UNIVERSITY OF MANITOBA

# PUBLIC TOWN HOUSING IN WINNIPEG:
# AN ANALYSIS AND THE DEVELOPMENT OF A PATTERN LANGUAGE

By

TERENCE D. MAUNU

A THESIS

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A dissertation submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements of the degree of

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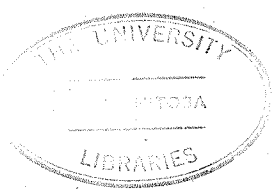

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TERENCE D. MAUNU

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# INTRODUCTION

"If architecture is to have any external validity, it is essential that design goals stem from the needs, desires and values of those who are affected by the buildings rather than simply from the values of those who believe that they know what is good for the rest. The architect's role is to ensure that alternatives are considered...."[1]

Martin Pawley "...(contends that) since the subjective value of objects (including dwellings) 'resides in their significance as extensions of the personality of their owner', the designer's task is to intensify this man/object relationship."[2]

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footnotes for this chapter p. xi.

# INTRODUCTION

This thesis confronts the problem of the ever-increasing anonymity and non-involvement of the user in the housing process. Rapidly increasing land values and the unstable economics of the building industry combine to effectively dissociate the majority of the North American urban dwellers from involvement in the development of housing. Most users must choose from an existing housing stock, hoping to find a home that is both within their financial means and that reflects their housing needs. Understandably, as the financial security of the user decreases, so does the range of choices available to him. At the bottom of this scale is the low income family, the family which because of physical, mental, or educational disabilities is economically insecure. Many of these are "wards of the State" and are dependent upon the Government for subsidization. They must rely upon some form of Public Housing to satisfy their dwelling requirements.

It is with this group of urban dwellers, the Low Income and with this form of housing, family Public Town Housing, that this thesis is concerned. It is felt that by examining the particular nature of the two within the specific context of Winnipeg, Manitoba, insight might be gained into the consequences of creating housing for the anonymous user.

The Manitoba Housing and Renewal Corporation (herein referred to as the MHRC or the Corporation) is a Crown corporation of the Government of Manitoba. It is responsible for the delivery of Public Housing in Manitoba and Winnipeg. The Corporation's housing program is examined

in Chapter I in an attempt to understand the complexity of the delivery system utilized in the development of Public Town Housing. This is accomplished by analysing the roles and relationships between the MHRC, the Architect, and the User as they have evolved since the formation of the MHRC in 1967 and as they exist today.

In Chapter II an understanding of the particular nature of the Winnipeg Public Housing tenant is gained from a User Feedback Survey conducted upon Public, Limited Dividend, and private town housing tenants in Winnipeg. A comparison of the data from the three user groups gives a clearer understanding of the nature of the Public Town Housing user.

Also in Chapter II an investigation of a specific group of existing Public Town Housing developments is conducted in an attempt to uncover the evolution of this form of housing in Winnipeg.

Following this, in Chapter III the building codes and design standards are analysed in an attempt to understand how these influence the built housing environment.

The role of the housing environment in fulfilling the physical and psychological needs of Man, the social animal is considered in Chapter IV. Insight into the man-built environment relationship was provided through readings in environmental socio-psychology. An analysis of the user feedback survey within the group of built Public Town Housing environments investigated is also conducted. This is done in an attempt to establish the success of the projects in satisfying user needs and to realize some subjective reactions to the built invironment.

This four-part analysis is then synthesised in Part II through the

establishment of a "Pattern Language for Public Town Housing in Winnipeg". The Pattern Language is a system of environmental analysis and design prescription created by Christopher Alexander and the Center for Environmental Structure in Berkeley. It is of particular interest to this thesis because it can be used to methodically relate user needs to physical components and their organisation in the built environment. The establishment of a typical series of relationships is accomplished in four steps:

1. An extensive analysis of the user and his needs.
2. An analysis of the inherent relationship between the user's needs and the spatial organisation of the built environment.
3. The translation of user-sensitive physical components within the built environment into prescribed design directives.
4. A cataloguing of these design directives and the related problems they resolve, for use by the designer of the built environment.

FOOTNOTES

1. Jon Lang, "Architecture for Human Behavior": The Nature of the Problem" Architecture For Human Behavior, Collected papers from a mini-conference. (Philadelphia: Philadelphia Chapter, American Institute of Architects, 1971) p. 24.

2. Alan Lipman, "Territoriality: a useful architectural concept?" RIBA Journal, February 1970, p. 68.

# PART ONE
# an analysis of public town housing in winnipeg

# public town housing in winnipeg: contextual background

"Because housing is a sophisticated act before it is an architectural one, architects and planners remain politically impotent; they have become willing cogs in a machine that drastically oversimplifies the act of living in housing in the name of expediency and assumed efficiency. The tighter the constraints on housing in terms of standards and cost yardsticks, the more remote from the act of living becomes the architect's contribution, reduced to a jigsaw-puzzle of style and standards."[1]

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footnotes for this chapter p. 26.

## HISTORICAL BACKGROUND

Mr. Ron Basford, former federal minister of Urban Affairs, once claimed that Canada enjoys the distinction of being the best housed nation in the world. Studies indicate that, percentage-wise, more Canadian families are housed in single-family detached housing, and that more Canadians own their home than is the case in any other nation. Consequently, the need for government financed housing programs has only recently become a concern in many urban areas in Canada.

In most urban situations, the availability of suitable land, and the cost of land, and construction have been such that the majority of Canadians were able to own and even to build their own homes. In this way, the user has been able to live in housing closely suited to his own particular needs. With the ever-increasing trend towards urbanization and the corresponding decrease in rural living, the availability and cost of residential land in the major cities has become critical. Thus, coupled with the often disparate extremes in income levels of the urban dweller, the problem of adequately housing the nation's poor has assumed increased importance.

In Winnipeg, Manitoba, the provision of governmentally subsidized housing for the Low Income first became a recognized concern in 1969 when the New Democratic Party was elected provincially. Prior to that the Federal Government offered loans and subsidies as an incentive for low cost housing, however this form of housing was not geared to low income citizens. As a result, the rents for the self sufficient Low Income gradually became too great and the allowable rent under the

social welfare systems became inadequate. The only housing available to many of them became that located in the slum areas of Winnipeg, the rooming and boarding houses and the ramshackle walk-ups in the deteriorating areas of the city. Due to misuse, a lack of maintenance, and antiquated facilities, the quality of these forms of housing was far below the expected level in the modern urban situation. Because of their economic plight, the Low Income were unable to seek housing of a better standard. Antiquated landlord-tenant laws created difficulties in obtaining proper maintenance of the existing facilities. The Low Income were gradually divorced from the housing process and enjoyed few opportunities of recourse. In the nation with the highest standards of housing where single-family dwellings were an accepted norm for family life, the Low Income were required to accept living in overcrowded environments insensitive to their needs and particular values.

The fore-mentioned circumstances combined to create an urgent need for a form of low rental housing geared towards the needs of the low income family in Winnipeg. The New Democratic Party recognized this need and took advantage of the Federally devised Public Housing programs. It created a program to increase the quality of housing in Manitoba. It recognized the urgency that existed in the necessary relocation of low income families housed in the substandard slum areas of Winnipeg to better housing in the less congested areas of the city. It also recognized the necessity in creating a policy of subsidizing rents that would allow the low income family, previously excluded from adequate subsidies, to build up financial capital. They could then gain a greater degree of economic mobility. It was felt that this in-

crease would allow the Low Income to enjoy such aspects of city life as continuing one's education and pursuing recreational interests which are normally beyond their means.

# THE MANITOBA HOUSING AND RENEWAL CORPORATION:
# EARLY STAGES
# -THE DEVELOPER PROPOSAL PROCESS-

By an Order in Council, The Manitoba Housing and Renewal Corporation was created on June 21, 1967. Although the purposes and objectives of the Act were, by definition, to "improve standards of living accommodation in the province and to assist residents of the province to obtain living accommodation of reasonable standards",[2] the Progressive Conservative government in power at the time did little in this regard. A real and concrete program of Public Housing was not implemented until the New Democratic Party took office.

The Public Housing program of the MHRC serves essentially to create housing accommodations

> "for leasing to persons or families of low income in need of decent, safe, and sanitary housing...having regard to the shortage, overcrowding or congestion of housing accommodations..."[3]

The basis of the provincial endeavour is the program devised by the Federal Government. A loan amounting to 90% of the capital costs and a subsidization in the amount of 50% of the interim financing and operating costs is made available to provincial housing corporations to create Public Housing. The applications for loans under this program are made to the Central Mortgage and Housing Corporation.

From the outset, a large number of eligible low income families that qualified for public housing resided in Winnipeg. The urgency of the situation dictated that expedient means be adopted in the creation

of public housing projects. Since the Corporation did not have land available for development, and because it lacked adequate staff, the housing process that most realistically and efficiently could create a large number of public housing projects was the Developer Proposal process.

The Developer Proposal process allowed the Corporation to quickly assemble and develop a large number of housing projects. Under this process, a request for developer-proposed housing schemes would be announced by the Corporation. These schemes were to include properly zoned land and a preliminary design created by architects under contract to the developer. The proposal was to adhere to developmental specifications delineated by the MHRC.

Wherever possible, single family and semi-detached homes within suburban tract developments were also purchased by the MHRC in an attempt to disperse its public housing into established residential areas. However, the urgent need for a large number of units dictated that higher density developments also be created. The majority of public housing was town housing at an approximate density of thirteen units to the acre. Town housing was a convenient vehicle which allowed ground floor access to a front and a rear yard for each living unit without consuming large areas of land. Having a yard is expected in family housing in Winnipeg--typical of most North American urban suburbs. The density of the developments was limited such that their absorption into the existing urban fabric was easier and because the availability of adequate parcels of land was not a serious problem.

The basis of selection of proposed projects was not, as may be

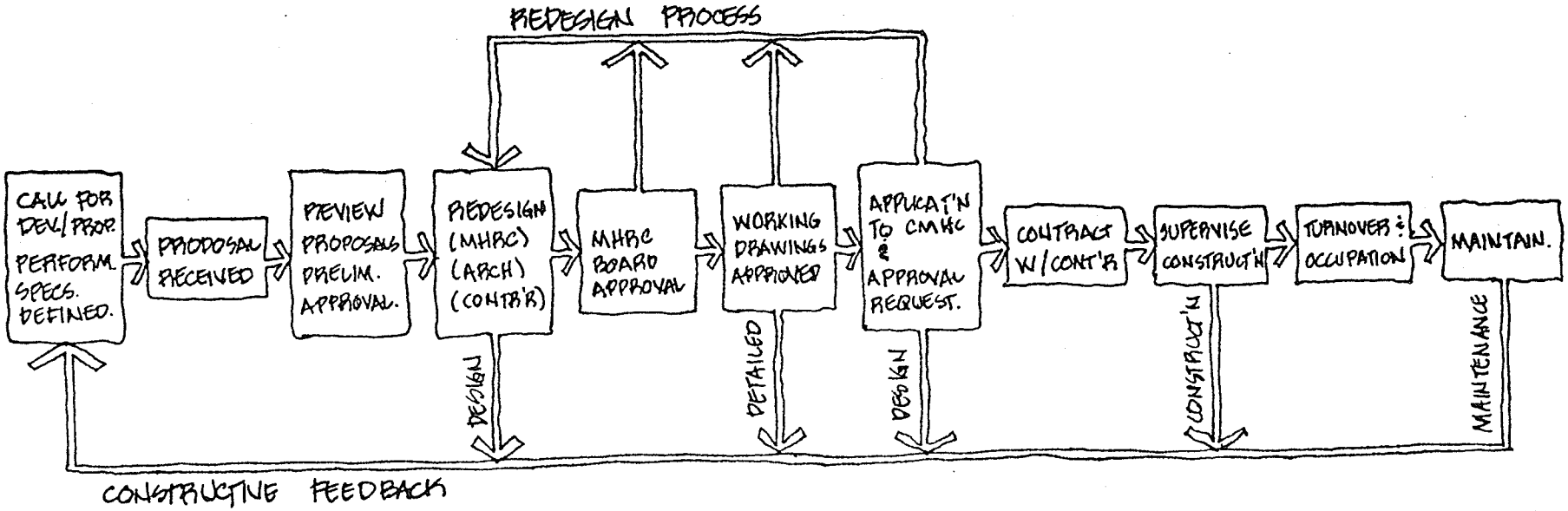
suspected, one based solely on economic determinants. Since the urgent demand for public housing existed throughout Winnipeg, the foremost determinant in the proposal selection process was the relationship of the proposed project to its immediate surroundings. The density and character of the immediate environment, the neighboring land uses, and the proximity of the project to schools, bus routes, and supportive retail and commercial amenities were the major determinants. The particular design of the proposal was not considered to be of prime importance. It was assumed that each proposal would necessarily undergo a design refinement stage once it had been deemed acceptable in principle.

The unit designs and the site plans of the approved projects would then enter this period of redesign under the direction of the Corporation architects. Since this type of higher density residential development was foreign to the Winnipeg housing market and the Winnipeg architects, the Corporation architects were first to realize a refined understanding of it. This was because of their immediate and continuous exposure to town housing design and the tenants' reactions to it. The process of redesign was often severely limited by the proposed costs which obtained concurrent approval from the Board of Directors of the Corporation. Design changes deemed necessary to increase the acceptability of the initial proposals became more involved as experience with Public Town Housing increased. Increases in costs based on these changes became increasingly difficult to justify. Eventually the point was reached where mediocre compromises to the initial proposal were initiated for the sake of economics and expediency. This problem with the process became only one of several inherent examples

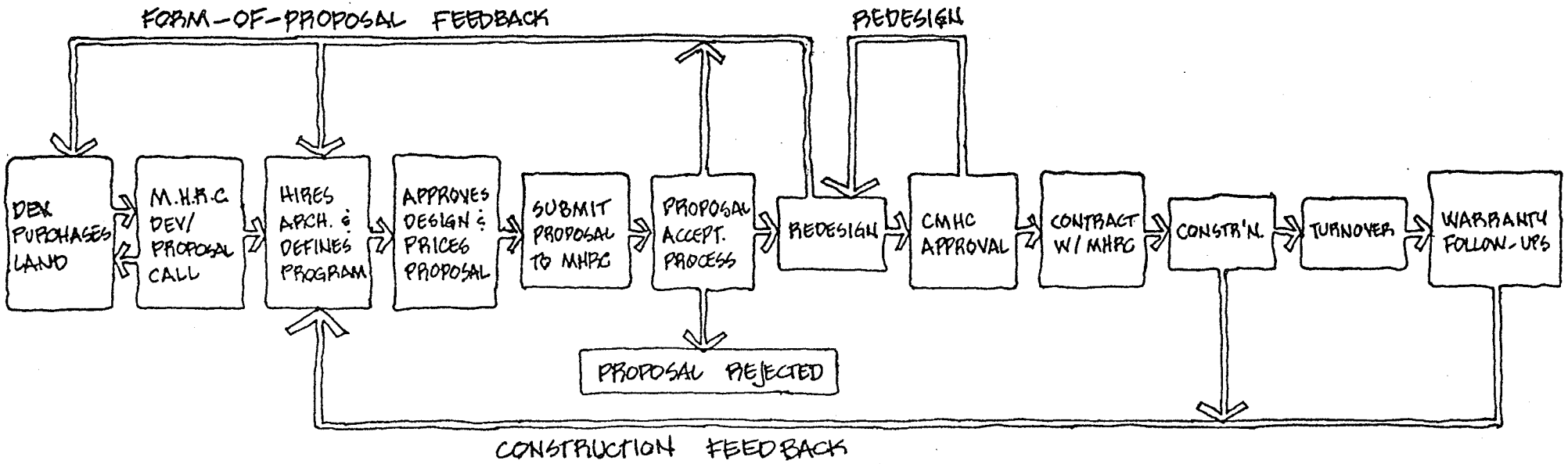
of insufficient control available to the Corporation as Owner. These deficiences began to undermine the long-term interests of the Corporation and the responsibility of the MHRC to the future tenants suffered. Other difficulties stemming from an inappropriate emphasis on controls and responsibilities on the parts of the Developer, the MHRC, and the Architect evolved to a point that they necessitated that a more realistic developmental tool be adopted.

The role of the Architect under the Developer Proposal process also proved to be a problem. The Architect was typically hired by the Developer, on a minimum-service basis, to design a project acceptable to The Manitoba Housing and Renewal Corporation. To the Developer, the Architect's role was nothing more than that of a drafting service. The lines of responsibility and the fee schedules were accordingly established. Legally and financially the Architect was responsible directly to the Developer. His responsibility to the Owner and the prospective user was limited, since he could not conduct a proper investigation of the public housing tenant and the implications of his needs on the design of the housing environment. There existed little chance of any realistic contact by the Architect with the Corporation prior to the proposal submission since the committed financial investment of the Developer dictated the initial physical constraints upon the project. This strait-jacketing of the Architect's responsibilities jeopardized the system, and only with a great deal of flexibility on behalf of the Developer and the MHRC could acceptable agreements be realized.

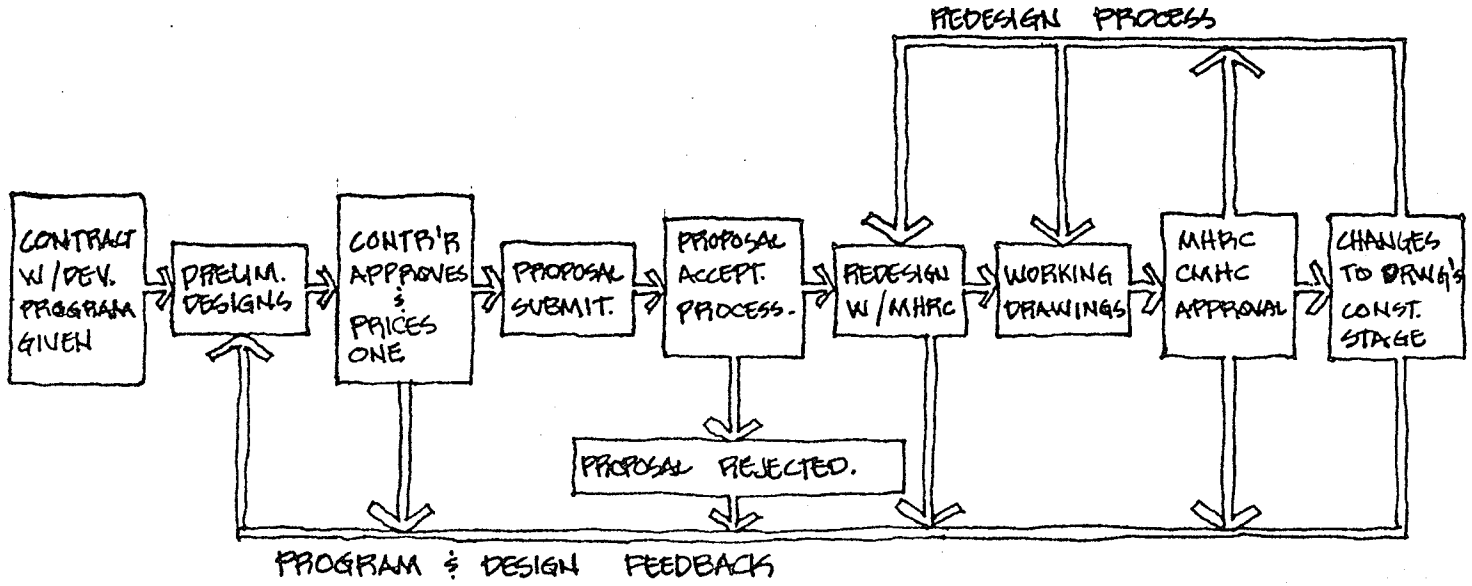
The greatest advantage that this developmental process did possess was the fore-mentioned ability to quickly and relatively efficiently




DEVELOPER-PROPOSAL "THE MHRC"




DEVELOPER - PROPOSAL "THE CONTRACTOR"




DEVELOPER-PROPOSAL "THE ARCHITECT"

produce a large number of urgently needed housing units. Since the Developer was able to propose developments that were based upon his particular expertise in the building profession, and his purchase of lands was often not subject to the type of cost escalation that governments experience when purchasing land, inherent cost savings could be initially realized. However, these initial savings often proved to be superficial when extra costs were incurred as a result of design changes and deficiencies in certain materials or methods proposed by the Developer. For reasons of expediency, the Developer Proposal process was maintained as the prime developmental procedure utilized by the MHRC until 1973. During this period, in excess of 4500 units of public family housing were realized in Winnipeg, significantly alleviating the most urgent demands for low income housing.

In an attempt to bring a greater degree of control over project development into the hands of the Corporation, two additional methods, the design tender and the working drawing tender processes, as they will be referred to in this thesis, have since been adopted. They recognize more realistically the need for control by the Owner. Through these, control is available to the MHRC in both the initiation and the subsequent development of any given project. Unlike the Developer Proposal system in which the Architect is hired by the Developer for minimal architectural services, these systems require that the Architect be hired by the Corporation for full architectural services. The Architect is therefore responsible both legally and financially to the Owner, and as Project Architect, he is charged with the coordination of the design development and the subsequent supervision of construction. In this manner, the interests of the MHRC are more realistically protected.

The initial phases of project development are similar for both of these revised methods. Upon the establishment of a need for public housing for a specific area, the Board of Directors of the MHRC approves the search for and acquisition of adequate lands. The purchase of such lands is done by the Land Acquisition Branch of the Provincial Government. Following this the Development Division of the Corporation recommends, to the Board of Directors, an initial development program. At the same time a recommendation for the retention of services of a specific Architect is also made. Subsequent to Board approval, this Project Architect, under the direction of the Corporation's architects, investigates and finalizes the design program. In this manner, the professional expertise of the Project Architect is utilized, as is the expertise and first hand experience of the Corporation's architects. Professional consultants, as required, are retained by the Project Architect. Following the resolution of all design considerations, necessary approvals are thereupon requested from the Board of the Corporation. Subsequently, approvals from the local community committees, the City of Winnipeg, and the Central Mortgage and Housing Corporation are requested. At the juncture whereupon these have been granted, the differences between the two systems can be recognized.

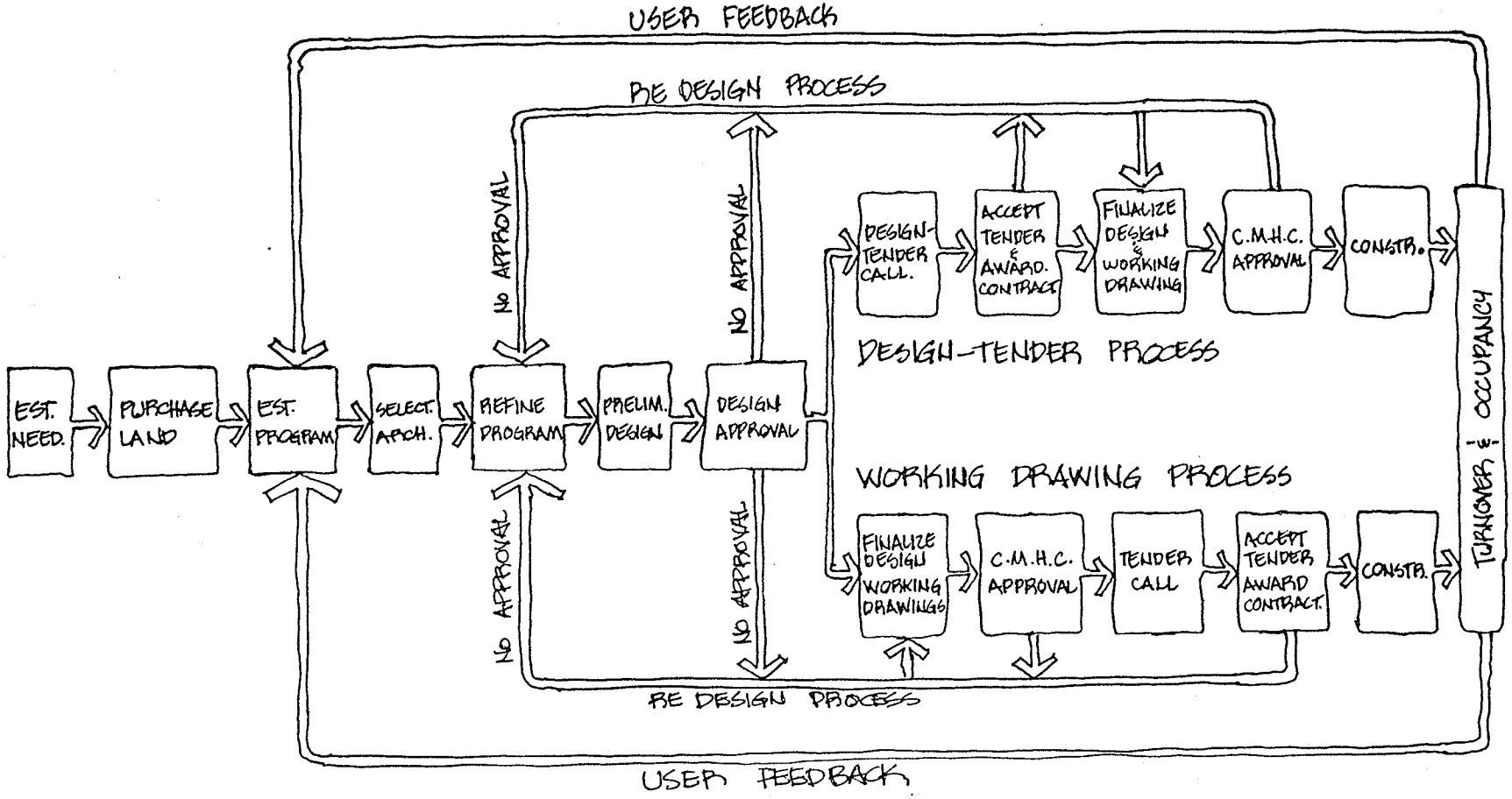
## Design Tender Process

Under the Design Tender process, once approvals of the preliminary design have been received, tenders are called based upon this preliminary design. At this stage only the general character of the project is fixed, ie. project size, unit breakdown, a generic site plan, and unit designs and configurations. Performance specifications, created

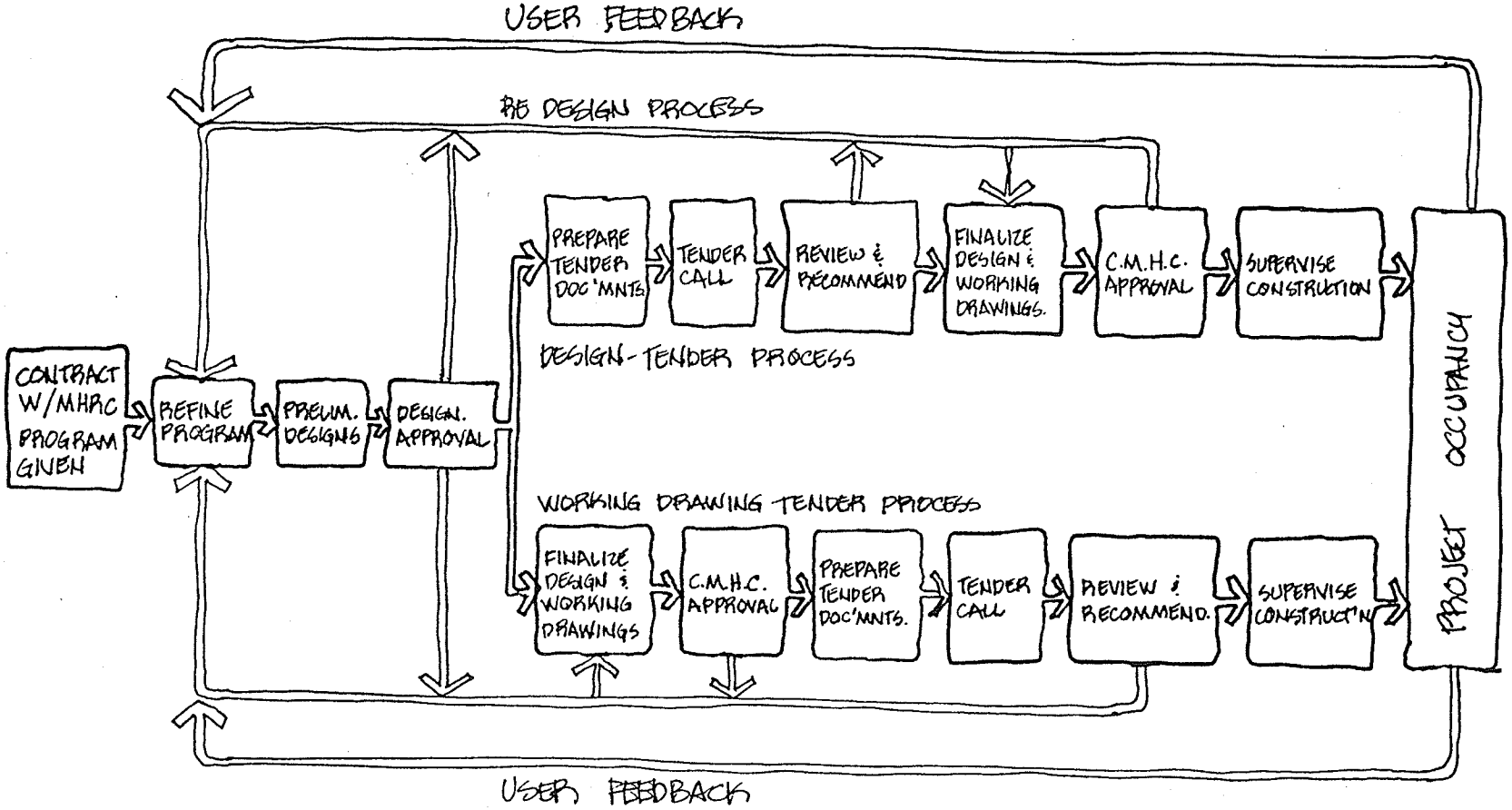
by the Architect, define the performance criteria of the building systems, namely, structural, mechanical, and electrical. By specifying the performance rather than the exact nature of these systems, a maximum degree of competition between the bidders is established, allowing for accommodations of the particular expertise of the individual bidder. The acceptance of a tender is based upon the recommendations of the Architect. Once acceptance is rendered by the Board, the Architect produces the working drawings and specifications in consultation with the MHRC and the Contractor. Upon receipt of final approval of the design from the CMHC and the municipality, construction may commence.

