

Société centrale d'hypothèques et de logement

Mill Woods
Experimental
Housing Project

# Mill Woods Experimental Housing Project

Architecture and Planning Professional Standards and Technology Sector November, 1976



Société centrale d'hypothèques et de logement

Honourable André Ouellet Minister of State for Urban Affairs

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#### INTRODUCTION

Traditionally the production of detached housing and various forms of multiple units such as semi-detached, duplex and even quadruplex housing has been associated with the conventional subdivision process. This process produces relatively large lots which give builders considerable flexibility in the siting of housing. It also gives the individual home owner the opportunity to change, modify or add to the house and lot layout to suit individual needs over time. However in recent years, as a result of the increasing cost of serviced land, prices have risen to the point where a large percentage of people can no long afford a single family home in a conventional subdivision. In addition to condominium multiple housing, street row housing, another form of housing called zero lot-line or small-lot housing using a freehold form of tenure has emerged in response to this condition. This form of housing, which in many ways is very similar to the housing found in the older areas of larger cities, permits a more concentrated pattern of urban growth. Consequently, the per unit serviced land cost can be reduced, by the use of smaller lots and more appropriate road rights of way and levels of servicing. However, as lots become smaller and houses are sited in closer proximity to one another, much closer attention must be paid to the design of the unit and its relation to other units if a reasonable living environment is to be maintained.

Central Mortgage and Housing Corporation, through its lending regulations, is required to establish and administer space standards for housing financed under the National Housing Act, including site planning criteria for the design of space about buildings. The purpose of these standards is to ensure a minimum level of housing quality and to provide direction to developers and designers of housing and to Corporation field staff in the review of projects financed under the National Housing Act.

Since the criteria relate to conventional detached and multiple forms of housing they are not appropriate for the forms of housing being developed across the country on small lots. In response to this situation the Corporation has developed a special set of criteria for these house forms. These criteria are contained in the Corporation document, "Site Planning Criteria for Housing on Small Lots in Comprehensively Planned Developments", an amendment to the Site Planning Handbook.

The criteria were based on the assumption that although the degree of mobility that people have in the housing market significantly affects satisfaction, design is also an important factor. One useful measure of the quality of design is the ease with which residents can undertake normal day-to-day activities, and this was used as the basis for the criteria for small-lot housing. This approach recognizes that space is needed outside the unit to provide an appropriate setting

(light, air, view, privacy) for activities undertaken within the unit (reading, food preparation, entertaining). Space is also required for outdoor activities such as gardening, sunbathing, entertaining, car parking, access, and garbage storage, each activity having specific environmental requirements. Of particular importance is the provision of communal space for preschool and school-age children's play needs, since each backyard is no longer large enough to function as a playspace as it does in conventional subdivisions.

In addition to these activity needs, the design of space should also take changes in lifestyle into account. The ability to modify the outdoor space and to change or add to the house are important factors affecting people's satisfaction with the dwelling. The relationship of the cost of land and housing, people's willingness and ability to pay for facilities, project scale and density as well as the nature of the site and local climate were also recognized as factors which should be taken into account in the design of space and were considered in the formulation of the criteria.

Having developed the site planning criteria for small-lot housing, the Corporation was anxious that they be tested to see whether they would provide an appropriate environment. Although a number of projects with zero lot-line housing on small lots had been built across the country (in Bramalea, Ontario; Windsor, and Coquitlam, British Columbia), none of them had been developed using the new Corporation criteria. A number of design opportunities were provided by the new criteria, such as a closer spacing of buildings and the incorporation of preschool playspaces, and it was felt that the most appropriate way of testing the criteria was to build a small project using the criteria as a basis for the design. The Corporation had also recently completed a study of users' reactions to their private outdoor living areas in a condominium courtyard housing project in This study had provided a number of insights into the design of private outdoor space which needed testing. The subsequent evaluation of the process used to develop the test project, as well as the evaluation of the project itself, would give valuable information about the improvement of the site planning criteria. would also give useful experience to others involved in similar projects.

Edmonton was an appropriate city for such a test project because the Corporation owned a number of small parcels of land there and because a considerable amount of experimentation had already been undertaken by the industry in the City. Since the cost of serviced land was increasing rapidly, the City was also anxious to participate in a project aimed at using land more efficiently. The City was aware

that close involvement with the project would give it valuable experience in the formulation of more appropriate procedures for the review of small-lot housing and special innovative projects.

The principle objectives of the project from the Corporation's point of view were to:

- 1. Test the site planning criteria developed by the Corporation for detached housing on small lots.
- 2. Introduce a new concept of housing to Edmonton which would explore more efficient site planning and servicing practices.
- 3. Demonstrate a communal playspace for preschool-age children.

A range of different approaches were available to the Corporation in undertaking the project. The project could be designed (either in-house or by consultants), tendered, built and marketed by CMHC, or a special team could be responsible for the design, construction and marketing of the project. The key factor in selecting an approach was the risk associated with the experiment and the need to break the project into design, tendering, and construction components. This approach would require additional "risk funds" in the form of fees for special design aspects or buy-back guarantees.

Because of the nature and the background of the Mill Woods project, a developer and the City were asked by the Corporation and the City to assemble and direct a team for the design, construction and marketing of the project without the use of special funds. There were a number of reasons for using this method.

The Corporation had done considerable research on the idea of small-lot housing. It had assembled a number of research reports, periodical articles and other data for the formulation of the criteria, and was aware of and had recorded a number of projects already built across the country. It had also contacted many people associated with the idea of small-lot housing. Consequently the Corporation was able to make available to the team a considerable amount of background material which removed the need for further research.

The background material showed that small-lot housing is a valid housing form and that the project was a sound development idea. It was therefore probable that the building industry would be willing to participate in a test project with little or no risk money. What was needed was the impetus to initiate and carry through the experiment. Since the project was believed to be a feasible idea, it was important that the normal development process be followed as closely as possible in order to ensure the idea could be used elsewhere. Since there is a strong house building industry in Edmonton which is already involved in a considerable amount of experimentation, it was appropriate that a developer be the principal member of the team responsible for the total project.

In addition, it was known at the outset that the Municipality did not have procedures for the approval of experimental projects, so its involvement in the process would not only ensure sensitive consideration of the project but might also lead to the formulation of administrative procedures for other similar projects. The City of Edmonton was asked to participate in the experiment and terms of reference for the project were subsequently developed. (See Appendix 1).

Through the local office of the <u>Housing and Urban Development</u>
Association of Canada, ten development firms were invited to meet
City and Corporation representatives to discuss the feasibility of
undertaking this project. Five firms expressed firm interest in
participating and nominated excellent design teams to undertake the
project. The team selected consisted of Nu-West Development
Corporation, Craig Fairbairn, architect, and Butler and Krebes,
engineers and landscape designers.

The first meeting with the design team was held on 7 February 1975. All the relevant background data assembled by the Corporation was made available to the team, including the design program and site planning criteria. In addition, Paul Thiel, a consulting engineer in Bramalea, Ontario who had extensive experience with zero lot-line housing projects in Ontario, met the design team and City and Corporation representatives to discuss some of the issues associated with this new housing form.

The design started immediately and extensive meetings were held with the design team, the City and the Corporation. At these meetings design alternatives were discussed as well as procedures to be used for the submission, review and approval of the project by the City. Although the City did not have a zoning category which could be used to process the project, a number of other mechanisms were available. These included a special designation of the site as a CD-1 Comprehensive Development District or the use of Section 155 of the Provincial Planning Act. Section 155 was selected as the most appropriate and rapid method for considering the application. Section permits the Minister of Municipal Affairs, subject to an application from the City, to waive any municipal or provincial regulations and so encourage low-cost experimental housing. also realized that the use of Section 155 would create important precedents for subsequent projects as well as giving it valuable experience in the establishment of a new zoning district. Procedures and criteria for reviewing experimental housing projects were developed by the City. The Municipal Planning Commission, comprising the principal officers of the City Administration, was given authority by Council to approve the project.

