parks coping with those problems identified from the case study are presented. The highlights are: the park should be an integral part of a neighbourhood unit; the optimum size of a park is 200 to 300 lots or 25 to 40 acres in area; cluster and cul-de-sac streets are ideal patterns for mobile home groupings; and a closed pattern of circulation with an adequate number of connections to outer areas is an ideal form.

The summary, recommendations and fields for further studies are stated.

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## CHAPTER ONE

### INTRODUCTION

#### A. Housing Problem:

Despite the fact that housing is one of the basic human needs for survival and that the provision of housing is one of the pressing social issues in our world, the technology of house construction is far behind that found in other industries. As a result, the conventional house building industry cannot supply enough decent housing at reasonable prices. Although some mass production techniques have been applied to conventional housing construction, such as the prefabrication of building components, most construction work is still carried out on the site, and efficiency in the utilization of labour and material is not comparable with that of other industries such as automobile manufacturing. Yet the need for more housing has been increasing rapidly along with population growth and urbanization. In Canada, the rising cost of urban land, building material, labour and interest rates on mortgages has made decent housing for certain socio-economic groups virtually out of reach.

#### B. Mobile Home and Its Problems:

In recent years, the mobile home industry had provided some solutions to the housing problem by introducing assembly line techniques to house construction, thereby substantially reducing the cost of production. This new form of

housing, which is both transportable and economic, has been well suited to the families of military personnel, transient construction workers and employees of remote single enterprise communities. However, the mobile home has created many problems in major urban areas. Although it is generally recognized as a decent form of housing, it is different, in many ways, from conventional housing; society is still prejudiced against it and its social stigma has been imposed upon the mobile home residents. In addition, most of mobile homes are located on mobile home parks where the environmental conditions are substandard.

The majority of mobile home parks located in major urban areas in Canada are not properly developed to accommodate the recent models of mobile homes which are designed for a long term occupancy and have been greatly improved over the early models in terms of size and facilities. Consequently, the mobile home residents have unnecessarily had to suffer poor environmental conditions and the poor social image of old mobile home parks has not been improved. Due to the poor environment of many mobile home parks, local people are often against mobile home park development in their vicinity; in addition, governmental regulations are somewhat discriminatory. Financial institutions including the Central Mortgage and Housing Corporation are reluctant to grant long term mortgages on mobile homes and mobile home parks comparable to those given on conventional housing and residential land developments.

Whether for better or worse, the trend towards an increasing number of mobile homes within major Canadian centres in the future is a persistent one and there are many implications for future urban planning. On the positive side, the efficient technique of house construction which the mobile home industry has developed is an indispensable resource for tackling the housing problems of certain socio-economic groups. On the negative side, the substandard environmental conditions of mobile home parks do not conform to socially acceptable standards and they create nuisance, and blight effects on the surrounding areas. Therefore it is an important task to formulate comprehensive solutions for what are presently conflicting social interests.

#### C. Objectives and Method of the Study:

The objectives of this study are: to evaluate the environmental qualities of mobile home parks in Greater Winnipeg; to identify the major physical problems; and to formulate a comprehensive physical design approach. The main emphasis of the study is placed upon the physical aspects, however, some non-physical elements which are directly related with the physical planning are also considered. These include the implications of present governmental policies and regulations toward mobile home park development, and the potential role of mobile homes in the field of future housing.

The study is mainly carried out as a library research, but it is supplemented by case studies of three selected mobile home parks. These are Downs Village, Covered Wagon, and Northgate Trailer Parks and their conditions are evaluated by the analysis of plans and field observations. In addition many examples in the United States and Canada are used as references.

D. Scope and Organization of the Study:

The evolution of the mobile home, its origin, past and present trends and its future prospects are studied.

Three existing mobile home parks in Metropolitan Winnipeg are selected and their physical environments are evaluated. This includes studies of the location, site characteristics, physical layout pattern, quality of construction and population composition of the residents and their attitudes.

The implications of governmental policies and regulations for the physical environment of the mobile home parks are evaluated.

The identified problems are synthesized; the major design determinants for future development to cope with these problems are identified; and optimum design criteria are presented. These include reviews of some better planned mobile home parks in North America, creative approaches and

innovations and basic principles of residential development. Finally a hypothetical layout design is presented and compared with the conventional residential layout design.

Summaries of the study, recommendations and conclusions are presented in the final chapter.

#### E. Definitions:

Since some of the terms used in this report may have different meanings to different persons, it is necessary to present some clear definitions. The basic terms are defined as follows:

A Mobile Home is a single family dwelling designed for transportation after fabrication on streets and highways on its own wheels or on flatbed or other trailers, and arriving at the site where it is to be occupied as a dwelling complete and ready for occupancy, except for minor and incidental unpacking and assembly operations, location on jacks or permanent foundations, connection to utilities and the like.<sup>1</sup> This does not include either the travel trailer nor systems housing.

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1. American Society of Planning Officials, Regulation of Mobile Home Subdivision, Planning Advisory Service, Information Report No. 145, The Society, Chicago: April 1961, p. 4.

A Mobile Home Park is a parcel of land developed to accommodate a number of mobile home units which is owned and operated by one entity. The owner is responsible for the provision of basic community facilities and services and he collects an appropriate monthly fee from the mobile home occupants.

The Neighbourhood is an urban unit with a functional arrangement of its environmental elements which is planned for the population of an elementary school district. The neighbourhood is conceived as a series of properly integrated component parts, called housing groups, varying in size from 50 - 300 persons.<sup>2</sup>

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2. V. Joseph Kostka, Neighbourhood Planning, Appraisal Institute of Canada, Winnipeg: 1957.

## CHAPTER TWO

### THE EVOLUTION OF MOBILE HOME AND MOBILE HOME PARK

#### A. Origin:

The mobile home has evolved from its original version, the travel trailer, which was designed mainly for short term vacation housing. Early travel trailers were made in small sizes, with maximum dimensions of not more than eight feet in width and twenty-nine feet in length, so that they could be towed by passenger cars without much difficulty. Since the travel trailer was not made for long term occupancy, it was not usually equipped with such facilities as water supply and disposal systems. Its primary market appeared to be high income families and the number of units manufactured prior to World War II was very small. A record indicates that the total number of units produced in 1940 in the United States was about 10,000.<sup>3</sup>

The initial use of the travel trailer for long term occupancy began some time around the World War II. Following the War, housing problems became very critical due to the large number of defence and construction workers moving to new areas, and then to the returning veterans and increasing number of new family formations as a post-war phenomenon.

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3. Frederic H. Bair Jr., Mobile Homes and the General Housing Supply, Mobile Home Manufacturers Association, Chicago: July 1969, p.1.

The travel trailer provided a temporary answer to these housing needs.

This new demand for travel trailers for temporary housing was reflected in both the number of units manufactured and the sizes and qualities of succeeding models. The total annual production was increased to 60,000 units in 1947 in the United States and the average size of these units became much larger than that of 1940 models.

Trailer parks evolved in the vicinity of new construction sites, new resource oriented communities and the major urban centres to accommodate those trailerites. However, as the trailer was not suitable for long term residential use, nor was the environmental quality of most early trailer parks. Over-crowding and the lack of necessary public facilities such as water supply and sewer disposal systems was usual in most cases. The physical conditions of some trailer parks were worse than those found in average slums. Alexander C. Willington described a trailer camp in Pennsylvania as follows:

"(The camp site was formerly) a deep hollow receiving for years the accumulation of dump-truck refuse. Upon this foundation of tin cans, old papers, broken bottles, and what not, earth was dumped and levelled off to make the site .....

..... drainage is solved in primitive ways ..... One large deep hole (covered at night by planks and guarded by a red lantern) receives all dish water and other liquid refuse which is supposed to seep through the clay side and bottom and finally disappear .....



Rubbish disposal is left up to the individual families, who burn it where they can. Garbage disposal, more difficult, usually involves some attempt to regulation.

..... Each family is required to supply its own garbage can and dump the contents a quarter mile away in an unconverted part of the<sup>4</sup> same hollow on which the camp site is located .....

B. Past and Present Trends:

Since these days, the advantages of mobile home living have been gradually recognized by certain segments of society, on the one hand, and the mobile home industry has been responding to market demands for larger and better equipped units on the other hand. In addition, the ever improving new models have been attracting more people to mobile home living. The average floor space of mobile home units has been steadily increased from the 216 square feet (8' x 27') of 1947 models to the 720 square feet (12' x 60') of 1968 models. (see Table 1). Better furniture, modern baths, kitchens, hot water heaters and refrigerators have become standard features in recent models. The improving new models have been influencing the volume of sales. The major breakthroughs in sales occurred when the new 10 feet wide and 12 feet wide units came into mass production in 1955 and 1962 respectively. The average annual sales between 1955 and 1961 were approximately 110,000 units representing an increase of 57 percent from 1947 to 1954. Annual sales have

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4. ASPO, The Changing Function of Trailer Parks, PAS, Information Report No. 84, The Society, Chicago: March 1956, pp. 1-2.

been increasing at an accelerated speed since 1962 and in 1968, 317,950 units were sold (see Table 2).

The increasing demands made it possible for mobile home manufacturing and sales business to operate more efficiently, and as a result unit prices did not increase despite inflation.<sup>5</sup> The result was more price disparity between the mobile home and conventional housing, and the mobile home could dominate the lower cost single family housing market in the near future. In 1968, 90 percent of the total sales of new single family dwellings under \$15,000 in the United States were mobile homes (see Table 3).

The rapidly growing number of mobile homes and their increasing dimensions have created some significant problems for urban planning in general, and for mobile home parks in particular. The majority of mobile homes in North America are located in mobile home parks. Yet many of these parks were primarily developed for travel trailers and have not been able to carry out repeated remodelling to cope with the new standards required by new models. Yet the pace of the new and higher standard parks development has been too slow. The result has been that many of the older parks have become more overcrowded and even less satisfactory for the new mobile homes.

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5. This means only the unit price per square foot.

TABLE 1  
 CHANGES IN MOBILE HOME DIMENSION (U.S.)  
 PERCENT OF DIFFERENT UNITS

First Quarter Shipments, 1960-1969

Year	8' wide <sup>a</sup>	10' wide <sup>b</sup>	12' wide <sup>c</sup>	Expansibles <sup>d</sup> & double-wides <sup>e</sup>
1960	4.3	95.7	-	-
1961	1.5	98.5	-	-
1962	1.2	85.4	1.6	11.8
1963	0.6	80.1	3.4	15.9
1964	0.7	74.3	12.3	12.7
1965	1.2	59.6	30.9	8.3
1966	1.0	34.1	57.9	7.0
1967	0.6	20.1	72.3	7.0
1968	0.1	2.9	86.8	10.2
1969	0.3	0.6	89.7	9.4

Source: "Mobile Home Sales, Purchases, Stocks and Shipments", Marketing Information Associates, Chicago.

Note:

- a Average length; 29' to 45'
- b Average length; 45' to 60'
- c Average length; 54' to 65'
- d Average length; 50' to 65'
- e Average length; 40' to 65'

TABLE 2

## MOBILE HOMES SHIPPED TO DEALERS (U.S.)

Year	No. Units <sup>1</sup>	Annual Change	
		no.	percent
1947	60,000	-	-
1948	85,500	25,500	42.5
1949	46,200	-39,300	-46.2
1950	63,100	16,900	36.6
1951	67,300	4,200	6.7
1952	83,000	15,700	23.3
1953	76,900	- 6,100	- 7.9
1954	76,000	- 900	- 1.2
1955 <sup>2</sup>	111,900	35,900	47.2
1956	124,330	12,430	11.1
1957	119,300	- 5,030	- 4.0
1958	102,000	-17,300	-14.5
1959	120,500	18,500	18.1
1960	103,700	-16,800	-13.9
1961	90,200	-13,500	-13.0
1962 <sup>3</sup>	118,000	27,800	30.8
1963	150,840	32,840	27.8
1964	191,320	40,480	26.8
1965	216,470	25,150	13.1
1966	217,300	830	0.4
1967	240,360	23,060	10.6
1968	317,950	77,590	32.3

Source: Mobile Home Manufacturers Association.

1. Figures for 1947 through 1955 include travel trailers.

2. 10 feet wide unit was produced from 1954.

3. 12 feet wide unit was produced from 1962.

TABLE 3  
 PERCENT OF MOBILE HOMES  
 FROM THE TOTAL OF THE NEW  
 SINGLE FAMILY DWELLING SALES  
 IN THE UNITED STATES

Year	Homes Under \$12,500	Homes Under \$15,000
1964	76	59
1965	76	65
1966	84	67
1967	86	73
1968	96	90

Source: Flash Facts on Mobile Homes,  
 Mobile Home Manufacturers Association,  
 Chicago, June 1969

The implications of the poor environmental qualities of mobile home parks are many. Some mobile home households have to suffer from undesirable environment, despite the fact that their units can provide almost all the amenities that conventional dwellings can if they are placed on appropriate locations.

Many potential buyers have been discouraged because of the lack of adequate sites where they can install the units.

The social image of mobile home living cannot improve substantially because of the poor quality of existing mobile home parks.

To cope with these problems two different approaches have been taken in recent years. The one is to up-grade the standards of existing parks and to develop enough higher quality mobile home parks. The other one is to produce mobile home units sufficiently like conventional single family dwellings that they can be fitted into conventional residential subdivisions.<sup>6</sup> Many big enterprises became interested in mobile home park development, and since the bigger the size the more efficient the operation, they have developed higher standard parks on a larger scale. Mobile home parks of over 1,000 units have appeared in the southern and southwestern parts of the United States, such as in Florida, Arizona and California. More recently Boise-Cascade Corporation, a big residential developer in the United States, is undertaking a 10,000 unit mobile home community development<sup>7</sup> and Orlando Florida Investment Inc., at Miami is planning for a 15,000 unit mobile home community in the central Florida.<sup>8</sup>

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6. Mobile home subdivision and systems housing is not considered in this study.

7. Cahners Publishing Co., Professional Builder, The Company, Chicago: November 1969.

8. The writer has been working for this project and he was responsible for the overall conceptual design and the detailed layout of the first stage development.

C. Potential Role of the Mobile Home in Housing:

For the logical assessment of the potential role of the mobile home in the field of future housing, it is necessary to evaluate the advantages and disadvantages of the mobile home compared with other forms of housing. The main advantages are: economical price; mobility of the unit; suitability for families of small size; and finally the amenities provided in good quality parks. The disadvantages are: that it is not large enough for large family households; that it has an unconventional appearance; and that in many instances, most existing mobile home parks suffer from substandard environment.

The primary advantage of the mobile home is the economical cost of purchase and maintenance, and the package deal financing practised in mobile home businesses. Even in affluent countries such as Canada and the United States, housing is an important social problem and a large proportion of the population cannot afford decent housing over the \$15,000 price. Yet conventional housing prices have been soaring higher and higher and the price disparity between conventional and mobile homes has been continually widening. At the present time, it is estimated that the average conventional house costs approximately \$15.00 per square foot as opposed to that of \$8.00 for the mobile homes.<sup>9</sup> As a result

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9. Metropolitan Corporation of Greater Winnipeg, Mobile Homes in Metropolitan Winnipeg and Additional Zone, The Corporation, Winnipeg: 1970, pp. 8-9.

the mobile home has become the only hope for millions of people in low income brackets for their future housing.<sup>10</sup>

Although mobile homes today are rarely mobile once they have been installed on the first site, the portability of units is still an important feature to certain people. As society becomes more industrialized and institutionalized, the role of the individual in society becomes more specialized. Consequently an individual has to change his place of living more frequently than in the past. The portability of the mobile home is a great advantage to those whose occupations are transient in nature, such as military personnel, construction workers, and employees at remote single enterprise communities.

A man's housing needs change at five different stages in his life span,<sup>11</sup> and the mobile home is a suitable form of housing at two different stages. For the young and newly formed and older or retired families, the comparatively smaller floor space of the mobile home is convenient for maintenance yet satisfies the family's requirements. As in the case of apartment living, many communal facilities and services are provided by the park operator; yet the residents can enjoy the pride of ownership and privacy.

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10. Tampa Tribune, "Nixon Says Mobile Home Only Hope for Millions," Tampa, Florida: April 2, 1970.

11. Michael Wheeler (ed.), The Right to Housing, Harvest House Ltd., Montreal: 1969, p. 35.



A large proportion of mobile homes are sold to second home owners, mostly rich and/or older people in the southern states such as Florida, Arizona and California. Prolonged life expectancy, early retirement and guaranteed incomes from pension funds or savings make it possible for those people to start a new way of life at this later stage of their life span. The second home owner in these areas, mostly from the northern states or from Canada, comes to enjoy the milder climate or other natural amenities in the area. Many ultra-modern standard mobile home parks, equipped with various recreational facilities such as golf course, swimming pools, lawn bowling, and other indoor facilities for year round operation, and provided with organized recreational activities, are developed for these second home owners or retirees. The market in this area is growing rapidly.

The advantages of the mobile home are reflected in the characteristics of households as presented in Tables 4 and 5. There are significant variations in these characteristics in different regions. In the southern regions, the proportion of retirees and second home owners is significant, whereas, in the northern urbanized areas, the proportions of households of young and newly formed and transient labour forces are much greater.

TABLE 4  
 OCCUPATIONAL CHARACTERISTICS  
 OF MOBILE HOME HOUSEHOLDS IN U.S.

	1960 <sup>1</sup>		1966 <sup>2</sup>	
	Mobile Homes	All Households	Mobile Homes	All Households
Professional and Technical	5.1 %	8.6 %	7.1 %	10.9 %
Managers, Proprietors	5.1	8.8	8.1	15.0
Craftsmen (skilled)	21.4	15.2	21.5	16.5
Operatives (semi-skilled)	18.8	15.3	21.4	15.7
Clerical, Sales	6.7	11.8	7.2	10.5
Service	4.4	5.2	4.8	6.2
Labours (non-farm)	6.8	5.7	7.5	3.7
Labours (farm)	1.1	4.2	1.4	1.0
Military and Not in Work	30.1 <sup>3</sup>	24.3	20.9 <sup>4</sup>	20.5

- Source: 1. U. S. Census 1960
2. Sample Survey, Bureau of Census, Department of Housing and Urban Development.
3. This includes 7.8% of Military personnel.
4. This includes 9.3% of 65 years and over age group.

TABLE 5  
 INCOME GROUPS OF MOBILE HOME HOUSEHOLDS  
 IN U. S.

	1960 <sup>1</sup>		1966 and 1967	
	Mobile Homes	All Households	Mobile Homes <sup>2</sup>	All Households <sup>3</sup>
\$ 4,999 and under	52.%	47.%	27.6 %	28.2 %
5,000 to 6,999	23.	21.	27.2	17.8
7,000 to 9,999	14.	19.	29.4	20.4
10,000 and over	11.	15.	15.7	29.6

- Source: 1. U. S. Census  
 2. Survey Bureau of Census for the Department of Housing  
 3. Current Estimation in 1967

The situation in Canada appears to be somewhat different from that of the United States due to her unique geographical, social and economic conditions. Society has been relatively slow to accept the mobile home. The long and severe winter climate in most of Canada prohibits for many months the outdoor living which the mobile home residents are more dependent upon because of their small floor space of their unit compared with that of conventional housing. Canadians have more conservative values and attitudes to

housing and the mobile home is less favourably accepted by society as a whole. In addition, mobile homes in Canada are 30 percent more expensive than in the United States,<sup>12</sup> and the price disparity between mobile home and conventional housing is not so favourable as it is in the United States. As a result, the proportion of mobile home households among the total households in Canada is smaller than that in the United States and the evolutionary process of the mobile home industry and market trend appears to be many years behind (see Table 6).