Working Drawing Tender Process

Under the Working Drawing Tender process, when approvals of the preliminary design have been received, the Architect proceeds to finalize the design and to produce complete working drawings and construction specifications. Structural, mechanical, and electrical systems are designed and specified with the advice of the necessary professional consultants. Upon the completion of these, tenders are called. The contractors therefore bid according to a predetermined and precisely specified building design. In many cases, the particular expertise of any one contractor may have to be abandoned in favor of those systems specified, and consequently a potential efficiency or economic saving may be lost. Following acceptance and approval of a tender, a contract is awarded and construction may commence.




PROJECT REALIZATION PROCESS




THE ARCHITECT'S ROLE

Advantages and Disadvantages

Experience has proven that each of the systems maintains its own particular advantages in costs and controls. The most important observation is that as the drawings and specifications become more restrictive, the bidders increase the costs correspondingly to counteract the loss of potential efficiency. Several examples exist whereby this can be illustrated. The following chart describes four of them. In each the Corporation has realized substantial savings through retendering.

| | | WORKING DRAWING TENDER | | DESIGN TENDER | | SAVINGS |
|---|---|---|---|---|---|---|
| LOCATION | NO. UNITS | TOTAL COST | COST/UNIT | TOTAL COST | COST/UNIT | COST/UNIT |
| BRANDON | 73 | 881,650.00 | 12,077.39 | 630,000.00 | 8,630.53 | 3446.86 |
| MACGREGOR | 12 | 140,130.00 | 11,677.50 | 124,683.00 | 10,390.25 | 1287.25 |
| WINNIPEG | 101 | 1,141,969.00 | 11,306.62 | 1,036,809.00 | 10,265,44 | 1041.18 |
| MINNEDOSA | 56 | 627,000.00 | 11,196.43 | 553,416.00 | 9,882.42 | 1314.01 |

In all cases, the projects were originally tendered under the Working Drawing process. When proposed costs were too high, they were retendered under the Design Tender process. In retendering, the intent of the original designs was maintained, while allowing for minor detail and dimensional changes. Under the original tender, the building systems themselves were designed and specified, in the second instance, only their intended performance criteria were given. It is important to note that in all cases but one, the low bidders in the first instance were also low after retendering; and although the basic intents of the designs did not change, savings in capital costs as high as 28% were realized. These examples show the obvious importance of involving each of the interests, that are party to the housing process, in a meaningful and significant manner.

## THE MHRC: THE ARCHITECT AND THE USER
## -PRESENT ROLES AND RELATIONSHIPS-

In addition to the adoption of the previously-mentioned tendering processes, other procedures were altered in an attempt to give control over the public housing program to the Corporation. A land banking program was initiated so that long-range programming, involving more comprehensive development planning, could be undertaken. In this way, it would be possible to integrate public housing sensitively into the overall development plans for the City of Winnipeg. Since there is not an efficient working relationship between the MHRC and the City of Winnipeg, additional procedures and programs of implementation for Public Housing are presently being studied by the Government of Manitoba. These respond directly to newly initiated programs from the Federal Government. Such schemes as the Assisted Homeownership Program and the Neighborhood Improvement Program are indicative of attempts to bring the local levels of government into the housing process. The relationships between the Corporation, the Architect and the User as they exist today are worthy of examination in order to establish a basis of understanding for the rest of the thesis.

### The MHRC and the Architect

The hiring of architectural consultants for the developmental planning and design of each of the projects is seen as the most efficient manner for the Corporation to initiate and maintain control over major projects. Architectural services based upon the recognized Manitoba Association of Architects' fee schedule are normally required for

each project. Fulltime coordination by the Architect is necessary to guide the project through its various stages. Tri-level governmental consultations are essential to assure efficient rezoning and approval requisitioning procedures, and it is the responsibility of the Architect to coordinate these.

The Architect is responsible directly to the MHRC. The needs of the potential user are represented in the form of design specifications, created by the Corporation and given to the Architect at the beginning of each project investigation. In order to fully understand the user and his needs, an ongoing search for, and analysis of, feedback from the user is required. In this way the design specifications can be up to date and truly representative. (This, however, is not being done at the present time and the translation of feedback into a form usable by the Architect remains haphazard and totally unstructured.)

Under the existing system, the role of and services rendered by the Architect do not reach their fullest potential. The Architect functions best when he is exposed to and aware of the user and his needs. The fee schedules established by the Manitoba Association of Architects do not encourage this type of investigation by the Architect so he must rely upon the Corporation's translations of the user's needs. When the particular life style, cultural backgrounds, family makeups, and housing needs are not understood by the Architect, the "fit" of the resulting environment can be too "tight".[4] Architects unfortunately do not always understand or respect the fact that housing needs and expectations can change drastically from one socio-economic class to another. Nicholas Taylor warns of the dangers involved when insensitive middle or upper class architects are called upon to create housing en-

vironments for lower class users. When an appreciation of the user does not exist, the architect often translates his personal cognizance of housing directly for that of the anonymous user. In his investigations of Public Housing in Britain, Taylor noted that;

> "...the positive planning of the publically financed home had been based not so much on any sociological analysis of what actually went on in the home as on an imposed bourgeois way of life..."[5]

He then proceeds to denounce the insensitivity that some architects maintain when designing Public Housing, by contending that

> "(t)he architects seem to have been more interested in exposing their white aggregate than in expressing the multi-colored individuality of the tenants."[6]

The Architect must be made aware of the characteristics of the low income family if he is to create housing that is sensitive to their particular needs.

> "The consideration of general family types in terms of population characteristics and minimum room needs is not enough. It is necessary to analyse the activities of many and varied patterns of family life....What are families' housing preferences, not in terms of physical features and gadgets, but in terms of the relative importance assigned to activities competing for consideration in residential design and construction? Here is a broad field of investigation that has been completely neglected. To come to grips with it a breakdown of family life situations and patterns is prerequisite."[7]

The Architect cannot establish a realistic recognition of the User and his particular needs. His only recourses are to rely upon the Corporation's interpretations of the User, or to transform his own understandings of housing into a translation of those of the anonymous User's. This, unfortunately, is the weak link in the housing process as it exists today, and this thesis illustrates one of the many types

of studies that are necessary to strengthen and sensitize the system.

The MHRC and the User

The Housing and Renewal Corporation Act defines a family of low income as;

> "a family that receives a total family income that, in the opinion of the corporation, is insufficient to permit it to rent housing accommodation adequate for its needs at the current rental housing market in the area in which the family lives."[8]

Only those families that qualify in the opinion of the Corporation are eligible to live in a public housing unit. Eligibility, as the definition suggests, is determined by the financial insecurity of the family. The total family income is that received by all members eighteen years and older. The monthly rent, before deductions, equals 25% of this income. Deductions for dependents at a rate of $2 monthly are assessed and the monthly utility costs included. The maximum monthly rent ever assessed is $400. Families, regardless of size, with assets in excess of $7000 are ineligible for housing assistance. In this way, it is hoped that the most needy are reached and given priority for Public Housing.

Tenant selection procedures also place a high value on the condition of the home in which the family lives while being interviewed for eligibility. Experience has proven that the family's sense of responsibility is disclosed by the manner in which the house is kept. A very dirty and littered home, for instance, tends to depict a lack of responsibility--little respect for property and inadequate self-motivation. A well-kept home, on the other hand, tends to indicate that the family has a greater

sense of responsibility--that it has more respect for property and is motivated towards self-betterment. This is so strongly felt that the MHRC insists that these interviews be conducted in the home of the applicant.

The welfare-recipient population of any given project is presently limited to 30%. This policy has been implemented as an incentive for families to become economically self-sufficient. By maintaining the majority of the project residents as wage earners, it is also hoped that examples can be set for those residents on welfare who do have the potential but not the motivation to improve their situation. The Public Housing projects are not "welfare slums" and the stigma attached by society to these is thereby lessened in intensity.

Under the present system, the only means by which an understanding of the particular needs of the tenants as they relate to the housing environment can be made perceptible is through reactionary complaints. Tenant organizations for each project and yearly "workshops" are the only structured vehicles established to receive tenant complaints. As can be expected, the information gained from either of these two sources is limited in scope and value. Since the grievances expressed tend to be reactionary in nature, based upon dissatisfactions with particular components within the public housing environment, the roots of the problems cannot always be identified. Reactions tend also to be negative in nature and when expressed by the user are done so defensively and, all too often, narrow-mindedly. Since no other efficient structure exists whereby these reactions can be expressed to the Tenant Relations personnel, they are presently received out of context, and their translation into an understanding of the man-environment relationship is

difficult.

These dissatisfactions also tend to be immediate or short-termed in nature. That is to say, they generally require only a makeshift, patch-up type of attention for their apparent resolution. Little attempt is made to search for the long-term incompatibilities or the more deeply rooted basis of many of the recurring problems. All too often

> "...local housing authorities are too preoccupied with operational matters. As a result they give little leadership in the direction of solving the housing problems of the low-income population generally. They become defensive of what they are doing rather than experimental and innovative."[9]

The tenant identifies most naturally with the immediate built-environment and his neighbors within it, and when incompatibilities occur, he can only relate these to those components most readily identifiable. The tenant himself is not always able to perceive the basis of every user-environment conflict that he may experience. It is this dichotomy between the creation of a particular housing environment for a particular user, and the fact that no workable vehicle exists whereby the user himself can become involved in the creation of this environment, that renders the public housing program of The Manitoba Housing and Renewal Corporation less effective than its potential would indicate.

At this juncture, it is important to become familiar with the particular nature of the low income, Public Town Housing tenant (or user) and the physical reality of the Public Town Housing environment as it has been created, to date, in Winnipeg. Through an understanding of the user and his needs, and by analysing the built-environment for its effectiveness in satisfying these needs, it is reasonable to assume that the initial step in the creation of a user-oriented perception of housing

would be more easily attainable.

To accomplish this, an analysis has been performed upon data gained from a user-feedback survey conducted on Winnipeg town housing tenants by The Manitoba Housing and Renewal Corporation. This survey was designed, in part, with this thesis in mind, while the author was employed by the MHRC. Consequently, the results were readily available for this analysis. The survey was limited to town housing projects alone, since the majority of public housing for families in Winnipeg is town housing. Private and Limited Dividend town housing developments were also included in an attempt to isolate the uniqueness of both the Low Income and the Public Town Housing environment. This analysis appears in the following chapter.

FOOTNOTES

1. A. Rabeneck, D. Sheppard, P. Town, "Housing Flexibility" Architectural Design. Vol. 43. no. 11, Dec. 1973, p. 700.

2. The Government of Manitoba, "The Housing and Renewal Corporation Act" The Manitoba Statutes. Chap. H160, sec. 2.

3. Ibid. sec. 1(s).

4. Robert Sommer, Design Awareness. (Corte Modeva, Cal., Rinehard Press, 1972.)

5. Nicholas Taylor, "The Failure of Housing" Architectural Review; vol. 142, p. 342.

6. Ibid. p. 342.

7. Reimer and Demareth, "The Role of Social Research in Housing Design" Land Economics; vol. 28, no. 3, 1952.

8. The Government of Manitoba, op. cit.; sec. 1(e).

9. The National Commission on Urban Problems, More Than Shelter. (Washington, D.C.: U.S. Government Printing Office, 1968) p. ix.

# the user and public town housing: operational context

"Comparatively speaking, the average public housing development may provide a better environment and more social and community services than the typical slum neighborhood. However, from the viewpoint of strengthening individual and family life, most public housing is tragically deficient..."[1]

"The task of providing suitable shelter and a constructive social environment for large, multiproblem, low-income families is much more an institutional function than a housing management function. The criteria for measuring effectiveness must be formulated in terms of meeting social needs, rather than economy, efficiency, and rent collection."[2]

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footnotes for this chapter p. 86.

## THE USER FEEDBACK SURVEY

In 1972/73, The Manitoba Housing and Renewal Corporation conducted a user feedback survey upon town housing tenants in Winnipeg, in order to create an understanding of the relationship between the user and the built housing environment. A random sample, representing approximately 20% of the tenants living in Public, Limited Dividend, and private town housing was interviewed. All Public and Limited Dividend projects existing at the time were represented, however, not all of the existing private tenants agreed to being interviewed. The resulting sample was fortunately large enough and representative enough to establish a basis for examination and comparison. The survey was designed in such a manner as to realize tenant characteristics, managerial relationships, and user reactions to the built environment. It was divided into four basic sections as follows:

1. Family Data:

   The intent of this section was to determine the family size, structure, and economic situation.

2. Residential Data:

   This section was designed to determine the family's housing background, the relation of this background to the present housing environment, and the appropriateness or comfort of the housing setting.

3. Managerial Relations:

   This was designed to determine tenant-management relations as seen

by the tenant, the tenant's reactions to rules and regulations imposed, the efficiency of maintenance by the management, and the function of and/or need for a tenants' organization.

4. Architectural:

This section was designed to establish the tenant's reaction to specific components within the built housing environment together with an attempt to isolate specific incongruities or dissatisfactions. The architectural section alone accounted for 50% of the survey as an attempt was made to focus on the suitability of the built Public Town Housing to the user.

The survey was conducted by a number of university students hired specifically for this purpose. The interviewer when conducting the survey, posed the individual questions before each interviewee and recorded the results on separate questionnaire forms. Although the survey contained over two hundred individual questions, once a familiarity with the survey technique had been gained, an interview would last only 40 minutes.

The questions were presented in a fashion that approximated informal and familiar conversation. This achieved maximum clarity and minimum confusion without resorting to more detailed explanations. Detailed explanations, changes in the tone of voice, and prompting on the part of the interviewer were kept to a minimum such that the interviewee could not perceive a predicted answer and the responses received would be spontaneous.

In order to obtain consistent feedback responses from the housewife alone were sought. She was generally at home when the interviews

were conducted, and since she spent the most amount of time at home functioning within the housing environment, it was felt that her responses would be the most realistic. It may be argued that questions pertaining to the children's play area, for instance, should have been asked of the children themselves, but since the survey was general in nature the response from the mother was felt to be adequate. This consistency was not always possible to maintain. This accounts for certain irregularities and discrepancies in the survey data. They are few in number and do not significantly affect the results.

Architectural Section

The architectural section of the survey, which is of particular significance to this thesis, attempted to analyse the appropriateness of various components within the Public Town Housing environments. The attempt made was to discern the user's feelings for the design of the environment progressing from the general to the specific. Questions in this section began with the general image held of the project as a whole; ("Do you like the physical appearance of your home?"). They then proceeded to investigate the problem of identity in such a housing project; ("Do your friends have any difficulty finding your home?"). Next a search for user reaction to the home itself, beginning with the kitchen; ("Is there enough kitchen counter space?"), and proceeding to the dining area, the living room, bedrooms, bathroom(s), and the basement.

Once the interviewee had been made to think specifically about the suitability of the house itself, her thinking was brought back to the outdoors and to the yards as an extension of the home; ("Do you use

the front yard area or the back yard area most often?" and "What do you use this area for?"). Following this, the suitability of the designed transitional areas of the site plan were investigated. ("Can you watch your younger children from the house when they are playing outside?"; "Is the play area adequately separated from street traffic?"; "Would you say people always make use of the sidewalks?"; and "Are there any problems with garbage disposal?").

Due to the eventual length of the survey itself, several questions probing more subtle user reactions to the built environment had to be eliminated. In an attempt to overcome this, key questions were carefully worded and located in an attempt to search for unconscious understandings held by the user. Many of these proved to be unsuccessful in the end because of their wording and also because of the methods used in correlating the responses. Consequently, some responses were voiced out of context and did not result in the expected feedback.

The correlation of the data was accomplished by transferring the appropriate coded responses to computer cards. Each card contained the response of one interviewee to one specific question. In correlating the responses to such questions as, "What would you do to improve the kitchen?", trends determined by the frequency of user responses were noted and calibrated. Feedback representing user reactions was maintained realistically as possible and trends that may have been expected by the designers of the survey were eliminated.

The percentage of responses to each question was then grouped, project by project, by the computer. The total percentage of responses for each town housing type were then isolated, as was the total for the

entire survey sample. In this manner, each project could be compared with each other for specific responses to specific questions; and each project type could be similarly compared. In the case of the architectural section, project by project response percentages were noted for the Public Town Housing sample only, whereas percentage responses of Limited Dividend and private town housing projects as a whole were calibrated. This was necessary because drawings of these town housing types were not always available for comparison and cross-relation. As a result, the specific differences between the designed solutions for Public Town Housing could unfortunately not be compared to individual Limited Dividend or private town housing solutions.

In all, a 20% interview sample was investigated. This included: 13 Public Town Housing projects totalling in excess of 1100 units, 6 Limited Dividend projects totalling over 800 units, and 3 privately owned projects totalling approximately 200 units. It is obvious that at the time of the survey more than 50% of the town housing residents in Winnipeg were Public Housing tenants. Since that date an additional six Public Town Housing projects have been completed bringing their total number to over 3000 units.

For the purpose of this thesis, the data realized from ten of the thirteen Public Town Housing projects investigated, has been selected for analysis. These were carefully chosen according to the following determinants:

1. Site Planning Design Evolution.

   The projects selected combine to form the most representative group wherein the evolution of a site planning and unit design

philosophy can be readily recognized. As knowledge of town housing design was acquired by the Corporation architects, the understanding of the various components of the built town housing environment and the importance of their interrelationships became increasingly sophisticated. The manner in which transitions between such components as the unit, the front and back yard areas, the play areas, the parking lots and driveways, the garbage collection facilities were created reached an increasingly refined understanding. Because of the timing of their design and construction these ten projects clearly exhibit this evolution.

2. Project Size.

With the hypothesis in mind that problems of identity formation and anonymity can be related to project size, the model group of projects adequately represents the then existing range in project sizes. The smallest Public Town Housing project studied consists of only 14 units, whereas the largest one contains 92 units.

3. Project Location.

The group of projects chosen was as representative as possible to account for each area of the city wherein Public Town Housing had been constructed. This was done in order to accommodate local differences that may exist. Various areas of Winnipeg can be identified to a certain extent from an ethnic and social status point of view. At the time of the survey, projects had not been constructed in each and every area of the city; however, the sample does characterize the variety of settings exhibited at the time.

The survey data most relevant to this thesis can be found in the

Appendix. The data is presented in graph form to facilitate visual comparison. The data representing the average responses from the three town housing markets is presented for the first three sections of the survey. For the architectural section, the data from the ten individual Public Town Housing projects as well as the Public Town Housing average are given. For ease of reference throughout the rest of the thesis, the Public Town Housing sample will be called the study group and the Limited Dividend and privately owned projects will be called the control group.

## THE WINNIPEG PUBLIC TOWN HOUSING TENANT

Through an examination of the user-feedback data three trends characteristic of the Public Town Housing family are found to represent the particular nature of this low income group. As can be expected the typical Public Town Housing family exhibits one of these fundamental characteristics and two or more are intrinsic to the majority. The traits, their nature, and the resulting implications are as follows:

### Low Income

All Public Housing families exhibit a disproportionately low total family income relative to its size and to the rest of society. This income is insufficient to obtain adequate accommodation in the existing housing market. As indicated before, a maximum of 30% of the tenants are welfare recipients and these household heads can be expected to be unemployed and receiving full welfare assistance.

The survey results clearly indicate the financial level of the

Public Town Housing family. The average total monthly income of the low income family is between $200-399 or $2400-4788 yearly. This compares to between $400-599 ($4800-7188 yearly) for the Limited Dividend sample, and more than $800 monthly or $9600 yearly for private development residents. The average yearly income of the Winnipeg town housing resident falls, therefore, between $4800-9600.

The financial insecurity of the Public Town Housing family is also exemplified by the numbers of families owning or having full time use of a car. Only 49% of the study group families have cars as compared to 95% for the control group. Only 84% of the study group cars are usable year round, while 97% of the control group cars are used year round. This latter factor may very well indicate that a disproportionate number of the cars owned by the low income families are in poor condition and they cannot survive the Winnipeg winter.

The data also indicates that, as the level of income decreases, there is a corresponding increase in income irregularity. The employed poor tend to have jobs that are low-paying, seasonal, short-termed, or fixed (non-advancement) in nature. Thirty-one percent of the employed Public Town Housing household heads hold low-paying or seasonal jobs such as clerical and labourer. An additional 40% hold positions that range from semi-skilled to recognized trades, such as sales, service, recreation, and craftsmen. Fifteen percent are students. Only 5% of the low income household head work force is employed in secure managerial or professional positions. Twenty-one percent of the Limited Dividend interviewees and only 3% of the private development household heads have low-paying or seasonal jobs. The low income trend towards income irregularity is readily recognized.

> "Among the most significant characteristics of large numbers of low-income families is irregularity of income. This may not be the case with families continuously on public assistance, but it does apply to those who depend primarily upon seasonal or day labor. The housing agency, then, is confronted not only with a tenant whose overall annual income is very low, but one who goes through frequent periods when he has no resources at all."[3]

By analysing the data on the respective ages of the household head(s), it becomes obvious that the heads of the study group tend to be older than the control group. Indications are that within Public Town Housing there are more married household heads in the 35-44 years age group and considerably fewer in the 25-34 years group than the rest of society. The percentages in the under 25 years and the over 45 years age groups appear to be relatively equal for both the control and study groups. On the other hand, relative to married household heads, there is a greater percentage of unmarried household heads to be found in the 35-44 years and the 45 years and older age groups in Public Town Housing. The fact that there is a greater number of older families in Public Town Housing than in other forms of town housing may reflect the difficulty that the Low Income have in establishing financial independence or security over a long period of time.

Family Size

The Public Town Housing family in Winnipeg tends to be larger in size than families living in Limited Dividend or private town housing. The survey data reveals that more than 69% of the Public Town Housing families have three or more children, whereas only 35% of Limited Dividend and 18% of the private town housing families have three or more children. One might expect that the size of the units investigated might have played a role in creating such widely varying statistics.

The survey data, however, rules this out:

| # of Bedrooms | STUDY GROUP | CONTROL GROUP | |
|---|---|---|---|
| | Public Town Housing | Limited Dividend | Private |
| two | 6% | 0 | 0 |
| three | 68% | 12% | 0 |
| four | 22% | 80% | 84% |
| five | 4% | 8% | 16% |

Rather than limiting the size of the control group families, the size of the control group units actually encourages larger families than does the study group. This would reaffirm the widely recognized tendency for families requiring Public Town Housing assistance to be larger in size than society's average.

Problems of the Low Income

The difficulties experienced by the low income family, as a result of a combination of two or more of the traits, deprive the family members from participating in many of the amenities offered in Winnipeg. Emotional and behavioral problems also appear to be more prevalent in the low income bracket than in the rest of society, however, this may be misleading. The upper socio-economic groups tend not to expose their problems before others.[4] Based upon discussions with Public Town Housing tenants and a report prepared for the consideration of the National Commission on Urban Problems in the United States, the following is a list of problems encountered by the typical low income family. Although no hard research has been done by the author in establishing this list, it is reflective of many of the views expressed by those low income persons with whom discussions were had.

-The family's financial resources are often too meagre to be invested

in constructive recreational and cultural activities.

-Single working mothers must often rely on day-nurseries or baby sitters to care for younger children while they are at work. Some children are often left at home alone at too young an age.

-Disorganized and single-parent families often become problems to others as well as to themselves. Single-parent mothers especially are highly dependent on relatives, friends, and neighbors in times of trouble.