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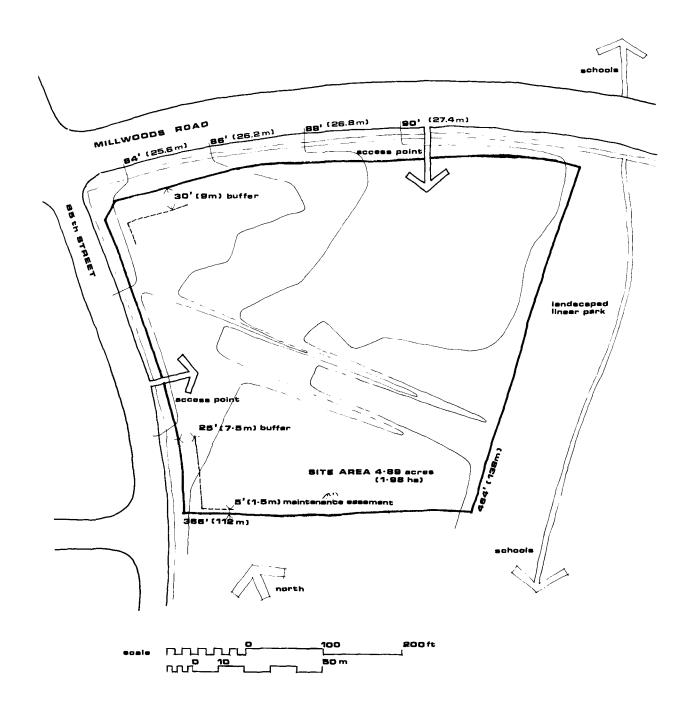
After presentation and approval of the project design by Mill Woods residents on June 17, the project plans were submitted to the City for processing. Considerable discussion followed on the innovative aspects of the project, resulting in extensive negotiations as well as some changes to the design of the project. These discussions revolved around three aspects; the width of the carriageway and the design of the cul-de-sac turnarounds, the fire separation between adjacent units, and the level of engineering services. Building permits were finally issued toward the end of November.

Construction started immediately afterwards, and the units were finished in July 1976.



#### Site Location

The site is located in Richfield, Mill Woods, located on the southeast edge of the city about six miles (10 km) from the city centre. Mill Woods is a land assembly project of approximately nine square miles (23 km $^2$ ) which is being developed by the City of Edmonton.



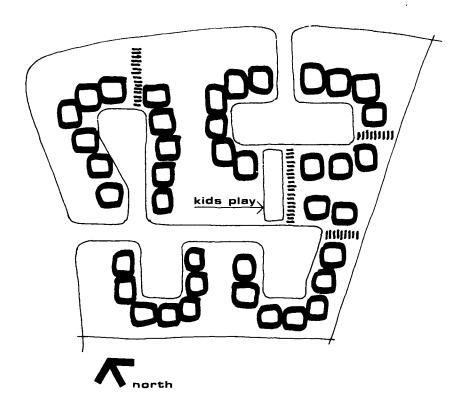
#### Site Analysis

The site is bounded on the north by a collector street known as Mill Woods Road, on the east by a landscaped linear park, on the south by a site for institutional uses, and on the west by 85th Street, a bus route. Only one road access point was permitted off each of the

adjacent streets, and setbacks were required along Mill Woods Road and  $85 \, \text{th}$  Street. A five-foot (1.5 m) gas easement was required along the southern boundary of the site.

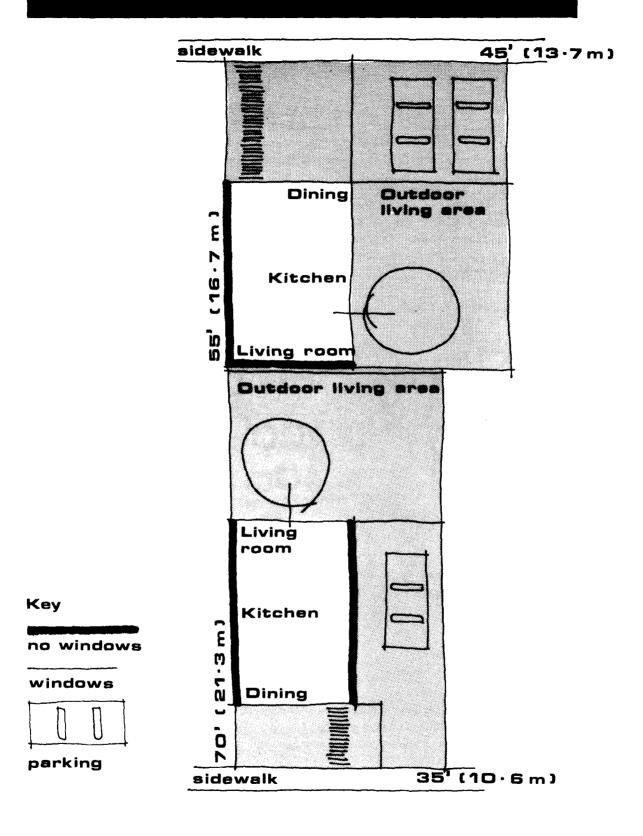
All services are located in the adjacent streets. The site falls approximately 6 feet (2 m) to the north. There are no trees on the site. The linear park connects the site to local schools and is used for casual recreation activities by school children.

The site is 4.89 acres (1.98 ha) in size and zoned R-2A permitting a density of 17 units per acre (42 units/ha). While this zoning category would allow up to 83 units on the site it was recognized that the housing form being tested on the site would produce a total number of units below that permitted by the zoning category.



#### Site Layout Concept

A number of alternative layouts were explored, based on the site analysis. Most appropriate was a layout with four clusters of housing on two cul-de-sacs linked by an emergency vehicle connection, with pedestrian connections to the adjacent linear park and sidewalks along Mill Woods Road and 85th Street. The emergency vehicle connection also provided a suitable location for the preschool play space, since it was centrally located and could be seen from many of the units. Since all the units are in close proximity to one another, the relationships among houses in the same cluster, as well as relationships among the clusters, was one of the critical design issues because of the problem of privacy.



Dwelling Concepts

The major design objectives are the provision of a parking area on the lot and a reasonably private outdoor living area accessible to the street for maintenance purposes. It was felt that these objectives could be achieved either by using strongly-indented building forms, like the courtyard house, or simple building volumes strategically sited in relation to one another so that the blank walls give privacy to the outdoor areas of adjacent units.

The latter approach was used as the basis of the courtyard housing project in Ottawa where each building was physically joined to its neighbour to form a checkerboard pattern. The user study of this project (User Study of Private Open Spaces in a Courtyard Housing Project, Working Paper 10, Architecture and Planning, Professional Standards and Services Group, Central Mortgage and Housing Corporation) indicated a high degree of satisfaction with the outdoor spaces, although the residents felt there was insufficient sunlight and ventilation for those units with a northern orientation or where the outdoor space was enclosed on three sides by walls two stories high.

The concept adopted for the project uses two basic house types which, when related to one another, maximize the privacy of the outdoor living area. In addition, space is provided on the lot for a variety of setbacks along the street. These house types have window walls along opposite faces or along adjacent faces producing rectangular lots (70' x 35' or 2450 sq. ft. - 21.3 m x 10.6 m or 228 m²) or square lots (55' x 45' or 2475 sq. ft. - 16.7 m x 13.7 m or 230 m²).



#### Site Layout

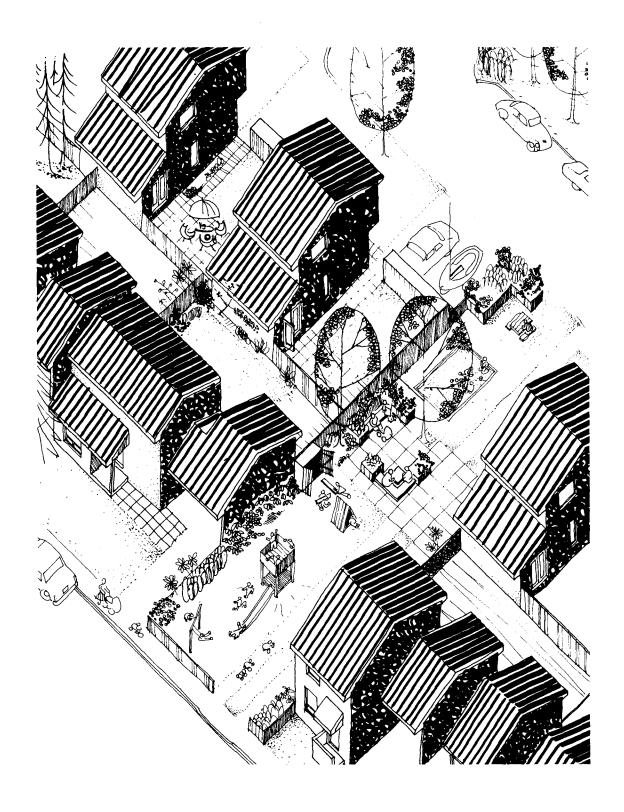
The layout accommodates 49 units at a gross density of 10 units per acre (25 units/ha) or a net density of 13.8 units per acre (34 units/ha) excluding the on-site roads to be deeded to the Municipality. Pedestrian walkways connecting the open space system with adjacent roads are provided. The site is fully landscaped with special attention having been given to the edge of the site and the islands in the cul-de-sacs. All sewer, water and hydro services are located in the road allowances, with gas service at the rear of each lot.

Innovations in the project include:

- 1. A road right-of-way 55' (17.8 m) wide with a 26' (7.9 m) paved carriageway in lieu of 30' (9.1 m) which is the normal city practice. The carriageway is designed to accommodate two passing lanes of traffic and one parking lane.
- 2. The use, where appropriate, of one lateral service for every two lots divided into separate services at the front lot line.
- 3. The provision of splash pads at grade under rain water leaders and storm sewer catch basins at critical points in lieu of a full storm sewer system which is the normal city practice.