The market trends and characteristics of mobile home households appear to be similar to those of the United States a decade ago. The volume of sales has not increased so drastically and the larger proportion of mobile home households are still the workers in transient occupations such as are found in construction and mining industries. Very small numbers are retirees among the mobile home households.<sup>13</sup> However, the most recent trends in Western Canada have recorded a drastic increase in sales. During the last three years the volume of retail sales has been almost doubled and an annual average increase of 25 percent is projected for the next 5 year period.<sup>14</sup>

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12. The average price in U.S. is \$5,700 and the equivalent unit is sold in Winnipeg at \$8,000. Source: Mobile Homes in Metropolitan Winnipeg and Additional Zone.

13. Both in Winnipeg and Edmonton, only one percent of mobile home residents were over 65 years of age as opposed to 9.3 percent in the United States.

14. Metropolitan Corporation of Greater Winnipeg, p.7.

TABLE 6  
NUMBER OF MOBILE HOMES  
IN PLACE IN CANADA<sup>1</sup>  
IN OCTOBER, 1968

PROVINCE	NO. OF PARKS	NO. OF MOBILE HOMES IN PARKS	NO. OF MOBILE HOMES NOT IN PARKS	TOTAL
Newfoundland	8	538	700	1,238
Prince Edward Island	7	357	250	607
Nova Scotia	43	1,599	1,600	3,199
New Brunswick	31	1,511	2,789	4,300
Quebec	60	2,500	4,500	7,000
Ontario	81	3,676	8,324	12,000
Manitoba	20	1,041	3,959	5,000
Saskatchewan	132	3,000	1,700	4,700
Alberta	105	3,789	4,450	8,239
British Columbia	230	3,950	4,200	8,150
Total	721	21,961	32,472	54,433

1. Department of Urban Development and Municipal Affairs, Government of Manitoba, Guidelines for Locating and Designing Mobile Home Parks, The Department, Winnipeg: March 1970, p. 16.  
Original Source: Submission by the Canadian Mobile Home Association and the Western Canadian Mobile Home and Travel Trailer Association to the Federal Task Force on Housing and Urban Development, December 1968.

## CHAPTER THREE

### EVALUATION OF ENVIRONMENTAL QUALITIES OF THE SELECTED MOBILE HOME PARKS IN WINNIPEG

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The market trend of mobile homes in Winnipeg has not been favourable; one of the important factors which has had a direct and detrimental influence on them has been the poor environmental quality, their social image is still poor and the local controls over the mobile home park developments are discriminatory in nature to limit the detrimental effects on the adjacent areas. Many potential buyers have been discouraged because of lack of space on which to place the unit where they could enjoy an acceptable level of environmental quality.<sup>15</sup> Consequently, to improve the poor market situation and to provide alternative choice for housing, the existing parks ought to be improved and new parks should be developed to an acceptable quality in terms of safety, convenience, economy and amenity.

For the formulation of proper and comprehensive guidelines for the development of mobile home parks of an acceptable quality, it is necessary to evaluate the existing situations and identify the major problems systematically. In this Chapter, an attempt is made to study three selected parks,

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15. Personal communication with Mr. Bruce Dockings, Senior Counselor, Division of Industrial Materials, Department of Industry and Commerce, Government of Manitoba.

namely Downs Village, Covered Wagon and Northgate Trailer Parks. These are the three largest parks among the seven parks located in Metropolitan Winnipeg.

The study is mainly concerned with the quality of physical environment, as determined by four different elements: location; physical characteristics of the site; standards of physical design; and standards of development and construction. However, some non-physical elements which are directly related with the physical environment are also considered. These include the population characteristics of the residents and their desires and attitudes.

A. Evaluation of Locations:

The location of the mobile home park, for the purpose of this study, is considered to be the physical relationship in space of a specific mobile home park to the general structure of the surrounding community and land uses.<sup>16</sup> Also the basic criterion used for the locational evaluation is the distances between the mobile home park and the locations of employment, schools, shopping, recreational and other necessary facilities for the mobile home park residents. Although it is recognized that the location of a mobile home park in the community greatly influences the overall efficiency of the urban land use pattern and the efficiency of spatial

16. Kevin J. Cross, Residential Land Subdivision: A Physical Evaluation, Staff Research Project No. 2, School of Community Planning, Univ. of B. C., Vancouver: 1965. p. 26

arrangements within the community is maximized when the total costs of overcoming distance are minimized,<sup>17</sup> the economic criterion for the locational evaluation is not considered in this study. Thus the locational evaluation is mainly carried out in terms of the convenience to the mobile home residents in the park of the necessary community facilities.

The mobile home park is a bona fide residential land use and the planning standards for locational criteria commonly accepted for the conventional residential development are equally applicable to the mobile home park. However, since the standards suggested by different persons or organizations vary in many aspects, it is necessary to establish the standards more specifically. For the purpose of this study the average figures of four different standards are considered to be the optimum standards (see Table 7) and the actual situations of the selected parks are evaluated on that basis. (see Table 8).

In Table 8, a simple rating system is introduced and each element is valued as good, fair or poor on the basis of the actual distance less than the standards, more than the standards but less than two time of them, and more than two times. The system is designed only for the evaluation of each element separately. Since the importance of different elements is not the same, it will provide only general overall locational values.

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17. Ibid. P. 35



TABLE 7

RESIDENTIAL PLANNING STANDARDS FOR LOCATIONAL CRITERIA  
(MILE)

Criterion	No. 1	No. 2	No. 3	No. 4	Range of Commonly Accepted Standards
Major Employment Centre	-	-	-	-	-
Major Shopping	4.00	-	-	1.00-1.50	1.00 - 4.00
Convenience Shopping	.75	-	.50	.25- .50	.25 - .75
Elementary School	1.00	.50	.50	.25- .50	.25 - 1.00
Junior High School	2.50	1.00	1.00	.75-1.00	.75 - 2.50
Senior High School	2.50	2.00	-	1.00-1.50	1.00 - 2.50
Play Ground	-	.50	.50	.25- .50	.25 - .50
Playfields	-	1.50	1.00	.75-1.00	.75 - 1.50
Community Park	-	2.00	-	.25- .50	.25 - 2.00
District Park	-	3.00	-	-	- 3.00
Churches	3.50	-	-	1.00-1.50	1.00 - 3.50

## Sources:

- No. 1. Urban Land Institute, "Community Builder's Handbook", The Institute, Washington: 1954.
- No. 2. Arthur B. Gallion and Simon Eisner. "The Urban Pattern", D. Van Nostrand Co., Inc., Toronto: 1963.
- No. 3. F. Stuart Chapin Jr., "Urban Land Use Planning", Harper and Row, New York: 1957.
- No. 4. The American Public Health Association, "Planning the Neighbourhood", Public Administration Service, Chicago: 1960.

TABLE 8

## MOBILE HOME PARK SURVEY - LOCATION ANALYSIS

Criterion	Commonly <sup>1</sup> Accepted Standards (mile)	Downs Village		Covered Wagon		Northgate	
		mile	rating	mile	rating	mile	rating
Metropolitan Core	-	9.00	n/a	4.00	n/a	6.00	n/a
Major Shopping	2.50	2.00	good	.25	good	3.60	fair
Convenient Shopping	.50	2.00	poor	.25	good	3.60	poor
Elementary School	.50	.75*	poor	.20	good	.90*	poor
Junior High School	1.25	2.00	fair	.75	good	-	poor
Senior High School	1.75	2.00	fair	.45	good	-	poor
Playground	.50	2.00	poor	.60	fair	-	poor
Playfield	1.00	2.00	fair	.60	good	-	poor
Community Park	1.00	-	poor	.60	good	-	poor
District Park	2.00	4.50	poor	1.20	good	2.00	good
Bus Stop	.25	.20	good	0	good	1.50	poor

1. The commonly accepted standards were construed by the averages of standards suggested by four different sources.

\* Indicates crossings of the major arterial roads.

Through this locational evaluation, it was found that Covered Wagon Trailer Park is the only one which satisfies the standards. Both Downs Village and Northgate Trailer Parks, located at the outskirts of built-up areas, do not satisfy the standards in many instances. They are located in isolation from the adjacent neighbourhood units; thus the residents of these parks have to suffer the inconveniences of travelling further distances for necessary community facilities and social activities. The most critical element is the locations of elementary schools. Children have to cross the major arterial roads to reach their school, which is dangerous and completely against the principles of residential planning.<sup>18</sup> The locations of the three mobile home parks, their respective community facilities and the patterns of urban development in the surrounding areas are shown on Plates 1, 2, 3, and 4.

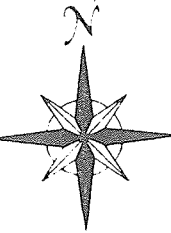
Most mobile home parks in Metropolitan Winnipeg have similar disadvantages. The causes of such poor locational choices are many; however, the most important factor is the illogical governmental regulations imposed upon the locations of mobile home parks. Detailed studies of governmental policies and regulations follow in the next Chapter.

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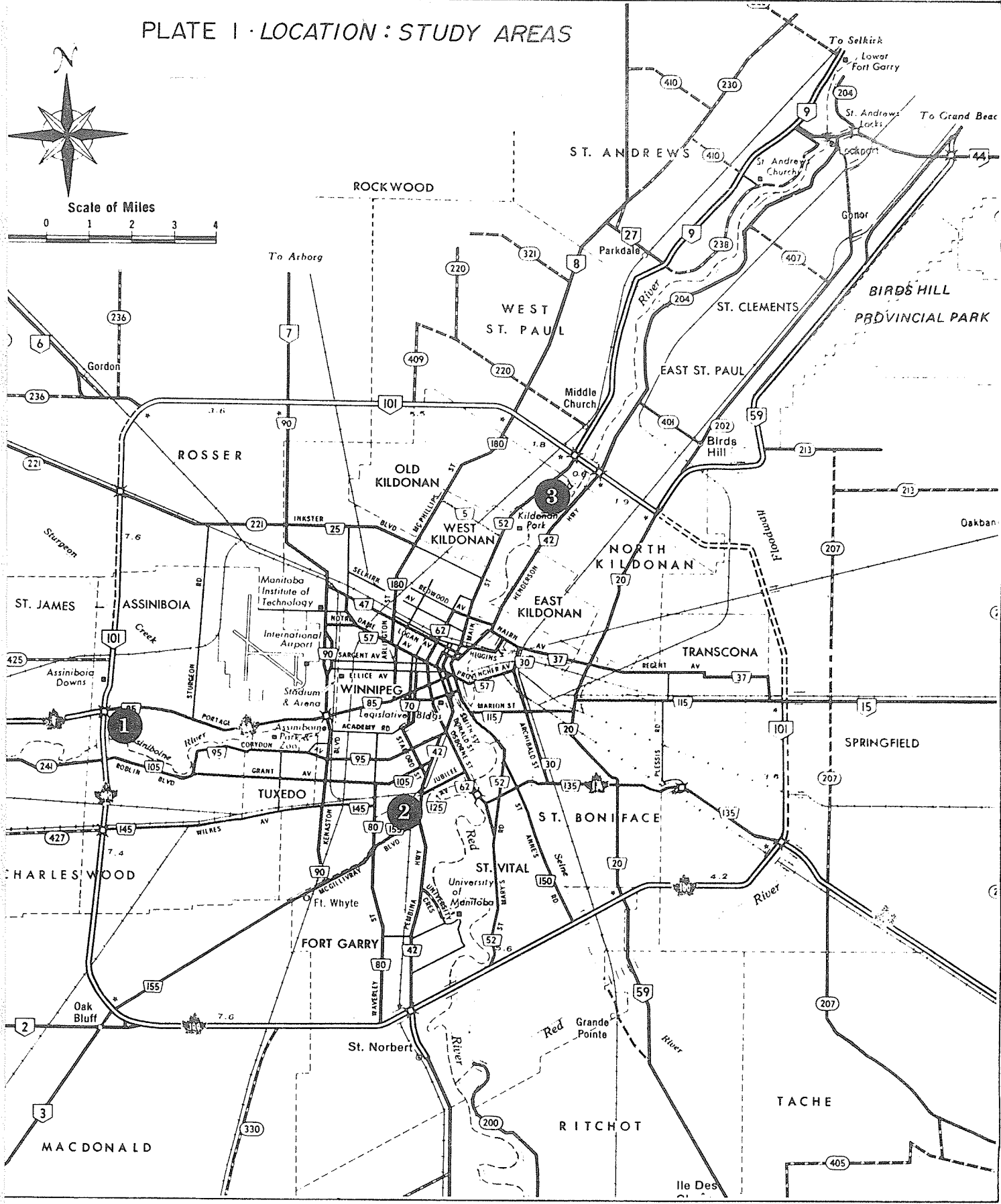
18. It is the basic residential planning principle that elementary school children should not cross any dangerous arterial roads to reach their school. Thus the elementary school is the fundamental element for the determination of the size and boundaries of neighbourhood units.

See: C. Perry, Housing for the Motor Age, or V. J. Kostka, Neighbourhood Planning, or Others.

# PLATE I - LOCATION : STUDY AREAS

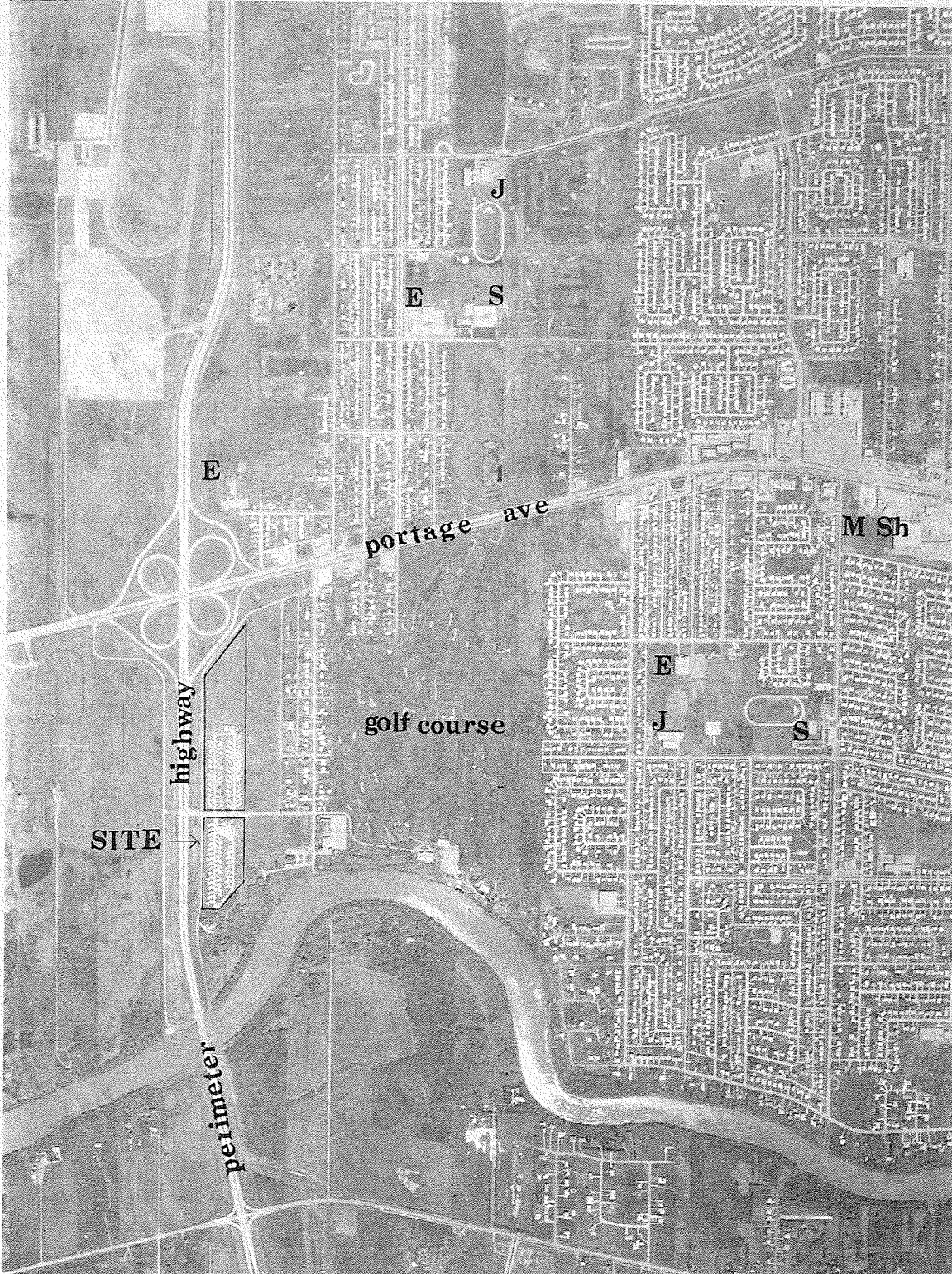


Scale of Miles



- 1 DOWNS VILLAGE TRAILER PARK
- 2 COVERED WAGON TRAILER PARK
- 3 NORTHGATE TRAILER PARK

PLATE 2 · LOCATION : DOWNS VILLAGE TRAILER PARK



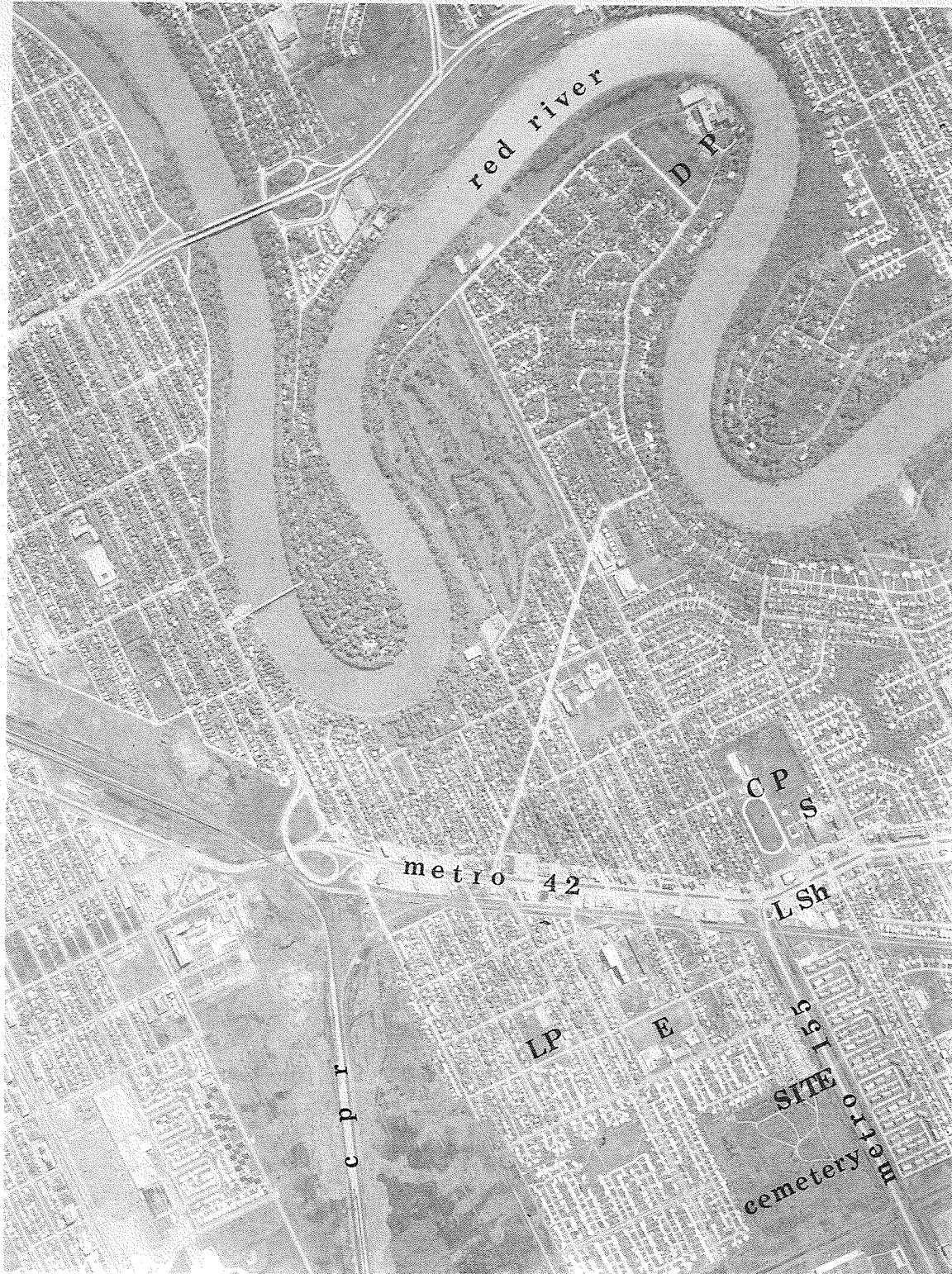
LEGEND

- E · ELEMENTARY SCHOOL
- J · JUNIOR HIGH SCHOOL
- S · SENIOR HIGH SCHOOL
- M Sh · MAJOR SHOPPING



SCALE 1"=1500'

PLATE 3 · LOCATION: COVERED WAGON TRAILER PARK



LEGEND

- |                        |                       |
|------------------------|-----------------------|
| E · ELEMENTARY SCHOOL  | L Sh · LOCAL SHOPPING |
| J · JUNIOR HIGH SCHOOL | LP · LOCAL PARK       |
| S · SENIOR HIGH SCHOOL | CP · COMMUNITY PARK   |
| L · LOCAL SHOPPING     | DP · DISTRICT PARK    |



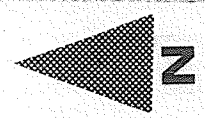
SCALE 1"=1500'

PLATE 4 · LOCATION : NORTHGATE TRAILER PARK



LEGEND

- E · ELEMENTARY SCHOOL
- DP · DISTRICT PARK



SCALE 1"=1500'

## B. Site Characteristics:

The site characteristics are considered to be the physical features of site, both natural and man made, which are of a physical or material nature and primarily identifiable by field inspections and observations.<sup>19</sup> These include such features as the boundary conditions, the size and shape of the site, soils, topography, vegetation, drainage courses, orientation and views.