-Broken families, especially those without male heads, often suffer from a lack of strong direction and success motivation. This is especially significant for teenage children entering adolescence.

-Due to a lack of money, or an inconsistent income, any problems exhibiting financial implications can be magnified out of proportion. Problems are encountered in keeping up to the cost of day-to-day life let alone setting aside money for future emergencies.

-The inability to manage their financial affairs often reflects a general lack of discipline and responsibility. Those families exhibiting this tendency often lack concern for the rental unit, respect for the neighbor's property and privacy, and control over the children.

-"(Often) poor people are conditioned to expect exploitation. It might be said that being exploited, or assuming that exploitation is the norm, is part of the culture of poverty. Poor people tend to believe that they exercise little control over their environment--that their lives and conditions around them are controlled from without...."[5]

This being the case, when people are continuously subject to exploitation, voluntarily or involuntarily, a deterioration of self-esteem and self-motivation and a greater dependence on others can result.

Mobility Potential

The combination of large families, less income, and single household heads seriously affects the mobility potential of the low income families. The term "mobility potential" in this context refers to upward mobility and the family's ability or desire to improve upon either its income situation, its style of life, or both. As suggested in More Than Shelter, the low income class may be viewed as consisting of three mobility sub-groups. These sub-groups and their characteristics are as follows:

1. The Mobile:

   Those people who have the desire and/or ability to live independent of income or housing subsidy are referred to as being mobile. However, due to short-termed illness, emotional problems, unemployment, or because they are students, they do require interim assistance.

2. The Potentially Mobile:

   This refers to those who are able to improve upon their situation but only through a concentrated desire, effort and some assistance. Types of assistance that are required include; educational advancement opportunities, training services, counselling, health and/or welfare services, and secure employment opportunities.

3. The Non-Mobile:

   This category includes those families who for reasons of permanent

health or emotional problems, mental or physical disabilities, age, and/or a lack of desire, cannot be expected to improve upon their financial situation or their style of life.

Summation

Public Town Housing must cater to the needs of people who are all dependent, in varying degrees, upon financial assistance. By recognizing these various mobility potentials, it must be realized that certain percentages of the housing units will experience a variety in rates of turnover. This is reflected in the responses by the study group to their expected term of residence in Public Town Housing. Of those interviewed, 22% expected to require Public Housing assistance for up to two years, 8% for two to four years, 3% for four to six years, and 48% for six years or more. These figures reflect the feelings of dependence and expectations for self-improvement held by the users. But when viewed in isolation, they do not account for either over-optimism or over-pessimism. The MHRC records are unfortunately incomplete and do not allow trends and rates in turnover to be established. The turnover rates are worthy of investigation in order to determine the suitability of the Public Town Housing environment for the different mobility groups. This type of investigation is beyond the scope of this thesis. Herein the immediate reactions to the built environment are emphasized.

## TEN PUBLIC TOWN HOUSING PROJECTS INVESTIGATED

The Public Town Housing projects chosen for investigation in this thesis belong to four separate groups. These groups or project types evolve from separate site planning design parameters. Each of the four types also represents a distinct stage in the evolution of a site plan-

ning philosophy by The Manitoba Housing and Renewal Corporation. They will be identified in this thesis in terms of the basic unit orientation and clustering hierarchy. The four types of projects, an explanation of each, and a presentation of those projects investigated, follows. They are described in a sequence representative of the evolution of the site planning philosophy.

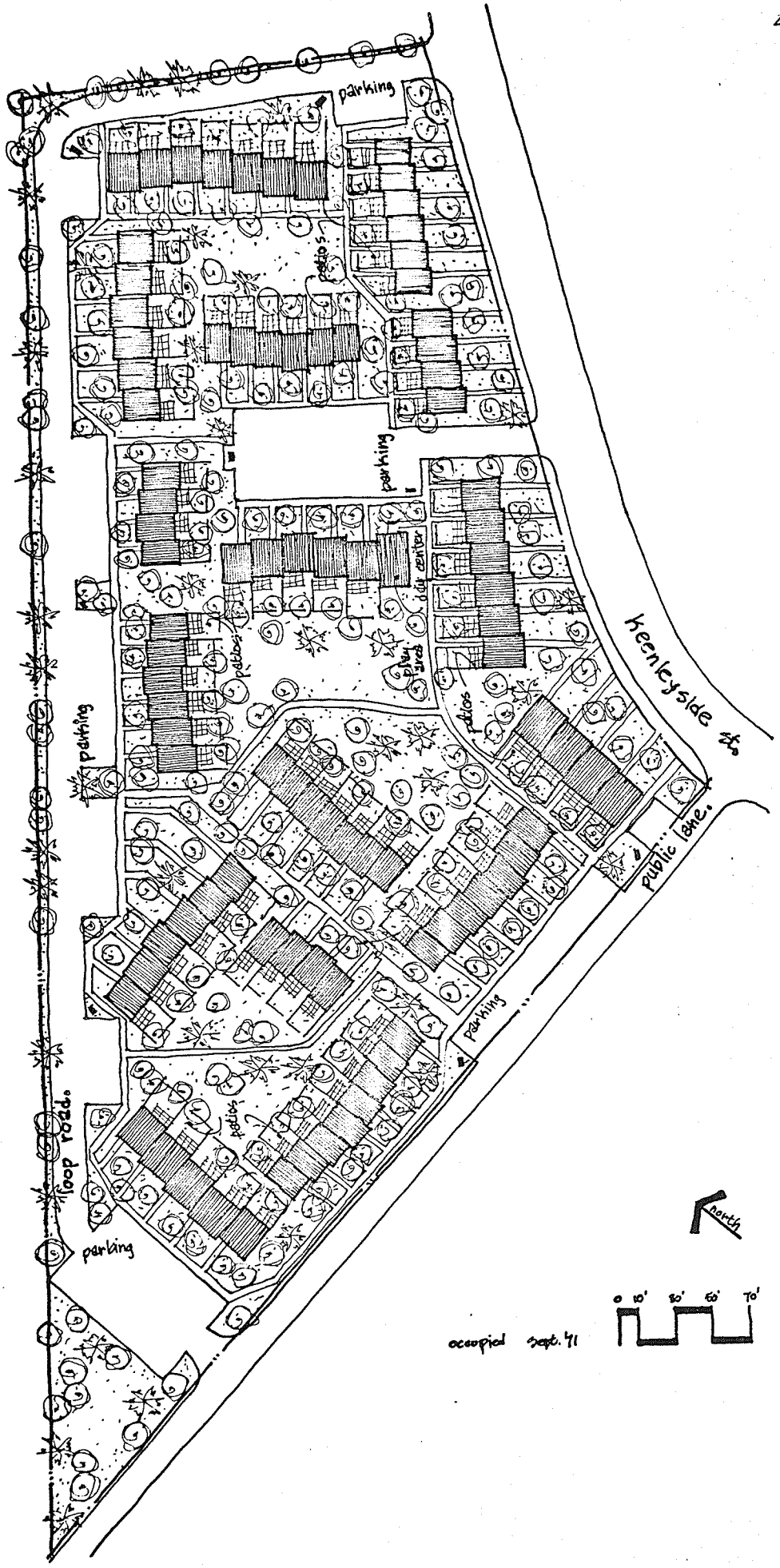
Loop Road

This project type, which illustrates the initial attempts in Public Town Housing design in Winnipeg, is distinctive in that a loop road passes through the project and services most, if not all, of the units contained therein. This design is very car oriented and is typified by individual parking spots adjacent to the units' rear doors, or within a close walking distance to the unit. The designed transition progressing from the street to the unit is: from the street to the loop road, to the parking spot, to a collector sidewalk, to the rear yard, then to the unit. In front of the unit is a front yard which overlooks an internalized outdoor greenspace. The younger children's tot lot is usually located within this greenspace.

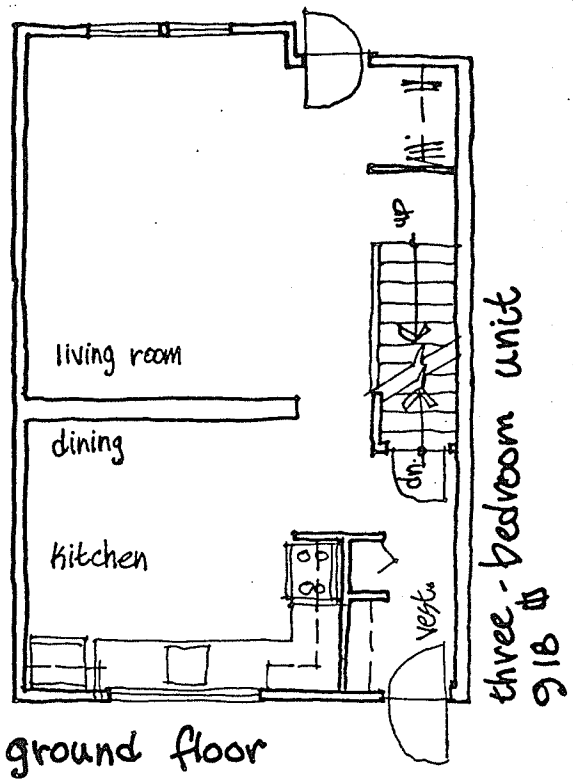
Three loop road projects were investigated. In the presentation of the user-feedback data in the Appendix, these projects are identified as LR I, LR II, and LR III. The individual names are Keenleyside, Marlene & Beliveau, and Donwood respectively, and are designated by the neighboring streets. A presentation of each project follows together with a description of the unique features of each.

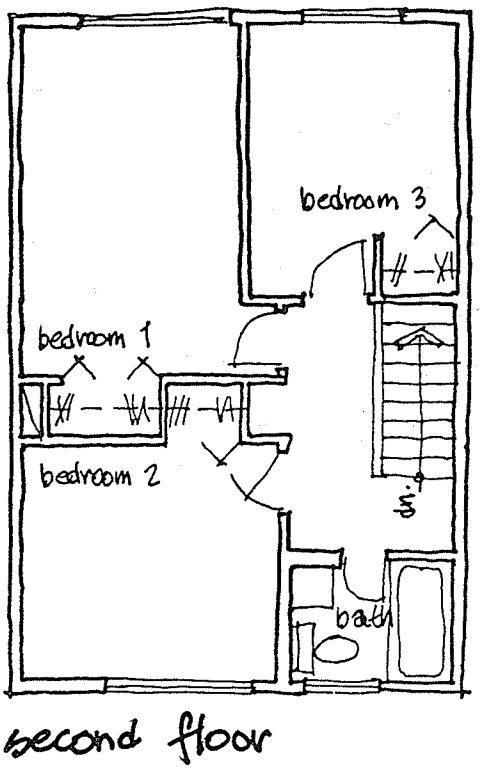
1. Keenleyside:

Keenleyside was the first project to be constructed by the MHRC.




occupied Sept. 71



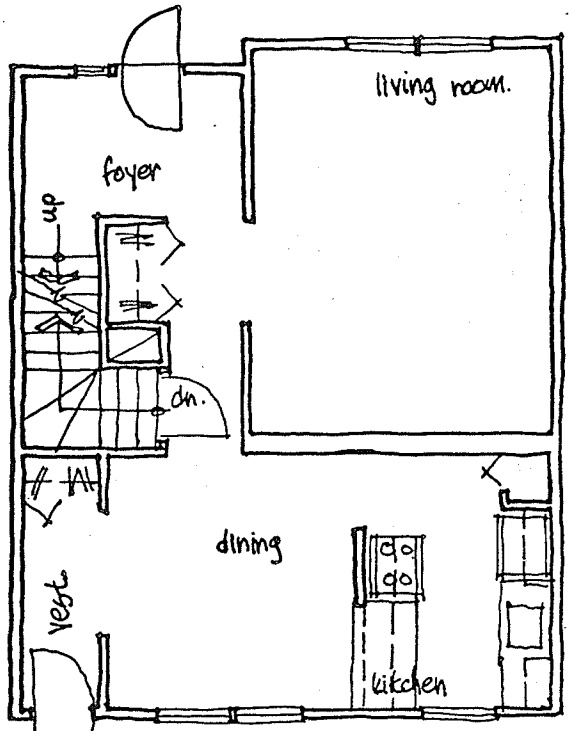




It was built by a large residential construction company and designed with the aid of the MHRC architect. The project is located adjacent to the CNR main line and at the time of the survey was the second largest Public Town Housing project in existence in Winnipeg.

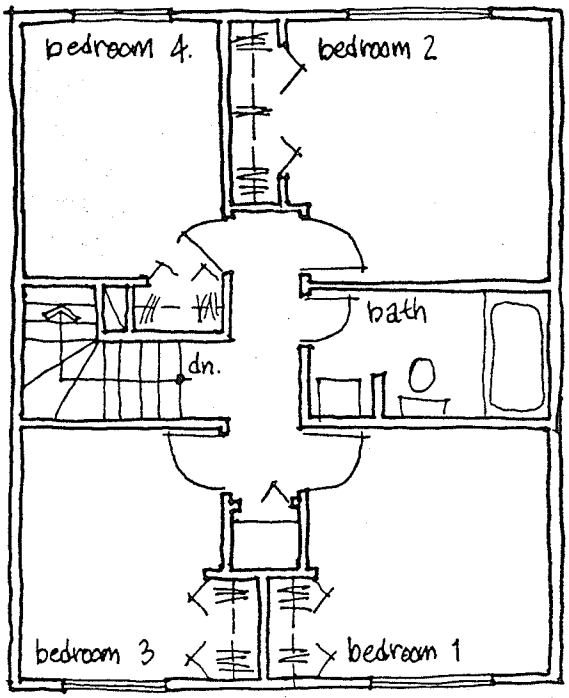
The uniqueness of Keenleyside is recognizable from the following observations:

-A single-loaded loop road circumscribes the site along the property lines.

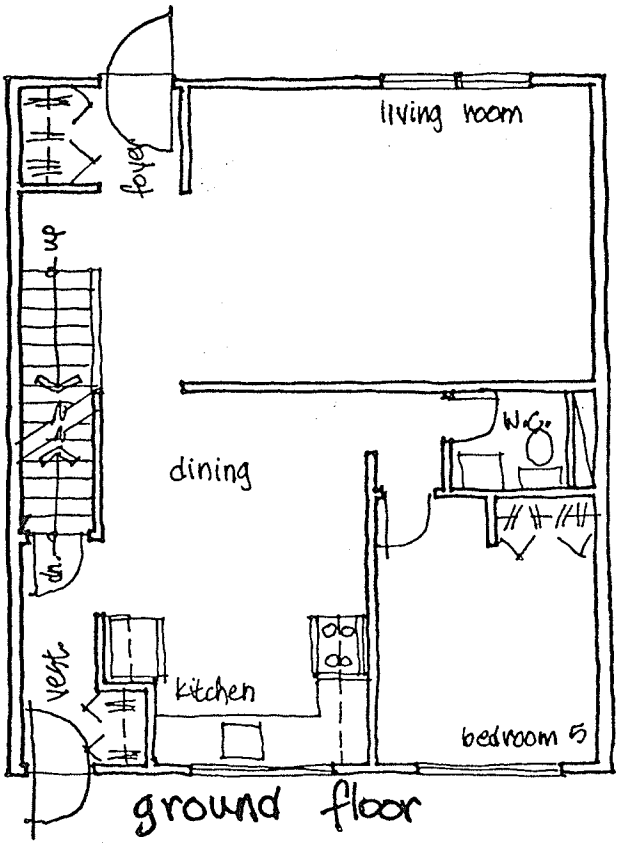
-Parking for the units along the loop road is provided in single-loaded lots, for up to eight cars, that flank the road. A larger



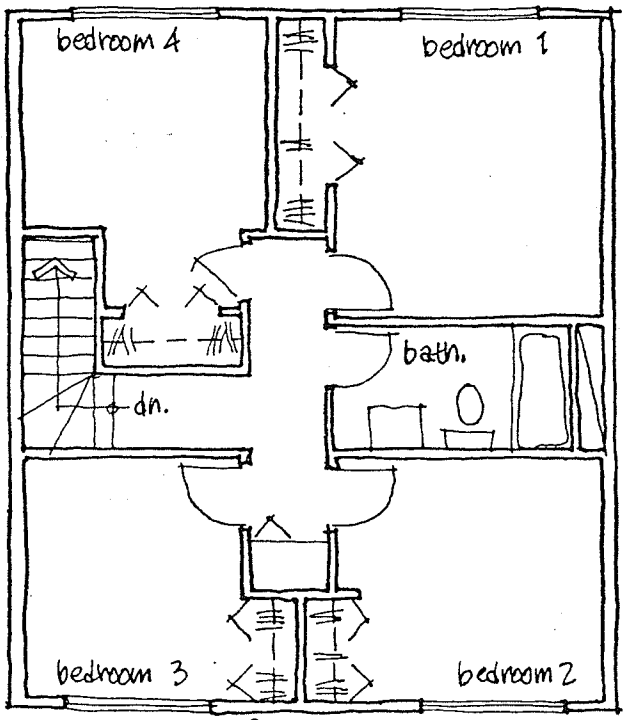

ground floor




second floor
4-bedroom unit 1170 ft²




ground floor




second floor
five-bedroom unit 1350 ft²

double-loaded parking lot is located in an acute-angled corner of the site and serves as parking for nearby units as well as for visitors. A large lot for 24 cars is located internally in the development and serves the units fronting onto Keenleyside Street as well as those centrally located within the development. Access to this lot is directly off Keenleyside.

-A community and day center building is also located in the center of the development for use by the tenants association and for community babysitting services. Adjacent to the day center is situated a tot lot area.

-Unit clusters are oriented around centralized green spaces. Twenty units are oriented towards Keenleyside itself.

2. Marlene & Beliveau:

The 98 unit Marlene and Beliveau project was created early in the MHRC program under the Developer-Proposal process. It was designed by a Winnipeg architectural firm hired by the Contractor for minimal design and drafting services. It is located in a well-treed suburban riverside setting. Incorporated within the project are two, two and one-half storey apartment buildings, each with 16 two-bedroom units. These apartment units were not included in this town housing survey. Other unique features of this development are as follows:

-A double-loaded road flanked with individualized parking spots provides access to the town housing units. The parking spots are

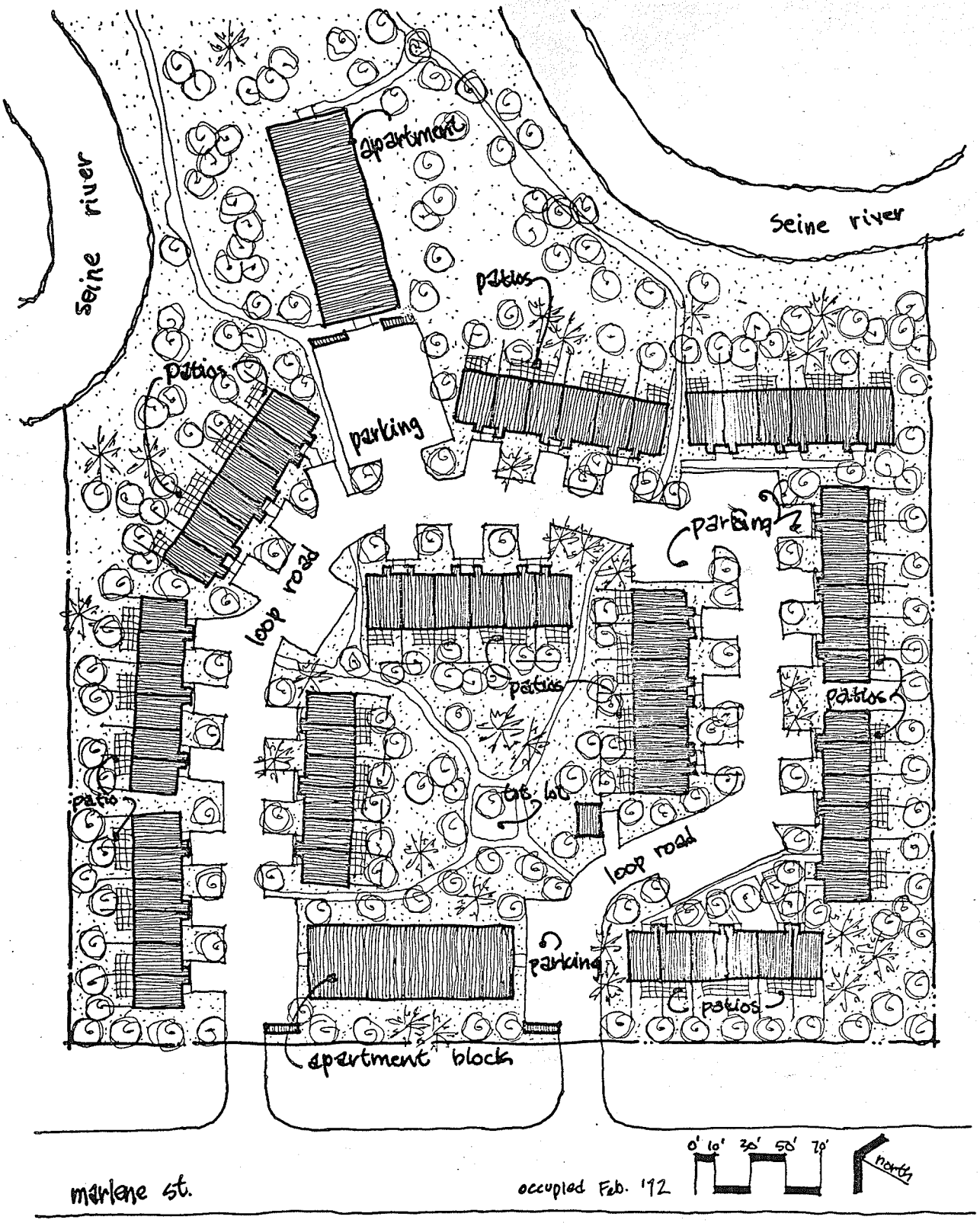
located immediately beside the rear door of each unit. Parking for the apartment blocks is in the form of a large double-loaded lot for the block along the river bank and in two single-loaded lots which serve the block fronting on Marlene Street.

-The town houses themselves are two-storey, three and four bedroom units. The kitchen area overlooks the parking spots and the loop road. The living rooms of the internal units face onto a centralized green space, and those of the external units overlook the river and the neighboring properties.

-Garbage enclosures for each town housing unit are located immediately beside the rear door, and are accessible to the collectors through the parking spot.

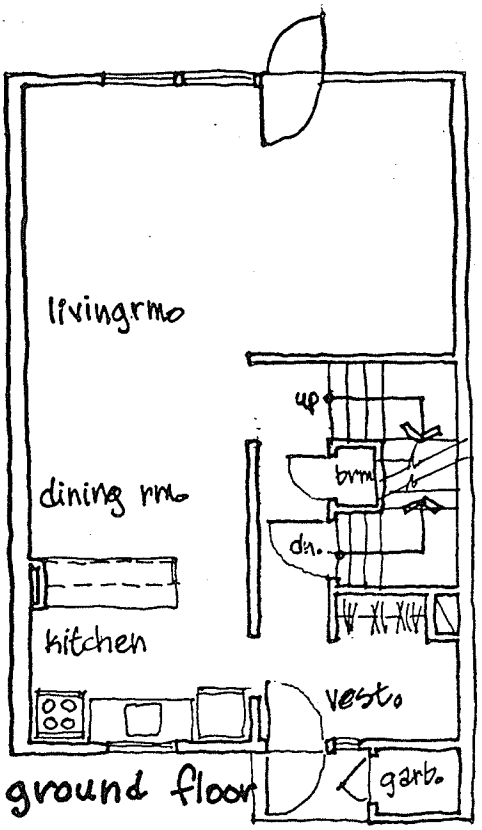
-A tot lot and play area is located in the internalized green space formed by the apartment block and the town houses along the interior of the loop road.

-A bicycle path winding through the trees along the riverbank is provided for use by the children of the development.



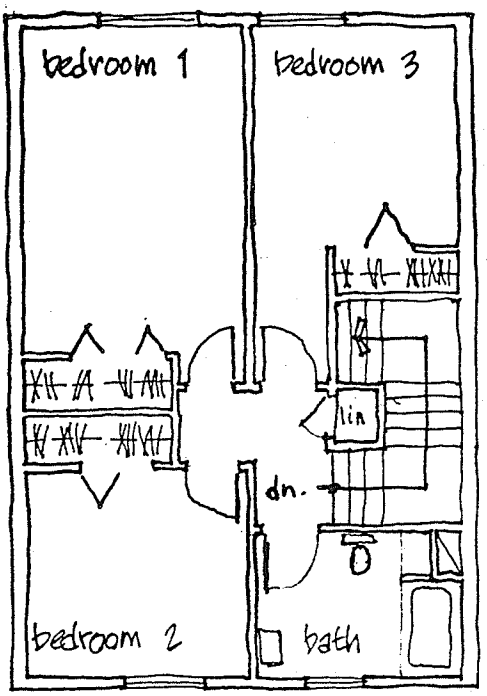

marlene st.

occupied Feb. '72

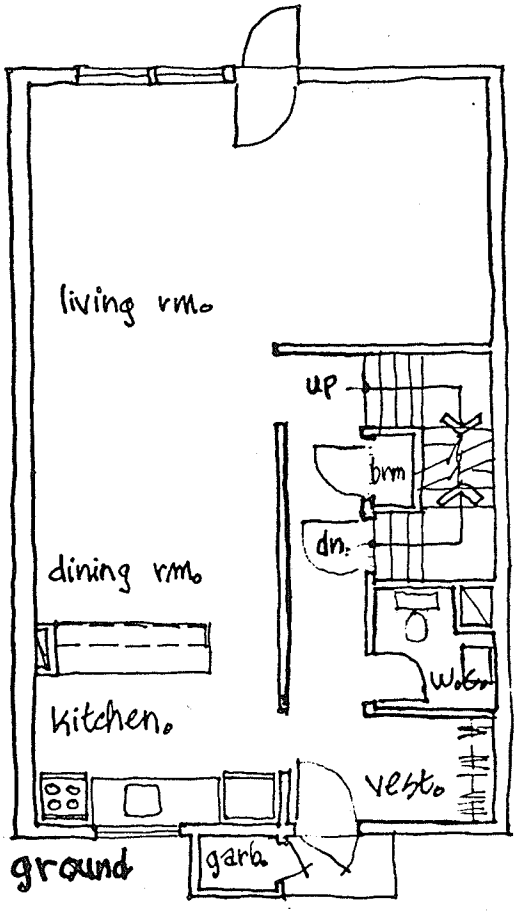



ground floor

3-bedroom unit
960 ft

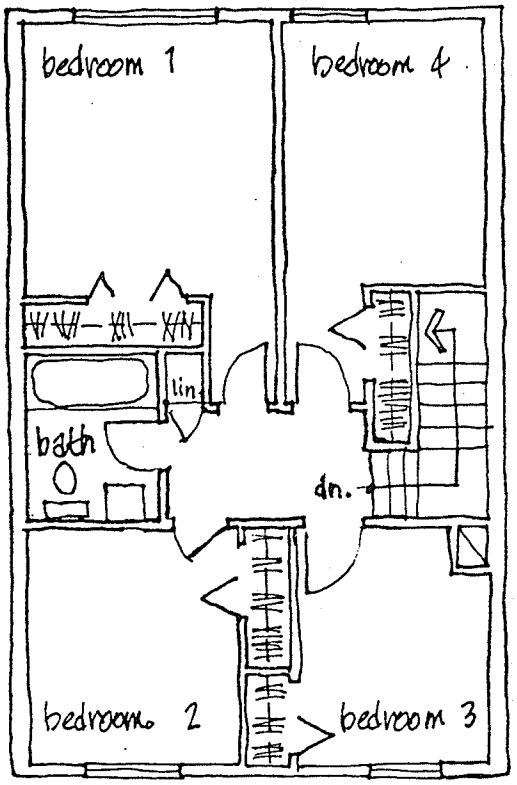



second floor




ground

4-bedroom unit
1050 ft




second floor

3. Donwood:

The 66 unit Donwood development was designed and built early in the MHRC's program. It is a medium sized project and contains a mixture of two, three, four, and five bedroom town houses. It is located in a higher density suburban area, close to two Limited Dividend town housing projects. The surrounding area contains three-storey walkup apartments and a shopping center.