#### Land Use Allocation:

	Acres	ha	% of site	
Lots	3.41	1.38	69.73	
Roads (including boulevards and islands)	1.343	0.54	27.48	
Walkways	0.035	0.01	0.72	
Playspace	0.101	0.04	2.07	

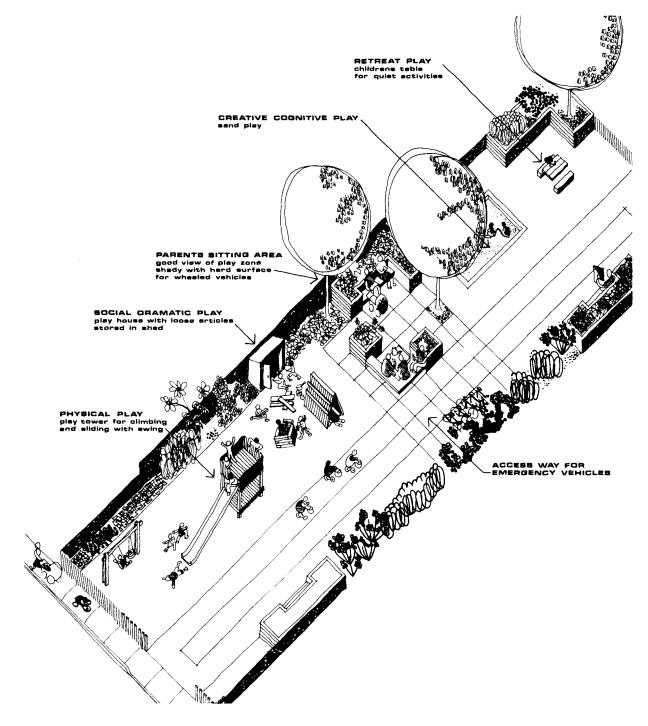


#### Lot Layout

All lots provide space for the unit, two cars or recreation vehicles, pedestrian access to the unit and a private outdoor living area. Access to the outdoor living area is from the street giving easy access to children and for maintenance purposes. This access is located between the garage and the adjacent unit, creating a fire separation between buildings so that each unit is fully detached.

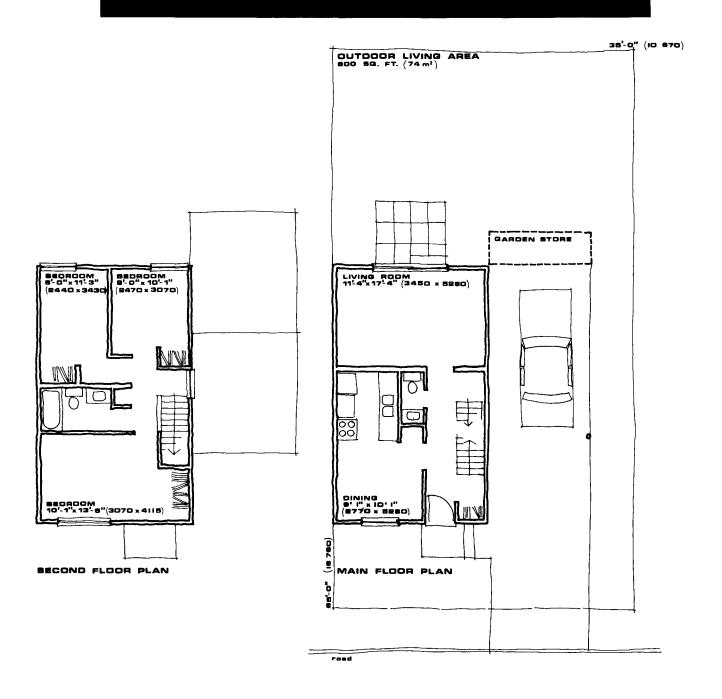
The private outdoor spaces were carefully planned to give a fully usable space (about 35'  $\times$  25' - 11 m  $\times$  8 m) as private as possible yet sufficiently open to permit maximum penetration of sun and ventilation.

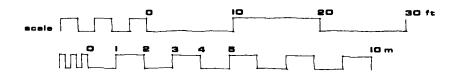
Lots are approximately 2500 sq. ft.  $(230 \text{ m}^2)$  in size ranging from a minimum of 1900 sq. ft. up to corner lots of 5500 sq. ft.  $(176 - 511 \text{ m}^2)$ .



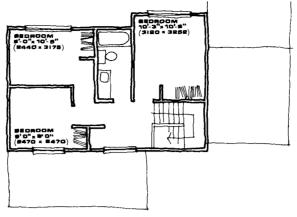
#### Preschooler Playspace

The playspace designed for preschool children is seen from a large number of the units and provides four distinct play zones as well as an adult sitting area. Good facilities have been provided for children's wheeled vehicles on sidewalks around the site and for emergency vehicles on the access way. The recreation needs of school-age children will be provided for in the adjacent linear park and other neighbourhood facilities.

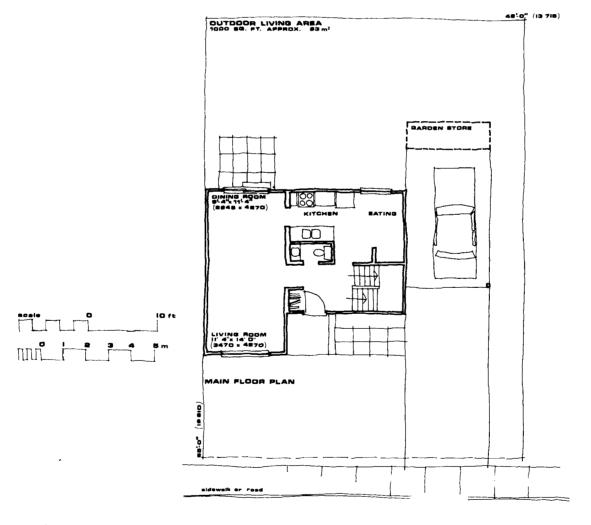




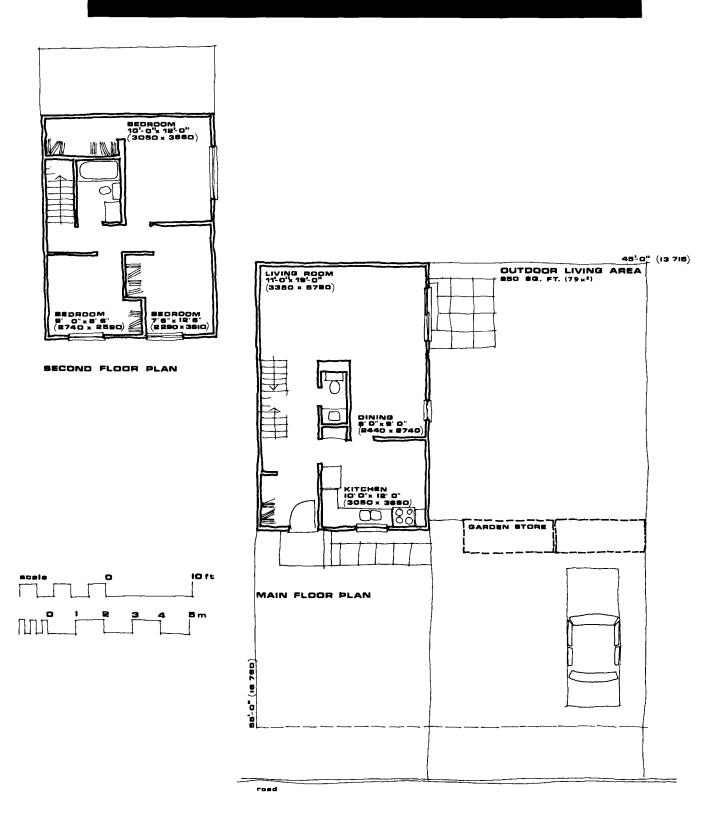
Unit type A Three bedrooms, two-storey, approximately 1080 sq. ft. (100 m $^2$ ) livable floor area (including outside walls), selling at \$50,706.



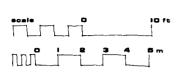
SECOND FLOOR PLAN

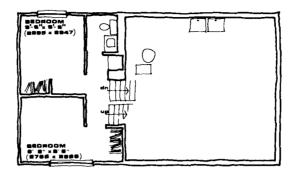


Unit type B Three bedrooms, two-storey, approximately 1100 sq. ft. (102  $m^2$ ) livable floor area (including outside walls), selling at \$52,518.