The advantages or disadvantages of certain physical features on a site are dependent upon whether they could be sympathetically incorporated into the physical design, or whether they might become undesirable limitations to it. Thus the assessment of these features is not thoroughly possible until some form of conceptual design is formulated. Nevertheless, it is possible to construe a general evaluation system in the light of general principles and practices of residential land developments and some unique requirements for the mobile home park developments. The commonly accepted standards of the site requirements for a mobile home park are construed from various sources and the physical features of the three selected parks are evaluated as shown on Table 9.

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19. Cross, p. 26.



TABLE 9

## MOBILE HOME PARK SURVEY - SITE ANALYSIS

	Downs Village	Covered Wagon	Northgate	Commonly Accepted <sup>1</sup> Standards
<b>ADJACENT LAND USES</b>				
a. north	highway	residential	comm. & agri.	possibility to be developed as an integral part of the neighbourhood unit adjacent to it.
b. south	river	metro-route	agricultural	
c. east	agricultural	residential	agricultural	
d. west	highway	cemetery	metro-route	
<b>SIZE AND SHAPE</b>				
a. acreage	21.8 acres	5.4 acres	8.8 acres	25 acres
b. shape	diagonal	square	rectangular	square
c. dimensions	420' x 2200'	390' x 470'	360' x 1150'	n/a
<b>SOILS</b>				
a. bearing capacity	reasonable	reasonable	reasonable	adequate for structures reasonable surface drainage
b. surface drain	reasonable	reasonable	reasonable	
<b>NATURAL FEATURES</b>				
a. vegetation	bald (poor)	bald (poor)	bald (poor)	desirable to have some trees slope less than 7% n/a
b. topography	flat (fair)	flat (fair)	flat (fair)	
c. watercourse	to the east	none	none	
<b>ACCESS</b>				
	good	good	good	possible to have one direct access to arterial road.
<b>OTHERS</b>				
a. safety	reasonable	reasonable	reasonable	reasonable for the residential develop- ment
b. amenity	reasonable	good	reasonable	

1. The commonly accepted standards were construed from various sources and the writer's personal experiences.

Many detrimental features are found in the three sites and the most critical one is the undesirable shape and size of these parks. At Downs Village and Northgate Trailer Parks, the shapes of the sites, being narrow and elongated, restricted flexibility in layout pattern and resulted in typical 'fishbone' patterns. At Covered Wagon the size of the site is too small for an efficient layout pattern with the provision of necessary community facilities in the park. In general, it is believed that a mobile home park should be developed on a large enough site so that the mobile home park can function as a reasonably sized sub-neighbourhood, and it should be equipped with the self-contained public facilities of daily use.<sup>20</sup> Also the shape of the site should be such that it allows enough design flexibility to avoid monotonous layout patterns.<sup>21</sup>

There are other detrimental features, although not very critical ones, in those parks. At Downs Village, the site is bisected by a public road; thus the mobile home park is developed on two separate sites. This allows the undesirable through traffic into the park. Also the site is

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20. Frédéric H. Bair Jr., Local Regulation of Mobile Home Park, Travel Trailer Park and Related Facilities, Mobile Homes Manufacturers Association, Chicago: 1965, p. 35.

21. Design flexibility is more important for the mobile home park development than for the conventional residential development due to the monotonous appearances of mobile home units. For the conventional residential development see: Spence-Sales H. J., How to Subdivide, Community Planning Association of Canada, Ottawa: 1950

bounded by excessive frontages on arterial roads. At Northgate, the municipal water and sewer systems are not extended to the site; therefore private systems had to be installed. These two sites are too isolated from built-up areas and the amenities of surrounding areas are not harmonious with these park developments. Finally, none of the three sites has a reasonable cover of trees. Tree cover is the most important element for the amenity of the park.

Other elements such as topography, soils, drainage and accessibility are considered as reasonable at all three parks. Those detrimental elements of physical features identified from the three sites are considered to be the common features among the majority of existing mobile home parks in Metropolitan Winnipeg. Since the method by which a specific mobile home park site is selected from amongst a number of possible alternatives is normally one which is of concern primarily to the entrepreneurs,<sup>22</sup> those poor site selections are mainly due to the entrepreneurs' short-sighted business planning and the lack of comprehensive guidelines for the mobile home park developments available to them in the past.

#### C. Physical Design Standards:

The physical design standards of the mobile home park development are restricted here to mean the layout pattern of

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22. Cross, p. 54.

land use and circulation established by the distribution and relationship of the various blocks, lots and house groupings, together with their related public access. The design standards for the purpose of this study are mainly considered to be two-dimensional in nature, and are adequately represented by the layout plan.<sup>23</sup> Thus the evaluation becomes mainly a quantitative analysis.

The elements of evaluation are categorized into four groups: density; land use; pattern of house grouping, lots and blocks; street layouts; and the commonly accepted planning principles and standards are used as yardsticks for the evaluations. The density in terms of number of mobile home units per gross acre is the direct indication of the standard of the layout. The land use analysis indicates the efficiency of the design. Finally the patterns of house groupings and street layouts are directly related to the functional arrangement of land uses, the visual amenity, safety and convenience of the park. The detailed analysis of the major design elements of the three mobile home parks, together with commonly accepted standards are presented in Table 10. In addition, the layout patterns of these parks are shown on Plates 5, 6, and 7.

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23. Ibid., p. 27.

TABLE 10

## MOBILE HOME PARK SURVEY - DESIGN ANALYSIS

	Downs Village <sup>2</sup>	Covered Wagon	Northgate	Commonly Accepted <sup>1</sup> Standards
<b>DENSITY</b>				
a. no. of lots	155	115	74	50 (min.), 250 (ideal)
b. gross density	7.1	21.2	8.9	maximum 8 - 10
c. net density	15.5	27.5	15.0	maximum 12.5 (ideal)
<b>LAND USES (PERCENT)</b>				
a. residential	52.0	78.	60.3	60.0
b. street & parking	19.2	)	29.7	20.0
c. recreational	3.3	)	2.8	)
d. public facilities	1.4	) 22.	4.2	) 20.0
e. buffer, vacant & strip open space	24.4	)	3.0	)
<b>HOUSING GROUPING</b>				
a. typical lot shape	60° diagonal	diag. & rect.	60° diagonal	n/a
b. average lot size	2800 sq(40x70)	1600 sq(28x57)	2700 sq(40x73)	3200 sq(40x80) min.
c. average block length	570 feet	550 feet	450 feet	1000 feet max.
d. average block depth	120 feet	100 feet	126 feet	160 feet min.
<b>CIRCULATION SYSTEM</b>				
a. width of r.o.w.	40 feet	20 feet	30 feet	collector 50 feet minor 40 feet
b. width of road paving	24 feet	20 feet	24 feet	min. 24 feet
c. hierarchical system of roads	nil	nil	nil	separation between local & collector rds.,
d. access to arterial road	indirect (good) access	indirect (good) access	one direct access	min. one direct access (ideal)
e. access to public rd.	4	3	nil	not too many but min.1
f. parking spaces	1 each on lot plus com.parking	nil	1 each on lot plus com.spaces	1.25 times the no. of lots

1. The commonly accepted standards were construed by figures from various sources and the writer's personal experiences.

2. This includes the planned expansion too.

expansion

HIGHWAY

ROAD  
buffer

PUBLIC ROAD

PERIMETER

SERVICE

buffer

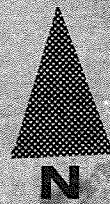
utility  
& office

tot  
ground

expansion

PLATE 5

DOWNS  
VILLAGE



1" : 150'

ELEMETARY SCHOOL

CEMETERY

utility building

BEAUMONT ST

PLATE 6

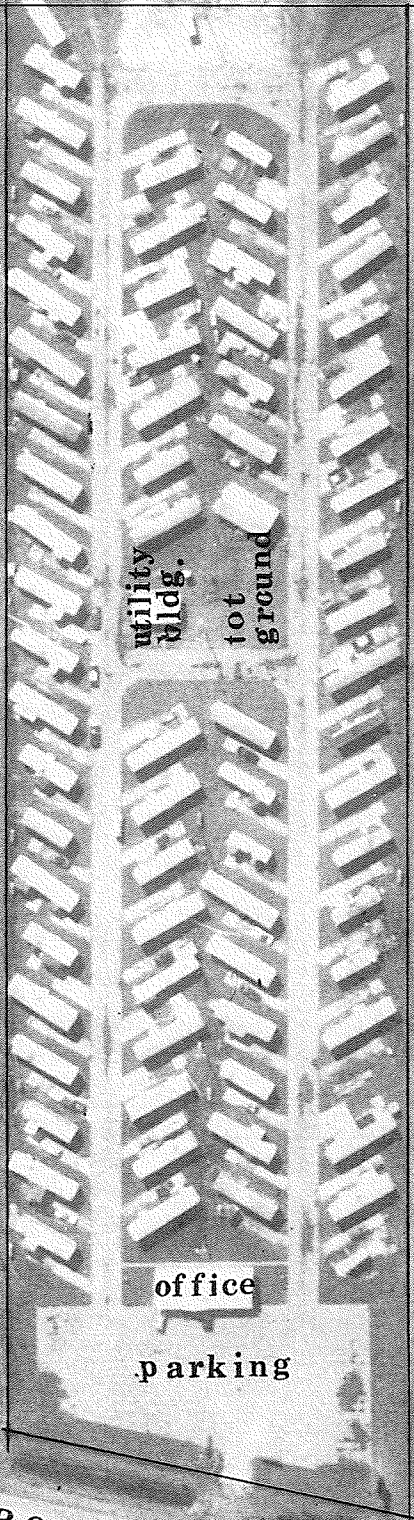
COVERED WAGON



1" : 150'

METRO ROUTE 155

LOW COST HOUSING



utility  
bldg.

tot  
ground

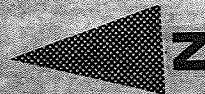
office

parking

MINIATURE  
GOLF COURSE

METRO  
ROUTE 52

P L A T E 7  
N O R T H G A T E



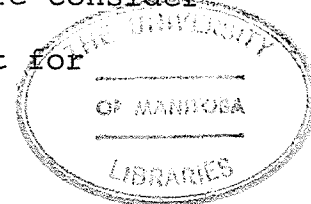
1" : 150



The evaluation reveals many deficiencies in the physical designs of these parks. All of these parks have the monotonous and unimaginative systems of house grouping on the typical grid patterns of streets and blocks. The size, shape and arrangement of lots are basically those of the typical travel trailer park layouts, and virtually no consideration is given to the variation of street facade or the functional relationships between the mobile home units and their lots. As a result, the visual effect is very similar to that of parking lots and the individual family is deprived of privacy. These deficiencies are partly due to the unimaginative approaches to design and partly due to the design limitations imposed by the sizes and shapes of these sites.

Another deficiency is the lack of recreational and other public facilities. Land areas dedicated for these purposes are too small and inadequate. For example there are no common storage facilities in all these parks. As in the case of apartment units, the mobile home is small in size and does not have basement space; therefore it requires common storage space to be provided by the park operators. Recreational facilities, particularly for the preschool children, are not provided for adequately. There are no indoor recreational spaces.

Other aspects of layout design, such as access, the circulation system and the overall gross densities are considered to be generally satisfactory conditions, except for



Covered Wagon Trailer Park, where a very critical condition exists.

Despite the reasonably good location and physical features of the site, Covered Wagon Trailer Park has the most critical physical conditions, mainly due to its extremely high density. The gross density of 21.2 units per acre creates an absolutely intolerable situation and the site is virtually packed with mobile home units with very little space remaining for streets. Streets are narrow, yet on-street parking is allowed since no off-street parking exists. One dead end street does not even have a turning bay. Needless to say there is no space dedicated to recreational use. The condition is not only unsatisfactory but dangerous for public safety and health.

The situations created by improper layout designs could have been avoided if both the municipal governments and entrepreneurs had taken more positive approaches to cope with the implications of poorly designed mobile home parks. The municipal governments are responsible for the controls and guidelines for the developments to safeguard public health, safety, amenity and the orderly development of urban land uses. The entrepreneurs should have a sense of social obligation as well as a profit motive; they should not forget that good housing enterprises are those which do consider social values in their planning.

#### D. Development Standards:

Development standards refer to the physical and visual qualities of the development. In order to simplify the process of evaluation, focus is placed on only those structures and facilities having physical manifestation at or above grade. A detailed engineering and economic analysis of structures and facilities is not included in the study since the main objective is a qualitative evaluation of the development and the physical amenity. For convenience, the elements of evaluation are grouped into five categories and existing conditions of the three selected parks are compared with commonly accepted principles and standards (see: Table 11).

The development standards of these three parks generally correspond with their design standards; and the worst condition occurs at Covered Wagon Trailer Park. Although conditions in Downs Village and Northgate Trailer Parks are not so critical yet, there are many deficiencies there, too.

The most problematic element is the poor landscaping development. Since mobile homes are products of assembly line manufacturing, the variations among their models are rather limited in scope; therefore the landscaping is the most important element for the visual variations and quality of amenity. However, potential sites covered with a reasonable amount of trees are not easy to find in the Prairie Region

TABLE 11

## MOBILE HOME PARK SURVEY - DEVELOPMENT ANALYSIS

	Downs Village	Covered Wagon	Northgate	Commonly Accepted <sup>1</sup> Standards
<b>LANDSCAPE</b>				
a. individual lot	nil	nil	nil	min. 2 trees over 6' per a lot
b. streets	nil	nil	nil	reasonable amount
c. public open space	nil	no open space	nil	reasonable amount
d. buffer strip	some to hwy. & river	some to south & west-cemetery	nil	adequate amount for visual screen
<b>STREET FACILITIES</b>				
a. paving	asphalt	asphalt	asphalt	asphalt or concrete
b. curbs & gutter	nil	nil	nil	min. one side of street
c. side walks or path	nil	nil	nil	min. one side of street or separate system
d. street lighting	nil	nil	nil	min. 0.1 ft. candle aver. 0.6 ft. candle
e. parking stall for household for guest	1 each on lot on street-fair	nil nil	1 each on lot on comm. space - adequate	min. 1 stall per lot min. 1 stall per 4 lots
f. requirements for snow removal	adequate	very poor	adequate	provision for machine movement and dumping
<b>PUBLIC FACILITIES</b>				
a. park or tot ground	not developed	not dedicated	not developed	100 sq.x no. of units proper development
b. indoor recrea- tional	nil	nil	nil	reasonable for the common gathering and children's use in winter
c. indoor storage	nil	nil	nil	90 cf. per unit
d. washer & dryer	adequate	adequate	adequate	reasonable numbers and locations
e. garbage contain- ers	nil	nil	nil	1 each in 200' range

TABLE 11 Continued

	Downs Village	Covered Wagon	Northgate	Commonly Accepted Standards
<b>UTILITIES</b>				
a. water & sewers	pipe lines	pipe lines	pipe lines	pipe lines
b. power & tele- phone	underground	overhead	overhead	underground
c. gas	nil	nil	nil	desirable
d. fire hydrant	nil	nil	nil	same as town housing
<b>INDIVIDUAL LOTS &amp; UNITS</b>				
a. aver. size of unit	standards	smaller	standards	12' x 60'
b. aver. distance between units	over 15 feet	less than 10 feet	over 15 feet	10 - 15 and over
c. patio	not developed	no space	not developed	180 sq. ft. per unit with fence or tree screens
d. skirting	no skirting or poor ones	no skirting or poor ones	no skirting or poor ones	same material as the unit's exterior
e. attached structures	poor to fair quality	poor quality	poor to fair quality	same quality as the unit itself.

1. The commonly accepted standards were construed by figures from various sources and the writer's personal experiences.

and landscaping is costly. Therefore, systematic and careful planning and implementation of a landscaping programme are required. Mobile home parks should, however, be screened by trees or other substitutes, and an acceptable beautification programme should be undertaken.

Another element which deteriorates the quality of development is the poor and older models of mobile home units themselves to which additional structures such as porches or storage spaces are attached. In many cases these accessory structures are subject to fire and their visual effects are very detrimental. In addition, none of the outdoor privacy areas are enclosed either by fences or trees, and the majority of units do not have proper skirts to hide the undesirable appearance of their wheels. These indicate that the entrepreneurs are not exercising adequate controls for the protection of public safety and amenity in the parks.

The inadequate development of public facilities and open spaces is another element which degrades the quality of these parks. The construction standards of the public facilities are poor and many designated open spaces are just wasted. The lack of common indoor storage space, and the lack of street lighting and side walks are additional detrimental elements.

E. Population Characteristics and Residents' Attitudes:

The desirable level of the environmental quality for a mobile home park is directly or indirectly related with the characteristics of the residents and their attitudes. Unless these aspects are thoroughly investigated it is not possible to determine the optimum level of environmental quality which will both satisfy the residents and be within their means, and at the same time meet the social standards of the district in terms of safety, economy, convenience and amenity. For these reasons, an attempt has been made to evaluate the socio-economic characteristics and attitudes of the residents; however, due to limitations in the readily available data, the study is restricted to two aspects only: the population composition, and the desires of residents and their willingness to pay for certain kinds of additional facilities in the park. These are shown on Tables 12 and 13 respectively.

