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CENTRAL MORTGAGE AND HOUSING CORPORATION

Demonstration Projects

Canada Mortgage and Housing Corporation
société canadienne d'hypothèques et de logement

Canadian Mortgage and Housing Centre
Centre canadien de documentation sur
l'habitation

PROJECT INITIATIVE AND DEVELOPMENT PROGRAM

INTRODUCTION

These notes are a precis of ideas presented recently to groups of builders and developers. The ideas are intended to assist proponents in the development and preparation of project concepts to be financed and built under the Project Initiative and Development Program, begun by Central Mortgage and Housing Corporation during 1971.

Under this program, all manner of projects dedicated predominantly but not exclusively to lower-income groups, may be financed directly through CMHC.

One specific purpose of the Project Initiative and Development Program is the encouragement of innovative ideas in the field of housing and the testing of some in the form of demonstration projects.

It is towards this form of activity these notes are directed.

Information concerning financial arrangements is available through CMHC branch offices.

Central Mortgage and Housing Corporation
December 1971

DEMONSTRATION PROJECTS

CMHC extends an invitation to explore subjects and ideas which could take the form of Demonstration Projects. Proponents are encouraged to develop and bring forward innovative notions conceived to improve housing and residential land use. These notions may include design, environment, technology, economics, or a combination of all or several of these aspects.

This booklet deals only with one basic idea: *The demonstration of ownership attributes of house forms or housing developments of greater than traditional densities.* Examples shown in this booklet are illustrations of the principles to be demonstrated and are not intended to confine the industry's initiatives solely to these ideas.

PARAMETERS

Statistical projections of urban growth in Canada indicate that by the year 2,000, as much as 90% of the population will live in cities. Current trends suggest that for economic reasons, traditional low-yield residential land development will be limited, and an increasing number of Canadians can expect to live in housing developed at greater than traditional densities.

These new, multiple forms of housing have not as yet been widely accepted in Canada. Many of them, in their physical forms, emulate rental traditions which do not fit the social, economic and climatic conditions of Canada.

If the assumption concerning an increased incidence of urban housing is correct, and its public acceptance as a viable alternative to traditional house forms is also considered desirable, then its cultural adaptation is of paramount importance.

What are the salient qualities of traditional housing that should and could survive the transition to higher densities?

Home owners are motivated in their selection of homes by criteria too numerous for consolidation in this booklet. However, there are three basic attributes which critically affect

housing design and choice:

- (a) a street address and any other qualities associated with the notion of personal identity;
- (b) accessibility and shelter for the automobile; and
- (c) privacy.

Past neglect of these important principles on low or medium-density housing developments led to project designs stressing communal characteristics of group parking, public open spaces and relative remoteness of individual dwellings from public streets.

Projects of this kind may continue to be built, particularly for rental purposes, and thus suit a variety of circumstances or aspirations.

However, examples in this booklet illustrate the achievement of similar or perhaps higher-than-medium densities through alternative design approaches. These designs incorporate the three basic ownership attributes, thereby adding to the choices available to the home buyer.

POSSIBILITIES FOR MEDIUM-DENSITY HOUSING

1. Detached or Semi-Detached Housing Condominium

The need for development densities, higher than those found in conventional single or semi-detached housing, inevitably led to multiple forms of housing in the past. These multiple forms are not the only solution.

There is a need for an experimental project to explore the application of the condominium principle to single-family, detached housing. This would demonstrate that medium densities can be achieved without necessarily resorting to multiple forms.

In its short tradition, condominium tenure has so far been applied only to apartments and row housing.

The notion of individually-owned dwellings placed on collectively-owned land, offers the opportunity to assemble the units without regard to lot sizes, presence of public streets, individual legal lot description, compliance with side yards, set-

backs or similar restrictions applying to conventional subdivisions.

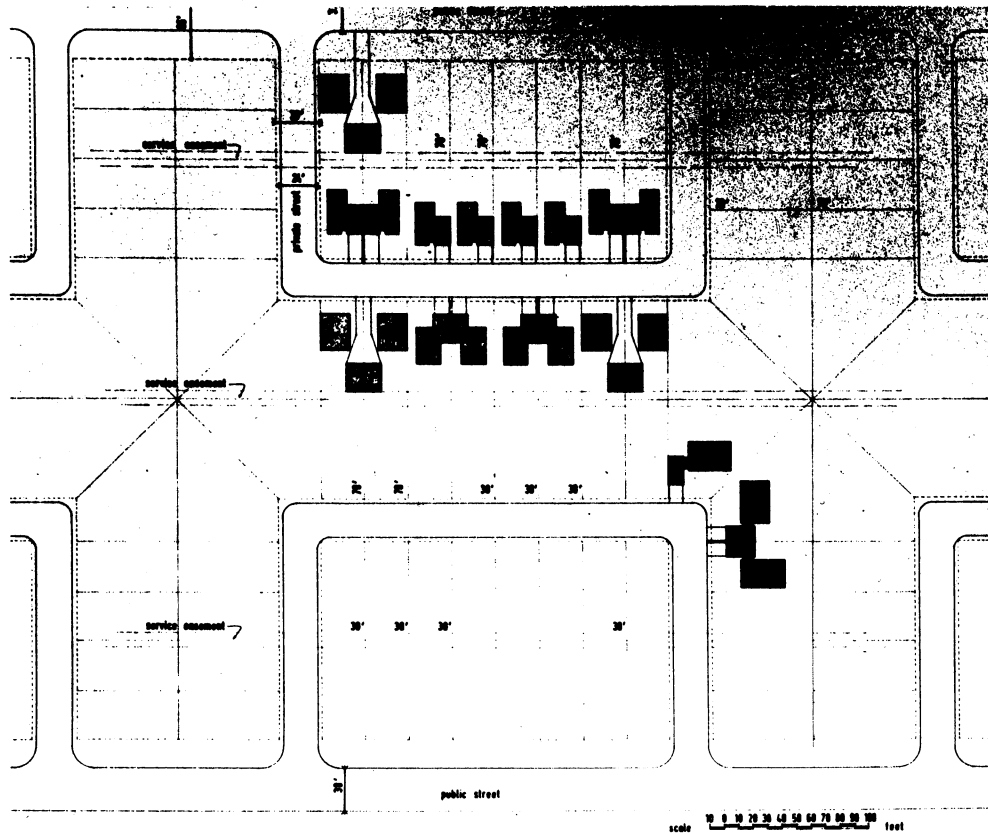


Figure 1 - A gross density of 17 dwellings per acre could be achieved by developing land in this manner.

The acceptability of this kind of development would depend not only on its economics but also largely on the skills with which the houses are placed on the ground, the way they relate to each other, the privacy aspects, the kind of spatial and environmental quality achieved.

House types suitably conceived for narrow lots would have to be used and their grouping would be arranged comprehensively to ensure compatibility.

2. Medium-Density Multiple Housing

The following examples illustrate the retention of the three basic ownership characteristics in multiple-housing developments of medium densities, using house types for varying income groups.