The project combines a single and double-loaded loop road that serves all of the units contained within the development. Parking is provided in small lots of up to six cars each, directly off of the loop. The kitchen areas of the units, excepting those fronting onto Donwood Drive, have direct visual control over their respective parking spots. Living rooms of the units on the inside of the loop face onto a centralized green space, while those on the outside of the loop face neighboring properties. Two groups totalling 12 units are oriented towards Donwood Drive itself. Other distinctive features found in this project include:

-A pedestrian collector sidewalk system, adequately separated from vehicular traffic, connects groups of units to their respective parking lots. Its location results in controlled pedestrian traffic movement that does not intrude upon individual rear yard territories.

-The larger units are scattered throughout the development so that there are no excessive concentrations of numbers of children in any particular zone.

-The rear yards are oriented towards the loop road and are separated

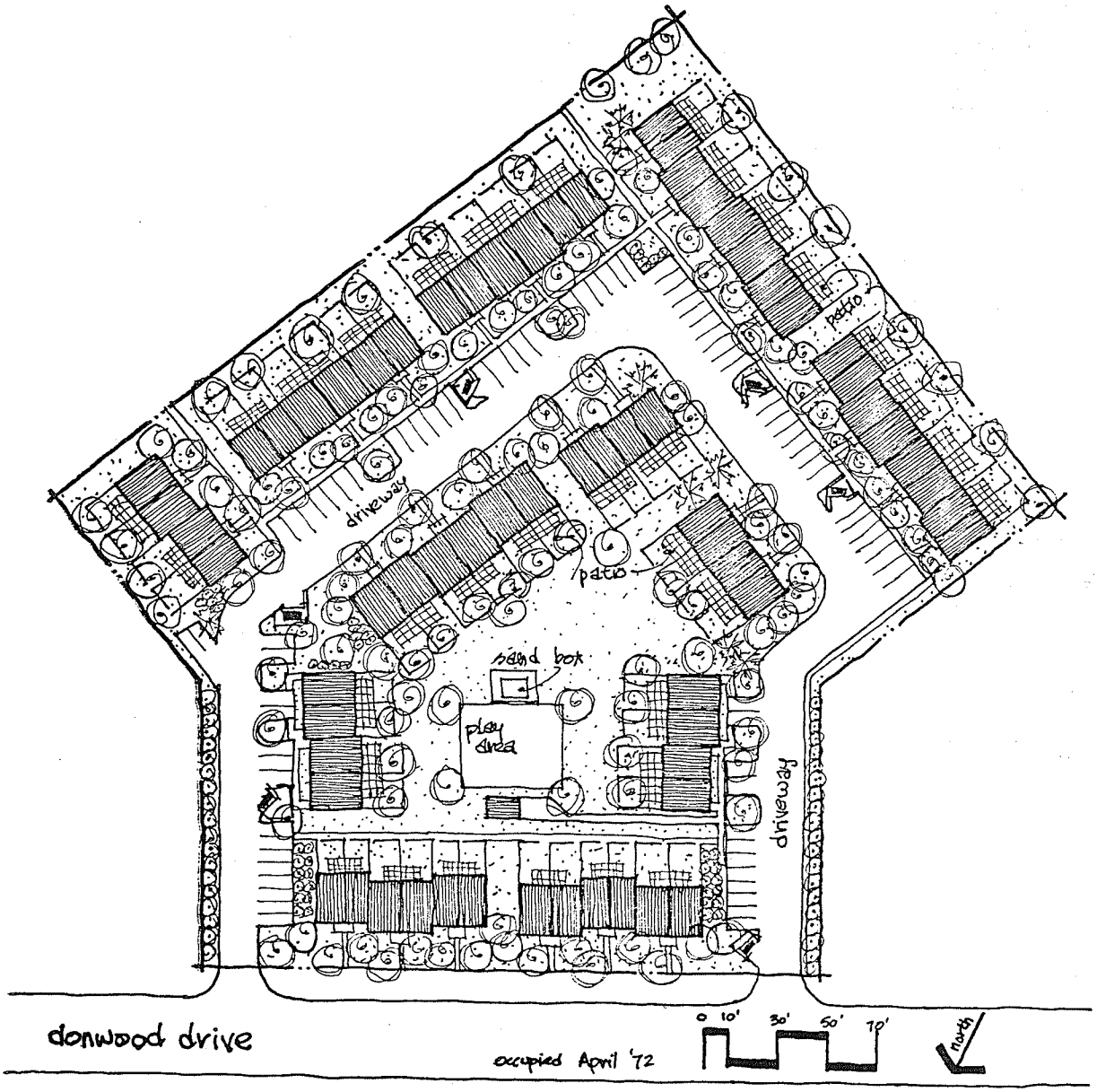
from it and the parking lots by three-foot high fences. The depth of the rear yards, the separation fence, and the collector walk system create a degree of transition and a sense of arrival to the unit.

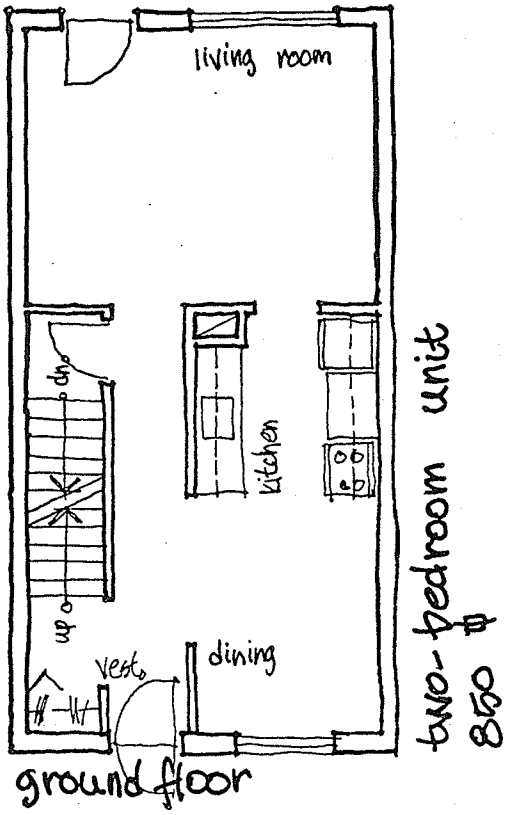
-The front yards are 25 feet deep, contain a small patio area, and are located off of the living room area. They are defined by a privacy fence at the party wall. The first ten feet nearest the unit is six feet and the last fifteen feet of it is four feet high. The ends of the yards are enclosed with a four-foot high fence with a gate opening.

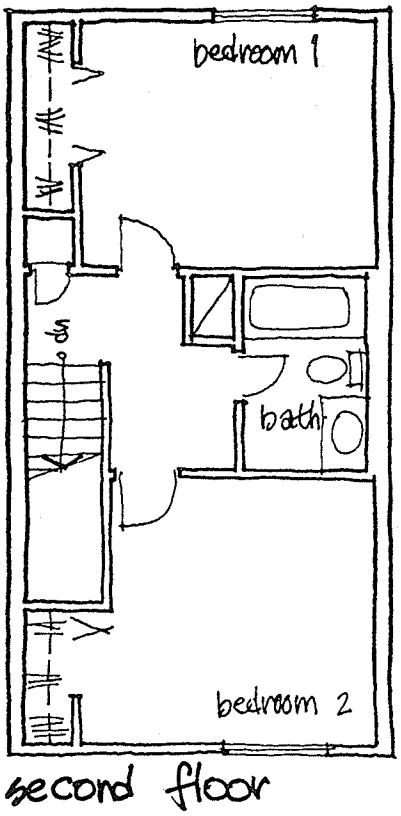
-All units oriented towards the loop road have equal setbacks from the road. No unit clusters are created.

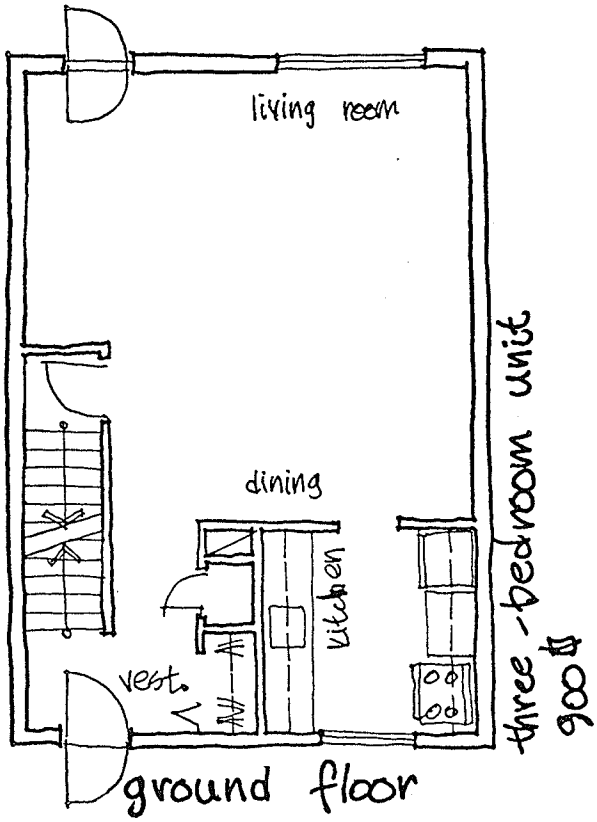
-The velocity of the vehicular traffic is controlled by abrupt turns, the parked cars, and the fact that the project itself is small enough that a long and meandering road is not necessary.

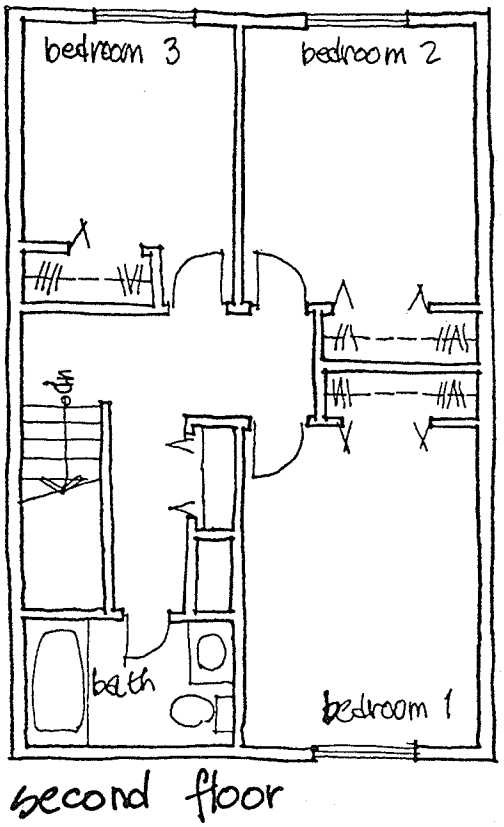
-Five garbage collection centers are provided. Each center has an enclosure that screens the garbage container from outside views. Space within the enclosure is provided for extra garbage and is also visually screened from the outside and protected from wind disturbance.

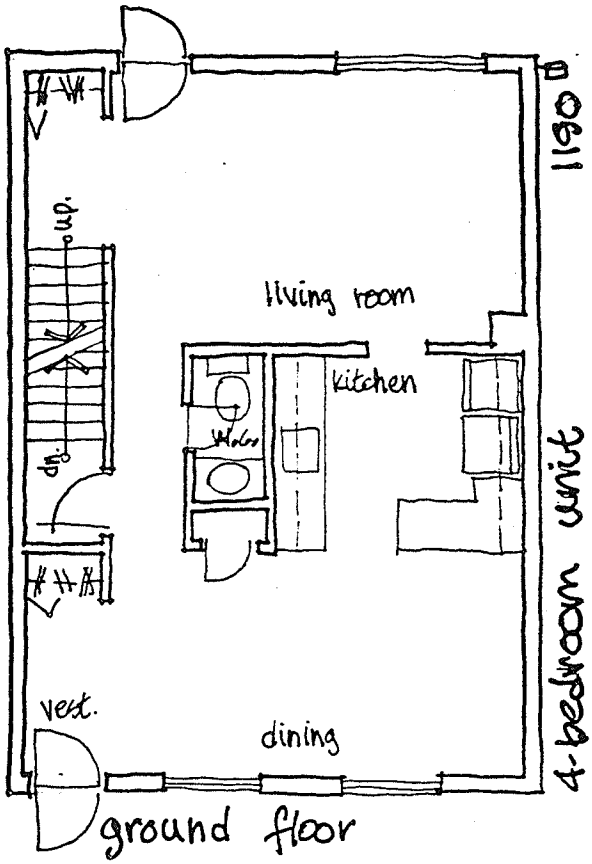

driveway
patio
patio
sand box
play area
driveway
donwood drive
occupied April '72
0 10' 30' 50' 70'
north

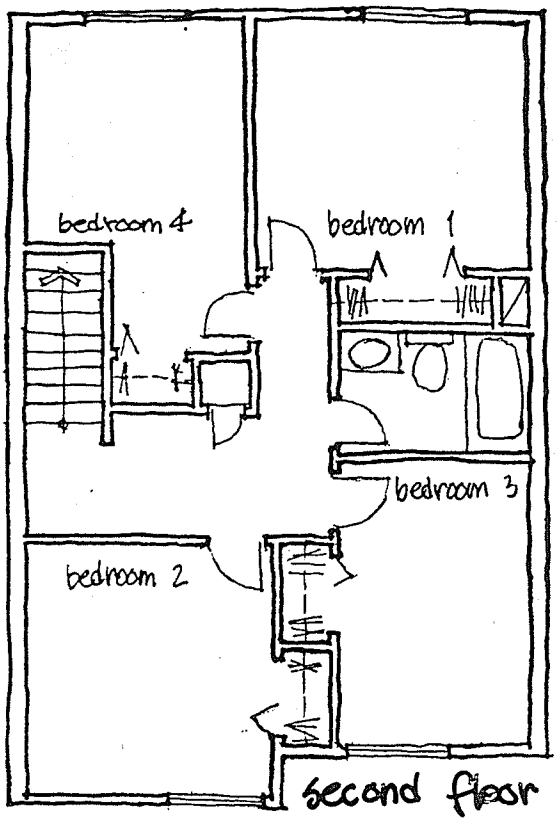

living room
kitchen
dining
vest.
up
dn
two-bedroom unit
850 ft²
ground floor

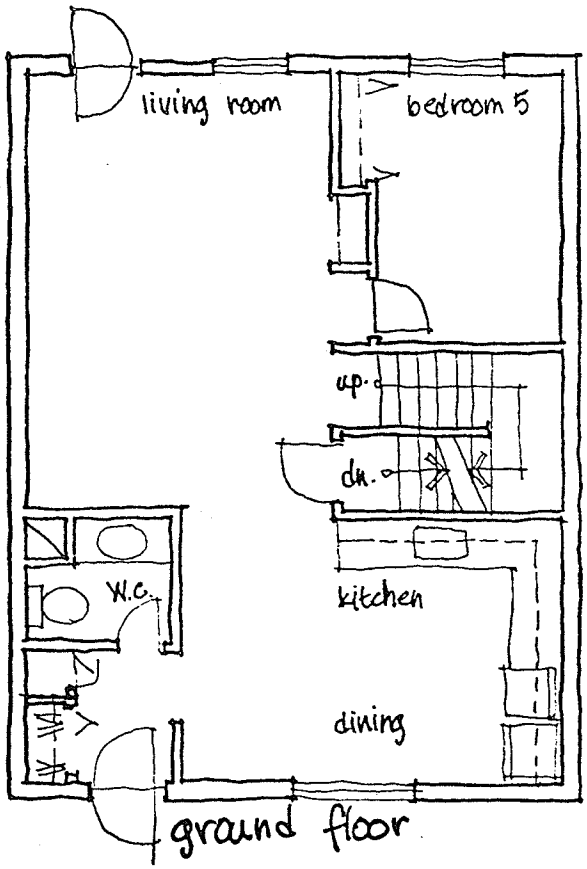

bedroom 1
bath
bedroom 2
dn
up
second floor

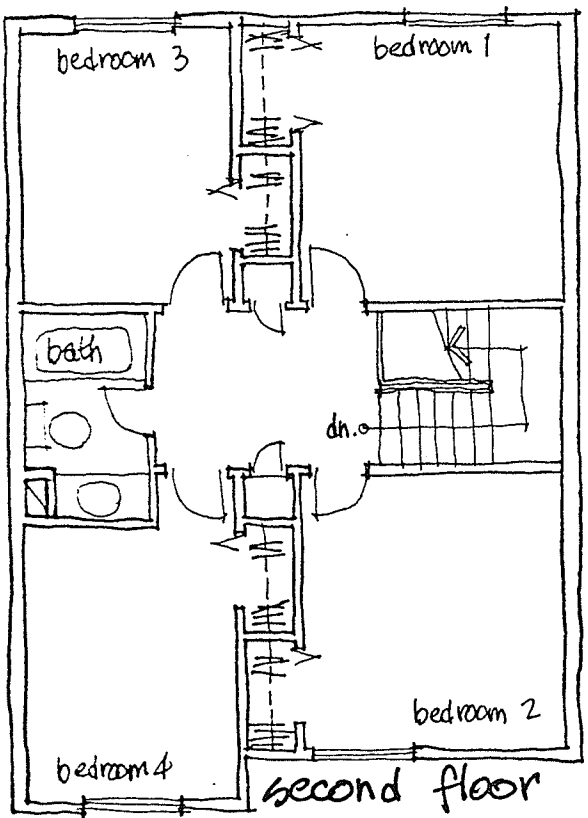

living room
dining
kitchen
vest.
three-bedroom unit
900 ft²
ground floor


bedroom 3
bedroom 2
dn
bath
bedroom 1
second floor




five-bedroom unit 1340 ft

Street Oriented

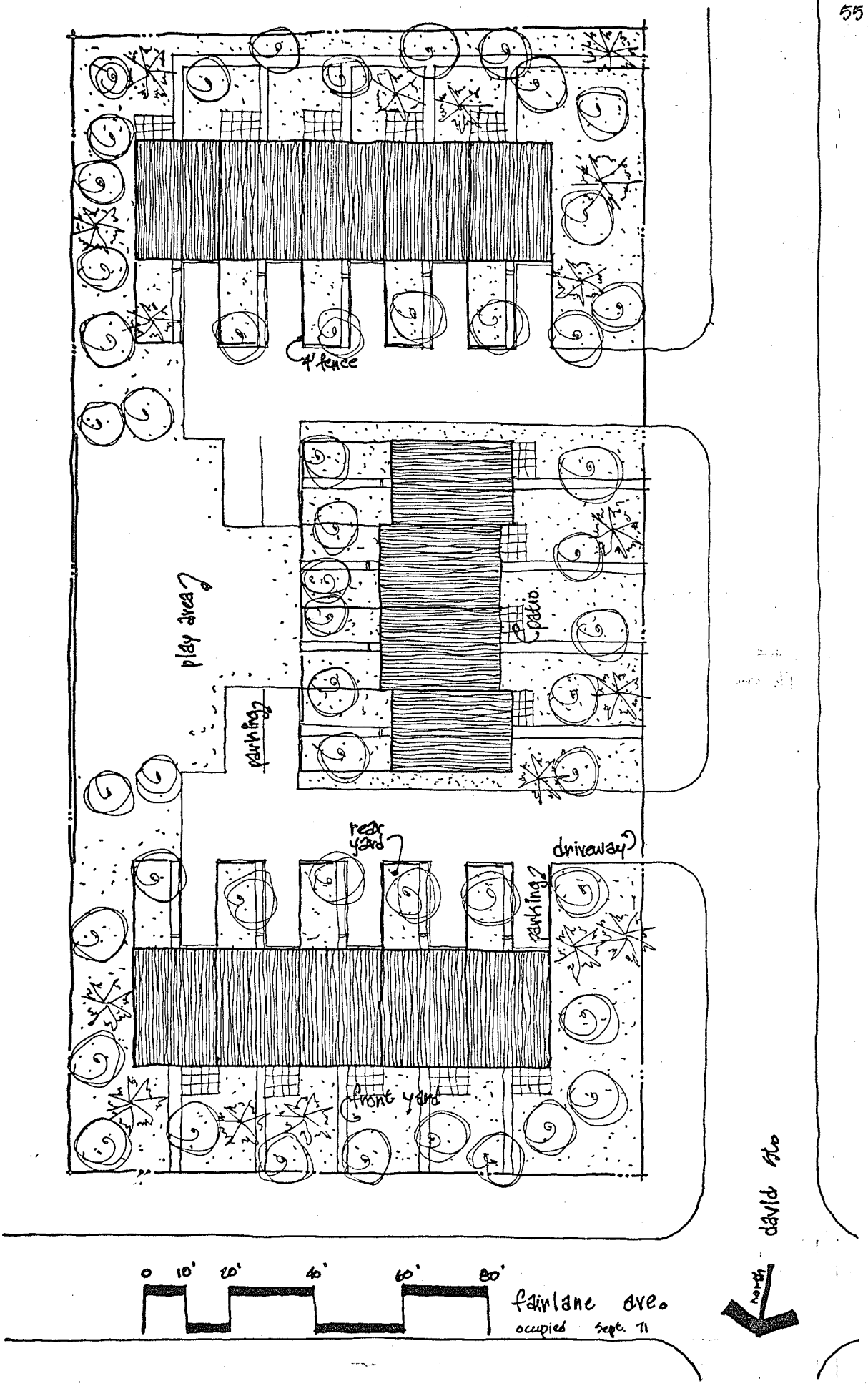
The projects typified as being street oriented are distinctive in that they are oriented towards the existing street system within the surrounding community. The more traditional hierarchy found in the typical single-family, detached home is approximated by this design philosophy. The transition established is thus: from the street, to the front yard, to the unit, and to the rear yard. Parking is accommodated in parking lots in the interior of the site. Tot lots for the projects are located adjacent to the internalized parking lots. Because this project type recognizes and is related to the street system, the projects tend to be smaller in size than the majority of Public Town Housing. This type was also developed very early in the Public Town Housing program of the MHRC.

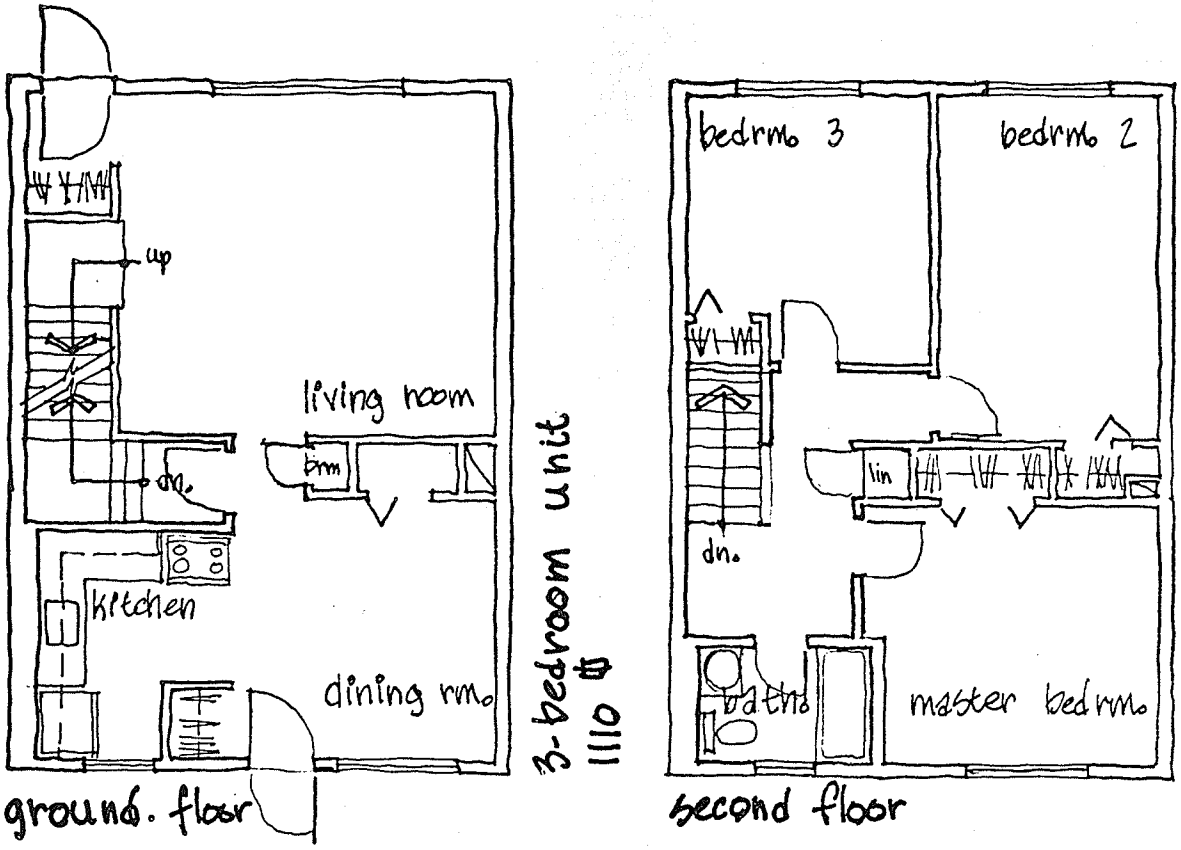
Two street oriented developments were investigated in the survey. They are; SO I, David and Fairlane and SO II, Lumsden-Lakeridge Road.