Since the evaluation is limited in scope, any concrete conclusion cannot be derived; however, some reliable assumptions can be made from the evaluation. These are as follows:

The mobile home households are very similar to suburban apartment households. Family size is small and there are smaller numbers of children, particularly school age, and retired persons. Based upon the study carried out at Edmonton, it is postulated that mobile home household heads may be

predominantly younger age groups, between the ages of 21 and 44.<sup>24</sup>

TABLE 12

MOBILE HOME PARK SURVEY - POPULATION COMPOSITIONS

Age Group	Downs Village		Covered Wagon		Northgate		Total	
	No.	%	No.	%	No.	%	No.	%
under 5	57	19.4	49	16.0	35	19.0	141	18.0
6 - 13	30	10.2	50	16.3	19	10.3	99	12.3
14 - 17	14	4.8	7	2.3	2	1.1	23	2.9
18 - 20	8	2.7	15	4.9	9	4.9	32	4.1
21 - 64	182	62.2	178	57.9	119	64.7	478	61.1
65 over	2	0.7	8	2.6	0	0	10	1.3
Total	293	100.0	307	100.0	184	100.0	784	100.0
No. of Family	100		115		74		289	
Average Persons Per Unit		2.9		2.7		2.5		2.7

Source: "Mobile Homes in Metropolitan Winnipeg and Additional Zone"

24. City of Edmonton, Mobile Homes in Urban Environment, Edmonton: 1968, Table 4, P. 19.



TABLE 13

## MOBILE HOME PARK SURVEY

OPINIONS AND PREFERENCES OF THE RESIDENTS<sup>1</sup>

1. Location: Proximity to the community facilities such as park, school and shopping	Yes	90.3%
	No	3.2
	No ans.	6.5
2. Shape of the lot	Rectangle	84.0
	Angle	9.5
	No ans.	6.5
3. Size of the lot	(40-50) x (80-100)	29.0
	50 x 100	45.5
	(50-60) x 100	9.5
	No ans.	16.0
4. Additional structures to be added to the mobile home unit	Porch	81.0
	Carport	42.0
	Garage	13.0
5. Need for the paved mobile home pad	Yes	77.5
	No	16.0
	No ans.	6.5
6. Desired type of heating	Gas	55.0
	Electric	9.5
	Oil	32.3
	No ans.	3.2
7. Willingness to pay a small reasonable cost for the underground power distribution	Yes	93.6
	No	3.2
	No ans.	3.2
8. Willingness to pay \$5.00 per month for the cablevision	Yes	29.0
	No	61.5
	No ans.	9.5
9. Management of the private open spaces	Manager	48.4
	Resident	48.4
	No ans.	3.2
10. Willingness to pay \$25.00 per year as a club membership fee for facilities such as outdoor swimming pool, indoor recreational etc.	Yes	96.8
	No	3.2

1. The original field data were collected by Six Wheels Ltd., Winnipeg, in 1969. Data were analysed and tabulated for the purpose of this thesis.

Mobile home residents appear to desire physical environment similar to that desired by conventional dwelling residents. The majority of people surveyed expressed their desire for and willingness to pay for such facilities and conditions as: locational preference within built-up areas, the size and shape of conventional single residential lots for their mobile homes, and better recreational facilities and amenity. Generally speaking the level of environmental quality desired by the mobile home residents appears to be very similar to that desired by middle or low income families.

## CHAPTER FOUR

### GOVERNMENTAL POLICIES, REGULATIONS AND STANDARDS

The problems identified from the existing mobile home parks in Metropolitan Winnipeg are closely associated with the governmental policies, regulations and standards imposed upon the developments. The mobile home is a still new form of housing in Canada and no level of government yet has positive and constructive policies toward the mobile home park development in the urban areas. Instead, the governmental controls and regulations are neither comprehensive nor logical; in many aspects, they are piece-meal and negative in nature. As a result, the governmental regulations and policies have not been able to provide incentive for the development of potentially good quality mobile home parks or for the improvement of older parks.

It has only been in recent years that governments have become aware of the potential role of the mobile home as a decent form of housing and the implications of poor mobile home parks in the major urban centres. At the federal level, the first policy recommendation concerning the mobile home and its park was presented in 1969 by The Task Force on Housing and Urban Development. At the municipal level, the first comprehensive planning study and recommendations to improve the present regulations on mobile home park development in Metropolitan Winnipeg were presented in 1970 by the

Planning Division of the Metropolitan Corporation. However, those recommendations have not yet been adopted as policies or regulations.

Governmental policies and regulations can be considered in two separate areas. One area is the direct controls which governments exercise by the enforcement of zoning by-laws, licensing regulations, and the like. The other one is the governmental policies which indirectly influence the developments, such as the provision of technical assistance, guidance, public information services, and the provision of mortgage funds. In this chapter, an attempt is made to evaluate the implications of present governmental policies and regulations for the physical quality of the mobile home park, and the prospects of future changes in these policies and regulations.

#### A. Direct Controls:

Under the provision of the British North America Act, control over an urban land development is the responsibility of the provincial governments,<sup>25</sup> and in most instances this responsibility as well as discretionary power is delegated to local governments.<sup>26</sup> In Metropolitan Winnipeg, where

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25. Canada, The British North America Act, Revised Statutes of Canada 1952, Vol. VI, No. 5, Sec. 92.

26. Manitoba, The Municipal Act.

local governments are operated by a two tier system, the mobile home park development is directly controlled by both the Metropolitan Corporation and the local municipalities. The Metropolitan Corporation has jurisdiction over town planning schemes and zoning by-laws, while local municipalities enforce the licensing regulations for mobile home park operations. Hence the primary concern of the Metropolitan Corporation is for the orderly use of land in the whole metropolitan region, while that of local municipalities is for the protection of local interests, particularly as they are affected by the revenues from and expenses of a development.

i) Local Governments;

The local licensing regulations vary in different municipalities. In some municipalities, the mobile home park development is prohibited by the by-laws. In some others, they do not have a by-law and any development proposal is evaluated by the council; however, the general attitudes of council members are mostly against the mobile home park development. Some others allow the mobile home park development, but their regulations are not uniform (see: Table 14).

Local regulations and policies are not necessarily based upon a comprehensive and positive approach. Those which do not allow and those which are reluctant to allow the mobile home park development do rationalize their view points on two major accounts. The one is that the mobile home

TABLE 14

## MOBILE HOME ZONING AND LICENSING IN METRO WINNIPEG

Municipalities	District Permitted	Requirements	District Conditional	Requirements	Licensing and Fee
Assiniboia	C3 (T.P.S.)	Min. site 2 acres Site width 400'	C2 (T.P.S.)	Min. Lot 1000 sf Min. Site 60000 sf Frontage on P.T.H.	\$6 u/m
Brooklands	C2	-	-	-	-
Charleswood	-	-	Any District	Frontage on P.T.H.	-
E. Kildonan	-	-	A1, C2, M1	Min. Lot 1000 sf	-
Fort Garry	-	-	Any District	Frontage on P.T.H.	\$10 u/y
N. Kildonan	C2	-	-	-	\$ 5 s/m
Old Kildonan	-	-	Any District	-	\$ 8 s/m
St. Boniface	C2	-	-	-	\$ 2 s/y
St. James	-	-	C	-	\$ 6 u/m
St. Vital	C2	-	A1, RA	Min. Lot 1000 sf	\$10 u/m
Winnipeg	C2, C3, CM and M1	-	-	-	-

Notes: 1) u/m; unit per month, u/y; unit per year, s/m; space per month, s/y; space per year.

2) Transcona, Tuxedo and West Kildonan do not permit mobile home parks.

Source: Mobile Homes in Metropolitan Winnipeg and the Additional Zone.

households do not pay their fair share of local tax, particularly school tax,<sup>27</sup> and the other one is that mobile home parks are nuisance factors to adjacent areas and degrade the quality of living environment in their localities. These points are often valid and legitimate since the present municipal tax system on the mobile home park is not appropriate, and since the majority of existing mobile home parks are sub-standard quality developments. If the local governments had taken more positive approaches to overcome those aspects rather than discourage the mobile home park development, those problems could have been easily resolved.

Housing is an important concern of local governments too, and it is a proven fact that the mobile home is a decent form of housing for certain segments of our population. Therefore it is a moral obligation that local government should take positive approaches to tackle the implications of mobile home park development. For example, it should revise the municipal tax system where it has the jurisdiction, if necessary.<sup>28</sup> By the same token, local government should encourage, directly or indirectly, entrepreneurs to develop good quality parks which are more an attraction than a nuisance to a locality, rather than discourage all mobile home park development.

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27. ASPO, The Changing Function of Trailer Park, p. 13.

28. A case study carried out in conjunction with a proposed mobile home park development in St. Vital concluded that the proposed development would not be any financial burden to the local government. Source: A private study prepared by Underwood McLellan and Associates Limited, Winnipeg, 1971.

ii) Metropolitan Government;

The Metropolitan Corporation of Greater Winnipeg controls the locations and standards of development of mobile home parks under the provisions of town planning schemes, zoning by-laws and the additional conditions set out by the Council in 1965. The zoning by-laws regulate the development standards in the districts where the mobile home parks are permitted outright and the conditions set out by the Council regulate those in the areas where their developments are conditional. 'This system of control is considered as a preferable one than the control system under a separate regulation by districts - under the police power - of the height, bulk, and utilization of structures; the uses to which land and water may be put; and the density of population. Thus zoning is one, and only one, of the tools available for implementing the community's comprehensive plan and an instrument for carrying out declared public policy.'<sup>29</sup>

However, there are major deficiencies in two areas. The locational requirements are not logical and the minimum standards of development specified in these regulations are not high enough for the recent models of mobile homes. Under the present requirements, mobile home parks are considered to be synonymous with travel trailer parks.

29. Ernest R. Bartley and Frederic H. Bair Jr., Mobile Home Park and Comprehensive Planning, Public Administration Clearing Service, University of Florida, Gainesville: 1960, p. 72.



The present zoning restricts the location of mobile home parks exclusively to commercial and industrial districts. Among 11 municipalities in Metropolitan Winnipeg, three municipalities, namely Transcona, Tuxedo and West Kildonan, do not allow the mobile home in any district, and in other municipalities, they are permitted outright only in commercial and/or industrial districts. Although in some cases the mobile home park is permitted in other zoning districts, in no case are they allowed in residential districts.<sup>30</sup>

The segregation of mobile home parks from conventional residential districts is mainly due to the unclear distinction between the mobile home park and the travel trailer park, and the reluctance to tackle the planning implications of mobile home parks. By definition, the mobile home is a single family dwelling and the mobile home park is a residential land use. Also the people in a mobile home park deserve to have the same privileges as those in conventional housing, with regard to public safety, convenience and amenity in their place of living. The implication of such a locational restriction is that the mobile home park, a residential use, would have to share the same environment as commercial and industrial uses. The land uses of the mobile home park and commercial or industrial areas are not compatible and the inevitable result is blight to the park and its surrounding areas. This is a

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30. Metropolitan Corporation of Greater Winnipeg, pp. 13-17.

usual situation in most urban centres in Western Canada.

A report described a situation in Edmonton as follows:

"People in mobile homes are therefore forced to share an environment which is aesthetically unpleasant, devoid of community facilities and which contains a high vehicular traffic with its resultant dangers and noise. This is completely the antithesis of the stated objectives and principles for residential development as quoted in the proposed General Plan, which are ..... socially integrated communities, within which may be enjoyed the highest standards of safety, health, convenience and privacy, and ..... to prevent the intrusion of incompatible uses which would adversely affect the health and amenities of the district". 31

The locational problems identified from the existing mobile home parks in Metropolitan Winnipeg are mainly due to this restriction by governmental regulations. To improve the situation, the regulations should be revised so that the mobile home parks can be developed harmoniously with other residential developments and form integral parts of their surrounding neighbourhood units. The present locational restrictions are only appropriate for travel trailer parks.

The other major deficiency which may be more detrimental than the locational restrictions is the inadequate minimum standards specified in the regulations. The elements of the standards which are most inadequate are: the minimum size of the park in terms of acreage and number of lots; the minimum size and shape of lots; the maximum gross density; and

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31. City of Edmonton, pp. 11-12.

the requirements for open space, public facilities, particularly landscaping. The present standards are, again, only appropriate for travel trailer parks. Revision to a higher level of standards is an urgent necessity since minimum requirements are often considered as maximum requirements in reality.

iii) Provincial Government;

The provincial government exercises some direct controls over the mobile home park developments in Metropolitan Winnipeg. Essentially, provincial control is primarily concerned with health and safety requirements.<sup>32</sup> In most cases, the requirements of Metropolitan or local governments surpass the provincial requirements. Therefore, in reality, the provincial regulations are not considered to be important.

B. Governmental Policies:

i) Federal Government;

The first official document showing the federal government's concern for mobile homes was the Task Force Report on Housing and Urban Development in 1969. The report referred to the mobile home and its market trend and made recommendations for changes in governmental policies as follows:

"The so-called mobile home is somewhat of a misnomer in that few of these mobile houses are, in practice, ever moved during their usable lifespan. These are not house trailers, but rather relatively small, pre-fabricated housing units generally installed without foundations in clusters or parks .....

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32. Department of Urban Development and Municipal Affairs, Government of Manitoba, Guidelines for Locating and Designing Mobile Home Parks, The Department, Winnipeg: March 1970, p. 15.

While the aesthetically-minded might cringe at the design and pattern of individual units and overall parks, there seems no question that mobile homes are becoming an increasing feature of the North American housing market .....

There does then seem to be a growing market for mobile homes in Canada. That being so and in line with its belief that Canadians should enjoy maximum freedom of choice in housing styles, the Task Force believes mobile homes should be given recognition within the Canadian housing market. One step in this direction would be to allow loans on such dwellings to be insured under the National Housing Act. Another - and one which might well bring positive improvements in an aesthetic sense - would be to amend municipal by-laws, where necessary, to permit the orderly development of mobile home parks within the community. This will necessitate, among other things, changes in current zoning and assessment regulations .....

The task Force thus recommends that: Serious consideration be given to amend the National Housing Act and, where necessary, municipal by-laws to accord so-called 'mobile' homes their proper place within the Canadian housing market." 33

Although all the recommendations made in the report were not accepted as housing policies, recent federal housing policies have been changed in accordance with some of these recommendations. In conjunction with the mobile home, the Central Mortgage and Housing Corporation is now prepared to provide mortgage funds for some specific mobile home park developments under the provision of the present National Housing Act. Under Sections 35A and 35C of the Act, the Central Mortgage and Housing Corporation may finance the funds to the provincial or municipal governments if the

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33. Government of Canada, Report of the Federal Task Force on Housing and Urban Development, Queen's Printer, Ottawa: 1969, pp. 49-50.

mobile homes utilized in the park will meet the requirements of the National Building Code.<sup>34</sup>

ii) Provincial Government;

This change in federal policy has been well taken by the province and at the present time, the Manitoba Housing and Renewal Corporation, the provincial agency for housing, is seriously considering the development of a pioneer project in Metropolitan Winnipeg. The objectives of the project are to experiment in the low-cost housing market with mobile homes and to demonstrate to the public what a well planned mobile home park can offer to its residents.<sup>35</sup>

iii) Metropolitan Government;

At the municipal level, the major urban centres in the Prairie region, namely Winnipeg, Edmonton and Calgary, had recently completed comprehensive studies about the planning implications of mobile home parks in urban areas. All of the studies made very similar recommendations: changes in zoning by-laws and municipal policies toward mobile home park development. At the present time, the Council of the Metropolitan Corporation of Greater Winnipeg is reviewing

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34. Correspondence between the C.M.H.C. Winnipeg office and the City of Portage la Prairie, and the Town of Neepawa, November, 1970.

35. Personal correspondence with Mr. Neil Osler, the Manager, Manitoba Housing and Renewal Corporation, November 1970.

the proposed changes in the zoning by-law. The main objectives of the proposal are to allow mobile home parks in the residential districts and to up-grade some elements of the mobile home park development.<sup>36</sup> The indications are that the approaches of all levels of government are becoming more positive, and that some of the detrimental implications of governmental regulations and policies in the past are gradually being overcome.

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36. Metropolitan Corporation of Greater Winnipeg, (Proposed)  
By-Law No. 1790.

## CHAPTER FIVE

### AN APPROACH TO THE PHYSICAL DESIGN

Many problems of existing mobile home parks have been attributed to the poor site selections and poorly designed physical layouts in the past. Because of the anticipated demand for mobile homes and mobile home parks in terms of both number and quality, and because of the bad effects poor quality mobile home parks have on urban environments, comprehensive and creative approaches to the layout of future mobile home parks are urgently required. The formulation of new approaches which can tackle many of the present problems of mobile home parks is an important task for the urban planner, since the role of mobile homes in future housing will be greatly dependent upon the successful and efficient development of mobile home parks. Bearing this task in mind, an attempt is made to formulate a fundamental approach to the physical layout of the mobile home park.

Since the mobile home park is a bona fide residential land use, the basic principles and practices for the conventional residential land development are equally applicable to the mobile home park development. However, the mobile home park has many of its own unique characteristics and requirements, and as a result, approaches to the design of mobile home parks are substantially different in detail from approaches to conventional residential land development. The clearest differences in approach are found in the

criteria for site selection and the principles of layout design.

A. Criteria for Site Selection:

i. Location.

The most important consideration for the selection of a mobile home park site is that the park should be an integral part of the neighbourhood unit. The residents of the park require the same quality of environment and facilities which are as pleasant, safe and convenient, as do residents of conventional areas. Many of the problems in existing parks are directly or indirectly caused by the systematic exclusion of the park from residential districts, with the result that it is located in isolation or in commercial or industrial districts, where the land uses are mutually incompatible. As a result, the mobile home park residents have to suffer from many disadvantages such as the inconveniences of travelling for longer distances for the necessary community facilities, the social isolation, and the undesirable physical environments in the area. To overcome these problems, the mobile home park should be located in residential districts and it should be developed to function as an integral part of the neighbourhood unit.

However, since the appearance of the mobile homes and the pattern of mobile home park layouts are so different from other residential developments, the mobile home parks



are not physically compatible with other residential developments. Thus the park should be located and designed in such a way that the conflict is minimized, with the park still being harmoniously integrated with the surrounding areas. The locations which satisfy these contradictory requirements are usually found in the transitional zone of land uses. For example, a parcel of land located in the area between residential and commercial, industrial or arterial routes could be harmoniously developed for the mobile home park; it will minimize the land use conflict from a potentially worse one, the conflict between residential and non-residential, to the less critical conflict between residential and mobile home park.

Another element to be considered is the requirement for direct access from an arterial road. Since mobile homes have to be transported from factories or other locations, and may have at times to be moved to other areas, the park should have at least one direct access from an arterial road so that the mobile home, with its excessive bulk, can avoid the local streets. The movement of mobile homes through local streets will interfere with local residential traffic and will reduce the tranquility of the residential environment. In addition to the access to an arterial road, it also requires one convenient access road toward the neighbourhood unit, so that the physical distance between the park and surrounding residential areas can be minimized.

Finally, since mobile homes are basically low-cost dwellings, the park should be located on relatively low priced land. Higher priced land will force the development into higher density and the obvious result will be poor quality. Generally speaking, urban land value is proportionately related to the accessibility of the site from and to the central business district. In the case of residential land value, specifically, some other elements such as the social prestige of residential districts and the amenity of the area also affect land value. The mobile home park will fit more harmoniously into low or middle class residential districts than into prestige districts, and suburban locations where the land is relatively cheap and more desirable to the mobile home park in terms of its social implications.

In most urban centres, there are not many sites which satisfy all these requirements. As a result, ideal locations for the mobile home park should be created rather than be found; the mobile home parks deserve special consideration by suburban developers. If a park site is planned together with other residential development, then the suburban neighbourhood unit can be developed very harmoniously with the mobile home parks within the planned neighbourhood unit.