(a) The "Linked" House

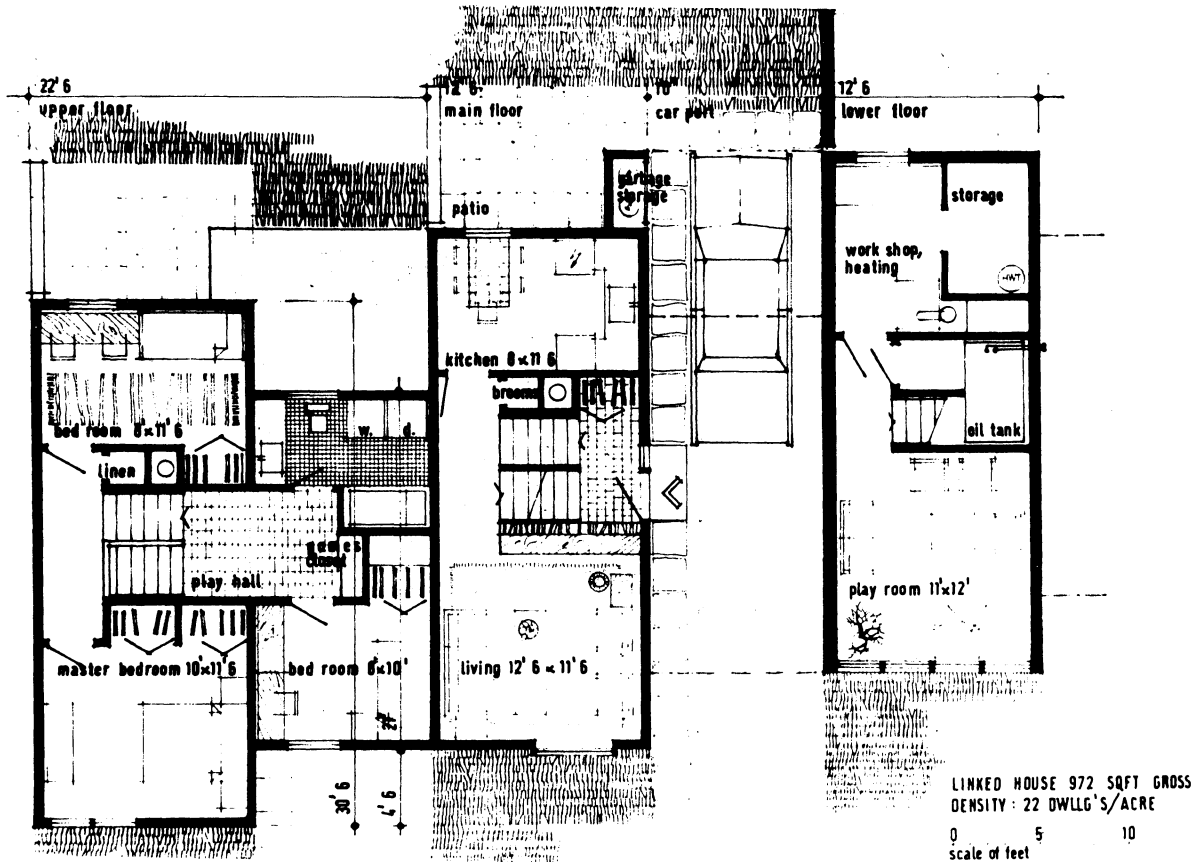


Figure 2 - Typical Floor Plans

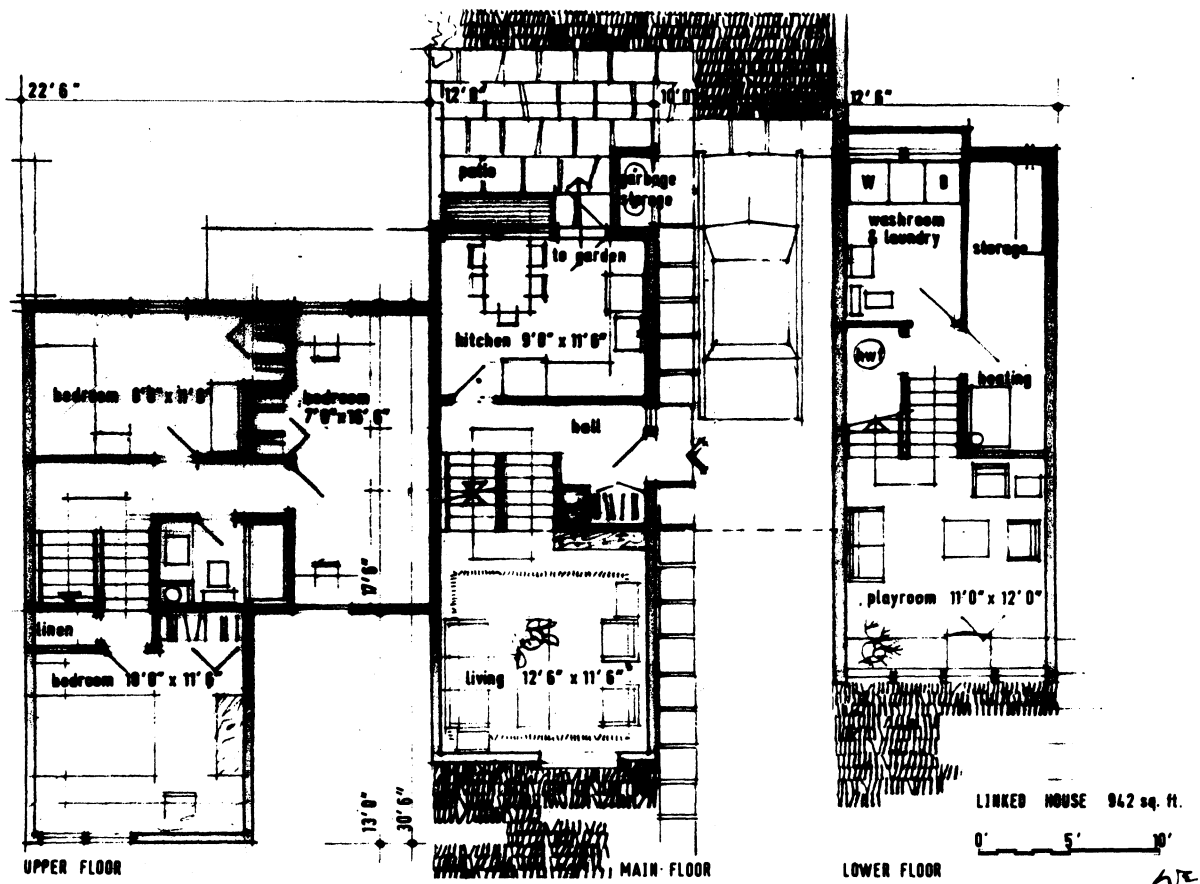
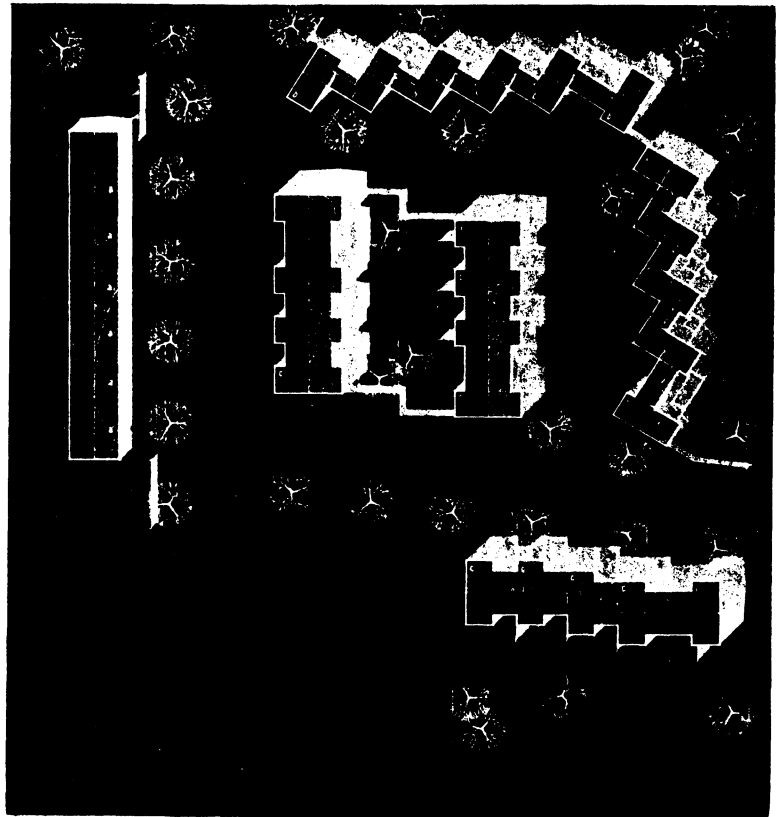


Figure 3 - Variation of a Typical Floor Plan



Figure 4 - Typical Street Elevations

Figure 5 - Projects developed at these densities and employing modest house types, as shown, are envisaged as serving low-income groups.



(b) The "Back-to-Back" House

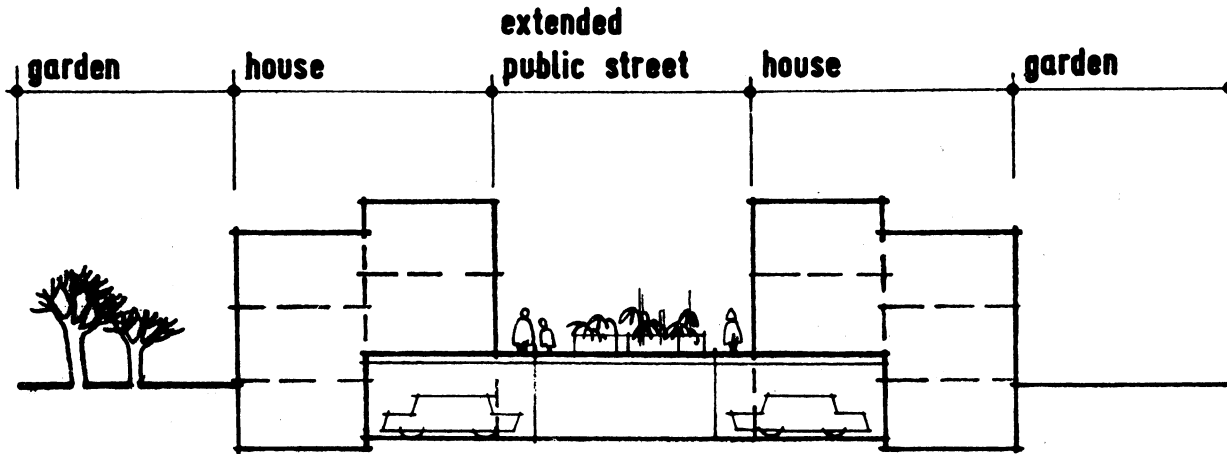
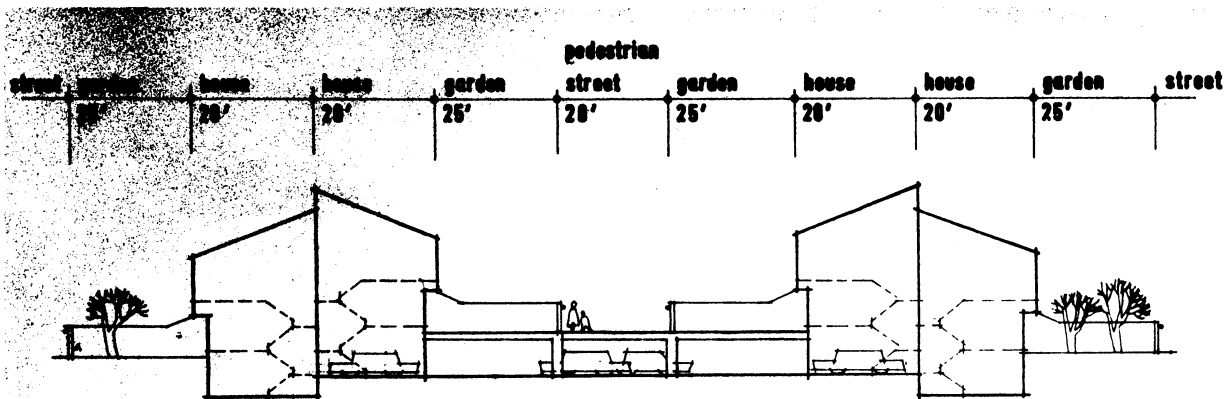


diagram showing principle of underground parking

Figure 6 - On land requiring even higher densities, underground parking has been used over the past 10 years or so, as a device to improve land utilization. The principle underlying the design concept rested on the provision of individual car parking at the basement level. The space above these garages was envisaged as an extension of the public street, while living areas face into landscaped, private or semi-private spaces.



underground parking principle applied to back to back housing

Figure 7 - Applied to "Back-to-Back" designs, significant savings in construction and services costs might be achieved through use of this principle. Individual car access on the basement level is still as shown in Figure 6, but the extension of the public street is formalized and reduced to the minimum required to be maintained publicly or collectively.