1. David and Fairlane:

David is a fourteen, three-bedroom unit development, built by a small house building company under the Developer-Proposal process. The design of the project was accomplished in consultation with the MHRC architect. It is located in a suburban residential area that combines single-family detached units with semi-detached housing. The entire area was under development at the time of the creation of this project. It remains, to date, the second smallest Public Town Housing development in Winnipeg. Some aspects of the particular nature of this project are as follows:

-The majority of the units front onto two intersecting residential


4' fence
play area
parking
patio
rear yard
driveway
parking
front yard
0 10' 20' 40' 60' 80'
fairlane ave.
occupied Sept. 71
north
david st.




streets, David Street and Fairlane Avenue. The living rooms of these units are oriented towards these streets and are removed from the property line by a distance of approximately twenty-five feet.

-Rear yards for the units are oriented towards the center of the site and are defined by four-foot high fences.

-Parking spots for ten of the units are contained within these rear yard areas, as are the individual garbage can enclosures. Vehicular access to these rear yards is via two separate driveways from David Street. Parking for the units fronting onto David Street is provided in two, 2-car lots flanking each driveway.

-A tot lot is located in the interior of the site and is defined at the rear property line by a six-foot high fence and by the driveways and the parking lots.

2. Lumsden-Lakeridge Road:

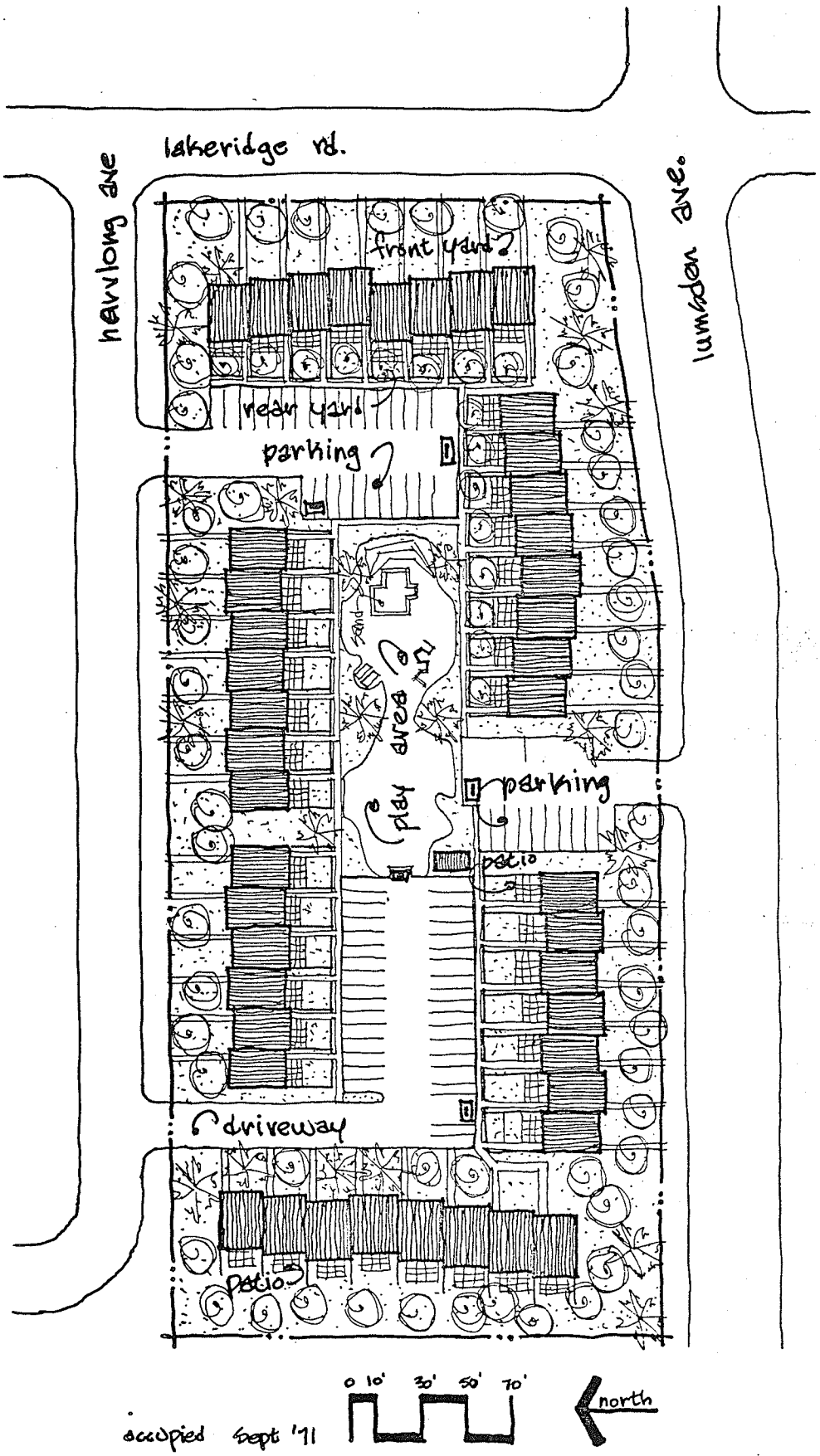
Lumsden is a 44 unit project of three and four bedroom town houses located in a new suburban residential area containing single and semi-detached housing. It is surrounded on three sides by residential streets and is designed so that all but eight of the units front onto these streets. Most of the units, therefore, have identifiable street addresses.

Following are some of its characteristic features:

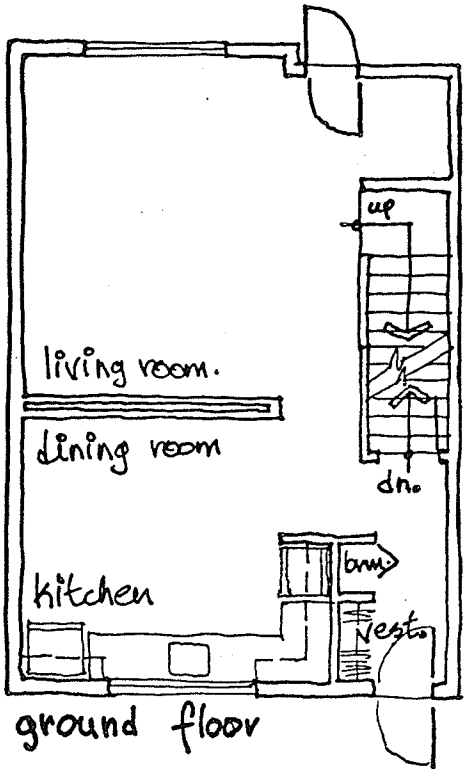
-Three separate parking lots located in the interior of the site serve all of the units. The kitchen side of the units is oriented towards these lots, providing for visual supervision of the parked car from within the unit.

-The rear yards of all units, except the eight at the West end of the development, are defined by five-foot and three-foot high fences. Small patios are contained within these yards. Five-foot high fences separate the parking lots from the adjacent rear yards and also act as screens for the car headlights.

-The rear yards for the four-bedroom units at the West end are undefined. The patios for these units are located within the front yards adjacent to the living rooms. These front yards are separated from one another by six-foot high privacy fences. Sliding glass doors provide access from the living room to these patios.

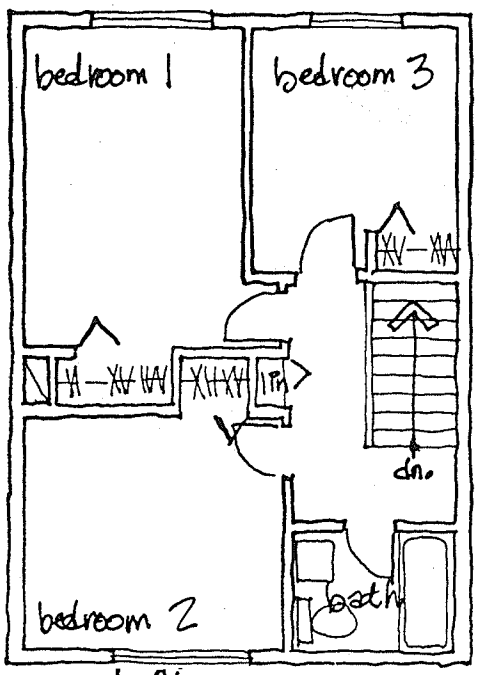



occupied Sept '71

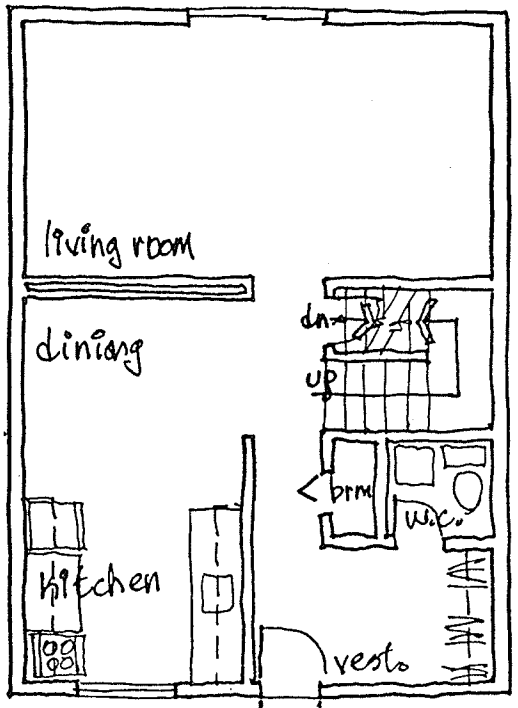



ground floor

3-bedroom unit
920 ft²

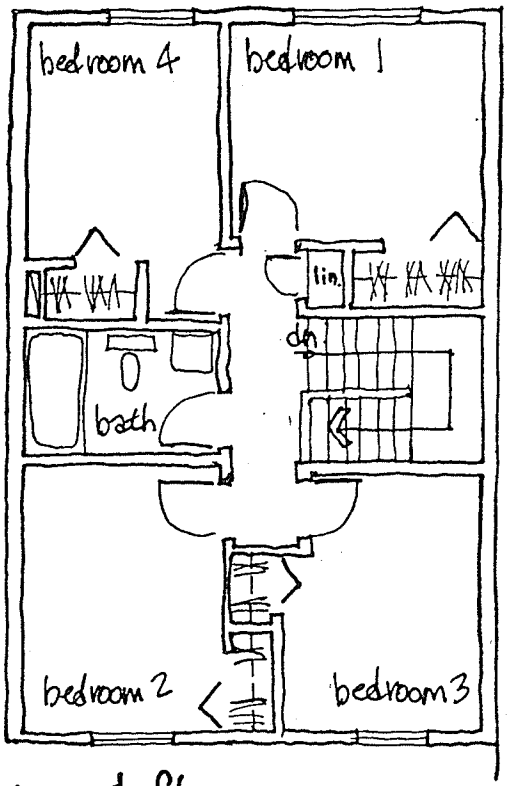



second floor




ground floor

4-bedroom unit
1047 ft²




second floor

The front yards of the units flanking the streets are left undefined by fencing and are accessible to the units by regular doors.

-The tot lot play area is in the center of the site, surrounded by the parking lots and the rear yards of the street oriented units.

Parking Lot Cluster

The parking lot cluster type is a direct outgrowth of the loop road type. It features unit clusters oriented around internalized parking lots. These group parking lots are separated from one another, thereby eliminating connecting loop roads and excessive through traffic. The rear entrances to the units are oriented towards the parking lots. The transition sequence is thus: from the street to the parking lot, to collector sidewalks, to the rear yard, and to the unit itself. Opposite the living room side of the units are located front yards that overlook internalized green spaces. The unit clusters tend to be large (20 or more) because of the size of the parking lots. Secondary and less recognizable clusterings of units result around internal green spaces.

Tot lots for these projects are located either adjacent to the parking lots or within the centralized green spaces. The parking lot cluster trend represents a stage somewhere near the mid-point of the evolution of a site planning philosophy for Public Town Housing.

Three developments with parking lot orientations were investigated in the survey. They are: PLC I, Maples Two; PLC II, Raleigh; and PLC III, Gordon Avenue.

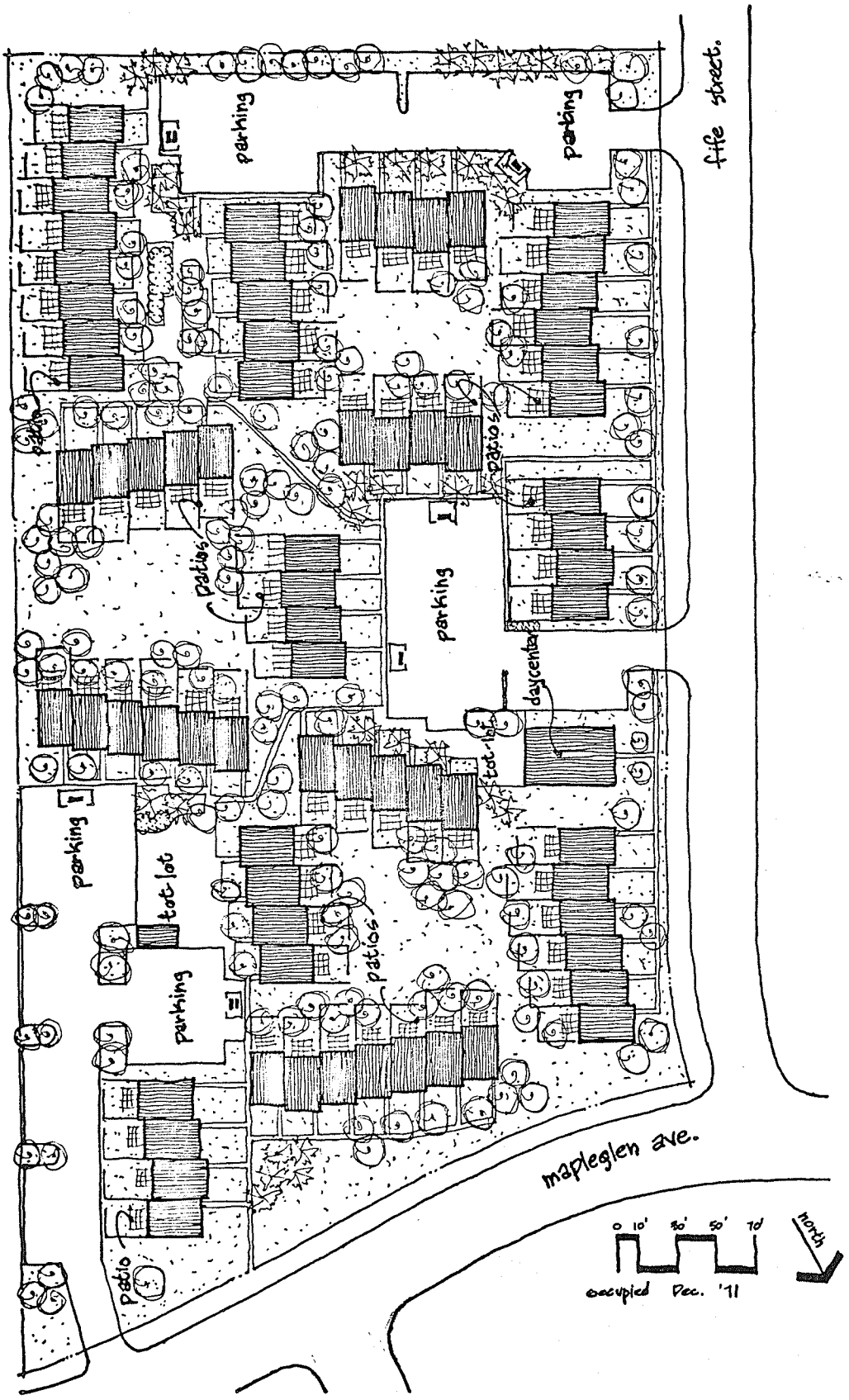
1. Maples Two:

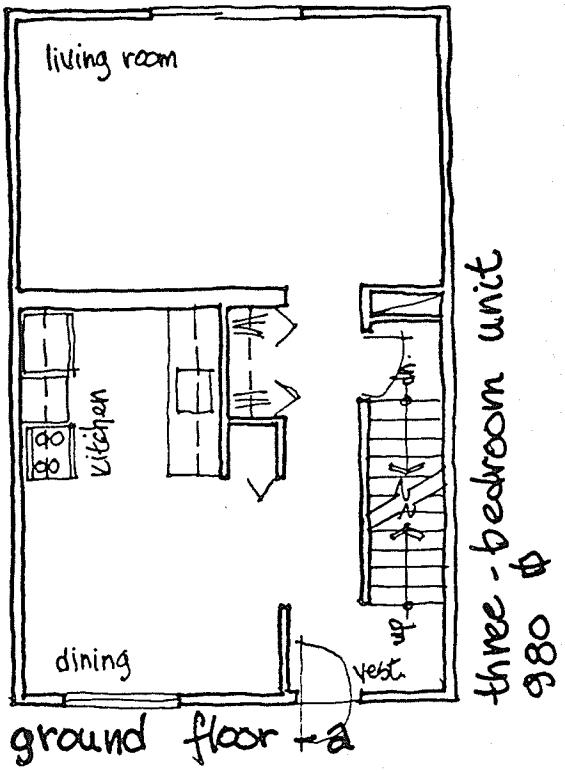
Maples Two is considered to be a large project in Winnipeg. It contains three and four bedroom units totalling 72 town houses. It is located in a recently developed residential area of single and semi-detached housing. A Public Housing project of four-plexes is situated across the street. The project was developed in 1971-1972 by a large inter-city housing development company, under the Developer-Proposal process and with design consultation from the MHRC architect. Some of the features are as follows:

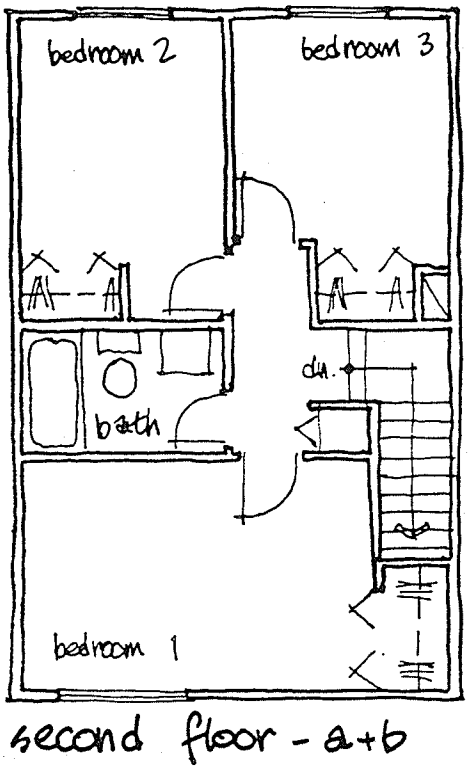
-Parking is provided in three large parking lots in the center and along the periphery of the site. Each has separate access to the neighboring streets. Centralized garbage enclosures are located on the periphery of these parking lots.

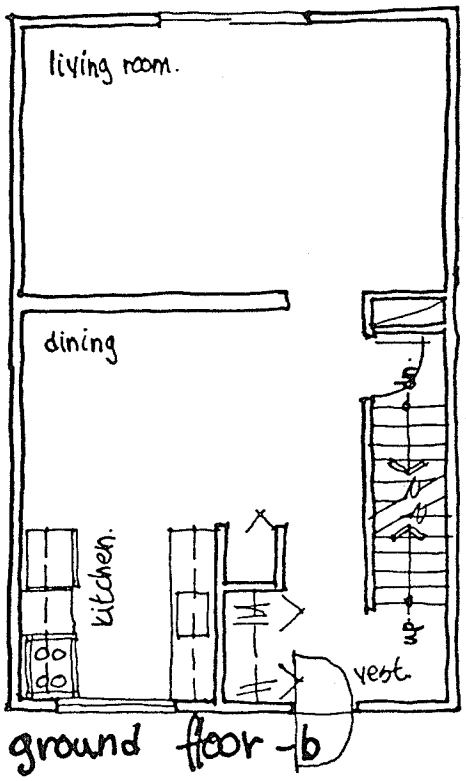
-The design of the units fronting onto Fife Street and Mapleglen Avenue responds uniquely to the street by locating the dining area at the rear of the unit. This provides an over-view of the street from within the dining area. In this case the kitchen proper is internalized within the unit. The units located centrally within the site feature internalized dining areas. The kitchens are located at the rear of the unit and have an over-view of the parking lot.

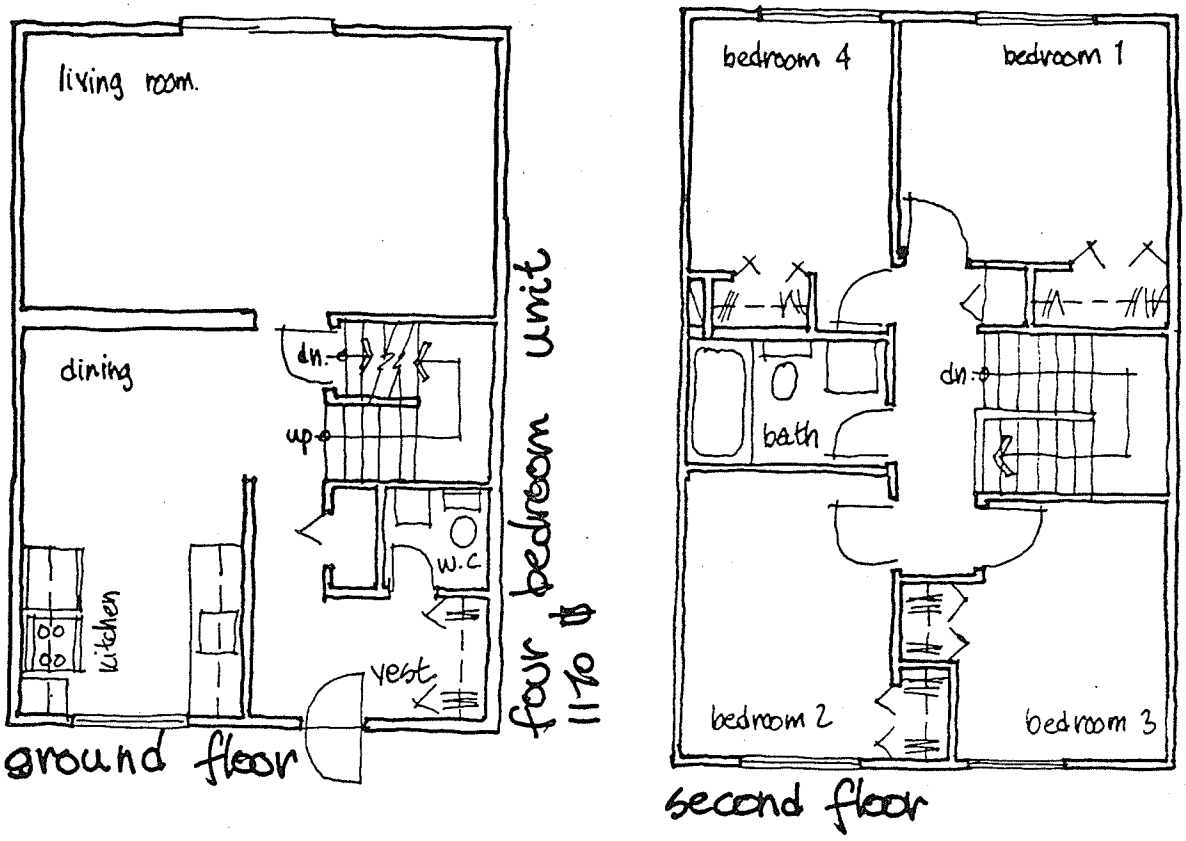
-The clustering of the units is oriented around the parking lots. Rear entrances face these lots while adjoining the living rooms are enclosed front yards. Together with neighboring unit clusters these define internalized green spaces.


fife street.
parking
parking
patios
patios
parking
daycenter
tot-lot
parking
tot-lot
parking
patios
maplegleN ave.
patio
0 10' 30' 50' 70'
north
occupied Dec. '11


living room
kitchen
dining
vest.
three-bedroom unit
980 ft²
ground floor - a


bedroom 2
bedroom 3
bath
clo.
bedroom 1
second floor - a+b


living room.
dining
kitchen.
vest.
ground floor - b




-Tot lots are located adjacent to two of the parking lots, and a day center is located adjacent to the most centralized tot lot.

-All units feature sliding-glass doors to provide access from the living room to the front yard and the patio.

2. Raleigh:

Raleigh is a 66 unit project located on the fringe of a recently-developed suburban residential area. It has a mixture of two, three, four, and five bedroom town houses. The project was constructed in 1971-1972 under the Developer-Proposal process. The architects hired by the Developer had previous experience in the design of Public Town Housing for the MHRC. Unique features of the project are as follows:

-The site is long and narrow (running East to West), with existing collector residential streets flanking it on either end. To provide vehicular access into the site, a roadway within the Southern boundary of the property was provided.

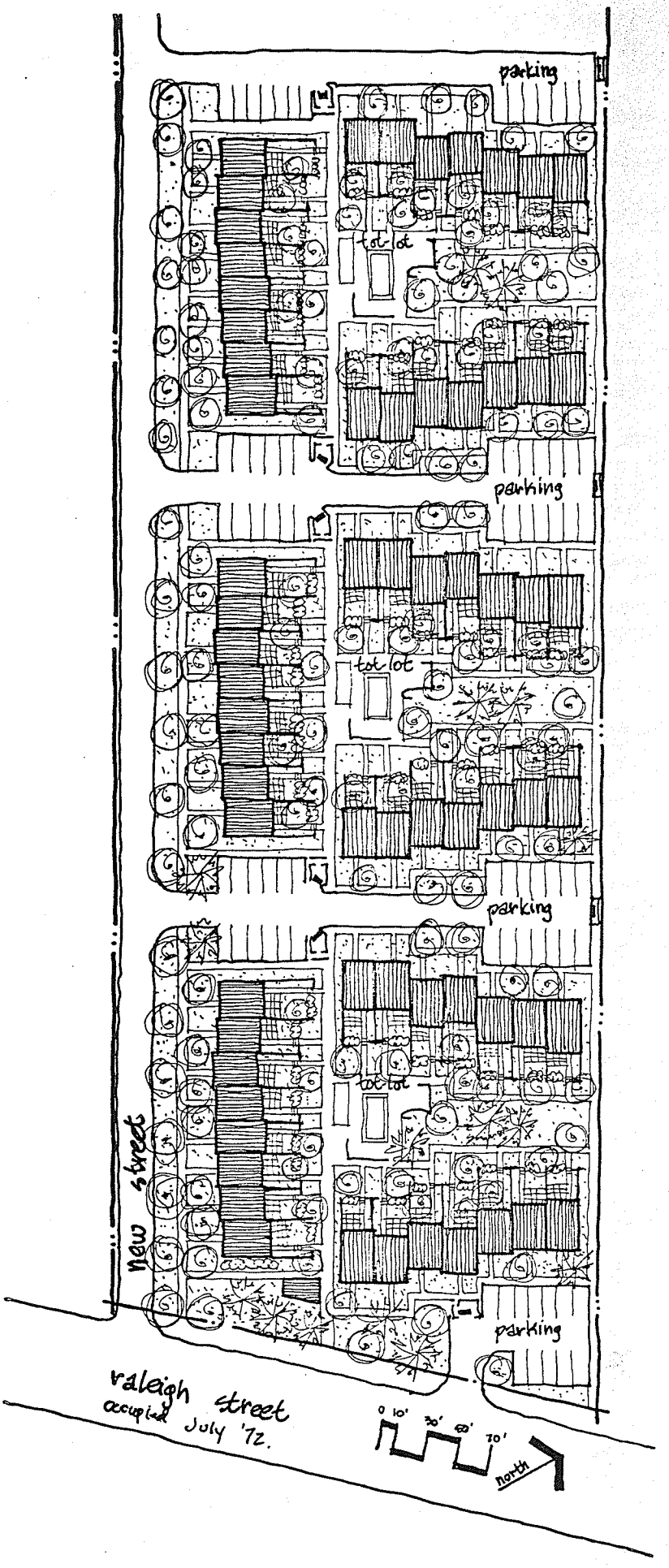
-The Western-most section of the property is left undeveloped and zoned for a future commercial occupancy.