In addition, the mobile home park could be developed as a temporary land use in built-up areas. In built-up

areas, there are always large tracts of land reserved for future development such as expressways and their interchanges. Or in newly developed residential districts, some areas are reserved for future apartment sites or shopping centres. Those sites are often satisfactory for the mobile home park's locational requirements. Therefore, if the cost and profit can justify temporary use for the mobile home park, some of these undeveloped areas will be suitable for it.

ii. Size, Shape, and Boundaries of the Site:

The size, shape and the boundary conditions are very important elements for the site selection, since they greatly influence the quality and layout design of the park.

The size of a park is closely related to the level of environmental quality. The mobile home park is a profit oriented business; therefore the high quality amenity and facilities in the park at a compatible range of monthly rents is only possible with a large scale development. If the park is too small, the result will be either lower quality environment or higher monthly rates, since the efficiency and utilization of public facilities and the operation of the park will be proportionately lower in small scale developments.

Experience in Canada indicates that parks over 200 units can provide well developed indoor and outdoor recreational

facilities with very reasonable additional per capita cost,<sup>37</sup> and parks with over 500 units can be developed with such facilities as outdoor swimming pools and small convenience shopping facilities.<sup>38</sup> The bigger the size the better the quality since the bigger parks can provide facilities and service of higher order.

On the other hand, the park should not be too big for sociological reasons. It is a common belief that a large number of people from one kind of social group within limited physical boundaries is not desirable because there is danger of hostile social interaction between that group and other groups. Yet too small a group is not desirable either because the group will be socially isolated from the main stream of neighbourhood activities and it will lose group identity. It is a common planning principle that a neighbourhood should be composed of heterogeneous social elements which can mix harmoniously and derive mutual benefit.

The optimum size should be determined by these two criteria; it is considered that a mobile home park of 200 - 300 units is an ideal size. Thus optimum acreage of the

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37. Underwood McLellan and Associates Limited, Mobile Home Communities: A Total Development Concept. The Company, Calgary: 1970.

38. Underwood McLellan and Associates Limited and Floranda Engineering Limited, The Concept Plan: Crescent Estates Mobile Home City. An engineering and planning feasibility study for Orlando Florida Investment Inc., Edmonton: 1970.

site can be calculated when the desired density is determined. Based upon 8 units per gross acre density, which is reasonable, the optimum acreage is considered to be 25 - 40 acres.

The shape of the site is a more important element to the development pattern of the mobile home park than to other residential developments because layout variation is a far more important element. Thus the shape of the property should allow enough design flexibility for an imaginative and creative layout pattern for the mobile home park. Generally speaking, sites with more square shapes are preferred to sites with long narrow strips, and some variations on the property lines may prove beneficial for an interesting layout pattern. Also a shorter perimeter of property boundary is more economical for buffering the mobile home park from adjoining land uses.

In addition, the boundary conditions are closely related to the shape of the site. For example, an excessive site frontage on incompatible land uses is not desirable whereas such frontages toward the public open space or other amenity areas are highly beneficial. Also a site near highrise structures or higher ground levels should be avoided as much as possible since the birdseye view of the mobile home park is not a pleasing one, unless the park is heavily covered with tall trees.

### iii. Physical Features on Site:

Good site planning incorporates the existing physical features harmoniously into the development and fulfils the intended function of development in the most effective way. To achieve this objective, the relative importance of the different physical features on a site should be identified and their implications for the design be evaluated. There are three major elements which influence the mobile home park layout.

Trees and shrubs are important features for the attractive mobile home park and they can be easily incorporated into a layout design. Mobile homes are factory manufactured structures and they stand on site without foundations. Thus no extensive field construction work is necessary for the mobile home park. The engineering requirements for road construction are not high because it is just a private road; thus trees and other features on the site would not be disturbed by road construction if flexible curves are introduced. In addition variations of mobile home orientation and roadways are desirable in order to avoid a rigid and monotonous layout pattern. Therefore trees and shrubs on a site can be more attractively incorporated into the layout design in the mobile home park than is the case in any other form of residential developments.

The bearing capacity of the soils and ground water table are not as important features for the mobile home

site as they are for other land development. Mobile homes are light structures and do not require normal basement structures. As in the case of the trees, the roads are not built for high intensity use and will be cared for by the operator better than are other public roads. The mobile home park in an urban area should be serviced by piped water and sewer systems; thus the bearing capacity and the ground water table are not very important considerations.

Mobile homes do not fit into rugged terrain; therefore it is more desirable to select a smooth terrain, particularly when the overall density is high. This is due to the long dimension of the mobile home unit and the limited amount of field construction work involved in mobile home park development. On the other hand, some topographic variation is sometimes a useful feature for the relatively large scale park or the low density park if the slope is not extensive. In any event, terrain is not an important consideration in the Prairie Region where most of the land is flat.

In terms of the physical features of a site, the old flood plain can be a suitable site for the mobile home park if the plain is protected from the danger of flooding and it satisfies the locational requirements described previously.

The locational requirements, the size, shape and boundary conditions, and the physical features of the site are the most important elements to be considered for the selection of a mobile home park site. Other determinants for the site selection are of lesser importance and are basically the same as those for conventional residential land developments.

#### B. Principles of the Physical Layout Design:

Once the site is selected, then the specific layout pattern of the mobile homes, together with the land uses and a circulation system, become the major concerns. The layout pattern should incorporate the physical features of the site harmoniously and advantageously, and it should provide satisfactory results in terms of amenity and the efficient and organic arrangement of land uses, circulation system and the cost of construction.

The principles of the physical layout of a mobile home park are similar to those of any other type of site planning, particularly residential land subdivisions. However, there are many important elements which are unique to the mobile home park layout or which deserve more serious consideration. In this study, principles and approaches to deal with these unique elements are examined.

The principles of physical layout of a mobile home park can be considered under several major divisions: house



grouping; land use pattern; circulation system; and the distribution of utilities and public facilities. Such divisions are rather arbitrary ones since all the elements are mutually inclusive and the design process requires the simultaneous consideration of a number of separate elements. Revision on one aspect of the layout will be reflected by complementary modifications to the other components of the total design.<sup>39</sup> Nevertheless, such divisions are necessary to discuss the principles which are predominant.

i. House Grouping:

The principle of house grouping is to fit the houses into a pleasing group where there is effective relationships between houses, sufficient variation for individuality, and an economical utilization of the common facilities.<sup>40</sup> The house grouping is a particularly important element for the mobile home park layout since the visual variations, the individual identities and the functional relationship between the unit and the lot area are only possible through the arrangements of the mobile home layouts. Mobile homes are monotonous and box-like structures and they have very identical floor plans and elevations.

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39. Cross, pp. 73-74.

40. Central Mortgage and Housing Corporation, Principles of Small House Grouping, The Corporation, Ottawa: 1954, p.4.

In addition, the mobile home park is usually a higher density development than the conventional single family residential subdivision. Thus house grouping is a more difficult element of the design layout for a mobile home park.

Yet house grouping is one of the most important elements for the mobile home layout design. The house group is the area where the individuals make most of their visual contact with the physical environment, as well as experience social intercourse with one another. The amenity, safety and convenience in this area are the most serious concerns of the residents; thus the success or failure of the whole layout design is greatly dependent upon the skillful and imaginative treatment of house groupings.

The size of the house group should be determined by the considerations of sociological, aesthetic and economic implications. From the sociological point of view, social consciousness in the form of the gratification of the drive of the individual for identification with the group may be expected to be developed among 50 - 300 persons.<sup>41</sup> Aesthetically, the house group should be able to provide some individuality and avoid monotony.<sup>42</sup> Economically, the size should be such that the public facilities provided for

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41. Kostka, p. 9.

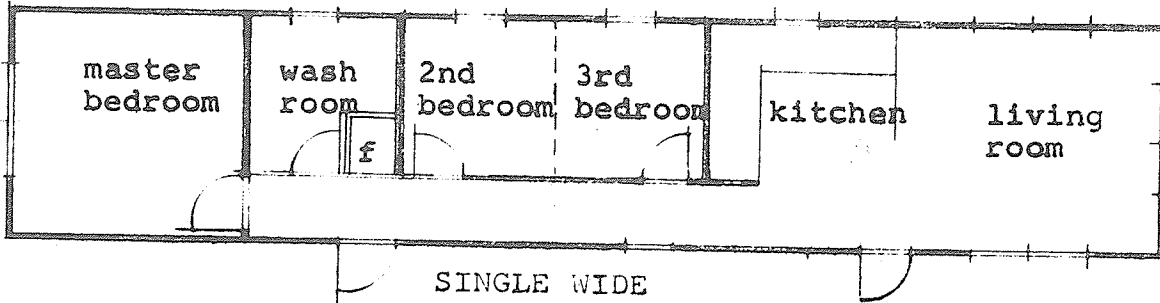
42. CMHC, p. 12.

each house group unit should be most effectively utilized. The size of a house group which satisfies aspects is considered to be an approximately 8 - 16 unit group.

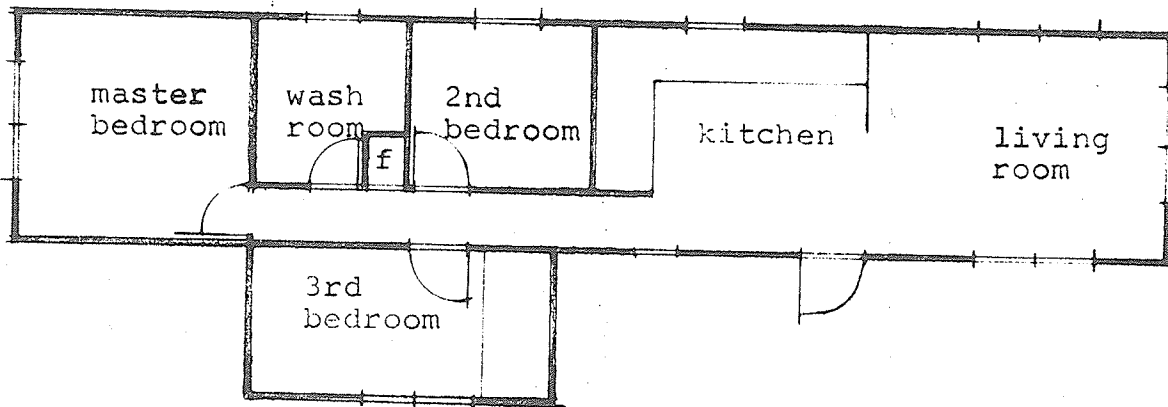
The layout pattern of the house grouping should start with a thorough understanding of the floor plans of mobile homes. For this purpose, the three typical mobile homes, namely the single line, expandable, and double line, are studied (see Plate 8). Except for double width type, which is very similar to the conventional single family dwelling, mobile homes have unique floor plans. The main entrance is usually at the right side toward the front of the unit and the living room orientation is usually toward the same side as well as to the front. The master bedroom is usually at the rear end, and the one or two additional bedrooms, as well as the kitchen and bathroom, are located in the middle. The expanded area is usually the additional bedroom and the typical width of the expanded component is 8 feet. The typical dimensions of the single width unit is 12 feet by 60 feet.

Due to the unique floor plans, mobile homes do not fit into the typical rectangular lots for conventional single family dwellings. If mobile homes are forced to fit into such lots, then the units run lengthwise on the lots, most of the windows face adjacent units, and the master bedrooms at the rear of the units are likely to be side by

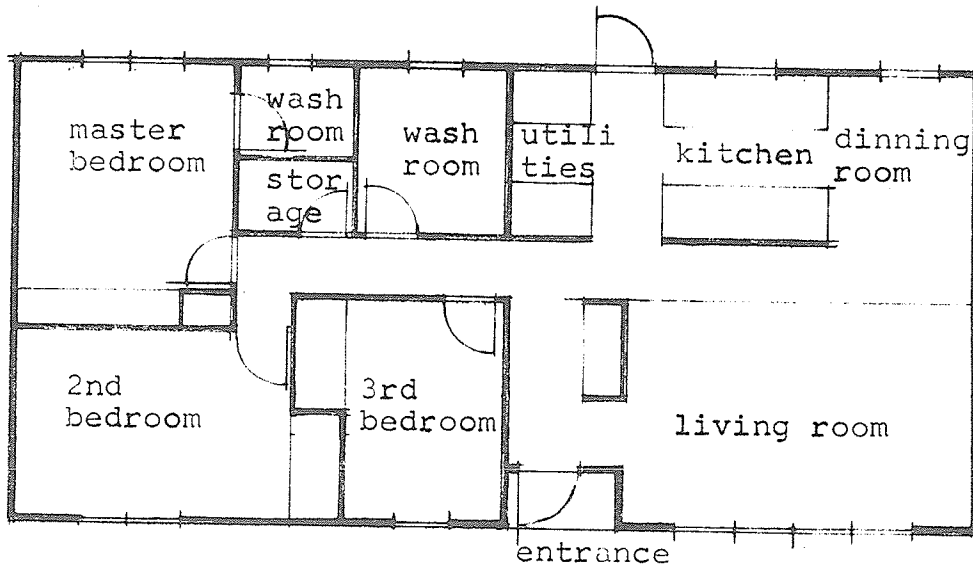
PLATE 8 : TYPICAL FLOOR PLANS



SINGLE WIDE



SINGLE WIDE EXPANSIBLE



DOUBLE WIDE

scale  
1" = 10'

side.<sup>43</sup> The shape of lots which can accommodate mobile homes efficiently and provide the functional integration between indoor and outdoor spaces are long rectangles with different widths at the front and the rear. The wider width at the front portion and the narrow width at the rear portion of the mobile home can provide the maximum privacy area to each unit in harmony with the indoor living space without reducing the overall density of the development.

Mobile homes in a park are usually located with their fronts facing toward the street. This practice has some merits since the rear area is often too small and will be overcrowded if the fronts of mobile homes are oriented in this direction. By facing the streets, the spaces over the streets provide further separation of front to front distance, and if the streets carry only small amounts of local traffic, there will be more privacy for the individual unit. This is a contradictory principle to some of the innovations of small house grouping.<sup>44</sup> However, the rigid and repetitious orientation of mobile homes to streets results in a monotonous and unpleasant street facade and makes the mobile home park more similar to parking lots than to places for living.

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43. ASPO, Regulation of Mobile Home Subdivision, p. 11.

44. CMHC, p. 10.

The majority of mobile homes are designed to be dependent upon some public facilities, such as common washers and driers, garbage containers, as is the case with apartment units. Also, the nature of the mobile home park is such that it is desirable to provide off-street parking for guests and prohibit any on-street parking. The efficient provision of such facilities at convenient locations is determined by the minimum number of units for efficiency and the maximum distance from the farthest unit. These are two contradictory elements; therefore the ideal compromise should be sought.

It is believed that "a group of four, five or six can be effective, pleasant and economical; some character and individuality can be provided, for instance, by different colours on front doors and by set-backs and landscaping, which includes the careful placing of trees. Too much variety in house designs can be as objectionable and monotonous as too little variety."<sup>45</sup> "The attempt to gain individuality and to avoid monotony by indiscriminately mixing houses of different design easily leads to an appearance of confusion. In fact rows of different small houses are the most monotonous feature of residential areas and it is one of the purposes of house grouping to introduce a more interesting kind of individuality - the individuality of groups."<sup>46</sup> "The need for two or three different house

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45. Ibid., p. 6.

46. Ibid., p. 12.

designs within a group does not arise unless the group is sufficiently large to justify some variation, or unless there are several groups within a housing development."<sup>47</sup> Since there are three different types of mobile homes and the ideal size of house group is considered to be 8 - 16 units, it is necessary to compose the house group with two or three sub-groups of 4 - 6 units of identical mobile homes.

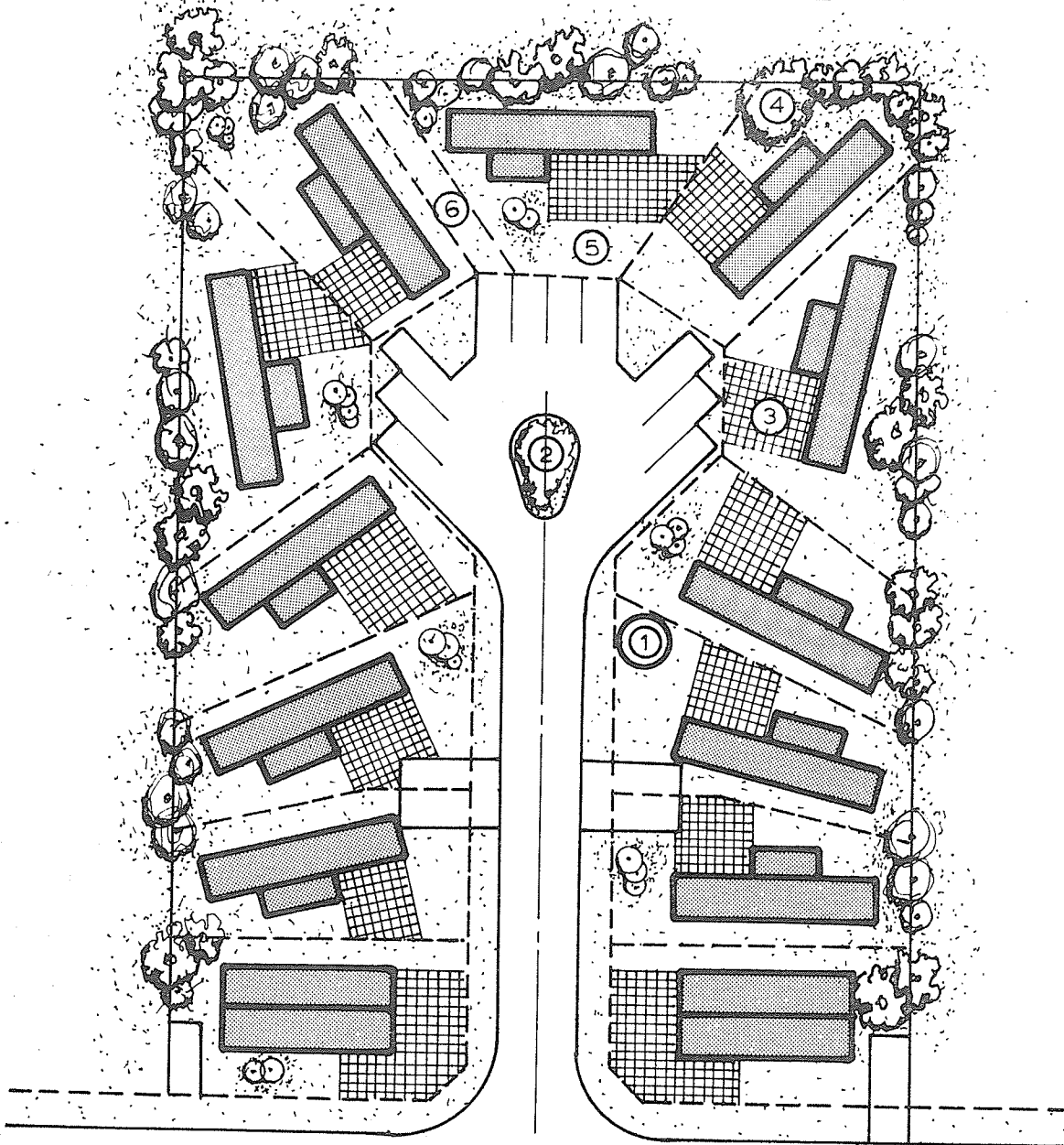
Finally, the house group should be layed out in such a way that the movements of mobile homes to and from their stands should disturb the least amount of space. Since the frequency of such movements is low, it is not necessary to provide paved or gravelled driveways for that purpose, but no permanent features such as trees and fences should be placed on the access. The spaces required for the movement should be easily converted to their originally intended uses. Thus careful consideration should be given to the arrangement of land uses in conjunction with the movements of mobile homes to and from their stands.

Indications of all the principles and practices of house grouping discussed here are that there are two particular types of layout patterns, namely the cluster and the cul-de-sac patterns, which satisfy most of these requirements. The house groupings layed out on these two patterns are illustrated on Plates 9 and 10.