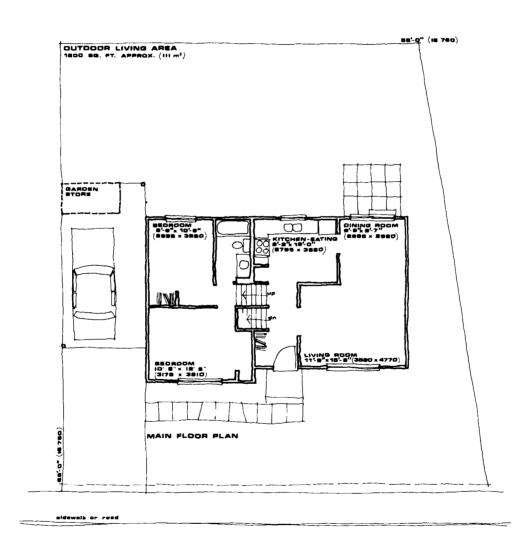


Unit type C Three bedrooms, two-storey, approximately 1140 sq. ft. (106  $m^2$ ) livable floor area (including outside walls), selling at \$ 51,227.





LOWER FLOOR PLAN



Unit type D Four bedrooms, split level, approximately 1210 sq. ft. (112  $m^2$ ) livable floor area (including outside walls), selling at \$ 55,133.

Since the project has only just been completed and occupied, it is not yet possible to fully assess the test. A user study is proposed to determine through observation and interviews, the opinions of the residents and other users of the project on the appropriateness of the design of the outdoor spaces. This information will be useful for future revisions to the Corporation's site planning criteria. Although this study will not start until about one year after full occupancy, it is possible to assess the criteria based on the experience of the design team. Since no adverse comments were expressed, it may be assumed that the criteria are reasonable. The zoning branch of the City of Edmonton describes them as "excellent". Further information will be forthcoming following the user study.

Three aspects of the project can be assessed. These are the relevance of the housing form to Edmonton, the effect of the project on residential development in the City, and the appropriateness of the process that was used to conduct the test. The information for these assessments comes from the participants in the project, including City and Corporation staff and the design team, by means of a self-administered questionnaire.

#### The viability of the housing form in Edmonton

It should also be stated that the project demonstrates that densities comparable with some forms of horizontal multiple forms of housing can be achieved through the use of detached housing when the dwelling and the site are designed in a comprehensive manner.

The project has demonstrated that comprehensively-planned housing on small lots with a freehold form of tenure is a feasible alternative to conventional single-family housing in a standard subdivision or to condominium housing. The evidence to support this is the fact that five of the 10 firms approached put together a design team in response to the proposal. In addition, two other projects using a similar form of housing have since been approved by the City and others are being considered. The fact that units in the project were readily sold is also an indicator of the success of the housing form. The major attraction of this housing is the detached form with freehold tenure, a strong western preference. However, since the lots are small, it is recognized that the provision of adequate communal recreation facilities in the neighbourhood is critical if a sense of crowding is not to occur. The provision of playspace for preschoolers to be maintained by the Municipality is felt to be an important component of the project and to have contributed to the acceptance of the housing form.

It was estimated that overall savings of about \$10,000 per unit had been achieved in comparison to the costs of a similar house in a

standard subdivision, even taking into account the additional costs that were included because of the special nature of the project. These savings are attributed primarily to a more efficient use of land and services through the use of smaller lots (about 2450 sq. ft. - 228 m²), shorter service main lengths (35' - 45' (10 - 14 m) for each lot), shorter lateral service lengths, and the reduction in the width of the road right-of-way. Additional savings were also achieved by the reduction in paved carriageway widths.

The elimination of rain water leader connections to storm sewers and the provision of splash pads also provided substantial savings and will contribute toward the retention of ground water on the site, an important ecological factor. Since the Municipality has assumed the responsibility for the roads "double taxation" (municipal taxes and condominium charges) has been eliminated. This constitutes a saving in maintenance costs to the home owner and is an issue of concern to many condominium owners across the country. Additional savings may also be possible in those projects where it is appropriate to use P.V.C. pipe for water mains, water service and sewers, a granular base for the roads or lamp holes in lieu of manholes.

Additional costs incurred by the project include the cost of the prime location and equipment for the preschool playspace and for the lengthy negotiations necessary during the approvals' process. Normally a playspace is not provided in a conventional subdivision for a project of this size, since it's assumed every backyard can be used for this purpose.

The location of the playspace is critical if it is to be fully used. Space left over at the corner of a site is not suitable since the playspace should be centrally located and seen from as many units as possible. Although land for preschool playspaces requires a prime location in the development there are economical means of providing space for the play activities. Multiple use of the land, such as was achieved in this project, is one such method.

Since the project is experimental, there was considerable discussion between the design team and the approving agencies. Their discussion time and the additional design work is estimated to have cost approximately \$1,000 per unit more than is the case with a conventional multiple housing project.

### The impact of the project on the residential development process in the City

It is apparent that the project has had a significant effect on the development process in the City. Firstly, the feasibility of the housing form has been demonstrated and the project is thought to have been the major factor in introducing the form into the local housing market. Secondly, the project has influenced the approvals' process now used by the City for experimental housing projects.

Because the City did not have a zoning category to review and approve the project, Section 155 of the Provincial Planning Act was used. This approach required the City to develop procedures and criteria for the review of the project. (See Appendix 2). These procedures established the Municipal Planning Commission as the approval authority on behalf of the City, eliminating the need for City Council to be directly involved and thus shortening the procedure normally used for experimental housing. In future the City will develop a special zoning category for the review of comprehensivelyplanned small-lot housing but will continue to use Section 155 as an interim measure. The project, therefore, has simplified the process of experimentation in the City by establishing a mechanism for the review of special housing projects. Experience gained from the project will also be used by City staff as the basis for the formulation of the new zoning category for comprehensively-planned small-lot housing.

#### An assessment of the test process

Obviously, the project has shown that modest experimentation can be undertaken without special funding and that the process used was on the whole successful because the ideas are sound, practical and involve a minimum of risk from the approvals and marketing viewpoint. However, if the experiment were to test subjective issues such as aesthetics or were to involve a high marketing risk, alternative procedures for undertaking the test would be needed either by the provision of special funding, or by having the Corporation itself design, build, and market the housing.

All members of the team and the City thought the process was different from the normal development process. This was because waivers of the zoning by-law and of the subdivision and transfer regulations were necessary and because the site was designated as a residential experimental development area under Section 155 of the Provincial Planning Act. This required the City to develop special procedures and criteria for the processing of the project and the designation of the Municipal Planning Commission as the approving authority. The legal subdivision of the site followed development approval, the reverse of the conventional approach, and this was also felt to be a significant factor.

Even though the process which was used to develop the project was successful, there are aspects which could be improved. Since the design and approval process was not typical, and even though extensive background research material was available, the design team felt that the provision of some special funding would be appropriate for other similar projects. This special funding to experimental projects would pay for the design work and extra negotiations with the approving agencies which are required before the project can be assessed. This special funding would, however, affect the success of the project to some extent as it would the use in another project of the ideas inherent in the design.

Although Section 155 of the Provincial Planning Act permits the waiver of all existing municipal and provincial requirements, the project must still satisfy municipal and provincial staff if building permits are to be issued and if roads, services and utilities are to be assumed by the authority responsible for maintenance. requires the proponent of the project to demonstrate the feasibility of his proposal, and obliges the City to take calculated risks. All municipal and provincial departments must fully understand the objectives of the experiment and closely coordinate their views if the project is to be realized. In this project, contact between the design team, the City and the Corporation was maintained through one person representing each of the agencies. As specialized skills were required, these were coordinated by the contact person. Generally the procedure worked well up to the finalization of details prior to the issuance of building permits then coordination faltered causing some delays. Experimental projects of this type should therefore be tightly managed, especially at the municipal level, if design opportunities are to be fully explored.

Finally, test projects, especially in the form of detached housing on small lots, requires an inordinate amount of attention to the detail of all the components that comprise the final product, including the provision of services and utilities. This is especially important where the building form is different from local conventional practices. Consequently additional staff time is required incurring additional costs which must be recognized and taken into account in the pre-planning of this type of an experimental project.

APPENDIX 1

PROPOSAL FOR AN EXPERIMENTAL HOUSING PROJECT, MILL WOODS, EDMONTON, ALBERTA

Note: The criteria in the proposal are now contained in the Corporation publication Site Planning Criteria.

#### **PROPOSAL**

Central Mortgage and Housing Corporation in conjunction with the City of Edmonton wishes to initiate an experimental housing scheme in the Mill Woods Project, Edmonton, Alberta. The purpose of this experiment is to develop modest detached housing based on the new housing concept referred to as "zero lot-line", "small-lot housing" or "planned unit development". This paper outlines the objectives of this project and briefly describes procedures for its implementation and the site to be used.

#### BACKGROUND

In December, 1973, CMHC purchased from the City of Edmonton three sites in the Richfield neighbourhood of the Mill Woods Project to be used for experimental housing purposes. It is proposed that one of these three sites be used at this time.