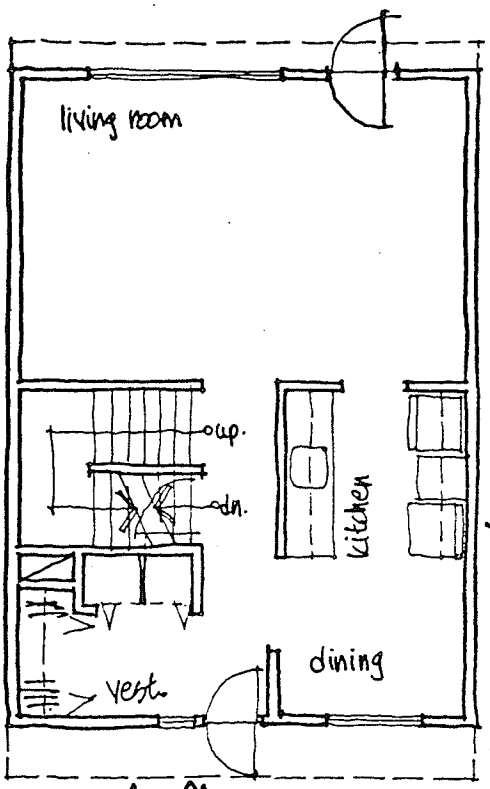
-The basic organization of units on the site is in the form of three U-shaped clusters. Living rooms are oriented towards internalized green spaces. The green spaces are flanked by tot lots. Dining area windows for the units along the base of the "U" are oriented towards the new roadway. For those units along the arms of the "U", the dining areas are focused upon parking lots.

-In plan the clustering of the units is oriented towards the green space and tot lot areas; in reality, however, the neighborhood groups of tenants are established around the common parking lots.

-Although the tot lot areas and the pedestrian circulation systems that circumscribe them are well defined physical elements, children on tricycles can be seen more frequently within the parking lots than around the tot lots.

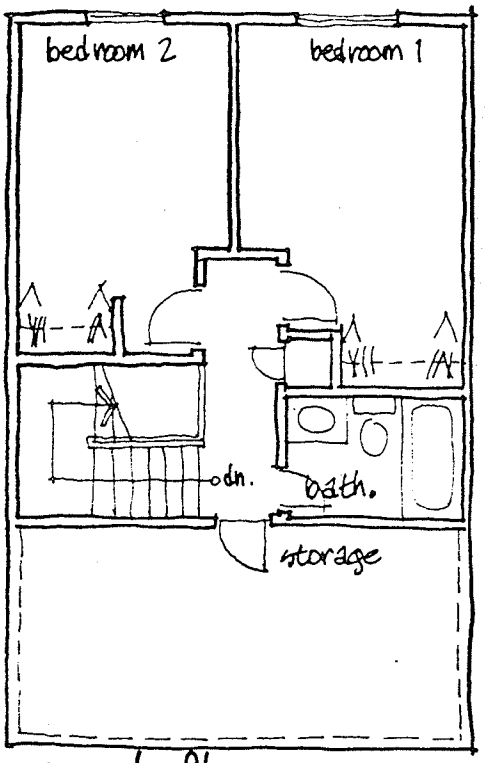
-The front yards are enclosed with six-foot high party wall fences and three-foot high fences on the side opposite the living room windows. These lower fences provide an over-view of the green space. Access to the front yard from within the unit is via a door that opens directly onto the living room.


parking
tot lot
parking
tot lot
parking
tot lot
parking
new street
raleigh street
occupied July '72.
0 10' 30' 50' 70'
north



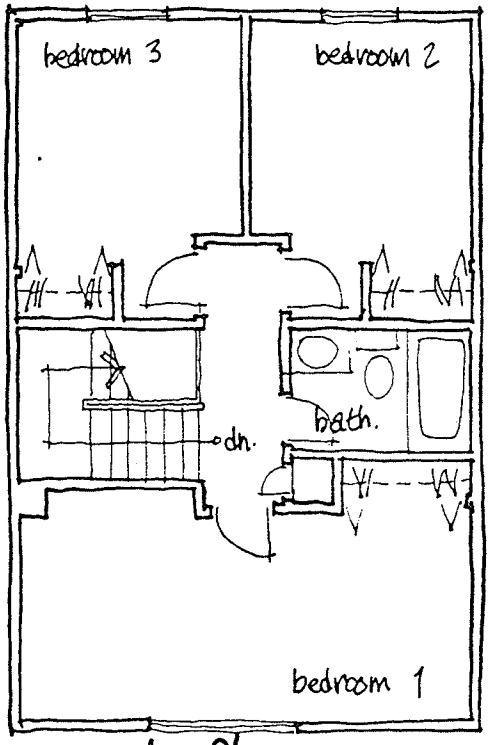

three bedroom unit
875 ft

ground floor
(two + three bedroom units)

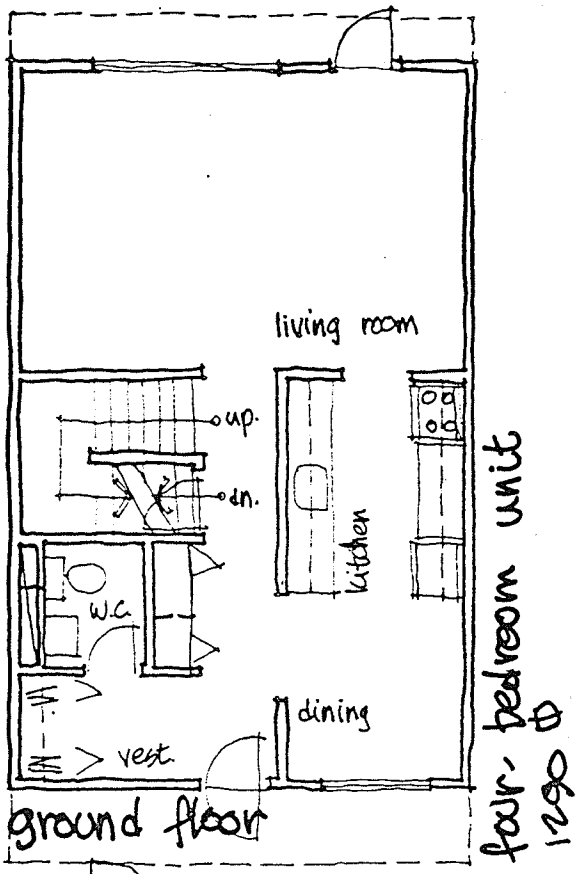



second floor

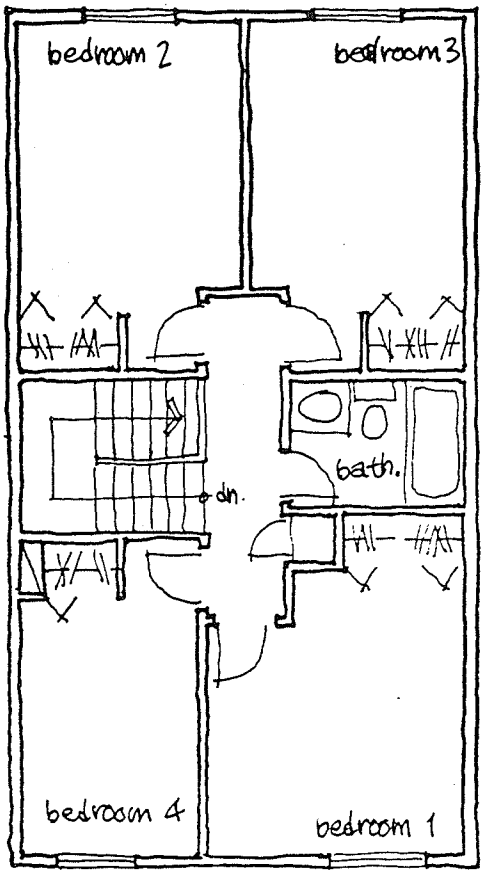
four bedroom unit
1010 ft

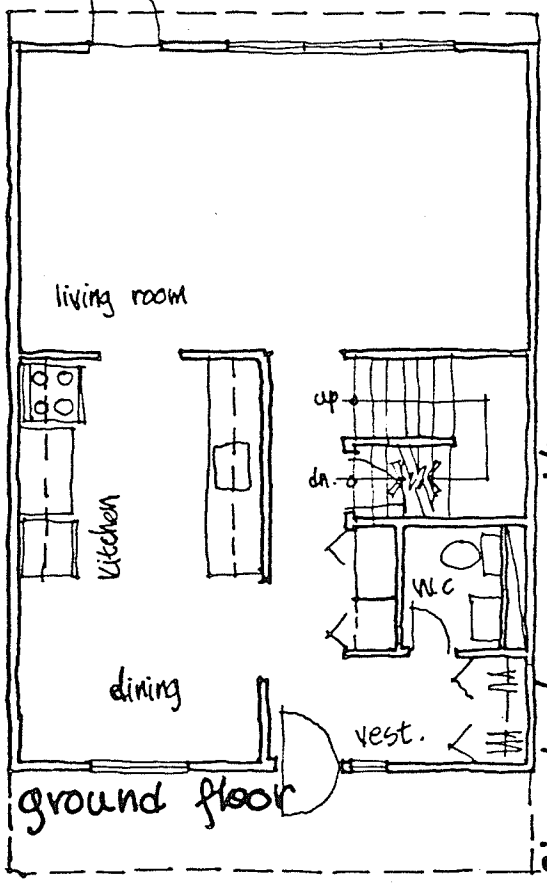



second floor

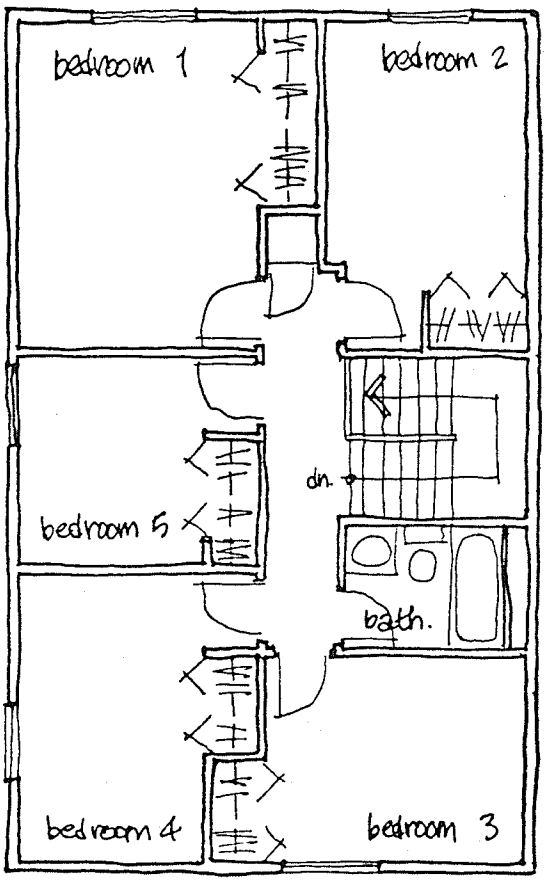



four-bedroom unit
1290 ft²




five-bedroom unit
1345 ft²



-Garbage enclosures are located within the parking lots. They are designed so that the containers are not visible from the outside. Access, for the user, to the container itself is accomplished without the use of gates.

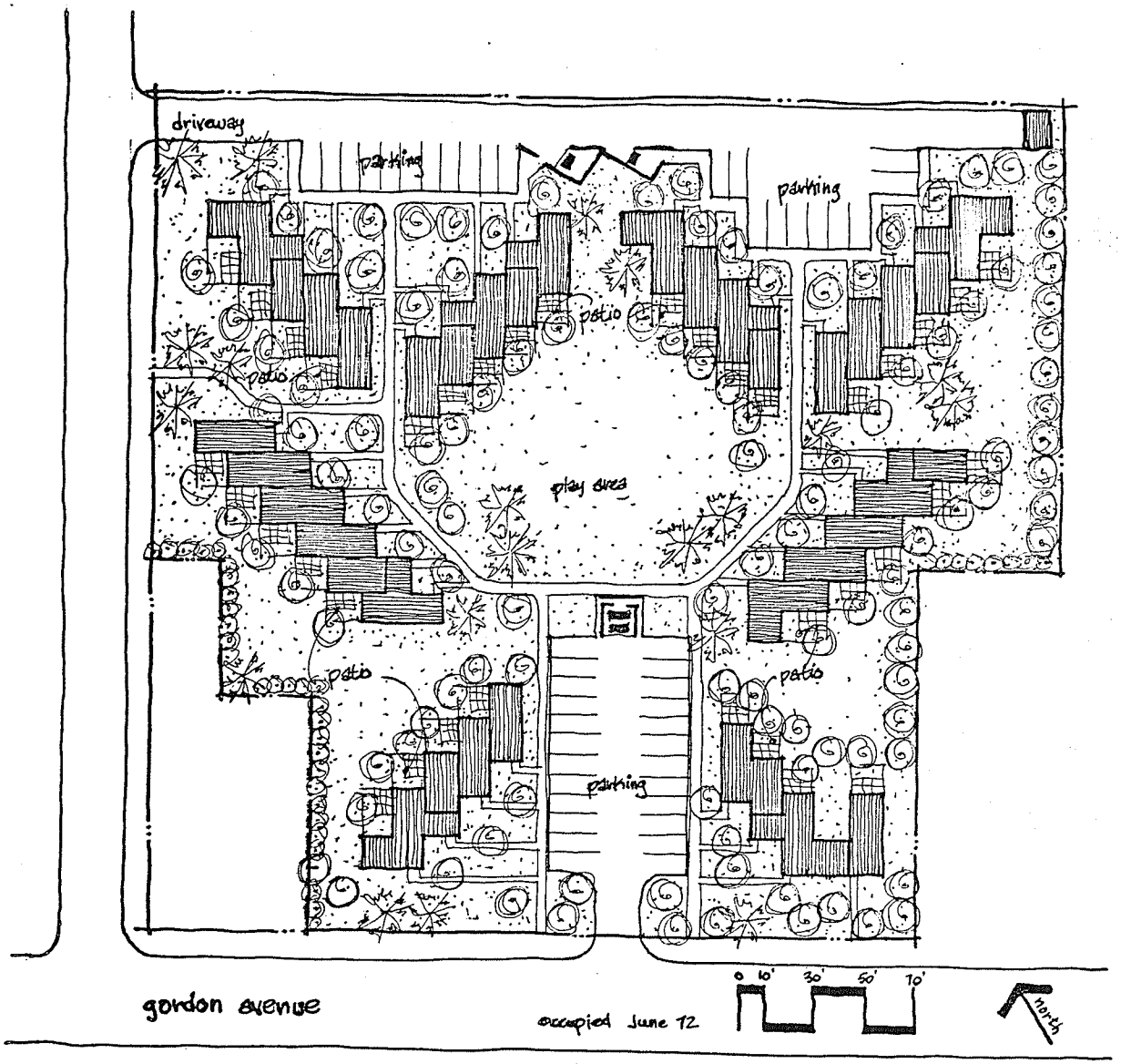
3. Gordon:

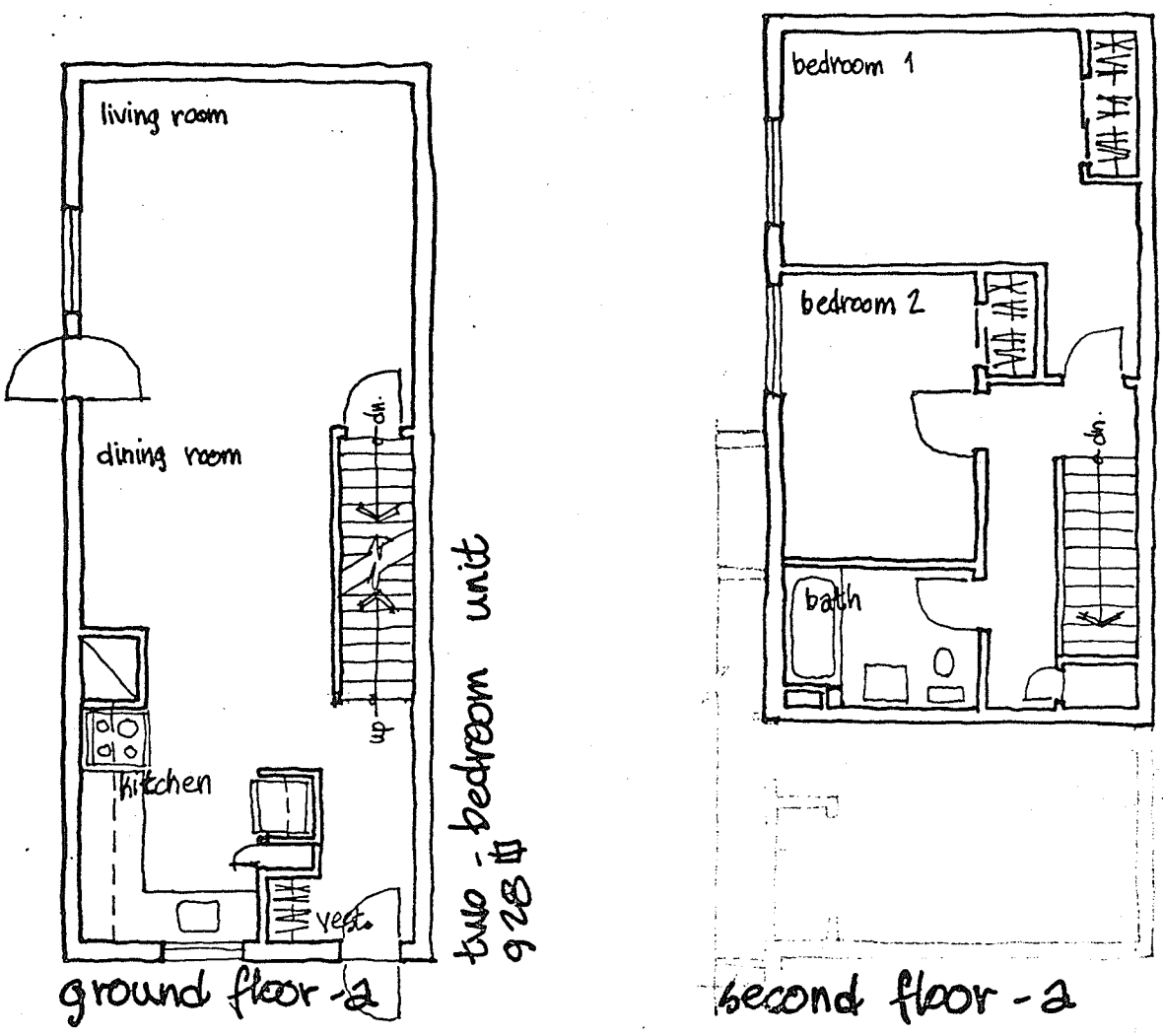
The 37 unit Gordon Avenue project was designed by an architectural firm employed by a development company on a basis of minimal design and drafting services. It was created in close consultation with the MHRC architects. It consists of two, three, four, and five bedroom town houses and is located in a predominantly residential area. Unsightly light industrial establishments flank railway spur lines that knife through the district, one of which is located immediately East of the site. As a result, the design of the site plan responds to the problem of orientation towards neighboring properties.

Unique features of this project are as follows:

-Three parking lots serve all of the units, the two at the North property line being linked together by an access road.

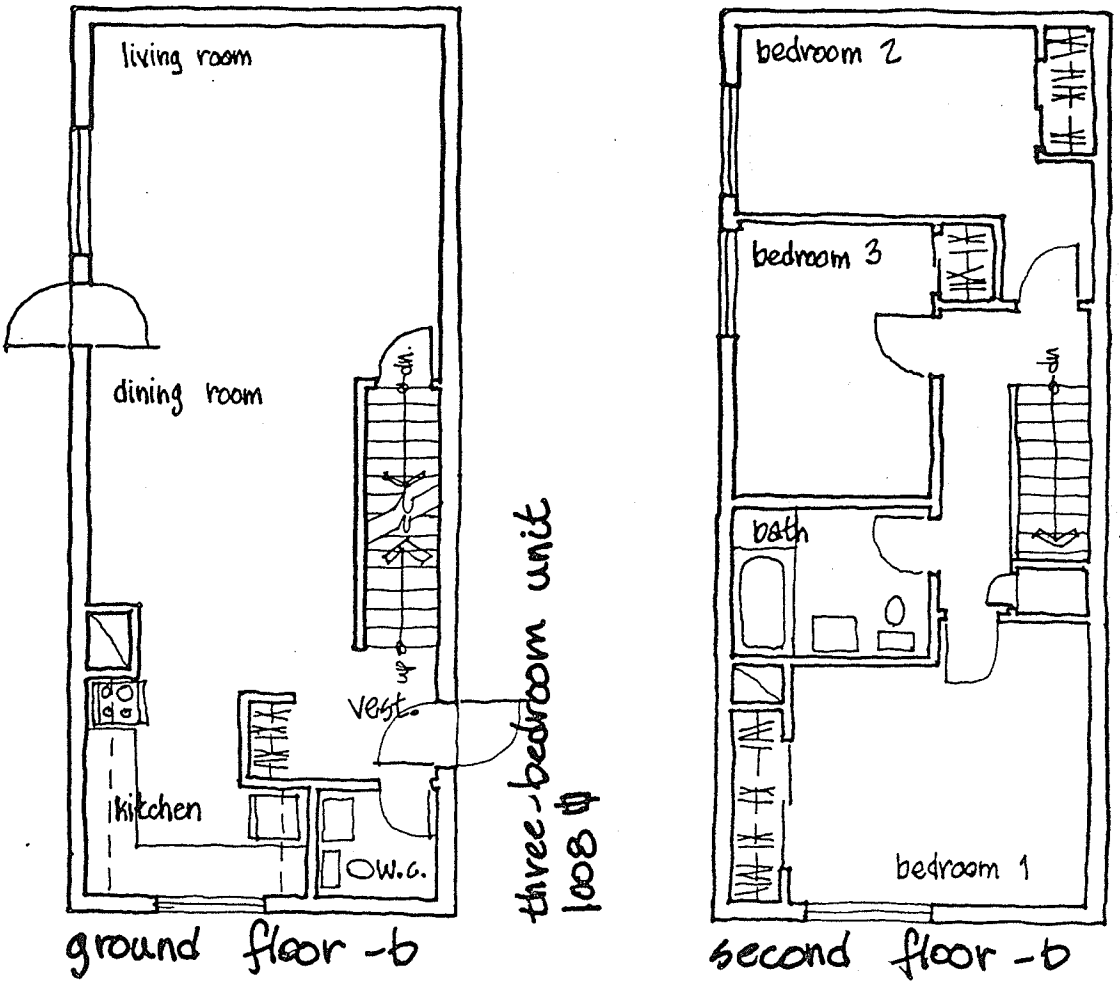
-The unit clusters are oriented to these parking lots, and collector sidewalks join these lots to the rear yards of the units. Identifiable unit groups are established, and a sense of arrival to a unit group and to the individual unit results from this clustering. This transitional arrival is especially successful for the two northern clusters.


driveway
parking
parking
patio
patio
play area
patio
patio
parking
gordon avenue
occupied June 72
0 10' 30' 50' 70'
north




-Unit floor plans and the staggering of the units respond to the problem of orientation of view imposed on the site by neighboring land uses. This is accomplished by alternately locating living room windows and doors to the patio on two different exterior walls. Also;

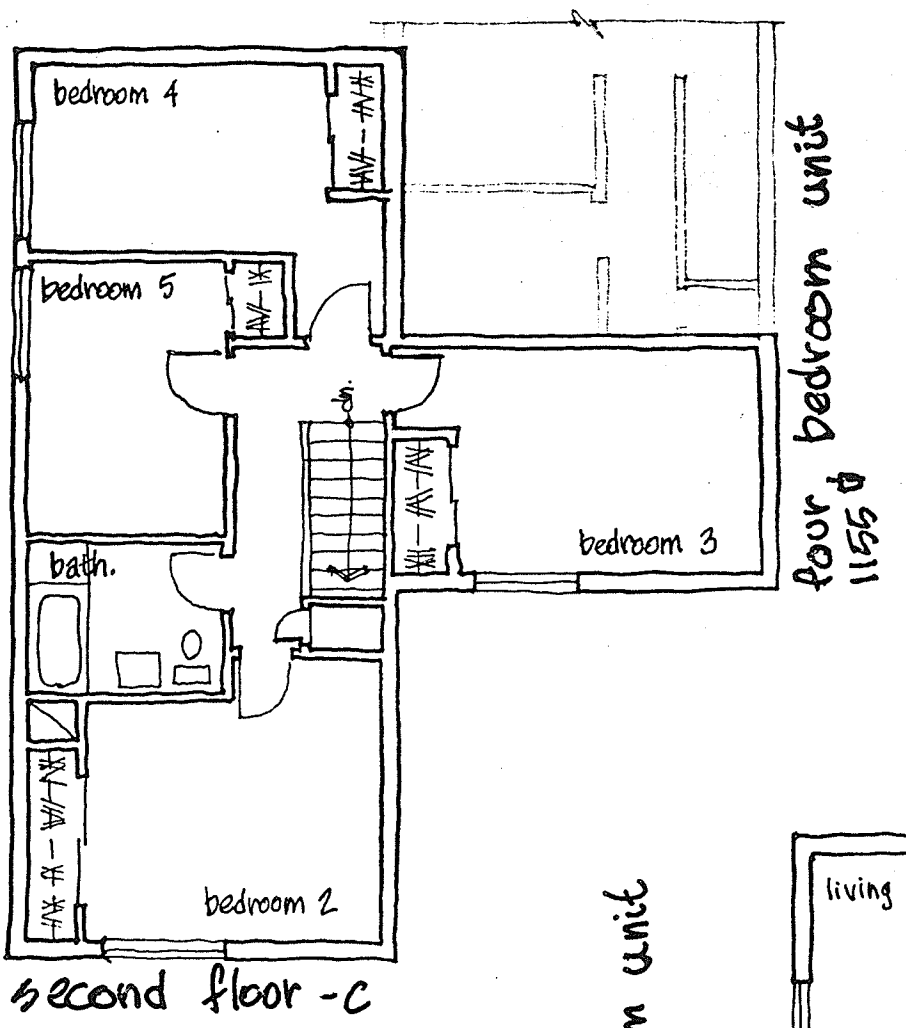
-The front yard areas are defined by the staggering of adjoining units and by six-foot high fences. The end of the yard is enclosed by a four-foot high fence with a gate opening. By carefully positioning this lower fence, the over-view from the living room and view from within the yard is controlled.