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47. Ibid., p. 6.

PLATE 9 · HOUSE GROUPING : CUL-DE-SAC



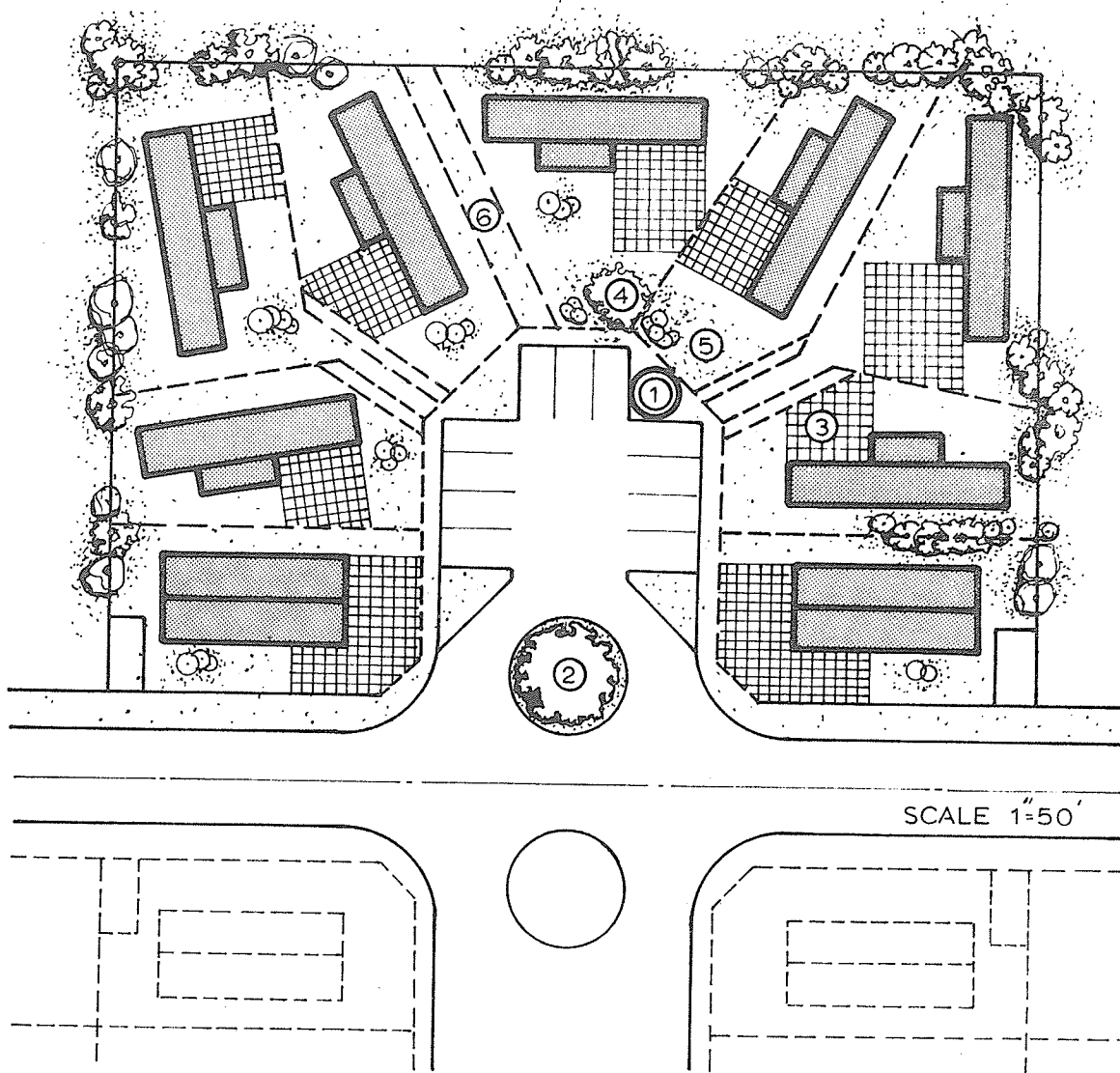
SCALE 1" = 50'

LEGEND

- |                                |  |
|--------------------------------|--|
| ① LAUNDRY BUILDING             | ⑤ LAWNS & FLOWER GARDEN<br>(NO PERMANENT STRUCTURES) |
| ② LANDSCAPED TRAFFIC ISLAND    | ⑥ ACCESS FOR SNOW CLEARING<br>& WALKWAY SYSTEM       |
| ③ PRIVATE OUTDOOR LIVING SPACE |  |
| ④ TREED AREA OR LANDSCAPING    |  |



PLATE 10 · HOUSE GROUPING : CLUSTER



LEGEND

- ① LAUNDRY BUILDING
- ② LANDSCAPED TRAFFIC ISLAND
- ③ PRIVATE OUTDOOR LIVING SPACE
- ④ TREED AREA OR LANDSCAPING
- ⑤ LAWNS & FLOWER GARDENS  
(NO PERMANENT STRUCTURES)
- ⑥ ACCESS FOR SNOW CLEARING  
& WALKWAY SYSTEM

ii. Overall Layout Design:

The basic principle of the mobile home park layout design is that a mobile home park should be as much self-contained as possible and the park should be physically separated from the surrounding areas. The separation, usually by means of buffer strips and a separate system of road layout, minimizes the land use conflicts and maximizes privacy in the park. The separate system of circulation provides flexibility in design and completely eliminates through traffic into the park. Also it encourages socialization among the residents and provides cosiness and a stable atmosphere.

In a mobile home park, there are two essential types of land use: the private space or the lots and the common spaces. The private spaces are subdivided into single family lots of various sizes and shapes. The common spaces are the land space required for the buffer strips, open spaces and land for recreational and other common facilities. In addition, sometimes it is possible or desirable to have some commercial land uses.

There are two different kind of lots: the lots for single width units and the lots for double width units. These two types of lots can be layed out in separate areas or in mixture. Both systems have merits and demerits. The former is basically the same system used to segregate different size lots in a residential subdivision, and

creates a more homogeneous grouping of houses and residents. The latter allows for more visual variation in house grouping and mixes different types of families. Thus the former system may result in physically monotonous house groups, whereas the latter may result in a socially incompatible mix of heterogeneous families. The careful combinations of these two systems as shown on Plates 9 and 10 are considered to be ideal, since such combinations make the street facade along the collector more similar to the conventional residential districts.

The common spaces can be categorised into three hierarchical orders, such as the major recreational and common facilities which serve the whole park, the tot grounds which serve several house group units, and the landscaped spots which form the visual focii along the streets. All these common spaces should be located on the central locations of their respective service areas. It is an ideal pattern of common space layout if all the common spaces are interconnected with strips of open space or pedestrian walkways. Of course, the physical features of the site should be incorporated into the common space layout if at all possible. Finally, in a region where snow clearing is a serious problem during the winter season, the common spaces should be designed to function as snow storage ground and proper access from the streets should be provided for snow clearing machines.

In the case of commercial land, the commercial uses should be limited to only those which are compatible with, or complementary to, the mobile home parks. In addition, their location should be restricted to an area where they can function as land use transition, bordering a major arterial road or highway on which the park has excessive frontage.<sup>48</sup>

Streets within a mobile home park function as do private roads within a planned residential unit. Mobile home parks should be enclosed by buffer strips; thus no mobile home should have direct access or frontage to a public street of any kind. A completely separate system should be developed in the park, with a minimum number of direct accesses both to the arterial road and to the main route leading to the neighbourhood centre.

Internal roads should be arranged in a hierarchical order of service road and the collector from which service roads branch out. It is a common practice that the collector becomes a circle road and the service roads become dead end streets or loops.

As with private road systems, it is desirable to reduce the maximum speed limit and the engineering standards of construction, and variations of road alignments should be

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48. Bartley and Bair Jr., p. 40.

utilized to improve the visual amenity of the park. In addition, widths of rights of way and pavements can be reduced to the minimums of 35 feet and 20 feet respectively if parallel parking on streets is prohibited. In this case, a large enough number of off-street parking spaces should be provided for residents and guests. Off-street angle parking can be located at the end of culs-de-sac or on the streets where additional rights of way are designated for the purpose, instead of on private spaces.

Utilities such as street lighting, fire hydrants and storm sewers, are usually aligned along the streets; thus these elements should be considered in the street layout. However, a mobile home park belongs to a single owner; therefore underground utilities can traverse private or common spaces more freely than in conventional residential developments. On the other hand, it is desirable to have underground power and telephone connections since overhead lines greatly disturb the amenity of the park. Thus the street layout in a mobile home park is much more flexible than in conventional subdivisions.

A pedestrian circulation system should be provided for convenient and direct access to all facilities. The system should have a minimum of road crossings. Usually the walkway system along the continuous open space system is an ideal form; however, in regions where snow clearing in the winter is a big problem, such a system instead of side walks does

not work properly.<sup>49</sup> Therefore side walks along the streets are more functional and economical. Ideally it is desirable to have both systems if it is economically feasible.

iii. Other Elements:

A good physical design alone cannot make a good physical environment unless the principles and objectives of the design are implemented properly in every detail. In a mobile home park, environmental quality is dependent upon the quality of structures and the maintenance of individual as well as communal properties. Thus the operator has to exercise some direct controls over certain aspects of private property which are directly related to overall environmental quality. For example, undesirable quality mobile homes should not be accommodated, and the additional structures attached to mobile homes should conform to the same standards as the mobile homes. All mobile homes should have skirtings to hide their wheels and the skirting should have the same exterior as the mobile home units. Either the operator or the individual should maintain the private areas to mutually acceptable standards.

In addition the park operator should provide properly designed street furniture and fences for private areas so that

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<sup>49</sup>. Snow is such a critical problem at the Town of Kitimat, B.C. that the separate pedestrian circulation system does not function as was intended.

the homogeneous and coherent standards of the park can be maintained.

iv. A Hypothetical Plan:

The layout design of a mobile home park is, as with any other site, not only a science but also an art. As a science, it is necessary to analyse and synthesize the design determinants and principles. As an art, it is necessary to create an imaginative and creative plan on the basis of those design determinants and principles. Thus the end results of the design are not always the same. However, to illustrate a sample layout based upon those design determinants and principles, a hypothetical mobile home park layout is shown on Plate 11. For the purpose of comparison of the mobile home park layout with the conventional residential subdivision, the site selected by Professor Spence-Sale is chosen, and the layout pattern is compared with his conventional residential subdivision pattern as shown on Plate 12.

PLATE II. A HYPOTHETICAL LAYOUT PLAN

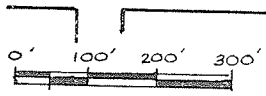
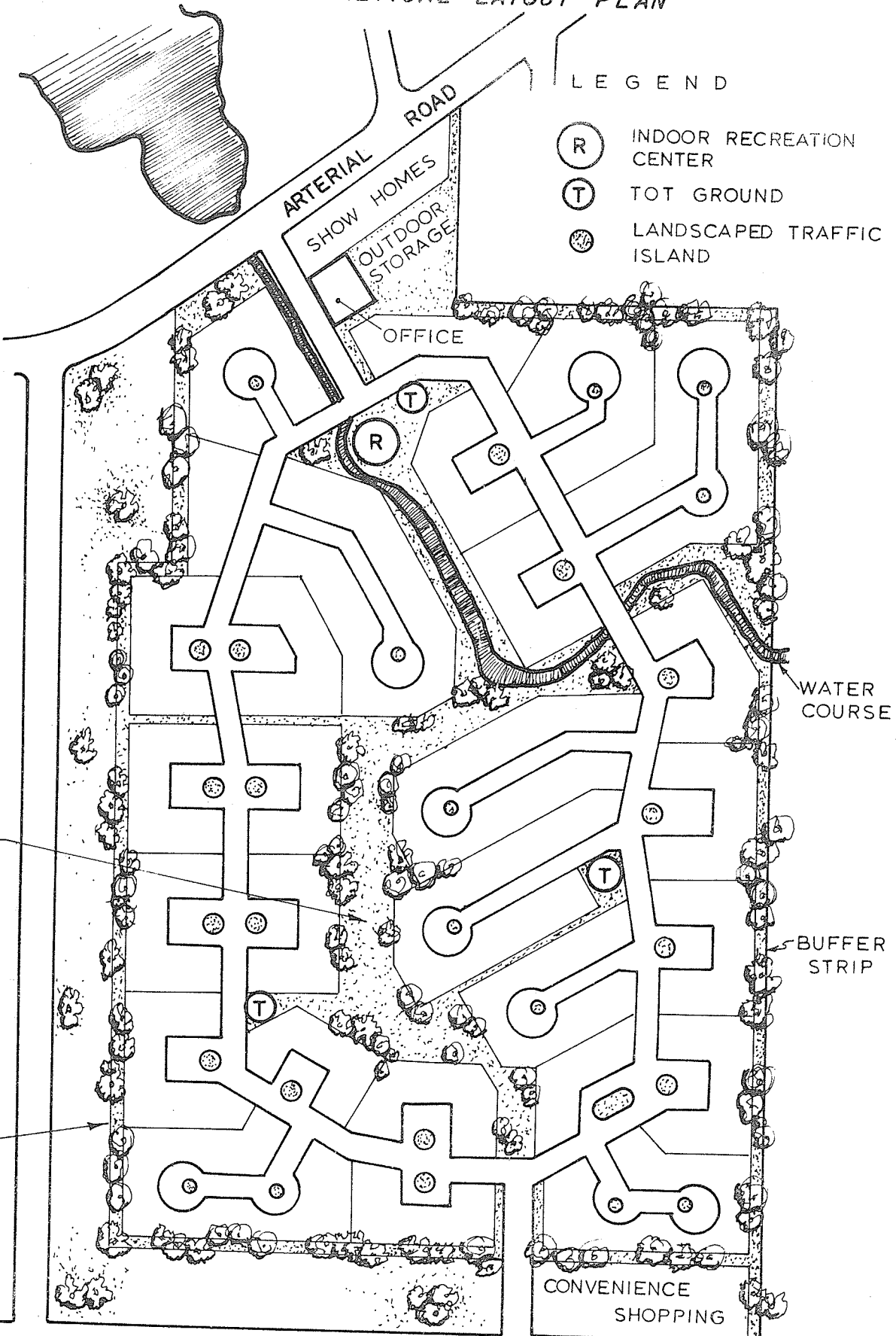
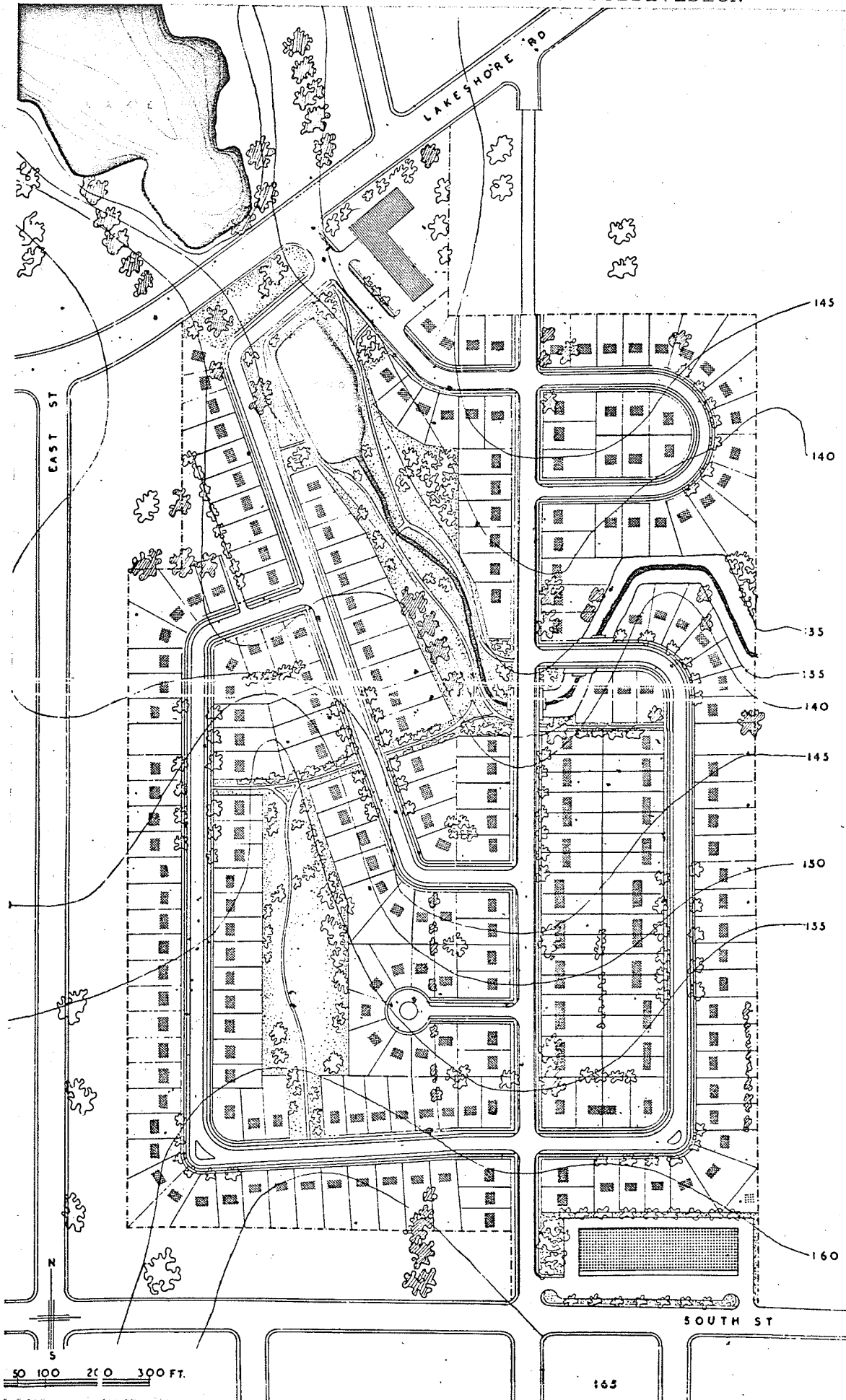




PLATE 12 A CONVENTIONAL RESIDENTIAL SUBDIVISION



Source: Spence-Sales, H. J., How to Subdivide.

## CHAPTER SIX

### CONCLUSIONS

#### A. Summary:

The recent trends of the mobile home market indicate a rapid growth in demand. Also the average size and the quality of facilities have been rapidly improving.

Mobile homes are a well accepted form of housing for the families of transient occupations and for relatively young and newly established households. The main features of the attraction are the lower cost and the mobility.

All mobile homes in Metropolitan Winnipeg are located on mobile home parks and the environmental quality of the majority of these parks is not satisfactory. First, their locations and site characteristics are not suitable for residential use and the mobile home residents have to suffer the inconvenience of travelling longer distances to the necessary neighbourhood facilities, and the poor amenity in the area. Second, these parks are not well equipped with necessary communal facilities such as recreational and storage facilities. In addition, their layout patterns are such that their visual appearances are monotonous and unpleasant. Third, the standards of construction and maintenance are not high enough for visual and functional satisfaction.

The governmental regulations and policies are rather discriminatory in nature. The mobile home park, a bona fide residential land use, is forced to locate in incompatible areas, such as commercial or industrial districts. The local tax systems are not updated to cope with the unique characteristics of mobile homes as real properties or personal properties and many local governments are against the mobile home park developments within their municipal limits.

It has only been in recent years that governments have taken positive approaches to the implications of the mobile home park developments. At the present time, the Central Mortgage and Housing Corporation is considering the provision of mortgage funds for some special mobile home park developments; however, its policy is not yet clearly defined. The recent proposal for zoning changes in Metropolitan Winnipeg in conjunction with the mobile home parks is under the process of review, but it will take some time until such changes will be in force.