The examples chosen in Figures 8 to 12, are intended to illustrate a house of approximately 1,120 square feet, accommodating a six-person family. At a net development density of about 30 to 32 dwellings/acre, projects based on this concept may (depending mainly on land cost) accommodate families of moderate to middle incomes.

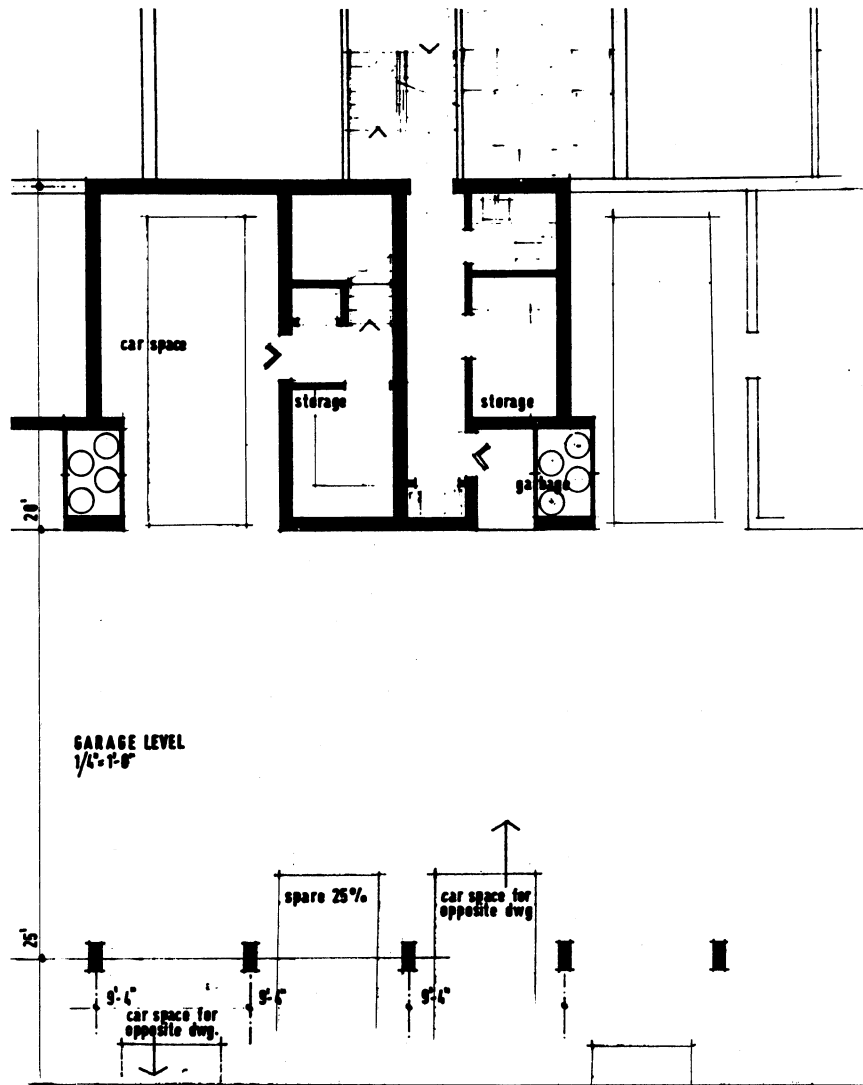


Figure 8 - Basement Plan

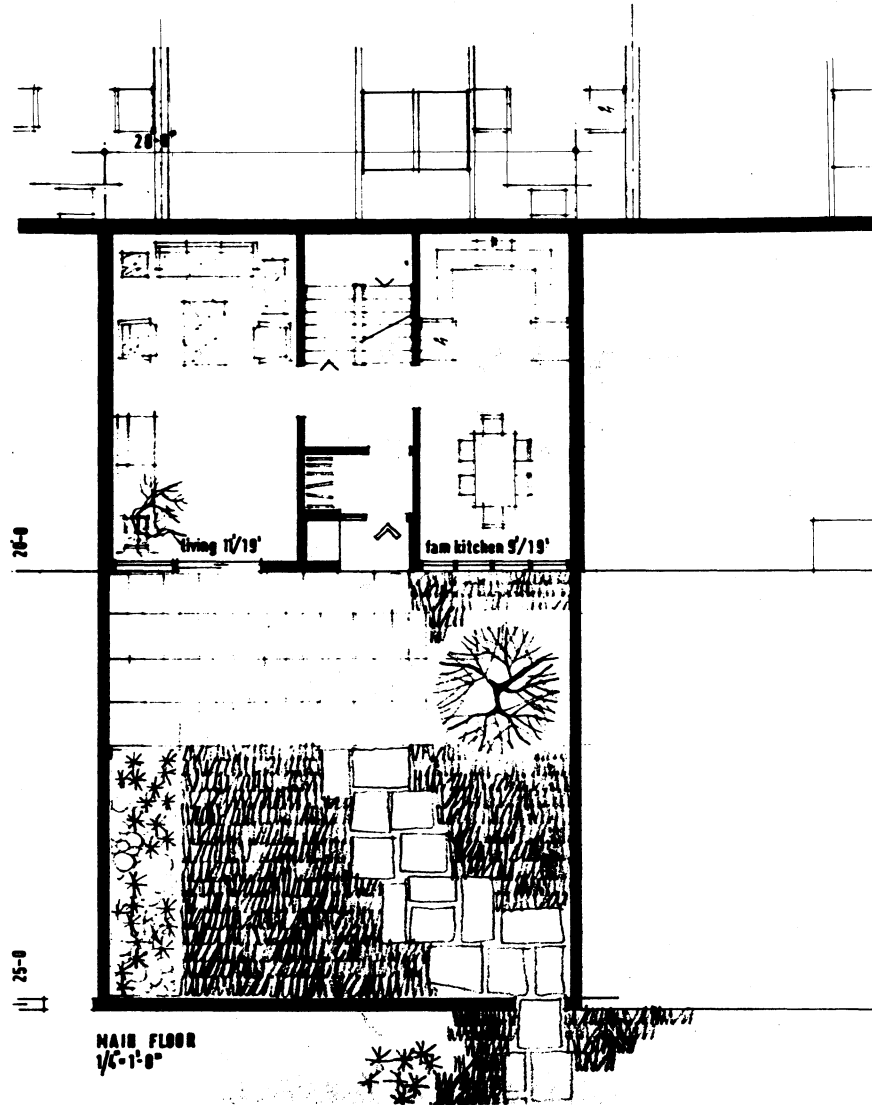


Figure 9 - First Floor Plan

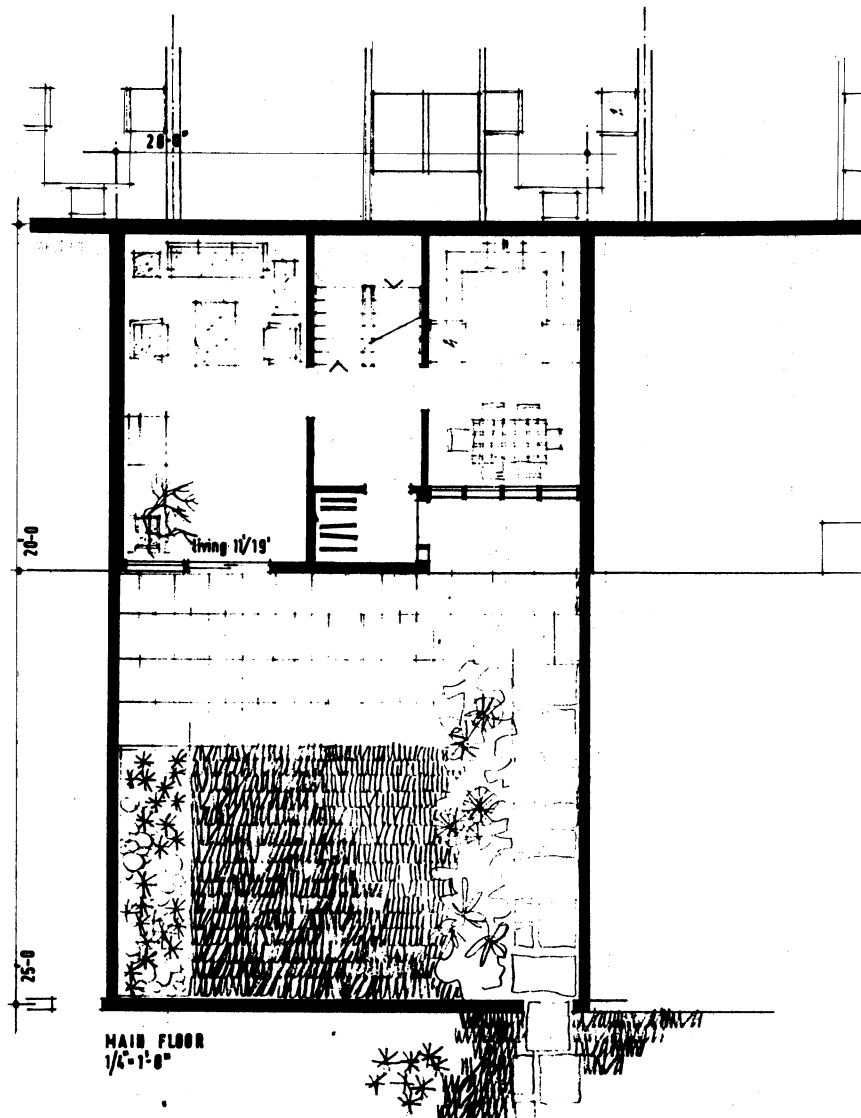


Figure 10 - Variation of a First Floor Plan

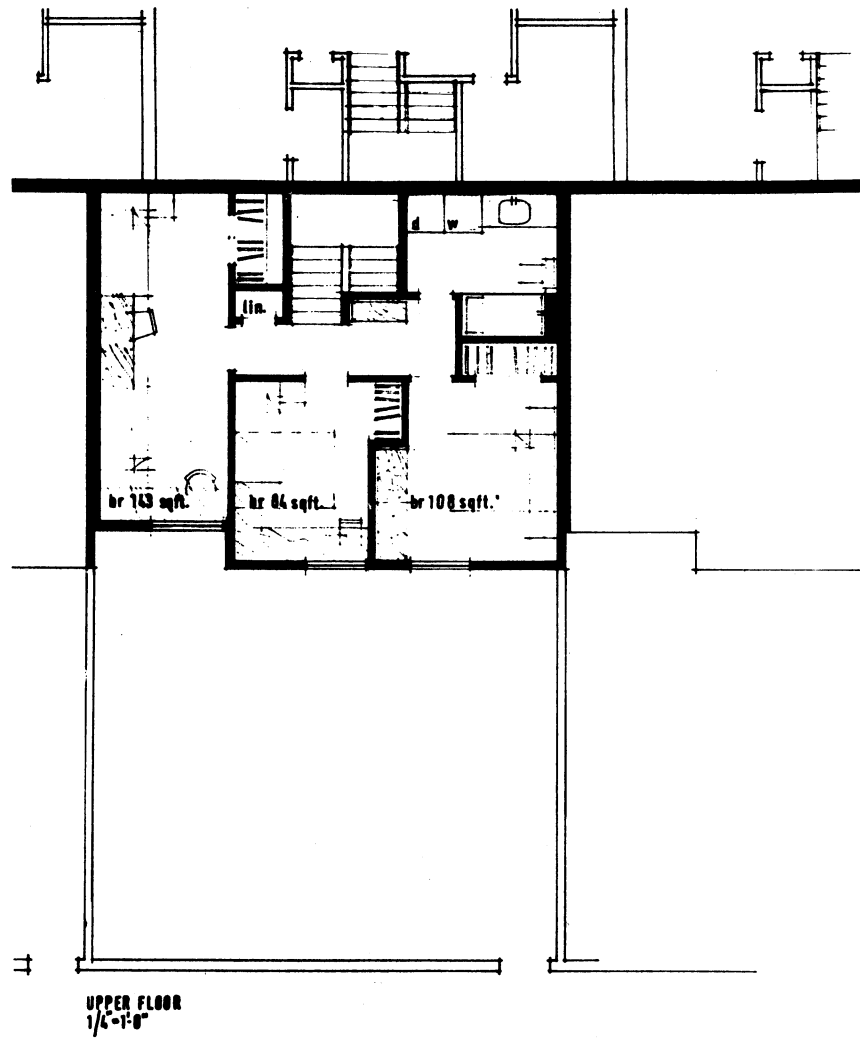


Figure 11 - Second Floor Plan

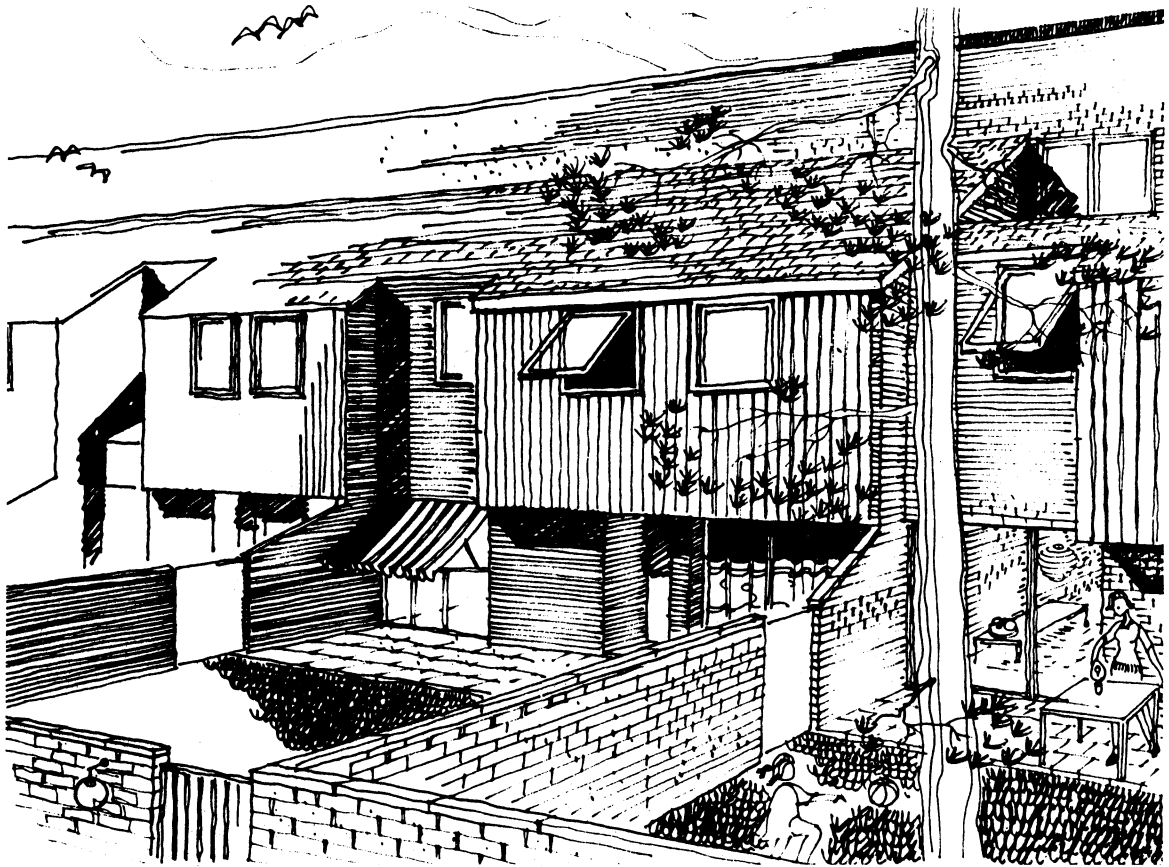


Figure 12 - Perspective

(c) A "Court-Yard" House

As already stated in the parameters of this booklet, multiple house forms will first have to be culturally adapted before they are universally accepted. Examples shown so far have stressed ownership attributes in design, and have emphasized solutions for low and moderate-income groups.

There is serious concern however, that unless their viability can be demonstrated for middle and upper-income groups, these forms of housing may become synonymous in the public's mind with poverty.

It is important therefore that in addition to physical adaptation, experimental projects should contain housing to serve the higher-than-moderate income groups, and thus demonstrate the possibility of social integration.

The "court-yard" house shown in Figures 13 to 18 illustrates demonstrations of this kind. It is a generous house. Nonetheless, significant savings can be achieved over traditional housing offering similar accommodation and amenities because of its multiple form and relatively efficient development density of 16 dwellings to the acre.