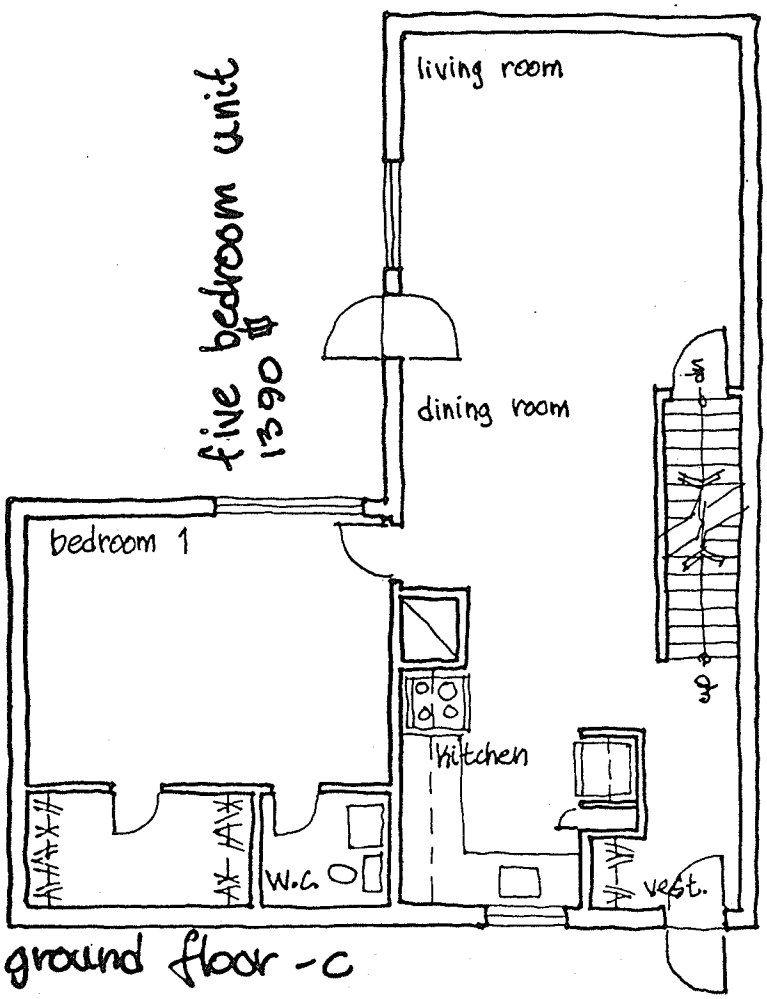



-Kitchen areas of the units relate to and provide visual control over the collector walks and parking lots. Rear yards opposite the kitchens are undefined except for the sidewalks and the staggering of the units.

-The tot lot is located in the centralized green space formed by the unit clusters and the front parking lot. Collector walks join the separate unit clusters and help to define the tot lot area.

-The larger units are scattered throughout the development thereby eliminating concentrations of children.


bedroom 4
bedroom 5
bedroom 3
bath.
bedroom 2
four bedroom unit
1155 ft
second floor - c


five bedroom unit
1390 ft
living room
dining room
bedroom 1
kitchen
W.C.
vest.
ground floor - c

Playground Cluster

This site planning design is an outgrowth of the parking lot cluster group. Rear entrances to the units are oriented around play areas for pre-school children. This type of clustering recognizes the importance of supervising younger children from within the house while they are playing outside. The kitchen side of the unit is oriented towards these play areas because the mother spends a significant amount of her time in the kitchen. The pedestrian activity between the unit and the parking lot flanks the tot lots thereby augmenting the play activities of the pre-school children.

To reinforce the relationship between pedestrian and vehicular traffic and child's play, smaller groups of units are oriented around tot lot, play areas. A number of these are then oriented around a common parking lot. The resulting series of transitions is thus: from the street to a parking lot, to a tot lot with collector sidewalks, to the rear yard, and to the unit. Once again, front patio yards overlooking internalized green spaces are located at the front of the unit.

This site plan type is the last to be devised by the MHRC to date, and is the most sophisticated of the four. It recognizes and attempts to respect the sometimes subtle relationships between the various site plan components. In so doing, it attempts to create adequate and distinguishable transitions from one element to another. The tot lots serve, in effect, as entry courts to a cluster of units.

Two playground cluster projects were investigated in the User Feedback Survey. These projects were; PGC I, Carriage Road and PGC II, Birds Hill Road.

1. Carriage Road:

The Carriage Road development, although created early in the housing program of the MHRC, represents a sensitive understanding of the interrelating components of town housing design. The design was accomplished by an architectural firm working in close consultation with the MHRC architect. It consists of three and four bedroom town houses totalling seventy-five units, and is adjacent to a 100 unit Elderly Persons Housing project at the South end of the site. This project was designed and developed concurrently with the town housing, and blends in architecturally with the town housing.

Distinguishable features of this project are as follows:

-The apparent size of the town housing project is reduced by fifty percent through the manner in which two groups of unit clusters are defined and separated. These group clusters have separate street addresses and vehicular access, and are separated from one another by a large, open, grassed playing field.

-Each parking lot is subdivided into four sections which reduces the apparent size of the lot. Four tot lot, entry courts are located around and oriented towards these parking lots.

-Each tot lot is hard-surfaced with concrete facilitating a variety of young children's play, the most important of which is tricycling. Each tot lot also possesses two sand pits set into the concrete and surrounded by a six-inch high curb. The sand pits are also defined on two sides by a three-foot high wall which prevents direct access to the parking lots. The entire tot lot is separated from the

parking area by a six-inch high curb.

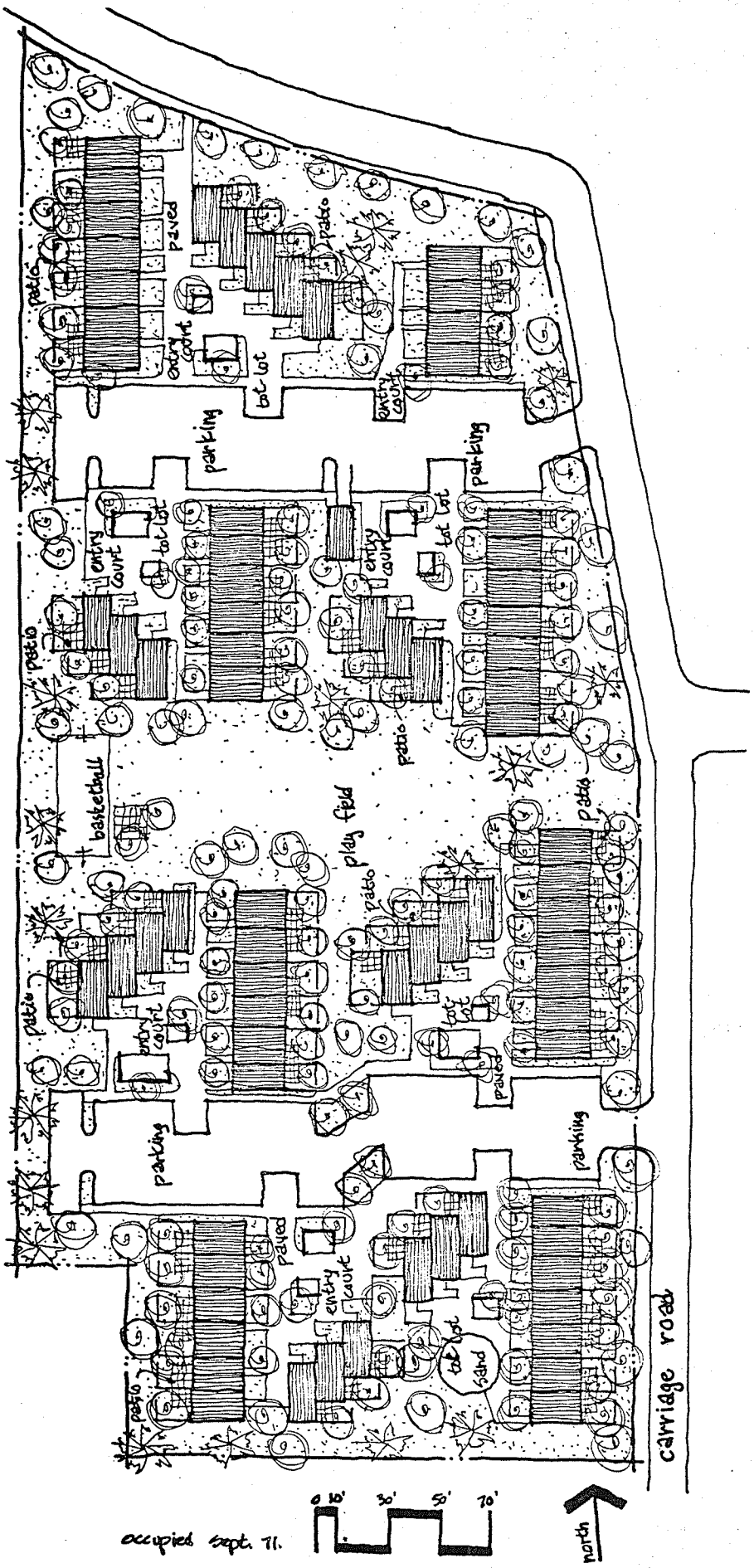
-Each tot lot serves as an entry court to a cluster of from nine to thirteen units. The common entry which is on the kitchen side of the unit is oriented towards these courts. As a result, the project is subdivided into eight separate and easily identifiable clusters of units. The clusters are also small enough for the user to maintain a strong identity with the individual units and the neighboring residents.

-Small grassed rear yard areas, adjacent to the kitchen, are defined by the sidewalks to the rear door, the staggering of the units, the second floor overhang, and the change in surface material, from concrete court to grassed yard.

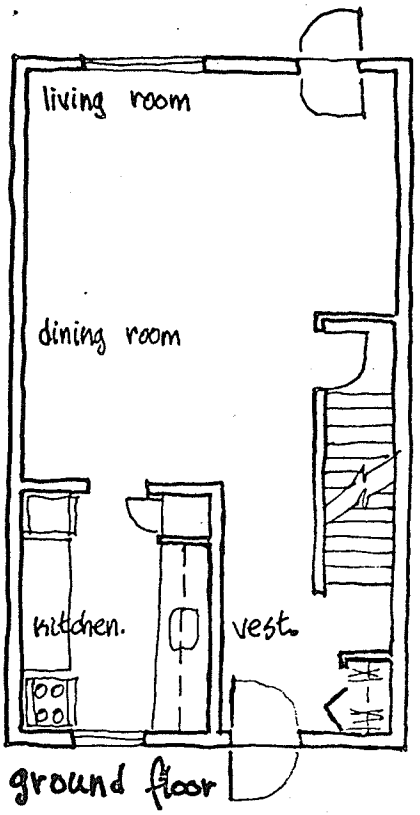
-Visual overview and supervision of the parking lots is available to most of the units from the kitchen.

-Living rooms of twenty-five of the units front directly onto Carriage Road. Unlike other Public Town Housing projects investigated, these units relate as strongly to the tot lot courts and the parking lots as do the internalized units.

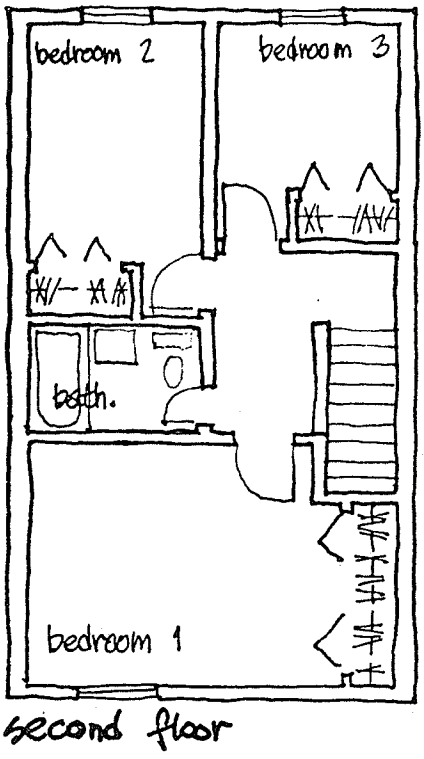
-Front yard areas are defined by the staggering of the units and a five-foot high solid fence. The twelve-foot long end section of this fence is lowered to a height of three feet and has a gate. This section is designed to be visually transparent. This transparent section is carefully located such that over-view from the living room and view from the patio area is controlled. A view from within one front yard across a green space to another front

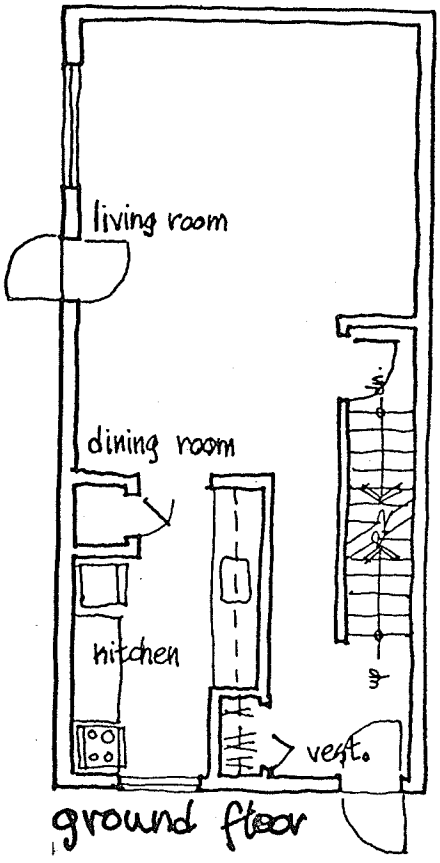



occupied sept. 71.

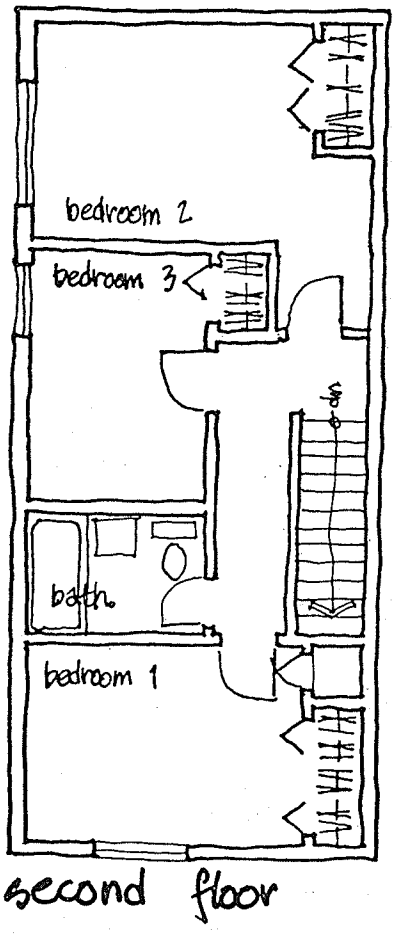


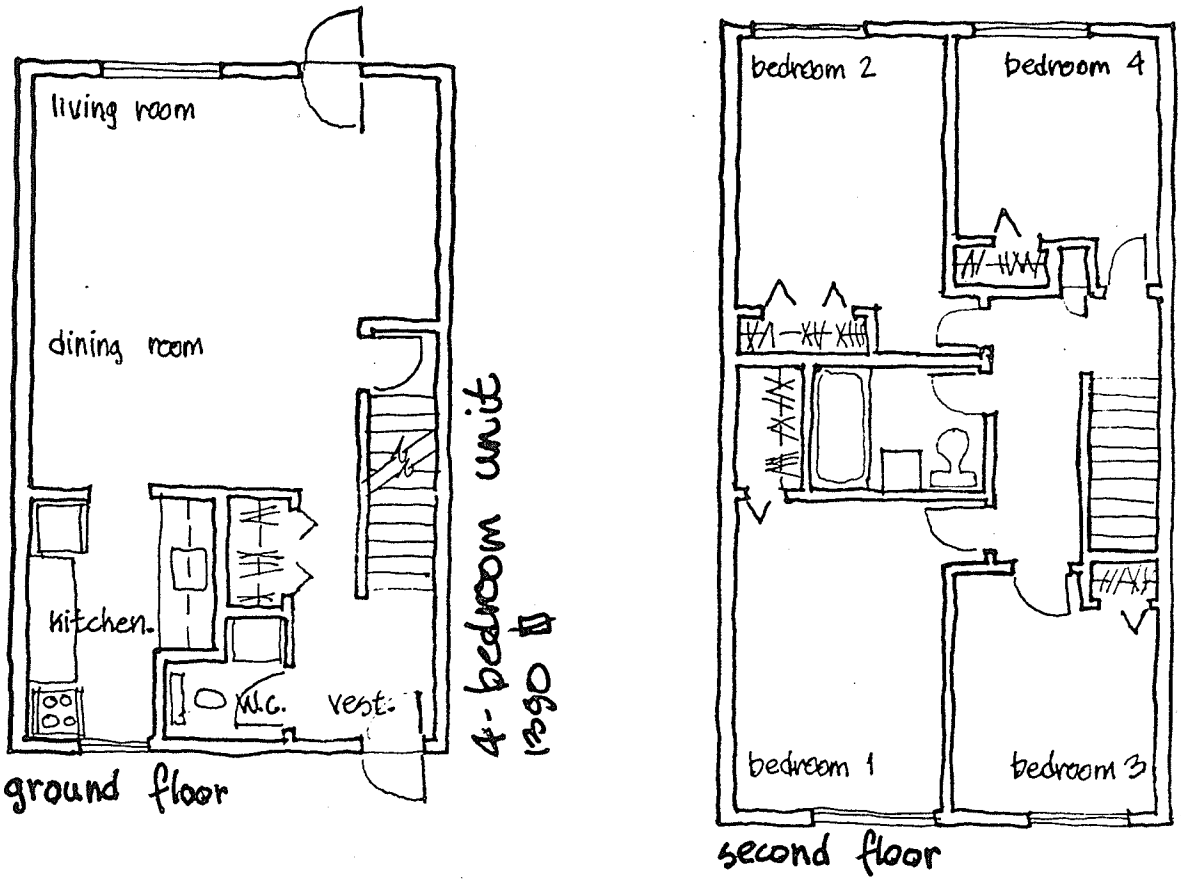

3-bedroom unit - type A
900 ft




3-bedroom unit - type B
875 ft






yard is in this way eliminated and visual privacy is maintained. The control of the view also aids in reducing the apparent size of the project by limiting the number of units within sight at any one moment.

2. Birds Hill Road:

The Birds Hill Road project is an eighteen unit development of three and four bedroom town houses. Unlike the other Public Town Housing projects investigated it was constructed on land owned by the MHRC. The architectural firm hired by the Corporation was responsible directly to the MHRC and full architectural services including construction supervision were required. The design was carried out in close consultation with the MHRC archi-

tects. Thus the experience gained from previous projects was able to be realistically utilized.

The development is located on the edge of a residential suburban district adjacent to a major highway. The site is long and narrow, surrounded on all four sides by lanes and an access road. These dictated the basic hierarchy for the site plan design. Other design features that it exhibits are as follows:

-The geometry of the site together with the density guidelines dictated that five parallel banks of units be created. These are positioned back-to-back and result in common tot lot, entry courts serving double-loaded cluster groups and common double-loaded green spaces.

-Parking is in the form of five lots flanking the land to the West. These are located adjacent to the entry courts and tot lots.

-The entry courts contain hard-surfaced sidewalk systems that also serve as tricycle circuits.

-Sand play areas adjoin the green space areas and are defined by an eighteen-inch level change. The entire area is approximately two feet above the lane and parking area, and is separated from it by steps, fences, and concrete retaining walls. This results in a well defined transition between the parking lot and the sand play area.

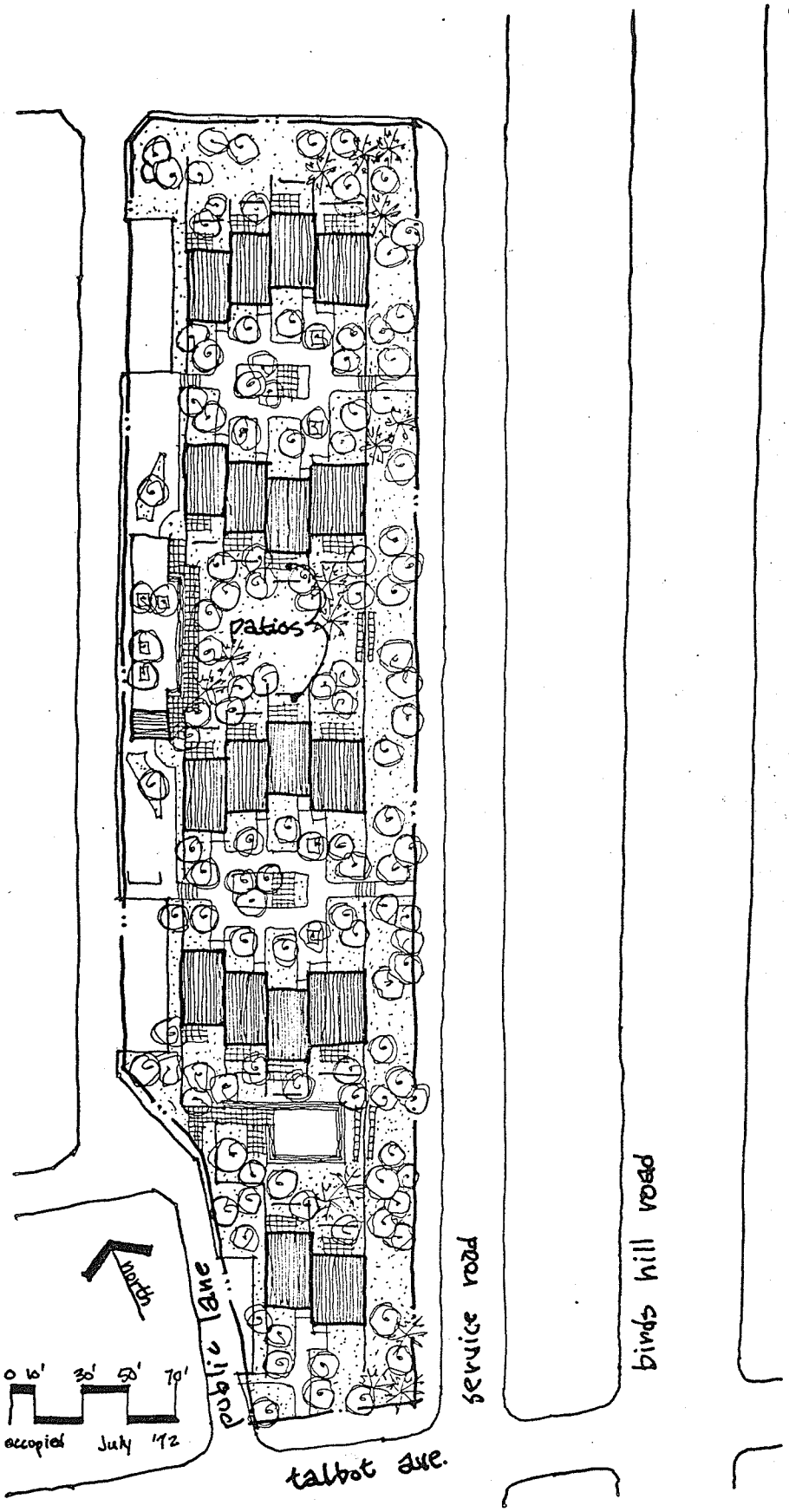
-Front yard areas are enclosed by eight-foot high party wall fences and a four-foot high fence with gate openings at the end. This

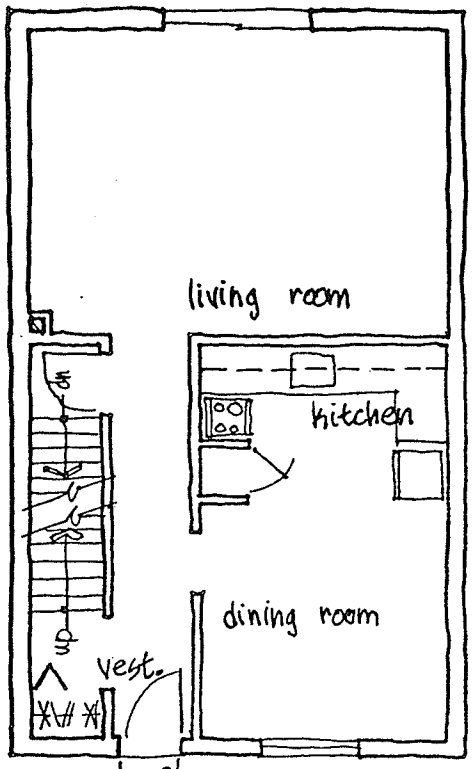
provides an over-view from within the living room, and a view from a standing position from the patio. The patio area is approximately one foot higher than the green space itself, which is two feet above the parking lot and the lane. This vertical transition from the green space to the front yard area aids in the territorial definition of the individual yards. It also locates the patio door threshold only one step above the patio.

-Kitchen-dining areas of the units overlook the entry court. This results in a strong sense of identity with a cluster group and its residents, as well as a high degree of control and supervision over the younger childrens' play in this area. Visual supervision of the parked car is not possible from within the unit. However, the position of the parking lot relates strongly to the entry courts thereby creating a degree of control.

-The grassed rear yard areas are defined by the staggering of the units, the sidewalks to the rear doors, and by shrubbery hedges that surround each yard.