The major determinants for site selection and an approach to a physical design which will cope with those problems identified from existing mobile home parks are presented. The highlights of the approach are:

- 1) The location of a mobile home park should be such that the park should be physically separated from its surrounding land uses; yet it should be an

- integral part of the neighbourhood unit in the area.
- 2) The optimum size of a park is 200 to 300 lots or 25 to 40 acres in area and the shapes and boundary conditions should be such that enough layout design flexibility is allowed.
  - 3) The most desirable patterns of house grouping, lots and blocks, are the cluster and the small super block patterns. These allow variation of street facades, functional integration between the indoor and outdoor spaces of individual units, and provide convenient locations for common facilities such as parking, garbage containers and visual foci, while still allowing reasonably high density development.
  - 4) Finally, the circulation system should be a closed pattern with an adequate number of connections to outer areas. The minimum of one access each to the arterial road and to the public road which leads to the neighbourhood centre is necessary, but no through traffic should be allowed into the park. Streets should be layed out by two different hierarchical orders, namely the collector and the service roads. The collector may be a circle road and the service roads may be small loops or culs-de-sac, branching out from the collector.

B. Recommendations:

The physical problems identified from existing mobile home parks cannot be totally resolved by the new approaches to physical design unless some non-physical factors are changed too. Thus three major recommendations are made for improvement in the non-physical elements of the mobile home park developments.

1) The present governmental regulations are not adequate. The minimum standards, the locational requirements and the municipal tax system in force at the present time should be improved so that the residents of mobile homes may enjoy the same privileges and share the same obligations as the residents of other types of dwellings. In addition, governments should take positive approaches to encourage the development of better quality parks and to provide the necessary technical assistance and information to the entrepreneurs in particular, and to the public in general. If possible, the governments are urged to initiate a pilot project which can demonstrate what a good quality mobile home park can mean to the community. Seeing is a hundred times better than listening, and this way the poor social image of mobile home parks can be rapidly improved, and an incentive will be provided to develop good quality mobile home park developments in the future.

2) The small scale mobile home park entrepreneurs may not pursue the proposed approaches for physical design. As

in the cases of conventional residential developers, small scale businesses are often inefficient and they may not take sound and comprehensive planning approaches because of their financial limitations. Thus it is recommended that small scale entrepreneurs form some kind of joint venture to achieve common goals: efficient business operation along with good quality mobile home park developments.

3) Finally, ideal sites for mobile home parks are not many in urban areas. Thus it is recommended that large scale urban land developers should seriously consider the potential sites for mobile home parks within their newly developing neighbourhood units. Good quality mobile home parks can be harmoniously integrated into conventional residential developments in terms of land use patterns and social integration.

#### C. Limitations:

The scope of this study is arbitrarily restricted to the physical aspects of the mobile home park design. Detailed studies of the social aspects of mobile home residents and the economical aspects of mobile home industries are considered to lie beyond the scope of this study. The physical problems of existing mobile home parks result from a complex interaction of social, economic, political and legal aspects of the mobile home park development process; yet the manifestation of these forces alone are considered. The specific objectives of the study are to identify the

major physical problems of existing mobile home parks in Metropolitan Winnipeg and to formulate a basic physical planning approach to cope with these problems in the future.

Insufficient readily available local data has restricted in-depth studies in many areas. The market trends of mobile homes and the social characteristics of the mobile home residents are often derived from cases in other areas. Sometimes local data has been presented in inconsistent forms for comparison with national data. Since the principles and standards suggested by different individuals or organizations are different in many cases, some personal value judgements have had to be made for the evaluation of the problems and for the formulation of the proposed approach.

#### D. Fields for Further Studies:

Since the mobile home park has become the concern of urban planners in relatively recent years, the ramifications of mobile home parks for urban planning have not been fully explored and the subject requires research in many fields. The fields of further studies which will directly contribute to urban planning and the mobile home industries are numerous; however, studies in the following fields are considered to be most urgently required:

1. A detailed sociological study of the mobile home households, including their socio-economic characteristics, their values, attitudes, desires and

physical mobility.

2. The implications of mobile home park developments for municipal revenues and expenditures and the ways and means to cope with these implications.
3. The social interaction between residents of mobile home parks and adjacent conventional residential districts.

E. Conclusions:

The study is mainly concerned with the physical environments of mobile home parks in Metropolitan Winnipeg. As the basis of the study, the four major areas are evaluated. These are: the general trends of mobile home market; the physical conditions of the three selected mobile home parks; the present governmental regulations and policies; and the proposed approach for the physical design for future mobile home park developments. The following conclusions are made from this study:

- Mobile homes will play an important role in the field of housing for the families of transient occupations and newly established young people.

- The physical environments of existing mobile home parks are not adequate. The most critical problems are the poor visual amenity, the poor communal facilities and inadequate locations as places for living.



- The present governmental regulations and policies are not adequate and do not provide incentive to the entrepreneurs for the development of good quality mobile home parks. The zoning by-laws and municipal tax systems should be positively revised to cope with the implications of mobile home park developments in the future.

- The physical design of a mobile home park should be carried out on the basis of sound and comprehensive residential planning principles and it should incorporate the unique requirements of the mobile home park developments. The determinants for the mobile home park site selections are identified and an approach to the physical design is formulated.

## BIBLIOGRAPHY

- American Public Health Association, Committee on the Hygiene of Housing, Planning the Neighbourhood, Public Administration Service, Chicago: 1960
- American Society of Planning Officials, Planning Advisory Service, Cluster Subdivision, Information Report No. 135, The Society: June 1960.
- The Changing Function of Trailer Parks, Information Report No. 84, The Society: March 1956.
  - Modular Housing, Including Mobile Homes: A Survey of Regulatory Practices and Planners' Opinions, Information Report No. 265, The Society: January 1971.
  - Regulations of Mobile Home Subdivision, Information Report No. 145, The Society: April 1961.
  - Trailers and Trailer Camps in the Community, Information Report No. 12, The Society: March 1950.
- Bair, Frederic H. Jr., Local Regulation on Mobile Home Parks, Travel Trailer Parks and Related Facilities, Mobile Home Research Foundation, Chicago: 1965.
- Mobile Homes and the General Housing Supply, Mobile Home Manufacturers Association, Chicago: 1969.
- Bartley, Ernest R. and Bair, Frederick H. Jr., Mobile Home Parks and Comprehensive Community Planning, Public Administration Clearing Service, University of Florida, Gainesville, Florida: 1960.
- Bestor, George C., The Challenge of Residential Land Development, Mobile Home Manufacturers Association, Chicago: 1967.
- Brown, Philip Schram, "Making Low Cost Housing Possible: A Theory of Mobile Home Park Design", Paper No. 121, 1970 American Institute of Planners Confer-In., Minneapolis/St. Paul: October 1970.
- Central Mortgage and Housing Corporation, Principles of Small House Grouping, The Corporation, Ottawa: 1954
- Site Planning Handbook, The Corporation, Ottawa: 1966.
- Chapin, F. Stuart, Urban Land Use Planning, Harper and Brothers, New York: 1957.

- City of Edmonton, Mobile Home Park in the Urban Environment, The City, Edmonton: 1968.
- Cross, Kevin J., Residential Land Subdivision: A Physical Evaluation, Staff Research Project No. 2, School of Community and Regional Planning, University of British Columbia, Vancouver: 1965.
- Department of Industry, Trade and Commerce, Government of Canada, The Mobile Home in Canada, Queen's Printer, Ottawa: 1970.
- Department of Urban Development and Municipal Affairs, Government of Manitoba, Guidelines for Locating and Designing Mobile Home Parks, The Department, Winnipeg: March, 1970.
- Gallion, Arthur B. and Eisner, Simon, The Urban Pattern, D. Van Nostrand Co. Inc., Princeton: 1963 (revised ed.)
- Government of Canada, National Housing Act - 1954, Queen's Printer, Ottawa:
- Report of the Federal Task Force on Housing and Urban Development, Queen's Printer, Ottawa: 1969.
- House and Home, The Mobile Home: The Rising New Giant in Housing, Vol. XXIII, No. 6, June 1963.
- Keeble, Lewis, Principles and Practice of Town and Country Planning, The Estate Gazette Ltd., London: 1964.
- Keeler, Suzanne, The Urban Neighbourhood: A Sociological Perspective, Random House, New York: 1968.
- Kostka, V. Joseph, Neighbourhood Planning, Appraisal Institute of Canada, Winnipeg: 1957.
- Planning Residential Subdivision, Appraisal Institute of Canada, Winnipeg: 1954.
- Lynch, Kevin, Site Planning, M. I. T. Press, Cambridge: 1962.
- Mandelker, Daniel R., Controlling Planned Residential Development, American Society of Planning Officials, Chicago: 1966.
- Metropolitan Corporation of Greater Winnipeg, Mobile Homes in Metropolitan Winnipeg and the Additional Zone, The Corporation, Winnipeg: 1970.

- Mobile Home Manufacturers Association, Mobile Home, The Association, Chicago: 1969.
- Mobile Home Site Planning Kit, The Association Chicago:
  - "Flash Facts on Mobile Homes", The Association, Chicago: 1969.
- Randall, William J., Appraisal Guide for Mobile Home Park, Mobile Home Manufacturers Association, Chicago:
- Rawson, Mary, Subdivision Casebook, Sponsored by the Planning Institute of British Columbia, Central Mortgage and Housing Corporation, Vancouver: 1963.
- Southeastern Mobile Housing Institute, Suggested Basic Standards for Mobile Home Development, The Institute, Atlanta: 1970.
- Spence-Sales, Harold, How to Subdivide, Community Planning Association of Canada, Ottawa, 1950.
- Underwood McLellan and Associates Limited, Mobile Home Communities; A Total Development Concept, The Company, Calgary: 1970.
- United States Department of Health, Education and Welfare, Environmental Health Guide for Mobile Home Parks - with Recommended Ordinance, Mobile Home Manufacturers Association, Chicago: 1966.
- United States Federal Housing Administration, Minimum Property Standards for Mobile Home Courts, The Administration, Washington: 1962.
- Urban Land Institute, The Community Builder's Handbook, The Institute, Washington: 1960.
- Innovations vs. Traditions in Community Development, Technical Bulletin No. 47, The Institute, Washington: 1963.
  - New Approaches to Residential Land Development, Technical Bulletin No. 40, The Institute, Washington: 1960.
  - "The Evolution of House Trailer", Urban Land, Vol. 26, No. 6, The Institute, Washington: June 1967.
  - "The Mobile Home", Urban Land, Vol. 25, No. 7, The Institute, Washington: July 1966.
  - "The Motionless Mobile Home", Urban Land, Vol. 19, No. 4, The Institute, Washington: April 1960.
- Wheeler, Michael (ed.), The Right to Housing, Harvest House Ltd., Montreal: 1969.

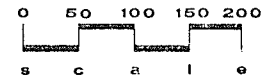
## APPENDICES

- A. Examples of Recent Mobile Home Parks in Western Canada
- B. Visual Conditions of the Selected Mobile Home Parks

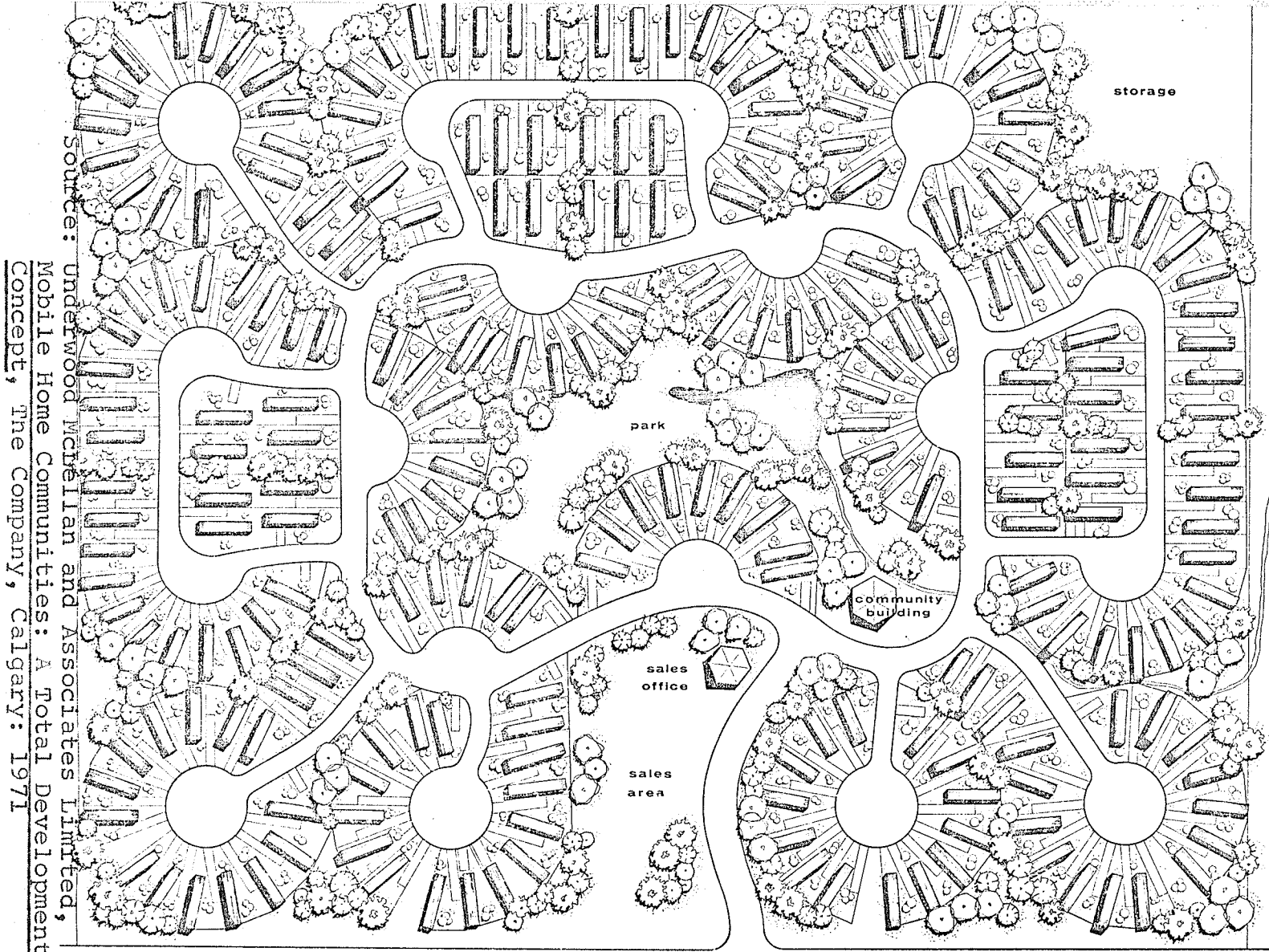
**outline  
plan**

DEVOS ROAD

proposed mobile  
home park



Underwood McIellan &  
Associates Ltd.

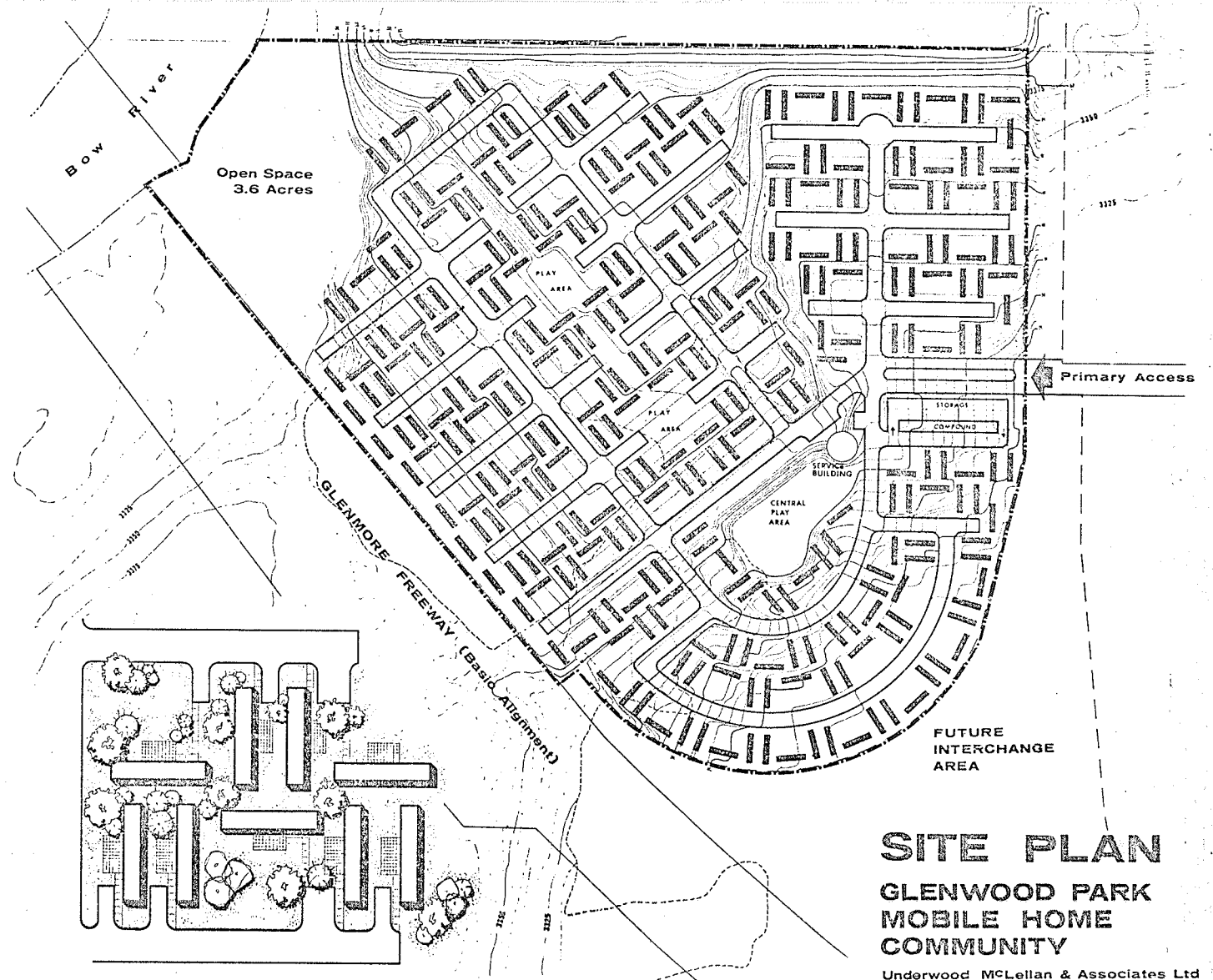


**DEVOS ROAD - SITE PLAN**

Illustrated above is the general layout for a 32-acre mobile home park in Winnipeg, Manitoba, Canada, involving some 230 sites. Special emphasis was placed on amenity areas and landscaping with the provision of major open space and recreation facilities. The design accomplishes a definite separation of through vehicular movements from localized traffic and intimate space associated with the individual unit. Turf, walks and patio areas are provided for each unit.

Other features include a unit sales area, and a community service building providing utility, administration and recreation space.