During the past year CMHC has been undertaking a number of studies and conducting regional workshops across the country as part of a review of its site planning criteria. As a result of this work, we have become aware of a number of emerging forms of housing. One of these, the zero lot-line concept, involves the provision of detached housing at densities considerably higher than those found in conventional subdivisions. In order to permit CMHC to fund this form of housing, the Corporation has recently prepared site planning criteria specifically for comprehensively-planned detached housing developments.

#### PROJECT OBJECTIVES

This experimental housing project has the following objectives:

- to introduce to the Edmonton area a new concept for detached housing which, through the use of a more economical and efficient site development approach, can provide modest detached homes at costs that can be afforded by people of moderate income.
- . to use the site planning criteria recently prepared by CMHC for "Small-lot Housing in Comprehensively-Planned Developments" to permit greater flexibility and innovation in site planning, while insuring the provision of functional and pleasing residential environments.
- . to explore alternative site planning and servicing practices that can reduce land and servicing costs rather than seeking major innovations in detached housing design or construction.
- . an alternate method of producing detached housing on a homeownership basis.

#### SITE

The site to be used for this experiment is 4.89 acres (1.98 ha) and is currently zoned R-2A. It is Lot 5, Block 15, Plan 6453 R.S. in the Richfield sector of the Mill Woods Project. Attached are copies of the site information.

If further site information is required it can be obtained from the Project Architect, City of Edmonton. In order to allow the site to be subdivided into smaller lots, it is proposed to have the site designated as a "Residential Experimental Development Area" under Section 155 of the Alberta Planning Act. This designation enables the municipality to approve experimental projects for low-cost residential development whether or not the project conforms to existing municipal by-laws and regulations.

#### PROJECT PROFILE

The following is a preliminary outline of the physical requirements to be met in the design of the project:

- . Detached housing of a <u>modest</u> size to be provided appropriate for family use. Should it prove necessary for reasons of planning efficiency or economy to have a portion of the units attached, this would be acceptable provided the characteristics of detached housing are retained.
- . Tenure to be individual homeownership.
- . Units can be a mixture of two, three and four bedroom types with the majority being three bedroom units.
- . Gross site density to be in the range of 10-12 units per acre (24-30 units/ha).
- . Development to conform to "Site Planning Criteria for Housing on Small Lots in Comprehensively-Planned Developments", a draft copy of which is attached.
- Sale price to be such as to permit the homes to be sold at a cost within the range of moderate income families (possibly under the Assisted Home Ownership Program).

#### PROJECT IMPLEMENTATION

It is important that the implementation of this project follow normal market procedures as closely as possible, thus assuring the usefulness of this experience to other projects in the future.

It is the intention of the sponsors, therefore, to select a developer who will assume full responsibility for executing the planning and construction of the project. Throughout the development process, it is expected that standard procedures with respect to design preparation, plan approvals, acquisition of loan commitment and construction will be followed. When 50% of the units are beyond the foundation stage, CMHC will sell the land to the developer at cost price permitting him to market the homes in the usual manner.

City and CMHC representatives will participate actively with the development team in a consultative role throughout the project, particularly during the design development stage, in order to assist the developer in satisfying the objectives of the project and to ensure the necessary approvals are obtained.

In addition CMHC, in its capacity as a lending agency, will assist the developer in arranging suitable mortgaging for the housing or make a direct loan if required.

After the project is completed and occupied, an evaluation will be made by the sponsors to determine the effectiveness of the site planning and servicing criteria, as well as assessing the residents' reaction to the resulting housing environment.

#### SELECTION PROCEDURE

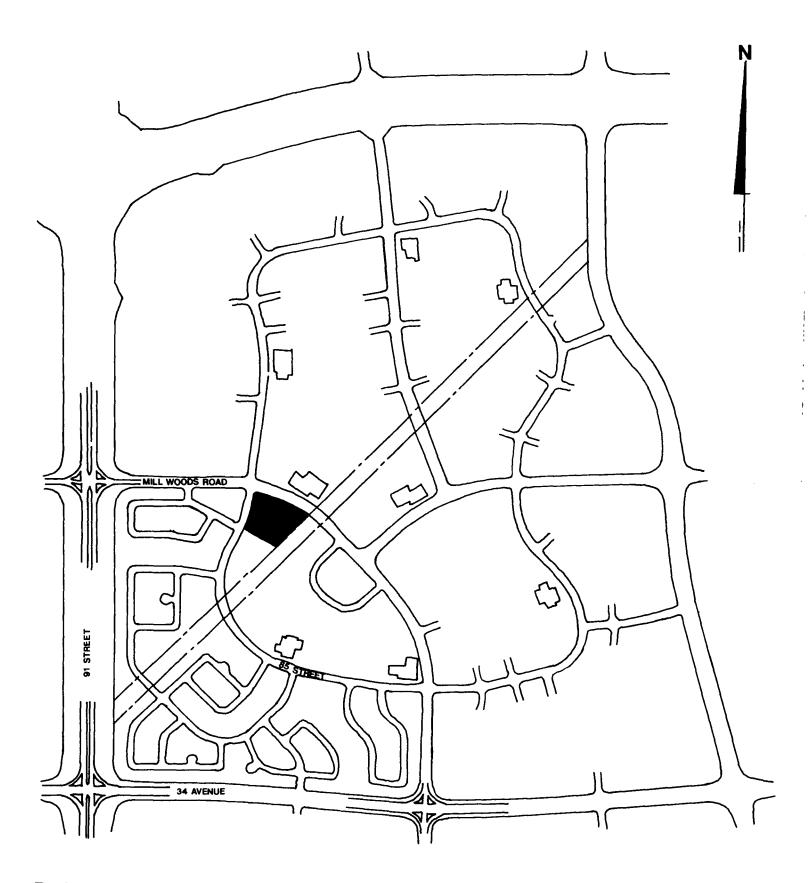
This paper is being sent to a number of local builders and developers in order to determine their interest in this proposal. The sponsors will select from the interested parties, one individual or group to develop the project.

The selection will be based on an assessment of the information listed below which each interested proponent is requested to submit:

- the proponent's expressed interest in participating in this experiment.
- . the capabilities and past experience of the proponent with housing of this scale.
- the names of the principals the proponent proposes to use to do the site planning and the architectural design, engineering, landscape design and construction of the project, and the capabilities and relevant experience of each.

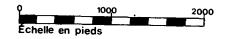
Individuals receiving this paper and interested in this proposal are asked to send a reply before December 16, 1974 to: Manager, Central Mortgage and Housing Corporation, P.O. Box 1273, Edmonton, Alberta, T5J 2M8.

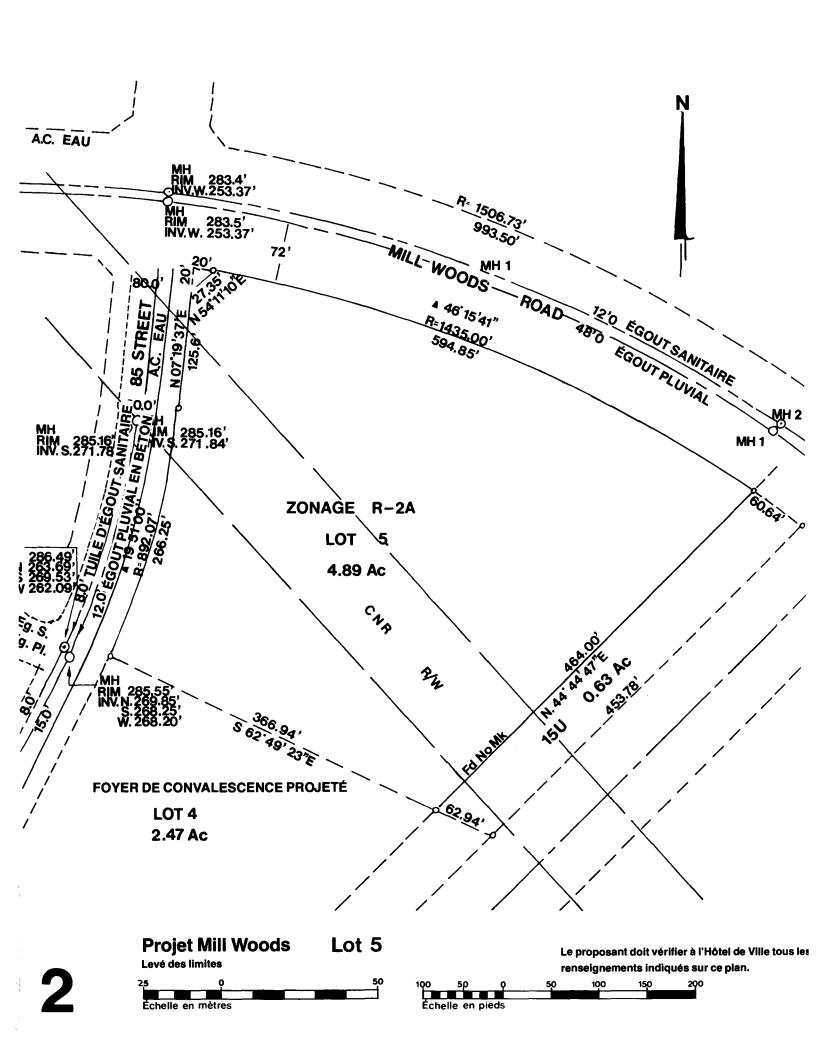
A subsequent meeting will be arranged.