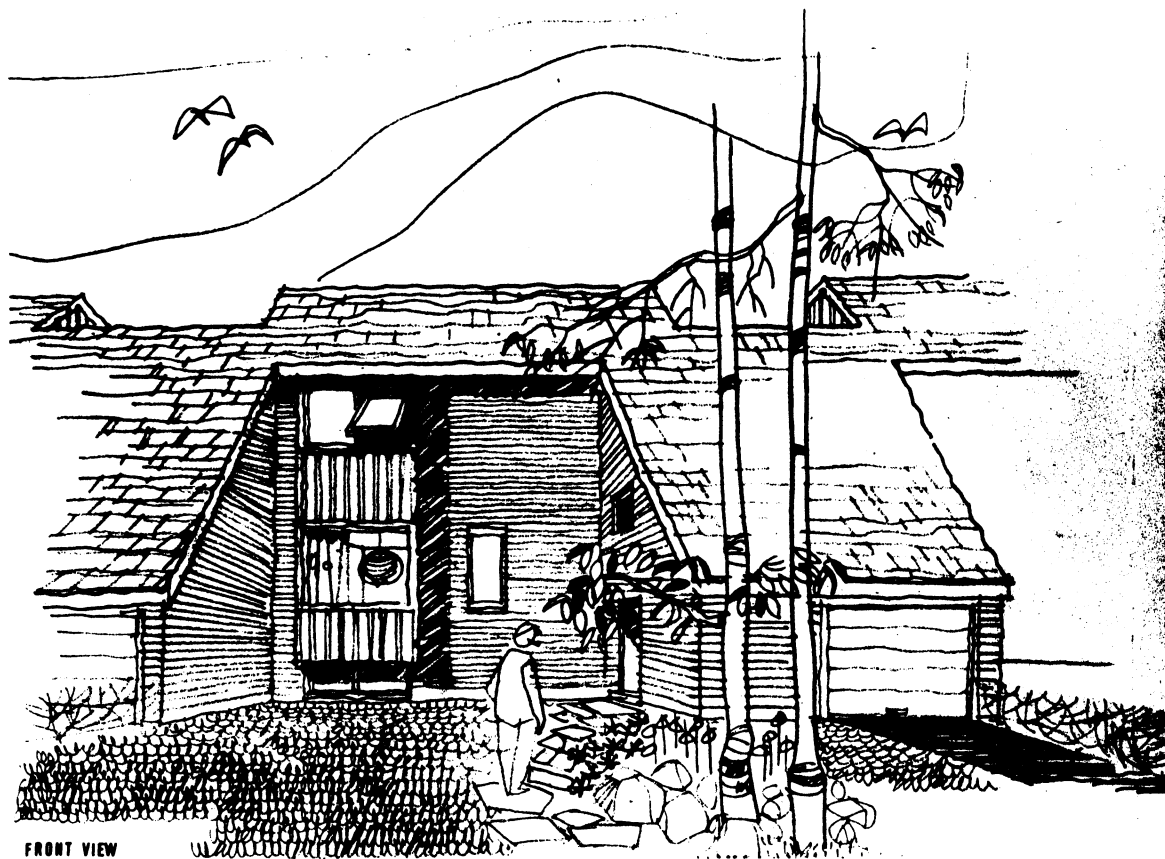


Figure 13 - "Court-Yard" House Perspective

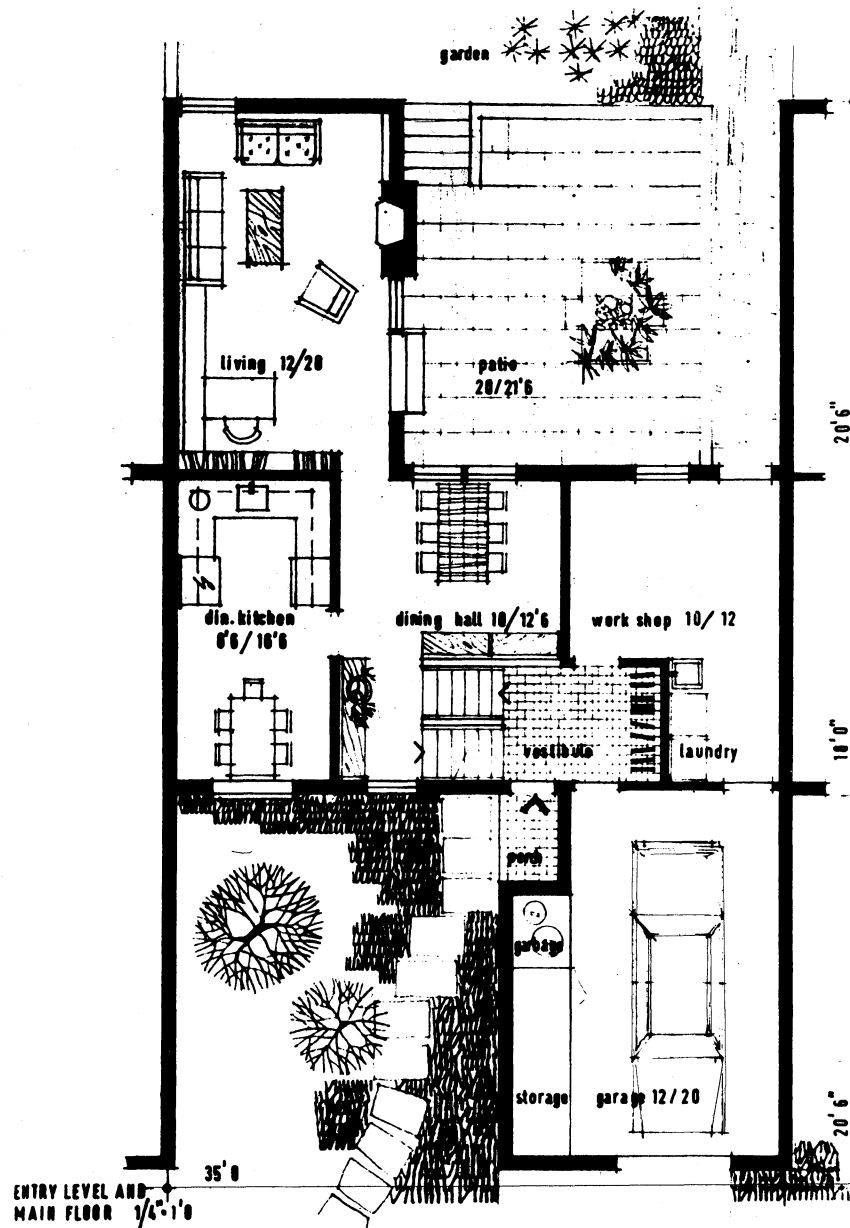


Figure 14 - "Court-Yard" House Entry Level and Main Floor Plan

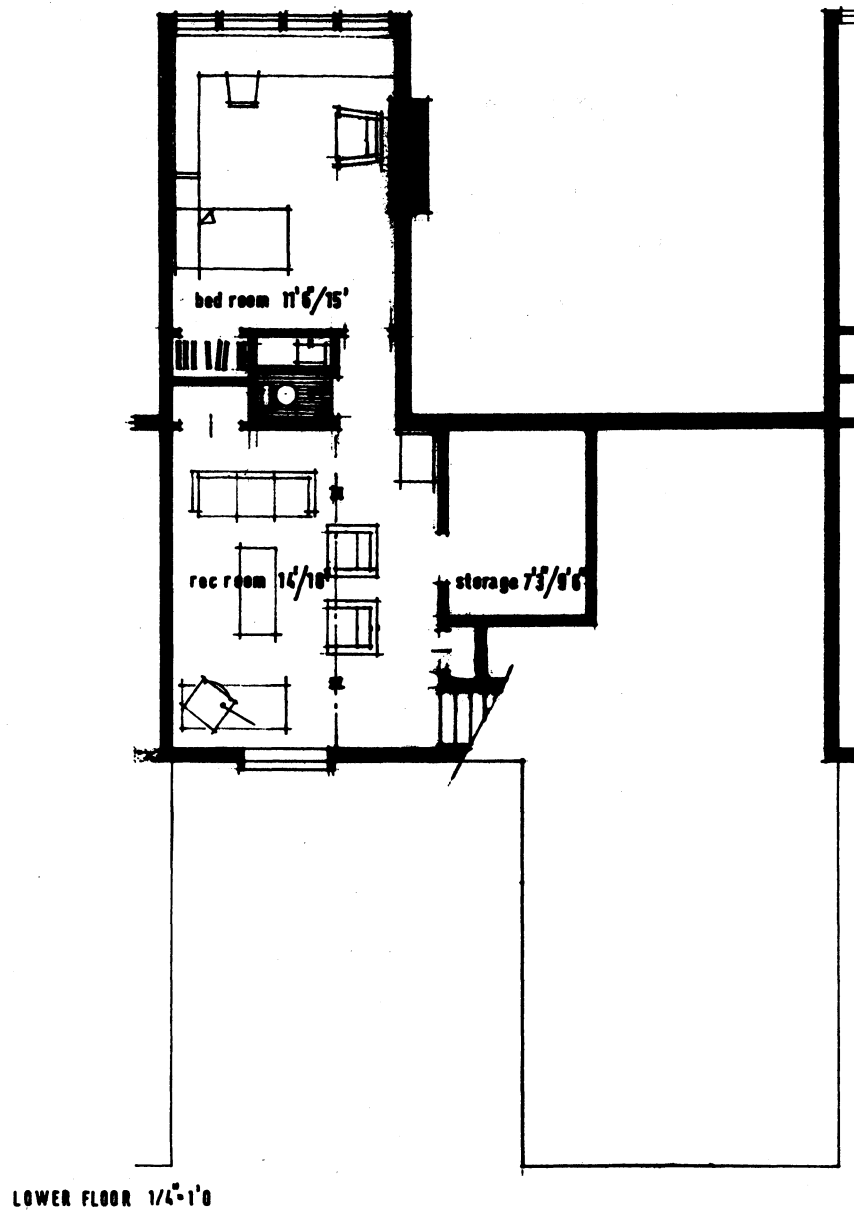


Figure 15 - "Court-Yard" House Lower Floor Plan

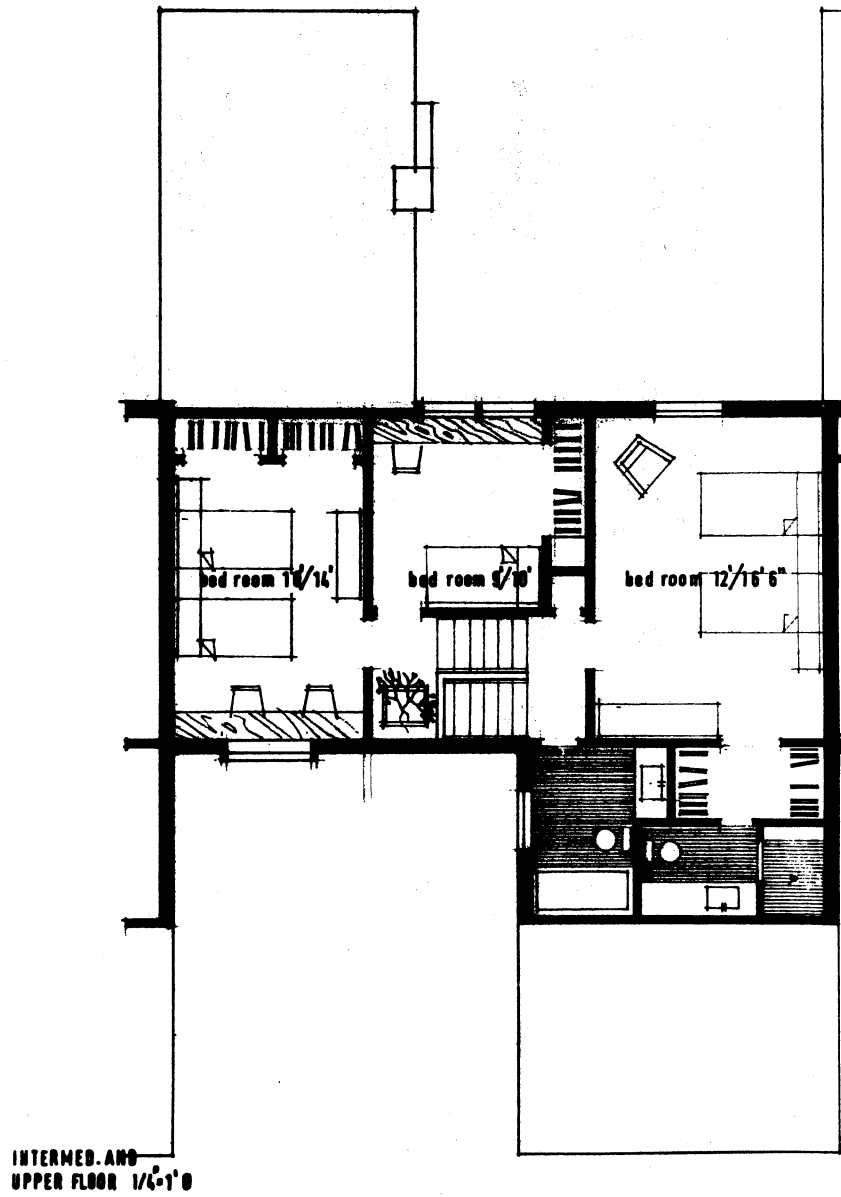


Figure 16 - "Court-Yard" House Intermediate and Upper Floor Plan

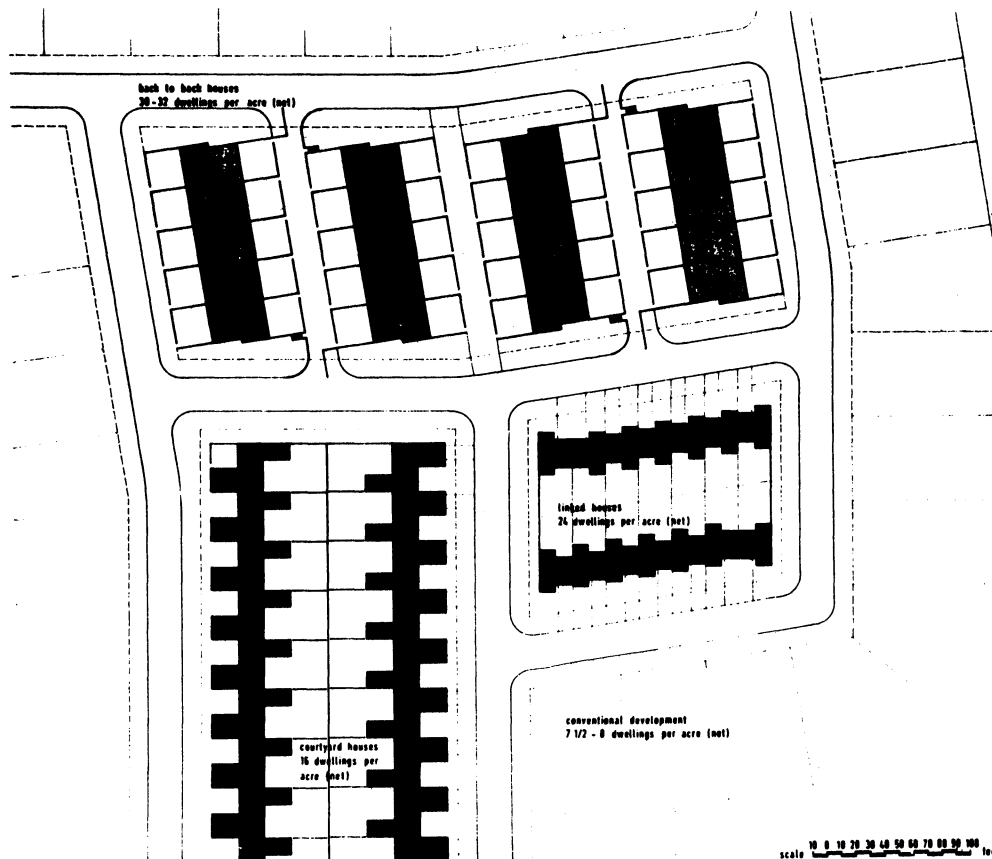


Figure 17 - A combination of the three house types illustrated in Figures 4, 12 and 13 is shown on this site plan. This plan shows respective development densities which can be achieved, and how such a project might fit into a conventional subdivision.

Figure 18 - (Opposite on Page 18) In some Canadian cities, rear lanes are used as the conventional method to provide access for vehicles, services and deliveries. Under such conditions, medium densities of up to 20 dwellings per acre can be achieved. At the same time, traditional characteristics of home-ownership are maintained.

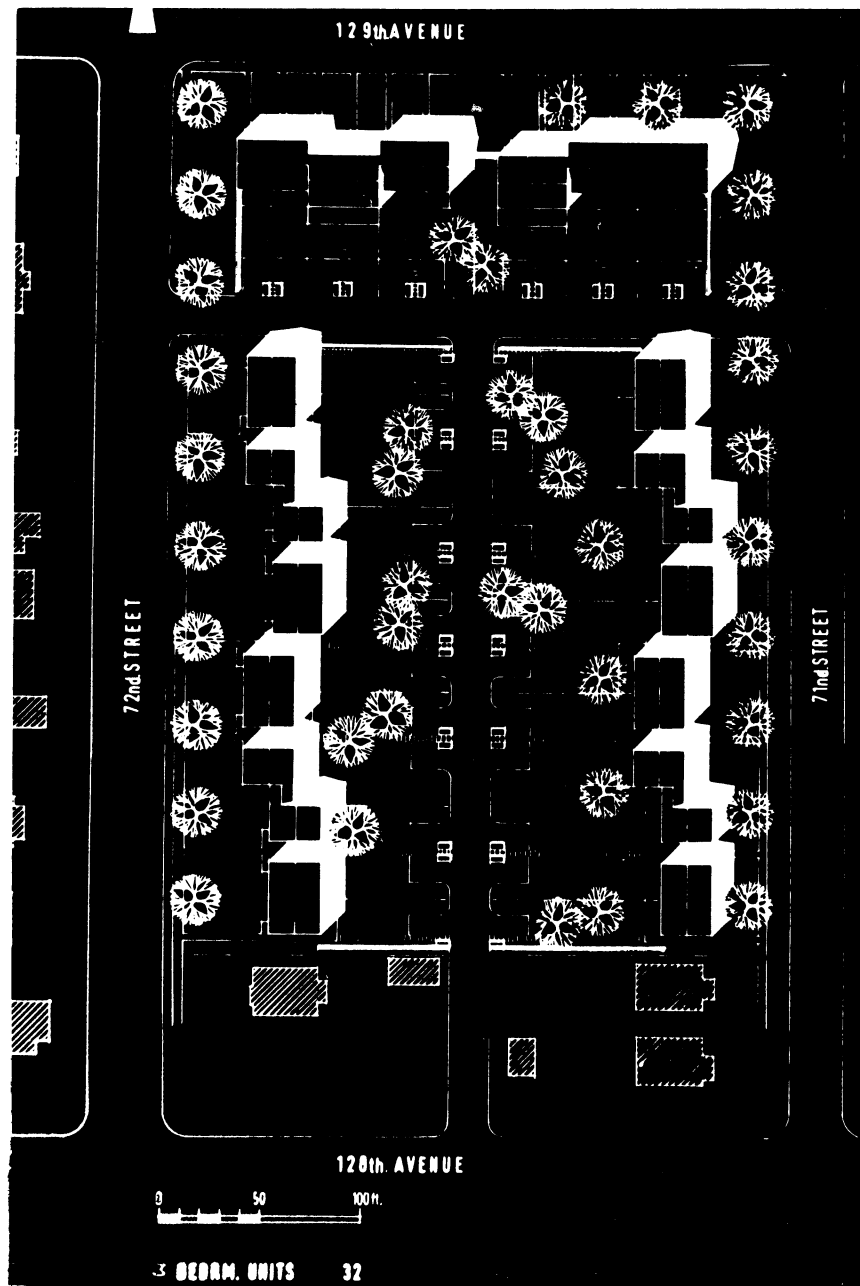


Figure 18

3. Ownership Characteristics in Multi-Storey Accommodation