Source: Underwood McIellan and Associates Limited,  
Mobile Home Communities: A Total Development  
Concept, The Company, Calgary: 1971



**SITE PLAN**  
**GLENWOOD PARK**  
**MOBILE HOME**  
**COMMUNITY**

Underwood McLellan & Associates Ltd

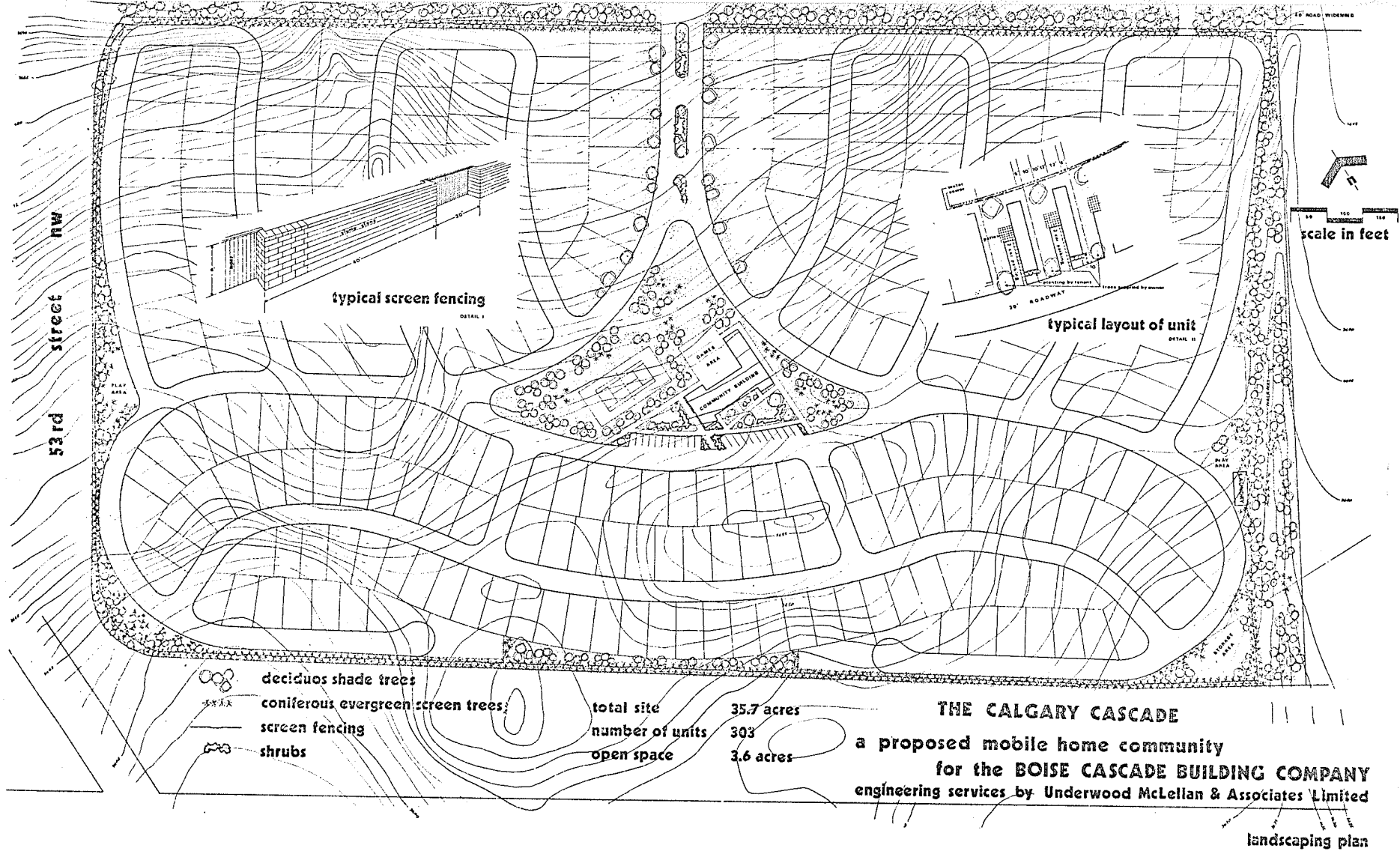
**GLENWOOD PARK - SITE PLAN**

The above plan indicates the general layout for a 41-acre mobile home community providing some 312 sites. Glenwood Park Mobile Home Community is located within the City of Calgary, Alberta.

Site planning for this development represents a new concept in mobile home park design. Conventional layout patterns, efficient in terms of servicing only, have been surpassed with a modular pattern which allows a simplified circulation system and a more amenable configuration of usable exterior space while maintaining an adequate standard of individual lot sizes and proportions.

Existing topographic conditions on the site demanded extensive earthwork and a carefully conceived grading plan provides maximum vertical separation between units while orientating as many as possible to the visual amenity of a major river valley.

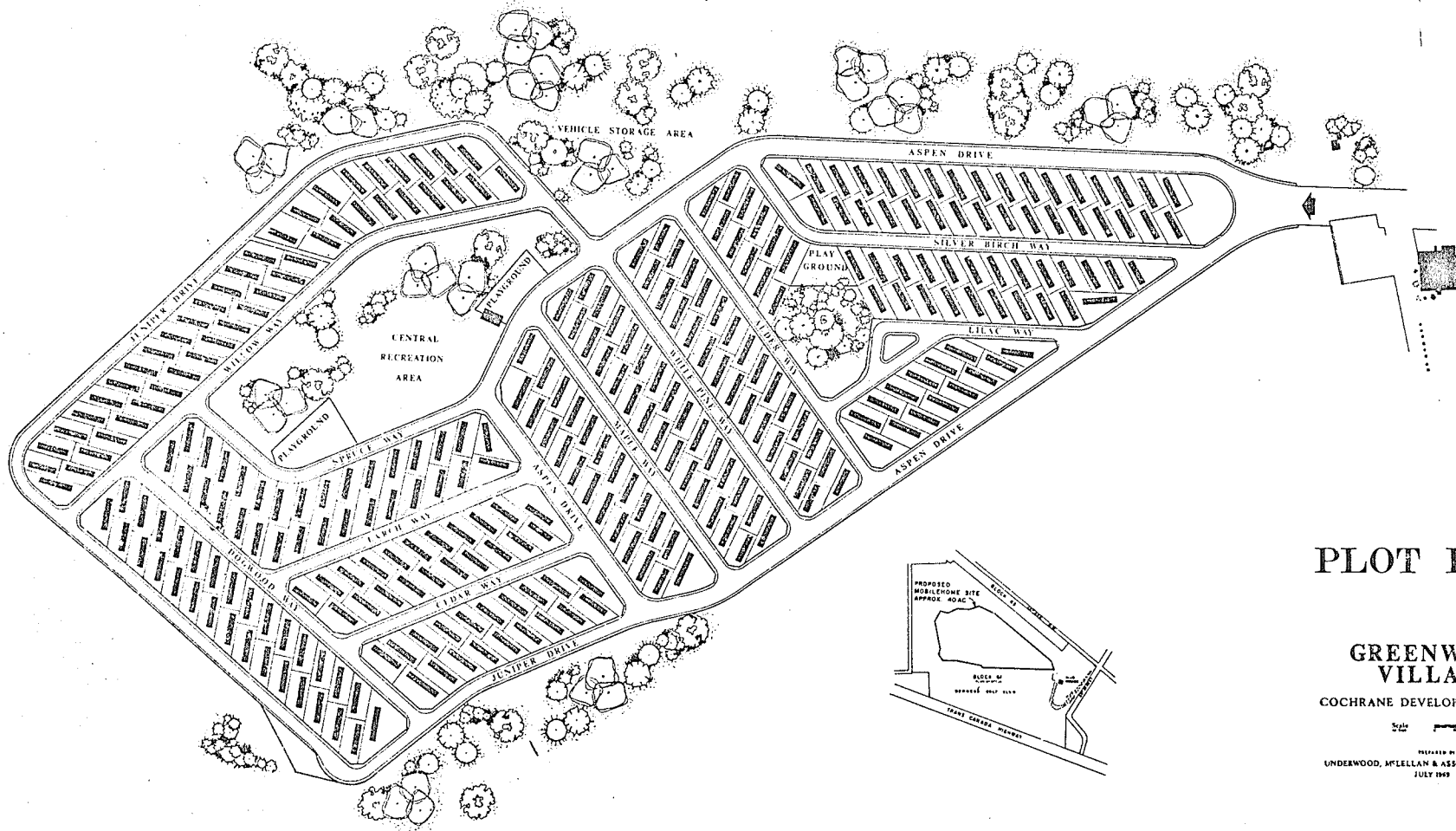
This mobile home park is planned as a permanent adjunct to an existing community with sufficient internal flexibility to adjust to various types and combinations of relocatable housing as future capabilities of the industry change along with market conditions.



## CALGARY CASCADE - COMBINED PLAN

The plan illustrates general layout and site design details as related to landscaping and other amenity areas for a 35.7 acre mobile home community developed by Boise Cascade Building Company in Calgary, Alberta. A total of 303 individual sites were created with particular emphasis on amenity areas, community security and recreation facilities. The community centre complex entails a major community building with lounge areas, activity rooms, sauna bath and other facilities. A swimming pool and outdoor games area are associated with the complex. Typical unit layouts are illustrated. The development provides for on-site management and regulatory controls to ensure a high standard of maintenance and visual appearance.



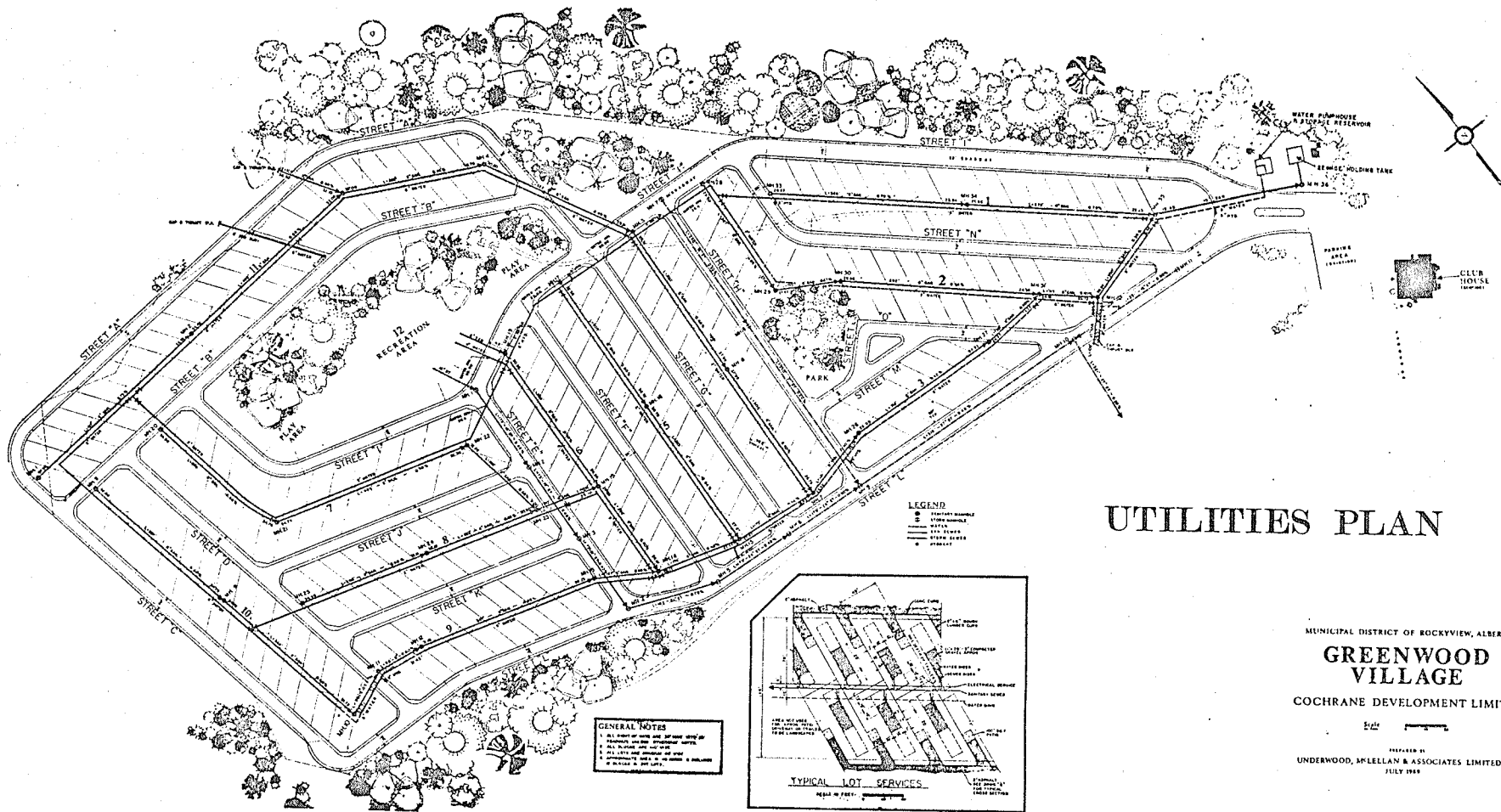


# PLOT PLAN

**GREENWOOD VILLAGE**  
 COCHRANE DEVELOPMENT LIMITED  
 5/24  
 PREPARED BY  
 UNDERWOOD, McLELLAN & ASSOCIATES LIMITED  
 JULY 1969

## GREENWOOD VILLAGE - PLOT PLAN

The general layout for a 40-acre mobile home community, Greenwood Village, adjacent to the City of Calgary, Alberta, is illustrated above. The development entails approximately 300 sites for mobile homes within the general environment of a major golf course and other open space. Other features include a central recreation area, community building and playgrounds. The mobile home community primarily serves units produced by one major manufacturer.

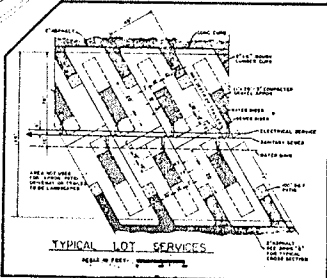


# UTILITIES PLAN

MUNICIPAL DISTRICT OF ROCKYVIEW, ALBERTA  
**GREENWOOD VILLAGE**  
 COCHRANE DEVELOPMENT LIMITED

PREPARED BY  
 UNDERWOOD, McLELLAN & ASSOCIATES LIMITED  
 JULY 1958

**GENERAL NOTES**  
 1. All lines of utility shall conform with the standards and the specifications of the Municipality of Rockyview and the Province of Alberta.  
 2. All utility lines shall be installed in accordance with the standards and specifications of the Municipality of Rockyview and the Province of Alberta.  
 3. All utility lines shall be installed in accordance with the standards and specifications of the Municipality of Rockyview and the Province of Alberta.



Drawing **D**

## GREENWOOD VILLAGE - UTILITIES PLAN

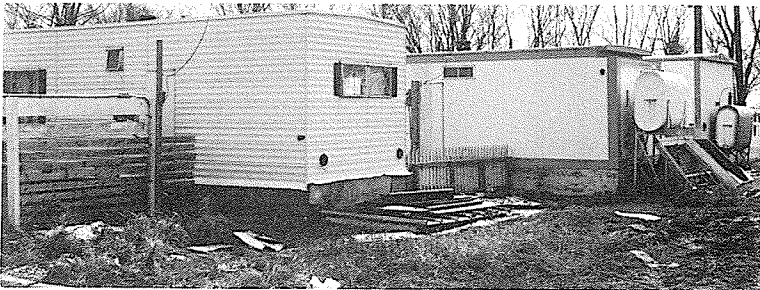
This plan illustrates the servicing requirements for Greenwood Village as related to the plot plan on the previous page. Utilities dictate special considerations as related to standards and economical servicing patterns. Typical lot servicing details are shown along with block and lot layout.

APPENDIX B

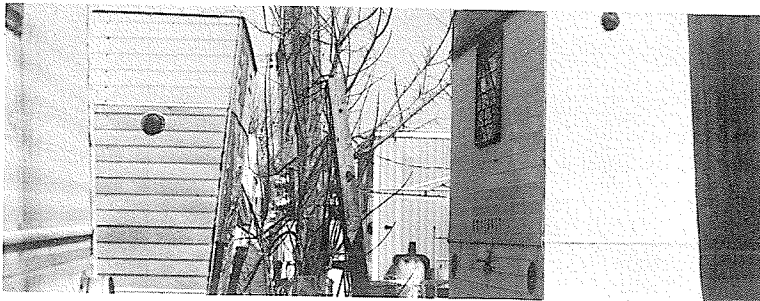
VISUAL CONDITIONS OF THE SELECTED MOBILE HOME PARKS



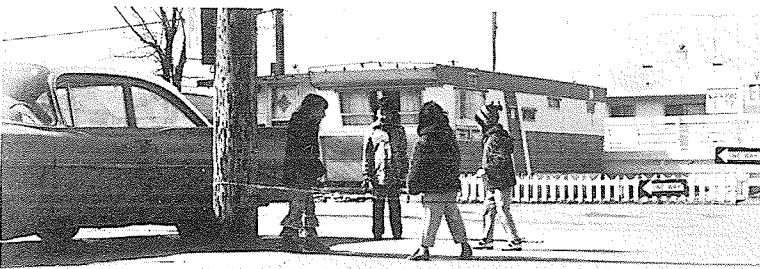
Overcrowding mobile homes, narrow street with parallel parking  
(Covered Wagon)



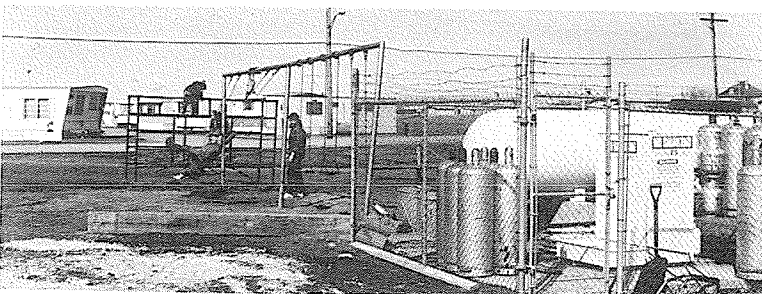
Mobile homes extruding beyond the limit of the park property  
(Covered Wagon)



Narrow rear to rear space which is dangerous and undesirable  
(Covered Wagon)



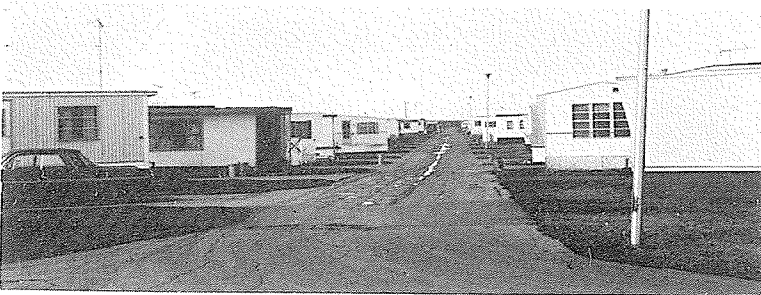
There is no tot-lot so children are playing on the paved parking area  
(Covered Wagon)



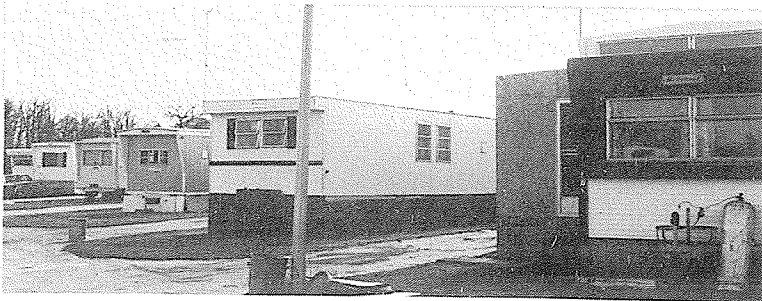
Tot-lot development adjacent to dangerous gas storage  
(Downs Village)



Typical street facade  
of the diagonal lot  
layout (Front view of  
mobile homes)  
(Northgate)



Typical street facade  
of the diagonal lot  
layout (Side view of  
mobile homes)  
(Downs Village)



Poor quality skirtings  
and accessory struc-  
tures  
(Downs Village)



Typical view of rear  
yards of the diagonal  
lot layout  
(Northgate)



Very limited privacy  
area despite the low  
density development.  
(Downs Village)