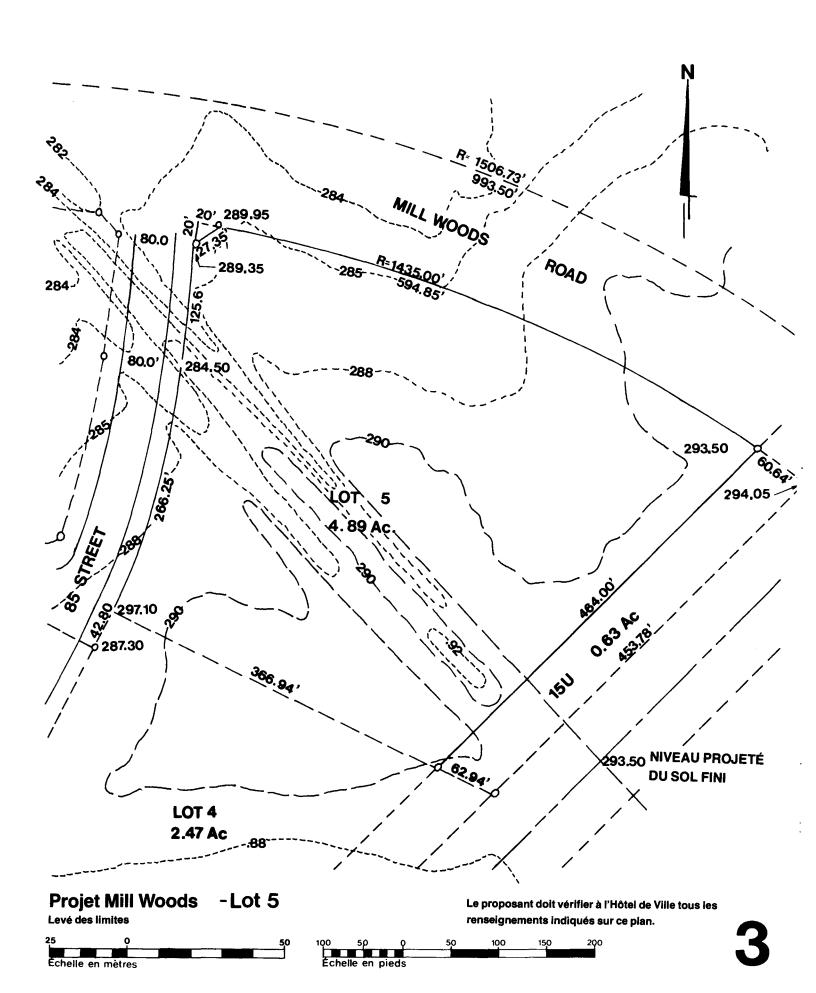


## Projet Mill Woods









#### APPENDIX 2

SITE PLANNING CRITERIA

FOR

HOUSING ON SMALL LOTS

IN

COMPREHENSIVELY-PLANNED DEVELOPMENTS

PROFESSIONAL STANDARDS & SERVICES GROUP

DRAFT # 7

OCTOBER, 1974

#### **GENERAL**

Traditionally the production of single-detached and various forms of multiple units such as duplex, semi-detached and quadruplex housing has been associated with the conventional subdivision process which involves the preparation and approval of street layouts and lot arrangements prior to any identification of the location or design of the housing units. The Corporation's site planning criteria governing conventional subdivision housing of this type, which are set out in Section I of the Site Planning Handbook, rely for the most part on the requirement of a minimum lot area which is of sufficient size to accommodate a variety of house designs.

However, in recent years, as a result of the increasing cost of serviced land and the strong demand for detached housing, prices have escalated rapidly to the point where a large percentage of people can no longer afford a single-family house in a conventional subdivision. In response to this condition, a number of new alternatives such as zero lot-line and detached condominium housing have been introduced which endeavor to reduce servicing and land costs by providing individual lots considerably smaller than those required for conventional subdivision housing. These new forms of small-lot housing developments are differentiated from conventional subdivisions in that the design and location of the individual dwelling units are an integral part of the preparation of the overall site design. For the purpose of this paper, this type of integrated development which consists of detached, semi-detached, duplex and/or quadruplex units, will be referred to as "small-lot housing in a comprehensively-planned development".

From the examples of small-lot housing in comprehensively-planned developments built to date, it is evident that this form of housing can provide a residential environment comparable in quality to that of conventional subdivisions while using land and services more efficiently and economically. In view of the fact that comprehensive developments are preplanned in detail and therefore permit a thorough evaluation of all aspects of the development beforehand, it is felt that smaller lot areas than those presently required in Section I of the Site Planning Handbook are feasible for detached and conventional small multiple housing that has been comprehensively planned. The purpose of this paper, therefore, is to describe specific site planning criteria to be used for the approval of small-lot housing in comprehensively-planned developments.

In preparing these criteria, the main objective has been to develop a method of specification that will facilitate greater innovation and flexibility in the design of housing on small lots. The concern has

been to minimize requirements that dictate what and how to build, emphasizing instead the need to create housing environments which complement the normal activity patterns of the residents, pointing out important human and environmental factors to be taken into account in the design process. Whenever possible, the basis of the criteria will be stated in performance terms. This material will serve as interim criteria which will remain in effect until such time as the on-going work of revising the Site Planning Handbook is completed, incorporating these and other necessary changes.

#### APPLICATION OF CRITERIA

These criteria shall apply to applications for approval of loan insurance or direct loans on single-detached, semi-detached, duplex or quadruplex housing that are to be built as a part of a comprehensively-planned development.

For the purpose of this paper, a comprehensively-planned development is defined as land under unified control that is intended primarily for residential use and for which the layout and design of streets, services, landscaping, open spaces and the individual dwelling units are planned in detail prior to submission for final approval.

It is recognized that a comprehensively-planned development of small-lot housing may constitute only a part of a larger development proposal which may include other housing forms such as conventional subdivision housing, apartments and so on. In these instances, these criteria shall only apply to the detached, semi-detached, duplex, or quadruplex that have been comprehensively-planned. The other housing forms shall be reviewed according to the relevant criteria in the Site Planning Handbook. However, where town housing, linked housing or street row housing are included as an integral part of a comprehensively-planned small-lot development, these units shall conform to the site planning criteria set out in this paper.

#### REVIEW PROCEDURES

As the review of comprehensively-planned projects involves an evaluation of many detailed aspects, the proponent and/or his architect and landscape architect are advised to initiate preliminary discussions with the CMHC Branch professional and technical staff as early as possible. This will permit examination of the preliminary concept and drawings at various stages to ensure that the requirements are understood and met. In this way, the applicant will avoid an unnecessary waste of time and money in preparing final drawings which subsequently may prove to be unacceptable.

It is recommended that consultation with CMHC Branch staff occur on at least three critical stages of the project development process:

- 1. <u>Site Acceptance Stage</u>: the site under consideration can be presented offering an opportunity to determine its present feasibility for residential use, the appropriate form of development and special features of the site and surrounding area deserving consideration.
- 2. Preliminary Design Stage: preliminary sketch plans of the overall layout and design including the site plan, servicing, landscaping and preliminary unit designs.
- 3. Final Plan Review: information in the form of detailed plans and drawings, as required for Multiple Unit Structures in the Administrative Requirements of the National Housing Act, shall be provided for final review for lending approval. In addition to this information, a site plan shall be provided showing the location of each unit and specifying the unit type, access points, direction of outlook from unit windows and location of car parking spaces.

The following categories will describe the main factors to be taken into account in laying out housing on small lots in comprehensively-planned developments.

# A SITE DEVELOPMENT

The development of housing in comprehensively-planned projects, as with other residential developments financed under the National Housing Act, should be based on sound planning principles and contribute to the orderly growth of the community. The relevant sections in the Site Planning Handbook dealing with community planning, project design, distance of housing from non-residential land uses and public open space will therefore apply.

As with various forms of multiple housing, small-lot housing schemes require that careful consideration be given to the overall development of the site. Special attention should be given to:

- 1. a survey and analysis of the site in its physical, social and economic setting to identify restraints on development and natural features on the site that should be retained. This analysis should indicate the availability of necessary community and recreation facilities, roads, pedestrian routes, services and utilities in the adjacent area.
- 2. the creation of well-designed residential environments through the efficient allocation of services, roads, pedestrian routes, playspaces, unit groupings and landscaping. Of special concern is the need to provide a diversity of housing forms to create visual interest.