Home-ownership attributes applicable to medium-density housing cannot be readily attained in projects of higher densities requiring multi-storey accommodation. There are however, a variety of conditions, which, if incorporated in multi-storey

housing, may make living more attractive than in the type of walk-up and high-rise apartment buildings now proliferating in our cities.

Broadly speaking, there are again three basic conditions which could make apartment living a reasonable alternative house form. These involve the provision of:

- (a) storage facilities within the dwelling;
- (b) laundry and drying facilities within the dwelling; and
- (c) a private outdoor space directly attached to the dwelling, superior in quality and size to the token space now provided in the form of minimum balconies.

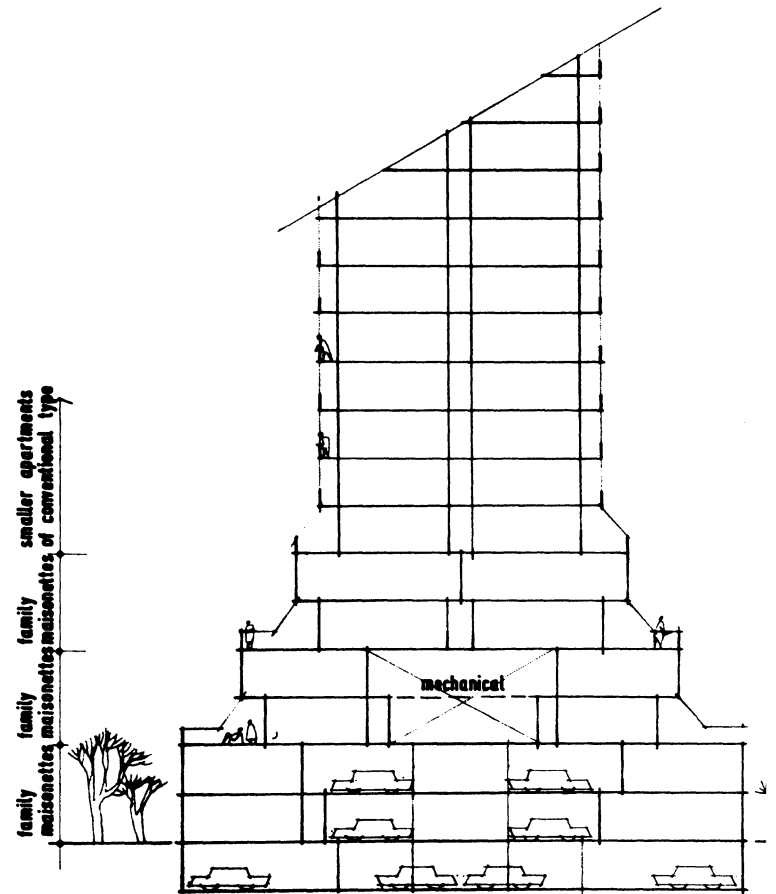
Other qualities associated with a house which could be built into an apartment include:

- (a) the maisonette principle which separates living and sleeping areas into two separate storeys;
- (b) cross ventilation; and
- (c) an access corridor which is more humane than the double-loaded corridor where length is governed by fire restrictions rather than by design considerations.