### B SEPARATION SPACE

One of the important functions of space around the dwelling is to provide an appropriate environment for activities undertaken within each unit, in terms of various factors such as daylight, sunlight, fresh air, quiet, visual privacy and scenery.

In order to ensure the satisfactory provision of these environmental factors, a minimum separation is required in front of the openings of each dwelling unit. The spatial requirements specified in this section have for the most part been based on the yard dimensions for Horizontal Multiple Housing in the Site Planning Handbook. However, for the purposes of comprehensively-planned developments the terms yard dimension, privacy yard and setback have been replaced in favor of specifying the degree of separation or control required for various types of openings of a dwelling unit. In the case of zero lot-line and other forms of freehold projects, if the required separation space for a unit extends into an adjacent property, provisions shall be made in the legal documents for the project to ensure the preservation of this separation space after the project is occupied.

The required separation space for any opening or window shall be applied along the full length of the wall for the room in which the opening or window is located. This separation space shall be free of other buildings, roadways, communal parking areas, communal walkways and any communal amenity areas intended for active use and shall fall within the boundaries of the original project. The sum of the minimum separation spaces for any two rooms facing each other will constitute the minimum separation required between the two dwelling units, unless otherwise specified.

# Principal Living Room Window

- a. A separation space shall be provided in front of a principal living room window with a minimum depth of 25 feet (7.6 m).
- b. The minimum separation space requirement is reduced to 15 feet (4.6 m) from a principal living room window to the nearest edge of a local residential street\*, communal walkway or landscaped communal open space intended for passive use, provided that the unit is located a minimum of 25 feet (7.6 m) from the centre line of the street allowance or communal open space.
  - \* (Definition of local residential street to conform to that described in Section C.2, Site Planning Handbook).
- c. No separation space is required for a principal living room window facing a local residential street, communal walkway or landscaped communal open space intended for passive use, where:

- . because of the difference in elevation between the exterior grade and living room, the sill of the living room window is at least seven feet (2.1 m) above the grade level of the adjacent communal area, and
- the unit is located a minimum of 25 feet (7.6 m) from the centre line of the street allowance or open space;
- . maintenance and unit access along the living room window wall is provided for through legal arrangement or registered easement, and
- . the fire separation requirements in the Canadian Code for Residential Construction have been met.

### 2. Habitable Room Windows Other Than Living Room

- a. An open space shall be provided in front of all habitable room windows, with a minimum depth of 17' 6"(5.3 m).
- b. The minimum separation space requirement is reduced to 10 feet (3.0 m) from a habitable room window to a blank wall of an adjacent unit, or to the nearest edge of a local residential street, communal walkway or landscaped communal open space intended for passive use, provided that the unit is located a minimum of 17' 6" (5.3 m) from the centre line of the street allowance or communal open space.
- c. No separation space is required for a habitable room window facing a local residential street, communal walkway or landscaped communal open space intended for passive use, where:
- . because of the difference in elevation between the exterior grade and habitable room the sill of the habitable room window is at least seven feet (2.1 m) above the grade level of the adjacent communal area, and
- . the unit is located a minimum of 17' 6" (5.3 m) from the centre line of the street allowance or communal open space;
- . maintenance and unit access along the habitable room window wall is provided for through legal arrangement or registered easement, and
- . the fire separation requirements in the Canadian Code for Residential Construction have been met.

# 3. Non-Habitable Room Windows and Openings

- a. An open space shall be provided in front of all non-habitable room windows and openings from a unit with a minimum depth of four feet (1.2 m).
- b. No separation is required for a non-habitable room window facing a private open space of an adjacent unit, a communal open space or a

local residential street, or where the separation requirements of an adjacent unit already provides an open space of eight feet (2.4 m) or more between the two units and where:

- . maintenance and unit access along the non-habitable window wall is provided for through legal arrangement or registered easement, and
- . the fire separation requirements in the Canadian Code for Residential Construction have been met.

### 4. Blank Walls

No separation is required for a blank wall, where:

- . Maintenance and unit access along the blank wall is provided for through a legal arrangement or registered easement, and
- . the fire separation requirements in the Canadian Code for Residential Construction have been met.

# C AMENITY SPACE

One other basic function of space outside the dwelling unit is to accommodate a range of residents' activities, both active and passive. Therefore, the design of recreational areas and facilities for a project should be based on an analysis and understanding of the activity patterns of the intended resident groups, such as infants and toddlers, preschoolers, school-age children, teenagers, adults, retired and elderly persons and handicapped residents of all ages.

The amenity area requirements specified in this section are intended to provide activity spaces within the project which, in the opinion of the Corporation, are usable for recreation or leisure purposes. These stipulations for project amenity space are based on the assumption that complementary large-scale facilities will be available at the community level. The minimum amenity area shall be exclusive of the ground floor area occupied by residential and non-recreational buildings, parking areas, and driveways. The amount of amenity area required varies according to the occupancy rate established for specific unit types.

The minimum amenity for each unit shall be provided in accordance with the following schedule:

•	Bachelor Unit	150 sq ft.	$(13.9 \text{ m}^2)$
	One-Bedroom Unit	200 sq ft.	(18.6 m <sup>2</sup> )
	Two-Bedroom Unit	575 sq ft.	(53.4 m <sup>2</sup> )

Three-Bedroom Unit

950 sq. ft.  $(88.2 \text{ m}^2)$ 

. Four-Bedroom Unit

1,325 sq. ft. (123.1 m<sup>2</sup>)

There are two basic categories of amenity space which should be considered in the planning of a comprehensive development.

Individual Amenity Space - areas adjacent to each unit for individual activities of the residents.

Communal Amenity Space - indoor and outdoor areas for both active and passive communal activities.

In addition to the consideration of the activity patterns of the intended users there are a number of other factors such as the form of the housing, the density and size of the project, its location and the climate of the area which will determine the appropriate allocation and design of amenity space.

# 1. Individual Amenity Space

The siting of housing so as to provide adequate light, air, scenery and privacy for each unit will not necessarily ensure that sufficient usable space will be available around the dwelling to accommodate a variety of individual outdoor recreation and leisure activities, such as eating outdoors, gardening, children's play, sunbathing, and so on. Therefore, in a comprehensively-planned development, an outdoor living area shall be provided immediately adjacent to each dwelling unit, to accommodate these individual activities.

The total area of each outdoor living space shall be equal to at least one half (1/2) the gross finished floor area of the dwelling unit. This outdoor living area shall consist of one uninterrupted space and shall not be made up of leftover side yards, strips of front yards, etc.

This space shall be included as part of the Minimum Amenity Area (MAA). (The minimum requirement for an outdoor living area shall be not more than the MAA figure for that unit less the minimum space required for communal amenity.)

In addition to demanding a sufficiently large area, these outdoor activities require that the space be well-drained and can receive direct sunlight for a part of each day. The design of the outdoor living space shall be such that at least part of it can be used as a privacy area in which a person, when sitting down, could not be seen from adjacent outdoor living spaces, public areas, walkways or streets. If not fully enclosed, the limits or boundaries of this

outdoor area should be clearly defined by fencing, screening, planting or other suitable means in order to clarify the control and use of this area. Access for servicing purposes should be provided to the outdoor living area which will not necessitate passing through a main living area of the unit.

The various activities, both private and communal, undertaken by residents outdoors, involve the acquisition and use of a variety of articles and equipment such as; seasonal equipment (bicycles, sleighs, barbecues, wading pools), outdoor tools and accessories (garden equipment and furniture, mowers, snow removal equipment), and items stored only temporarily (discarded furniture, garbage, papers). Storage facilities specifically designed for this type of regular use should be provided within easy access of each unit. The design of these facilities should ensure that the storage area can be securely locked, and if intended for refuse storage, well-ventilated. Where facilities are not provided as an integral part of the unit, space shall be designated for such a facility in an appropriate location.

# 2. Communal Amenity Space

Within any housing project there is a need for space which can be used on a shared basis by the residents for individual or group activities. In higher density developments, as individual yard areas and unit separations are reduced, more thought must be given to providing communal areas to accommodate those recreational activities which cannot or should not be undertaken within the individual unit or yard area. Communal space should be allocated for a variety of different user groups and functions such as: outdoor areas for active use such as games and sports, outdoor areas for passive uses such as walking or sitting and communal indoor facilities in larger projects for both active and passive use.

In planning the communal amenity areas for a project, consideration must be given to the manner in which these areas are to be operated and maintained. Under various forms of tenure such as condominium, cooperative or rental, a management group is established for the project which can normally assume the responsibility for the communal areas. However, in developments where the units are sold freehold, this local management structure does not exist and the communal facilities provided must be taken over and maintained by the municipality or perhaps a homeowners' association.

In denser small-lot housing projects, the need for play areas for young children is particularly important, because of increased child population and the lack of individual amenity space for communal activities. As their mobility is very limited, young children will only make use of a play area if it is a short distance from the home

and is not reached by crossing busy streets.