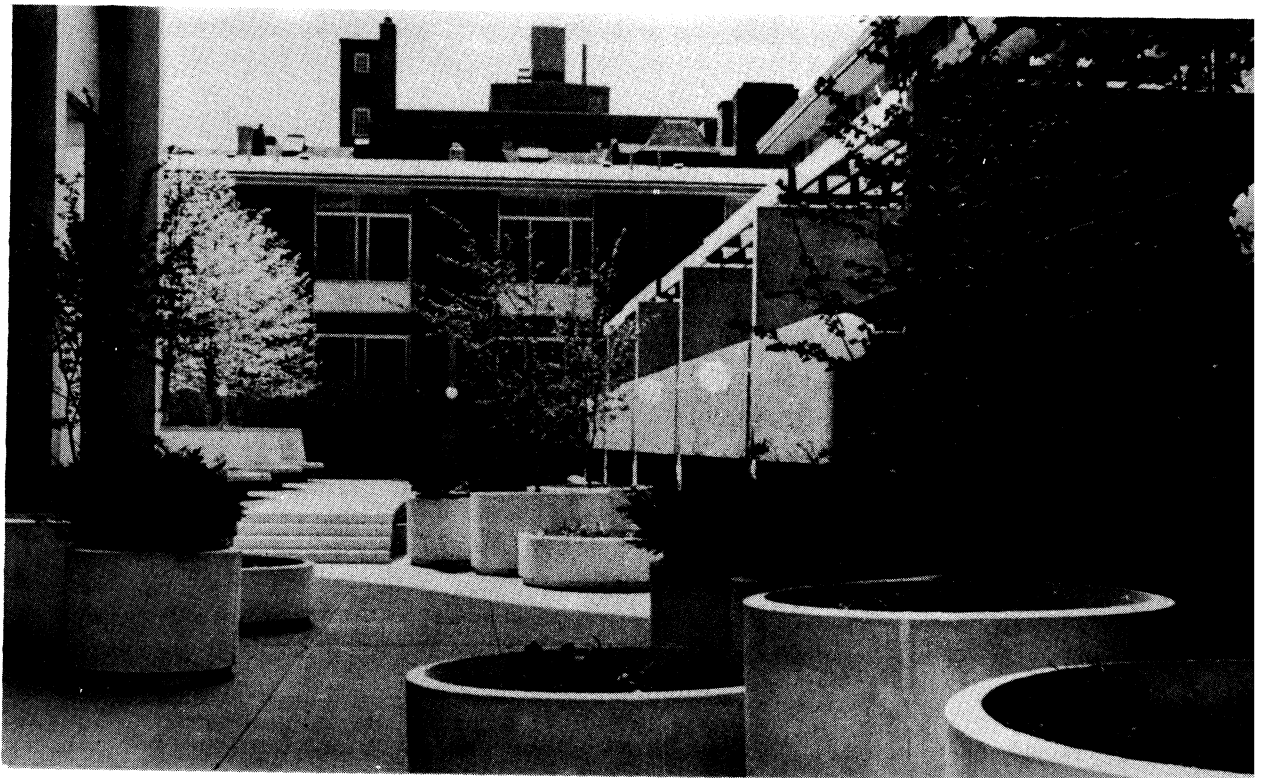
Figure 19 (Opposite on Page 20) - Inclusion of "home-ownership" qualities may be economically feasible only for a limited number of family dwellings located on the lower three or four storeys of a high-rise apartment. Dwellings on the upper floors might be of the more conventional design.

Figure 20 (Opposite on Page 20) - In other projects, "home-ownership" qualities could be developed in family accommodation on the periphery of a site with access to surrounding streets, and private yards facing inwards. Underground parking could be shared with high-rise dwellers on the same project.

RIGHT - Figure 19



BELOW - Figure 20



4. Air Rights

Economic constraints will influence space and "home-ownership" attributes in apartment developments of the kind previously discussed. Extensive savings in land development, construction and services costs, will have to be achieved if these attributes are to be accommodated.

The principle of air rights visualizes the employment of space above other uses. This could include residential accommodation. Properly employed, it could facilitate the sharing of land, development and construction costs among a number of users.

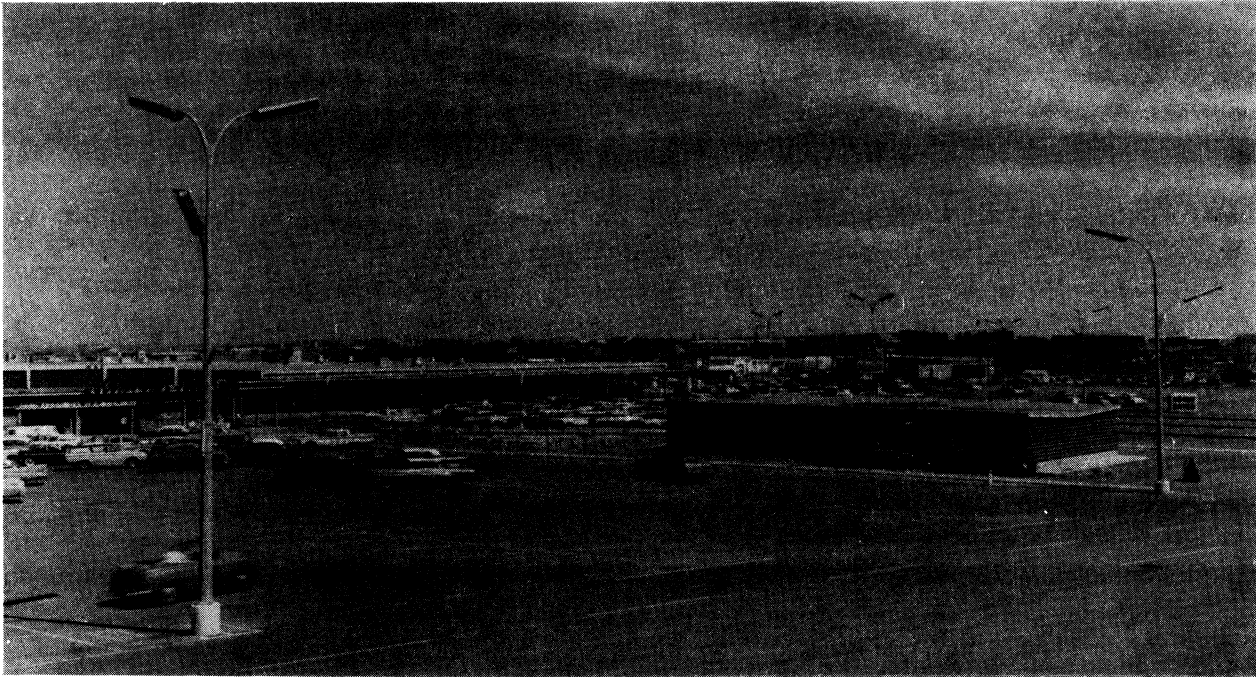


Figure 21 - A typical shopping center. If land and services costs contribute significantly to the high price of housing, and if municipal tax revenues depend on efficient land use, a dramatic waste of land is clearly demonstrated. This waste is not confined to shopping centers, but must be seen as one of the consequences of zoning regulations which tend to segregate parcels of land into differing and rather sterile land uses.

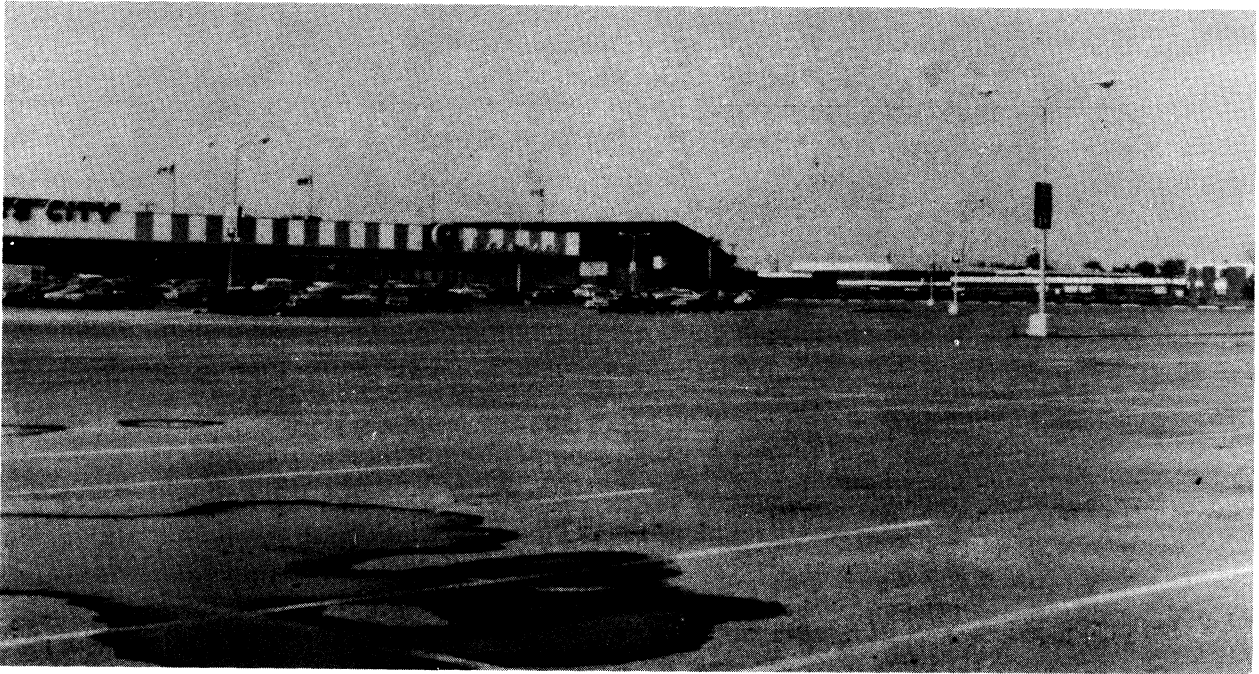


Figure 22 - Adjacent to this shopping center, there is a hockey arena, a swimming pool and a school, each on separate sites with differing land uses. The combination of these uses on one site would utilize the land more economically, would free adjacent land for other compatible uses, and could provide the opportunity to incorporate some unconventional housing (Figure 23) at reasonable cost.

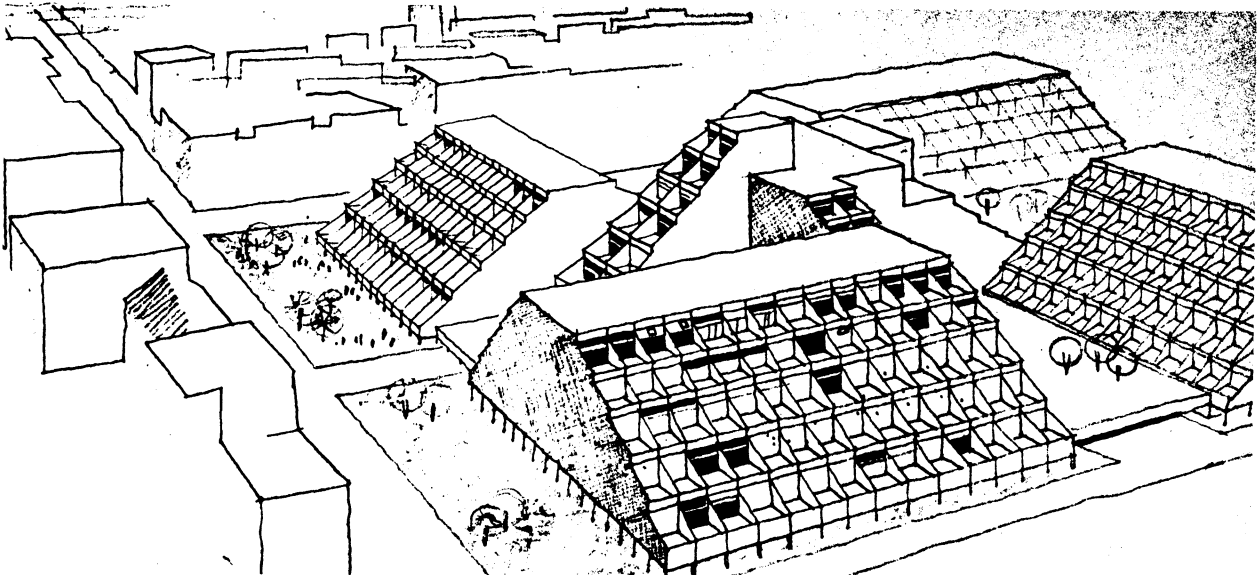


Figure 23 - Superimposed over commercial uses and parking, the pyramidal structures could contain recreational and institutional uses, such as arenas, swimming pools, schools, libraries, day-care centers and many others, as well as housing.

Additional benefits from developing land as shown in Figure 23 are:

- (a) improved maintenance of parking areas through the absence of snow;
- (b) improved convenience to shoppers who, under conventional conditions and regardless of weather, would have to walk great distances from parking spaces to stores; and
- (c) improved appearance within the city-scape.

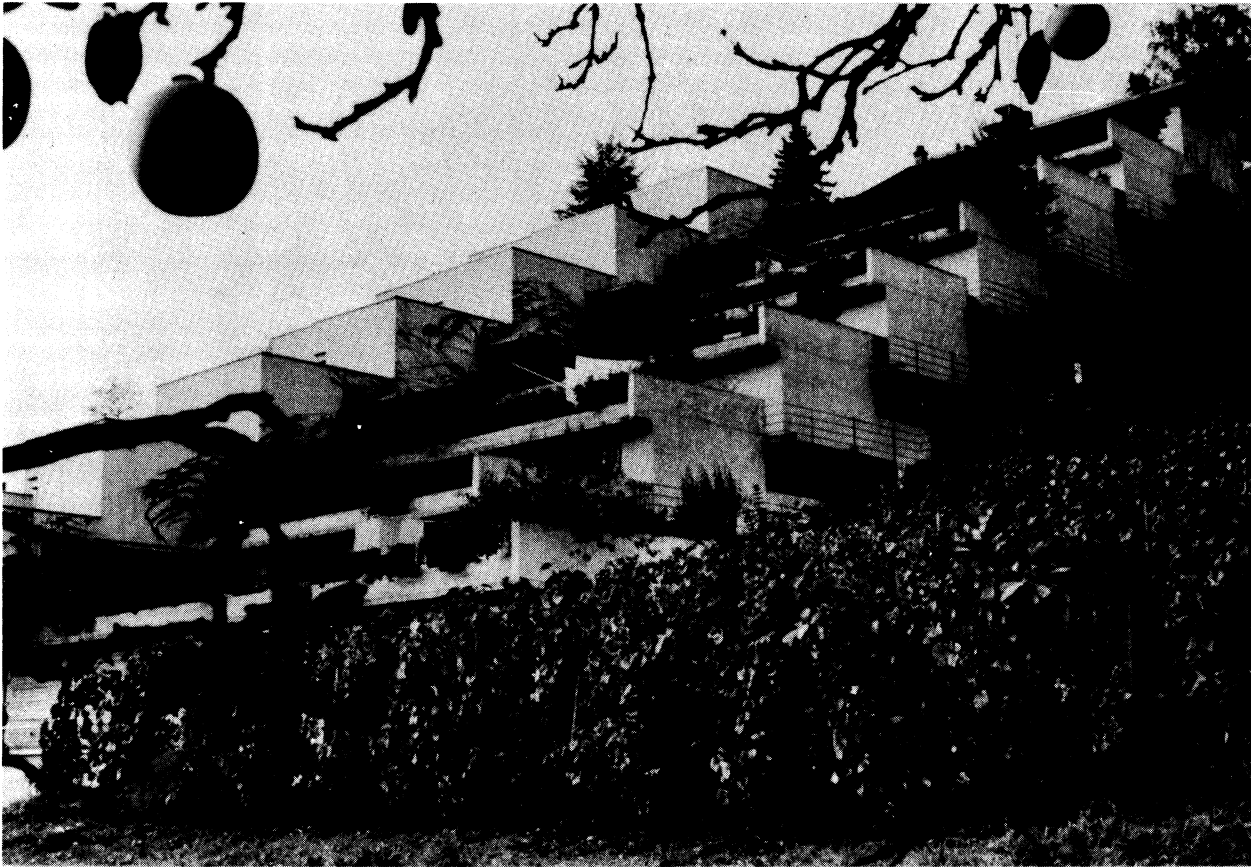


Figure 24 - Housing superimposed over other uses might look similar to terraced dwellings in Switzerland.



Figure 25 - Because of shared development costs, urban housing conceived under air rights could offer a more generous allotment of space than the typical walkup or high-rise apartment building.



Figure 26 - Experimentation with mixed uses may prove to be the key to providing a rich and stimulating quality to our urban landscape.

It is not likely that the very large developments, used to illustrate the notion of air rights, will be built as part of CMHC's Project Initiative and Development Program. The lead time required for planning, market research, and the financial risks involved, militate against the application of this idea within a program offering limited incentives.

However, ideas based on air rights to explore the same principle on a lesser scale, may very well provide the background for a realistic submission under the Project Initiative and Development Program.

5. Shell Housing

In the Atlantic Provinces, a large number of home owners are taking advantage of the opportunity to contribute labor and material to the construction of their homes. Down payments are thus being supplemented through a "sweat equity".

These experiments may encourage other Canadians to participate in similar schemes to save money.

Current inputs of "sweat equity" are confined to single-family housing and to the final phase of construction.

However, the application of the "sweat equity" principle to multiple house forms and to extended end phases or other phases of construction, remains essentially unexplored.

Builders and developers wishing to experiment with these notions are invited to submit proposals embodying "sweat equity", to CMHC under the Project Initiative and Development Program.

Such proposals should:

- (a) be conceived to facilitate contributions of "sweat equity";
- (b) emphasize low-income home-ownership but not necessarily to the exclusion of other income levels; and
- (c) include house forms differing from the single-family unit.

CONCLUSION

The ideas expressed in this booklet have been discussed with many groups representing the house-building and land-development industries across the country. They are not intended to be exclusive.

The Project Initiative and Development Program was launched as a vehicle to advance innovative ideas in the very broad field of housing. CMHC would therefore welcome suggestions and ideas which might form the basis of housing and environmental experimentation.

Projects built under this program will be evaluated to determine their economic feasibility, applicability to other locations, user acceptance, architectural and civic design qualities. Findings will be made available to the building industry, municipalities, and the public.