In comprehensively-planned developments of over 20 family units (two bedrooms and more), a small play area for young children shall be provided within a walking distance of not more than a 100 yards (91.4 m) of the majority of the units measured along the principal pedestrian route. It is preferable that this play area be located within view of as many units as possible. The amount of space required shall be based on the provision of a minimum of 50 sq. ft (4.6 m<sup>2</sup>) for each family unit. Landscaping, fencing, surface treatment and equipment may be provided as appropriate to the design and location of the play areas. This space shall be included as part of the Minimum Amenity Area.

Though the main function of these small communal spaces is to provide play areas for young children, they should be designed as multi-functional spaces serving a number of other uses as well, such as providing landscaped areas for visual relief in these denser developments and pleasant shaded seating areas where people can relax and parents can supervise their children. Clumps of trees, natural planting and features should be preserved in these areas and augmented with durable forms of ground cover and a variety of hard-wearing surface materials to create an attractive area requiring a minimum of maintenance.

#### D VEHICULAR PARKING

The design and location of vehicular parking facilities are important aspects to consider not only because of the resident's reliance on the car as an item of daily use, but also due to the increasing trend of residents to own more than one vehicle, such as a second car or a recreation vehicle (e.g. a camper, truck, boat or skidoo). Careful consideration should be given to what the vehicular ownership rate is likely to be in a project and to provide sufficient parking to satisfy this need. Provision of visitor's parking should also be considered and planned for within the development.

As a basic requirement, at least one parking space shall be provided for each dwelling unit within a walking distance of 150' (45.7 m) of a unit entry. Where this parking space is provided on the individual lot, it shall not be located within the separation space provided directly in front of a principal living room window.

Where municipal local parking standards are more stringent, these local requirements shall apply.

APPENDIX 3

PROCEDURES AND CRITERIA FOR REVIEWING INNOVATIVE HOUSING PROPOSALS PREPARED BY THE CITY OF EDMONTON.

Procédures d'examen et critères d'appréciation des projets d'habitations novatrices

### Définition

On entend par habitations novatrices celles qui, par quelque aspect inédit ou inhabituel, s'écartent des pratiques contemporaines de construction, des prescriptions d'implantation ou des techniques de lotissement.

# Procédures d'examen

Le promoteur doit soumettre son projet au Service d'urbanisme et demander que l'emplacement soit désigné "Secteur d'aménagement expérimental d'habitations" aux termes de l'article 155 de la Loi provinciale d'urbanisme dont la traduction se lit comme suit:

- "155 l. Dans le but d'encourager la construction expérimentale d'habitations à prix modique, une municipalité peut demander au Ministre d'émettre une ordonnance désignant une ou plusieurs étendues de terrain situées à l'intérieur de ses limites "Secteurs d'aménagement expérimental d'habitations".
  - 2. Au reçu de la requête, le Ministre peut émettre une ordonnance dite Ordonnance relative à un "Secteur d'aménagement expérimental d'habitations".
  - 3. A l'intérieur d'un secteur d'aménagement expérimental d'habitations, le conseil d'une municipalité peut, nonobstant toutes dispositions législatives dont la présente loi, approuver un projet d'aménagement expérimental d'habitations à prix modique, qu'il soit ou non conforme aux règlements de la municipalité.
  - 4. Nonobstant toutes dispositions législatives dont la présente loi, et tout règlement, l'approbation d'un plan de lotissement dans un "Secteur d'aménagement expérimental d'habitations", peut être accordée par le Ministre.
  - 5. Pour que la construction d'habitations à prix modique dans un secteur d'aménagement expérimental puisse être entreprise et menée à bonne fin économiquement et rapidement, le Ministre peut:
  - a. renoncer ou permettre de renoncer, en totalité ou en partie, aux dispositions et conditions de la présente loi ou des règlements qui en découlent, et à tout règlement de la municipalité, et
  - b. prendre, autoriser ou prescrire toutes mesures qu'il juge souhaitables et conformes à l'intérêt public".

Avant de présenter officiellement sa demande à la Ville par l'intermédiaire du Service d'urbanisme et pendant qu'il met son projet au point, le promoteur devrait, pour en faciliter l'agrément, Upon satisfaction with the kinds of information, requirements and criteria that the Department deems necessary to evaluate the proposal properly a presentation will be made to the Municipal Planning Commission. The Municipal Planning Commission is delegated authority to approve all innovative housing proposals for any area to be proposed as a Residential Experimental Development Area. Subsequent to an approval by the Municipal Planning Commission of an innovative housing proposal referred to above, but prior to application being made to the Minister for an order designating a Residential Experimental Development Area, all property owners within 200 feet (61 m) of the approved development be notified and be allowed 14 days in which to appeal to Council the approval given by the Municipal Planning Commission.

After this process has been completed, an application will be made to the Minister of Municipal Affairs for a Ministerial Order to designate the site as a Residential Experimental Development Area and authorize the waiving of any municipal or provincial regulation not observed in the plan. Alternatively, the designation and waiver could be applied for separately. The recommendations as to the information required of the developer will most likely allow for the application to be made concurrently.

# Information Required from Developer

A detailed narrative statement shall be submitted with the application for designation of a Residential Experimental Development Area and shall include the following information:

- 1. The developer must demonstrate, in order to qualify under Section 155 of The Planning Act, that his proposal is a "low-cost" residential development. A cost analysis and/or estimated market price of the units would be satisfactory. It is noted that "low-cost" is not interpreted as meaning low-income housing but rather housing covering the full income range of the market but less expensive than comparable conventional units.
- 2. All elements of the plan considered innovative will be clearly identified and sufficient supportive material provided to establish the characteristics and extent of these innovations.
- 3. Each innovation so identified must be justified in terms of its importance to the total concept, the benefits to be derived from its implementation, its impact on the provision of services and amenities and desirability to the general public.
- 4. Those sections of municipal and provincial regulations which will have to be waived to allow for the innovations should be specifically quoted.

- 5. Delineation of the areas of immediate and on-going responsibility in the development. The forms of ownership involved should be indicated and the elements of the project to be developed and maintained by the developer/applicant, homeowner and municipal authorities outlined. This would include the initial landscaping, servicing, and roadway construction and maintenance of the site after it is completed.
- 6. Mechanisms by which conformance to the plan as submitted will be ensured. This would be done through a combination of caveats, easements, service agreements and performance bonds. In particular, maintenance easements must be provided to allow the residents and municipal authorities free access to those structures, open spaces and roadways for which they are responsible. The cost of any caveats deemed necessary will be borne by the developer/applicant.
- 7. Anticipated scheduling and sequence of development for the plan.
- 8. Interest of applicant in the proposal and a legal description of the subject property.
- 9. Present land use of the subject property and existing land use or zoning designation, if any.
- 10. School generation and population density statistics for the experimental area.
  - A comprehensive plan of development for the proposal shall accompany all applications and shall provide the following information:
- 1. Location, elevation and architectural treatment (particularly exterior finishes) of all structures including fencing.
- 2. Number and types of residential units.
- 3. Types of land use and net acreage of each use.
- 4. Location of all access: vehicular, pedestrian and emergency.
- 5. Plan of the vehicular and pedestrian circulation system.
- 6. Location, capacity and treatment of all parking areas.
- 7. Location of all existing trees and type and extent of landscaping anticipated.
- 8. Location and function of all open space and identification of open space outside of actual development anticipated for some of the residents.

- 9. Location and extent of all services.
- 10. Relationship of the planned development to adjacent land uses.

The Development Officer may request any additional information as may be deemed necessary.

### Criteria

Each proposal will be considered on its own merit with the developer being responsible for the justification of the experimental elements of the plan. The applicant, with the co-operation of the Planning Department and the Realty Development Office, is also responsible for reaching a consensus on the implementation of the proposed innovations particularly those affecting roadway and servicing standards.

At this time, the imposition of a specific set of regulations is not considered the best course. Within the brief period given to produce this report, it is not possible to delineate such a policy or critically adapt regulations used elsewhere. More importantly, by considering each plan on its own merit, the developer will be encouraged to submit a wide range of innovative and creative proposals.

It is anticipated that guidelines as to lot size, house type and setbacks will be developed in the future based on an analysis of the initial developments. In the interim, the following considerations should be observed in preparing and evaluating experimental residential communities:

- 1. Any innovation that may compromise safety standards will not be acceptable.
- 2. Relationship of housing type and size to the scale of the development and its component lots.
- 3. Integration of structures and open spaces in terms of separation, heights and architectural treatment.
- 4. Relationship of structures and open spaces to proposed circulation patterns.
- 5. Relationship of type and siting of structures to maximum use of private amenity spaces.

- 6. Adequate provision and subsequent effectiveness of commercial open spaces.
- 7. Use of and integration with natural features (trees, elevations, etc.).
- 8. Integration of the development into surrounding land use.

Prepared by: Subdivision Planning Branch City Planning Department June 16, 1975