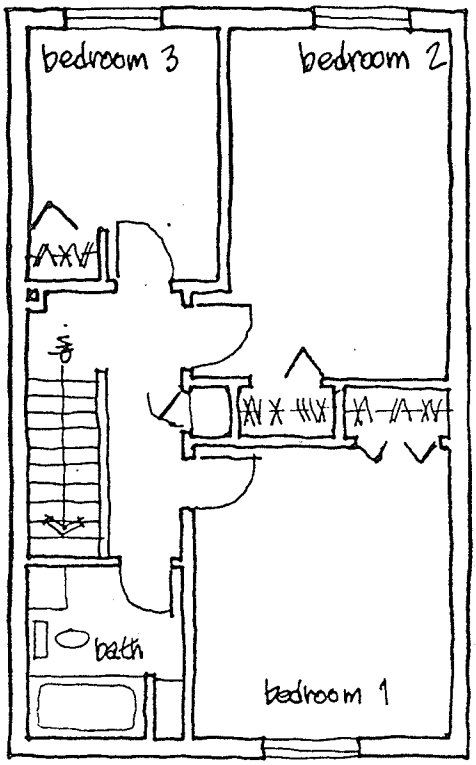
-The entire eastern side of the development is enclosed by an eight-foot high fence that encloses the front yard, the green space courts, and the tot lot, entry courts. As well, it serves as a visual and acoustic screen from the highway located East of the site. This continuous fence reduces the apparent height of the roof ridges and gives a human scale for the development when viewed from the surrounding neighborhood.


patios
north
0 10' 30' 50' 70'
occupied July '72
public lane
talbot ave.
service road
birds hill road

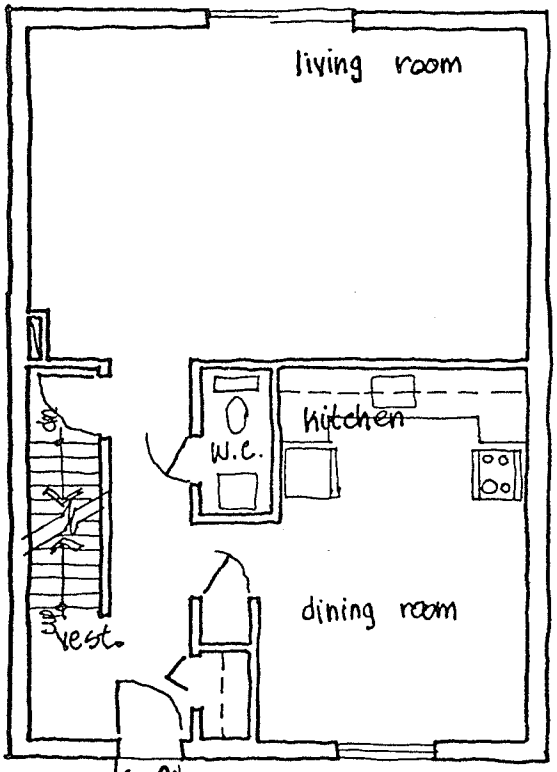



ground floor

3-bedroom unit
985 ft

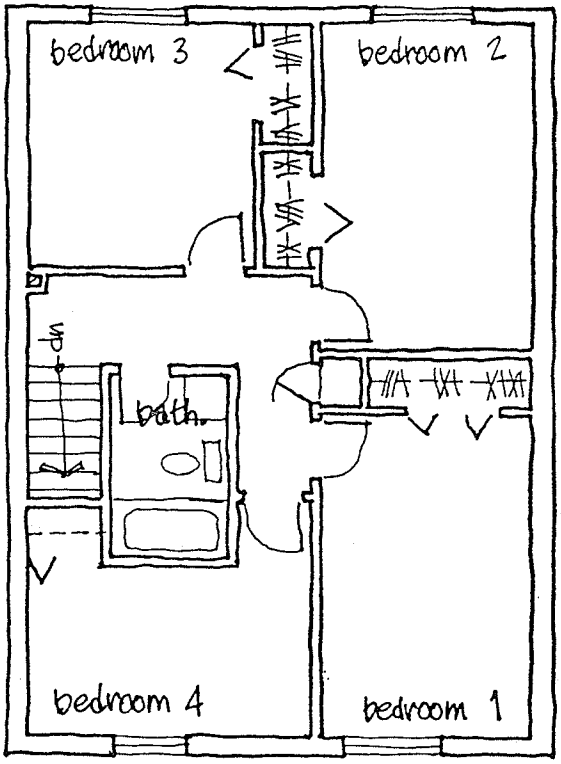



second floor




ground floor

4-bedroom unit
1085 ft




second floor

Site Planning Design Evolution

The site planning design evolution illustrated by the four types of projects is an outgrowth of an increased understanding of the act-of-dwelling and the interrelations that exist between the various components of town housing design. This understanding was gained largely through a process of trial and error. For example, the relationship between vehicular arrivals, pedestrian activities, and the play of younger children was first realized in the parking lot cluster type and, in a more comprehensive way, in the playground cluster type. An understanding of the act of casual socialization by the mothers and the supervision of the younger children's play can be seen in the gradual transition to smaller unit clusters with kitchen-sides of the units oriented towards tot lot, entry courts. Moving the parked car away from the house but still within view of it indicates the need for a safe play area for the children adjacent to the house and the importance of the car to the low income people. The move to unit staggering and transitions in surface materials and privacy fence designs reflect the need for a territorial definition of front and rear yard areas. Limiting the size of unit clusters responds to the need for the user to readily identify with his immediate neighbors. Controlling the views from the living room and the front yard reflect the concern for an identity in a large development. The ten projects presented reflect the understanding of Public Town Housing that evolved.

The design of the Public Town Housing environment is a complex problem. The last stage of the site planning evolution, the playground cluster project type, illustrates that with an increased understanding the built environment can be more sensitively designed, however, addi-

tional analyses must be conducted. An investigation of the constraints imposed by the building codes and design standards upon the design of Public Town Housing is necessary. The degree to which they affect or limit the design must be known. In the next chapter such an investigation is conducted. Once an understanding of the design constraints has been achieved, the effect that the human need systems should have upon Public Town Housing can then be investigated.

FOOTNOTES

1. The National Commission on Urban Problems, op. cit., p. vii.

2. Ibid. p. viii.

3. Ibid. p. 27.

4. Lee Rainwater, "Fear and House-As-Haven in the Lower Class" People and Buildings. (New York: Basic Books, Inc., 1972), p. 301.

5. Ibid. pp. 28-34.

# form determinants of public town housing

"Of the many types of buildings and environments there are, housing stands as an example of the failure to question quantitative standards for their implications beyond the economic....Evaluative research into multi-family rental housing, private as well as public, would find a wealth of daily adaptations made in response to undersized housing. 'How much space?' has been answered mainly by how much money there is available to spend....(E)nough space means to what extent the physical environment of a dwelling is a resource for the fulfillment of the behavioral expectations people have....'What are the dominant consumer preferences for space?' In the first place, consumers do not prefer floor area, and in fact remain largely ignorant of the amount of such space even within their current dwellings. They 'prefer' rooms, and specify only that these be large enough to accommodate appropriate activities and the necessary furniture."[1]

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footnotes for this chapter p. 94.

## THE DESIGN STANDARDS AND BUILDING CODES

The underlying function of housing is to fulfill man's dwelling needs. The housing environment requires facilities that satisfy man's needs for safety, shelter, comfort, sleep, sustenance, sex, entertainment, and the raising of the family, in order to maintain and promote the physical and psychological well-being of the inhabitant. The exact number and types of facilities and the corresponding physical areas required are dependent upon the family structure, size, and socio-cultural values. The design parameters imposed upon housing reflect the importance that the fundamental features of the act of dwelling have in the Canadian context. Through the creation of the National Building Code [2] (NBC), the Canadian Government has defined a minimum acceptable subsistence level of housing.

The NBC draws its safety provisions from the standards designated by the Canadian Standards Association which finds its roots in the Canadian Engineering Standards Association (CESA) established in 1919. The CESA, in turn, based its initial regulations on the suggestions and experiences of the British Standards Association and the British Standards Institute. The health, safety, and construction performance standards as they had evolved in Britain played a significant role in forming a basis for the development of the Canadian construction standards.

The recognition for the need of standardizing control over residential construction began in the 1930's under the National Dominion Housing Act. This resulted in the first edition of the NBC in 1941.

Under the terms of the British North America Act such local activities as the supervision over building construction were made the responsibility of the provincial governments. They, in turn, have reassigned the concern to the municipal level. The fact that over 90% of the Canadian cities voluntarily use the NBC or incorporate it within their own residential construction standards illustrates its value.[3]

The federal government has developed supplements to the NBC, the Canadian Code for Residential Construction[4] (CCRC) and the Central Mortgage and Housing Corporation's Site Planning Handbook[5]. These attempt to confront the particular problem of residential construction and development. The CMHC has incorporated these codes as law for the construction of publically-owned residential buildings and since the housing program of The Manitoba Housing and Renewal Corporation relies heavily on federal subsidies, these codes form an inherent part of the construction specifications of The MHRC.

The NBC and the CCRC define in terms of distance and area dimensions minimal acceptable standards for residential construction. The safety requirements of construction systems are defined in terms of minimum bearing capacities and spans of structural components of different materials, combinations, and properties. The safety of the user is protected by fire codes which define methods of fire control through floor and wall constructions. The use of fire extinguishing systems, smoke containment design, and efficient exiting routes further protect the user. The physical and psychological well-being of the user is protected through the definition of standards for water supply and waste disposal, air-supply and ventilation, and minimum requirements for natural and artificial lighting levels. Defined minimum room areas

and dimensions respond to the psychological requirements of man. Acoustic privacy is confronted by analysing and defining the acoustic properties of a variety of wall and floor constructions and by specifying minimum acceptable levels of acoustic separation between neighboring activity areas.

The CMHC Site Planning Handbook analyses the space between residential buildings. An emphasis is placed on: visual privacy, vehicular traffic control, the separation of housing functions from vehicular and pedestrian traffic routes, and the dimensions and physical separation of outdoor living areas.

The MHRC has created design and construction specifications[6] for public housing construction that respond directly to the NBC and its supplements. They also supercede some of the minimum standards established by the CMHC and specify more definative or restrictive requirements. These substitutions generally indicate a recognition of family size implications and the need to minimize the efforts and costs of maintaining Public Housing rental units over the fifty-year loan period. Many materials, structural components, service utilities and systems, and building equipment are required to be of a higher degree of quality to meet more stringent performance criteria in the protection of the long-term investments of The MHRC. Another purpose of this is to off set the additional abuse that the larger low income families, with their corresponding higher incidence of behavioral and emotional problems, tend to exert upon rental housing.

Municipal governments also attempt to place greater emphasis and control over various segments of the NBC. They also establish, through

zoning by-laws, a direction for and control over developmental densities and land uses. A sensitive growth of urban areas is assured by eliminating the location of conflicting land uses adjacent to one another. Controlled development is achieved by providing for the incorporation of supportive amenities within residential areas and by controlling the densities of developments.

These controls respond primarily to the fundamental nature of housing; the biological needs of man, the economic and structural properties of construction materials and techniques, the public ownership of low income housing, and an attempt to control development. When public monies are being invested, the minimum acceptable dimensional and area guidelines often become the maximum.

## THE PHYSICAL NATURE OF TOWN HOUSING

Town housing, the particular form of housing under investigation in this thesis, embodies distinctive characteristics that render it an efficient means of housing the Low Income of Winnipeg. It does possess inadequacies that are presently surfacing and legislative changes are being implemented at both the Federal and the Provincial levels that promote alternative means of housing. For the purpose of a tool of investigation, the thesis assumes that town housing will remain a form of Public Housing for some time in the future in Winnipeg. The nature of the physical characteristics must be understood in order to establish a framework for further investigation and analysis.

Town housing is primarily distinguished by the location of groups of three or more housing units side-by-side. The units share party

walls that define the lateral limits of the territory within each housing unit and that provide a degree of fire and sound separation between them. Typically the units are two stories in height. Family functions, ie. kitchen, dining, and living, are normally located on the ground floor; while sleeping areas, bedrooms, and bathrooms are located on a second floor directly over the ground floor. Exceptions to this are found in larger, four, five and more bedroom units, where a bedroom(s) and an additional bathroom(s) are often located on the ground floor. Full basements are provided. Separate water supply and sanitary sewer systems are provided for each unit as are electrical and heating facilities. Each unit is totally self-contained.

Entrances to the units are located along the front and rear end walls. Living functions that require natural light, ie. bedrooms, living rooms, and kitchen-dining rooms are also located on the end walls where exposure to the outside is available. The internalized floor areas where natural light is deficient become designated as circulation, storage, and bathroom zones. When adjoining units are staggered a section of the party wall becomes exposed to the outside. Fenestration is often allowed to occur at these points.

Outdoor space immediately opposite the end walls, laterally defined by imaginary extensions of the party walls, become designated as yards for each unit. In this manner the realm of each unit extends to the outside to include a "yard" at each end. This maintains the single-family dwelling ideology of individualized property. In the context of this thesis, the front yard is directly outside the living room, while the rear yard is outside the kitchen side of the unit.

Economic advantages to this type of shared party wall construction for rental housing are as follows:

-The total ground area attributed to each unit is significantly less than in single-family developments. Higher densities are therefore possible.

-Such facilities as driveways, parking areas, and children's play areas may be combined for community use.

-The total roof area per unit amounts to one half of the habitable floor area thereby reducing capital construction and heating costs.

-Expensive exterior wall construction is reduced due to the fact that fewer walls are exposed to the outside.

-Heat loss is also lessened by the reduced wall exposure. The party walls do not transfer heat and resultingly heating costs are decreased.

The physical limitations imposed by the housing codes and building standards, and by the nature of town housing, together with those imposed by increased density living must be acknowledged as having some affect upon user behavior. The living spaces provided within the unit and their respective locations and relationships to other spaces become predetermined by the density and economic restrictions of Public Town Housing. It is now important to investigate man's needs in the act of dwelling and his associated psychological urges in relation to the housing environment.

FOOTNOTES

1. Constance Perin, With Man in Mind. (Cambridge: The MIT Press, 1970), pp. 139-140.

2. Associate Committee on the National Building Code, National Building Code of Canada 1970. (Ottawa: National Research Council, Canada, 1970).

3. R. F. Legget and M. C. Baker, Directory of Standards in Building. (Ottawa: National Research Council, Division of Building Research, 1968).

4. Associate Committee on the National Building Code, Canadian Code for Residential Construction. (Ottawa: National Research Council, Canada, 1970).

5. Central Mortgage and Housing Corporation, Site Planning Handbook. (Ottawa, 1966).

6. "MHRC Construction Specifications", The Manitoba Housing and Renewal Corporation, Winnipeg, 1973.

# the man-housing continuum

"It is inevitable that urban concentrations create stress. Our first reaction to this urban stress is to move away from it; to turn our backs on it; to try to escape it. This is very natural. Yet the remedy is worse than the disease. The ills of urban life which are commonly attributed to density and stress, are in fact not produced by the original stress itself, but by our own actions in turning away from that stress. If urban society is to survive, we must overcome this over-reaction. If people do not expose themselves, if they do not dare to make themselves vulnerable, life will become more and more intolerable, and we shall see more and more of the signs of dissociation which are already far too evident."[1]

"People want a voice in the design and use of their buildings, streets, parks, and cities. They want to be more than spectators and consumers in a world designed and managed by remote professionals. They want to be more than passengers on a spaceship; they want to help design and personalize their cabins, and passageways and to have a go at the controls. Yet it is not enough to give people options. They must know how to use them and also the consequences of exercising them. There is no point in making people aware of their environment if they have no way of influencing it. Participation without awareness produces ignorance and ugliness; awareness without participation leads to frustration and alienation."[2]

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footnotes for this chapter pp. 152-154.

Human behavior within the built environment is a function of three complex systems. These are: physical and psychological needs, environmental influences, and the psychological ability to cope with and/or adapt to these inputs. The human need systems form the fundamental basis of the act of dwelling. The most essential of these needs, shelter, security, safety, and survival, are at least superficially similar for the whole of mankind. It is the vast socio-cultural differences of mankind as well as the climatic influences that give the diversity to the characteristics of the nature of housing.

The psychological make up or personality of an individual results from the socio-cultural values and norms engrained into him since birth, and varies with the human need systems and the manner in which the immediate environment responds to these needs. According to Turan,[3] this interchange between needs, personality, and the environment, creates in the individual a behavior space, a filtering system that reacts to, and analyses the effect of, the environmental inputs. This filtering process is subconscious and evaluates each input and determines its relative degree of threat to the stability of the behavior space. The physio-psychological state of the individual determines his ability to cope with, or adapt to, stressful situations. The socio-cultural background of the individual determines also his beliefs and values, and to a certain degree, his psychological urges towards self betterment within his behavior space. As the individual confronts and satisfactorily copes with stressful situations, his identity or esteem and motivation are reinforced.

The housing environment plays a significant role in the development of a healthy behavior space-filter system. To it is assigned the role of fulfilling man's basic dwelling needs and consequently creating a sound base for the development of a behavior space. Low income families, living in substandard and overcrowded slum conditions, are often deprived of the basic need to confortably perform the act of dwelling. This undermines the adaptive process and the ability to identify, avoid, or cope with further stressful situations. Research has indicated that crowding in the home environment can lead to social pathology in the form of crime and aggression[4] and psychosomatic illnesses such as schizophrenia, anxiety, and tension due to an inability to adapt to threatening inputs[5]. Improvements to the home environment or a move to one of a higher standard can lead to a reduction in these illnesses and an improvement in self identity and personal aspirations.[6] Children growing up in substandard and overcrowded housing conditions tend to accept crime and violence as a way of life. Great difficulty is encountered in their attempts to better themselves or to climb the social ladder.[7] As Maurice Broady suggests human behavioral problems cannot be attributed solely to the inappropriateness of the built environment.[8] A change in the built environment will not always foster the behavioral reactions expected. Human behavior is affected by the socio-cultural values and morals upon which man bases all of his experiences.

In this investigation of Winnipeg Public Town Housing, a study of the basic need systems of the Low Income as they pertain to the act of dwelling is imperative. The uniqueness of the low income resident can be determined by comparing the life-style and needs of the Low

Income to those of the more affluent. The unique role of Public Town Housing can also be established by comparing these needs to the form of housing dictated by the codes and standards. Once this has been accomplished, it should be possible to determine how the design of the environment must respond to the additional psychological urges of the low income dweller -- those psychological urges that are fundamental to the development and reinforcement of his behavior space.

## THE ACT OF DWELLING

Spaces, and the activities that occur within them, can be defined in terms of their 'manifest' and 'latent' functions. In the case of housing, the manifest function is in direct response to man's need systems. The spaces in the house assume different latent functions according to the socio-cultural values of the user. The use of such spaces as the kitchen, the dining room, and the living room, for instance, can vary significantly between upper, middle, and lower class families. The mosaic of cultural backgrounds in Canadian society attaches corresponding numbers of latent meanings for "house" and the activities assigned to each of its spaces. Where guests are received, entertained, and fed, where and when adults and children eat meals, and where children play while adult groups socialise, are all examples of the types of questions to be asked when investigating this aspect of the act of dwelling.[9]

Six activity groups combine to form the fundamental act of dwelling. These are: sustenance, rest, sex, hygiene, work/leisure/play, and socialization/entertainment. Each activity group is composed of a number of associated latent activities and also satisfies a manifest aspect of man's need systems in the act of dwelling. To maintain a healthy and significant existence, an individual should be able to comfortably perform both the manifest and latent functions. The frequency to the Low Income of financial, family size, marital, and behavioral problems often deprives many of them from performing various activities considered at times to be essential to modern life. It is imperative

that the built Public Town Housing environment respond sensitively to this variety of needs without imposing further restrictions and limitations upon the act of dwelling.

The following is a presentation of the six activity groups. The presentation consists of a fundamental description of each act, together with the manner in which the housing codes and standards respond to the needs. The significant latent needs portrayed by the low income family in Winnipeg are then illustrated. Then the provisions for these within the Public Town Housing environments are examined.

Sustenance

Biologically man requires food and water in order to survive. This is a simply stated fact and as a result, its basic implications upon the design of a dwelling unit in the Canadian context, are precisely understood. Distinctive facilities are required for the storage of food, (refrigerator and cabinets), the preparation of food, (sink, counter top, range, and oven), the eating of food, (table, chairs, dishes, and cutlery), and the cleanup of food and utensils, (sink, garbage disposal facilities, and utensil storage facilities). The fore-mentioned are the minimal necessities in the Canadian context.

For the function of food preparation, the Canadian Code for Residential Construction (CCRC) specifies a kitchen, (minimum area of 45 square feet), a counter top and sink, (minimum length of counter eight feet), storage shelving above the counter, (minimum shelving area of 22 square feet), and cabinets beneath the counter. A minimum clearance of three feet is required in front of the counter. For the act of eating, an area of 35 square feet when combined with another room, or 75 square

feet when not combined, is required as a dining area.

The MHRC Design Specifications accept the minimum standards of the CCRC, but respond to family size implications by requiring that the counter top and accompanying storage spaces increase incrementally with the number of bedrooms. They also specify that 30" ranges and 13 cubic foot refrigerators be installed in units with three or more bedrooms. The dining area is required to be of such a size that all members of the family may be seated for a meal at one time.

Additional or latent activities are often assumed in the kitchen and dining areas. The entertainment of guests, especially in the rural and low income western Canadian context, often occurs in the kitchen/dining area. Congruent with this is the act of food preparation for the guests and whereby the housewife's skills as a cook and housekeeper are displayed. The presence of the dining table surface also encourages its use as a study center, a work surface for hobbies, sewing, or for book-balancing, and a play surface for both adults' and children's games. Because of its easily washable wall and floor surfaces, many of the messy indoor children's play activities and adult hobbies are seen to be restricted to the kitchen or dining area. These latter functions are equally important to the act of dwelling and to the healthy development of the individual and the family.

The codes and specifications do not mention the use of these spaces for such latent functions. According to the codes, the dining area can be reduced in size if combined with another space, thus reflecting the fact that it is primarily designed for the manifest function of eating. The strong relation between food preparation, dining, and socializing

that the Low Income and western Canadian families illustrate, is not recognized. A common result is the combination of the dining area with the living room. Such a relationship reflects a more middle-class and eastern urban norm, in which the apparent ease of food preparation for guests, and formal dining take precedence over the display over good housekeeping abilities. A further illustration of the inappropriate transposing of middle income values onto the lower income groups, with regards to the kitchen and dining area is as follows. In the middle income situation, a neat and efficient galley-kitchen is often suitable, since as little time as possible is spent in the kitchen. Such an arrangement for the larger, low income families is questionable. They are usually unable to afford expensive cuts of meat, and resort to excessive spicing, frying, and boiling. As a result, there may be humidity and odor problems. A larger, airier room is required to disperse the humidity and odors, and to minimize their transfer to the other living areas of the home.

Rest

There are three degrees of rest considered to be essential to the well-being of man. These range from the daily need for several hours of deep sleep, to the need for a less intense rest in the form of a nap, to the need for casual relaxation. They are necessary for the revitalization of emotional and physical energy and for enabling the individual to reflect inwardly.

The daily need for sleep is the most fundamental requirement. The desirable degree of physical privacy and isolation, and the necessity for eliminating unwanted visual and acoustic disturbances, has resulted in the creation of a distinct physical space within the home, primarily

geared to this act of sleep. The bedroom, because it attempts to provide for this need, has become the area in which personalized activities such as hygiene and dressing occur. Fundamental to the design of the bedroom, according to the design standards and building codes, is area allotment for beds and dresser cabinets and provisions for clothing storage. In the Canadian context, it is generally understood that the parental couple shares the "master bedroom" while a maximum of two children share each of the remaining bedrooms. Once adolescence has been reached, there is a need for separating the children of opposite sex and for providing for more personal privacy. This is recognized in the preference for individual bedrooms for these children.

The bedroom that does afford the appropriate degree of privacy becomes an extension of one's self, a personalized part of the home. The individual may retreat to it to be by himself, to discard roles and personalities assumed for the benefit of others, and to perform private activities without fear of being overseen and intruded upon. A latent function of the bedroom is the accommodation of these latent needs. Additional ones are: a personalized play area for children, a study area for students, a place of relaxation while reading a book or listening to music, a place where teenagers can retreat to listen to their music or visit with contemporary friends, and a place of isolation, rest, and recovery from illnesses.

Forms of rest that do not require an equal degree of physical isolation and privacy often occur in other parts of the home. This type of relaxation often takes place in the living room, and may occur individually, with the family, or with guests. It usually includes reading

books, listening to music, watching television, doing hobbies, playing games, or visiting.

Due to the physical nature of town housing, as the number of bedrooms increase, the respective individual bedrooms assume minimal sizes. Two-bedroom town houses typically exhibit larger than normal bedrooms, both of which are often in excess of 115 square feet. Five-bedroom units, on the other hand, have only one comparably large bedroom. The remaining four just meet the minimum requirements. It is ironical that, as the need for privacy increases for the typically larger low income family, the provisions, with the Public Town Housing home, for this privacy decrease. The economics of, and the demand for, Public Town Housing provided in Winnipeg is such that members of larger families are forced to share bedrooms. The space in the bedroom is usually adequate for only the beds and desks or dresser units. The privacy requirements of two or three children is not provided. These crowded conditions severely limit the use of the bedroom as a play and study area.

Windows in Public Town Housing are sized according to the minimum in the codes. Their area is equivalent to 10% of the floor area. The window sills in bedrooms are usually located three to four feet above the floor for visual privacy from the outside and for ease of furniture arrangement. However, the resulting atmosphere within the room and the difficulty younger children have in seeing outside restricts the attractiveness of the room as a play, work, or hobby area.

Sex

The social norms of the Canadian family environment restrict indulgence in sexual activity to the adult parents. Sexual activity between unmarried persons and especially involving adolescents living at home ranges from being strongly discouraged to being taboo, depending upon cultural and religious backgrounds. Incest is a criminal offence in Canada.

The provisions for the fundamental need for sex by the family parents is primarily provided for in the form of the master bedroom. This does not mean that sexual activity is or should be limited to the bedroom environment. The psychological need of the partners for physical and acoustic privacy, and the frequent relationship between the acts of sex and sleep, combine to augment the appropriateness of the master bedroom. These needs for privacy are typically accommodated by isolating the master bedroom from the other bedrooms, without relinquishing the need for supervision over the children by the parents. Some methods commonly employed in resolving this need include: sound-absorbing wall constructions, back to back closets that halt sound transmission, the creation of dressing area transition zones at the entrance to the master bedroom proper, and bathrooms that separate the master bedroom from others.

The provision of an additional bathroom accessible only from the master bedroom is an increasing trend for those affluent enough to afford it. This is primarily in reaction to the privacy of the sexual act as well as the fact that the bathroom is also a noise generator. Public Town Housing unfortunately cannot afford such a high degree of privacy control and increased convenience. The crowded conditions and

minimal unit size restrictions combine to deprive the parents of the preferred degree of privacy.

Another latently assumed function of the bedroom, relating to sexual drives, is that of separating the sexes, and depriving and controlling the sexual impulses of adolescent children. This becomes a problem in the larger Public Town Housing family situation where two or more children must share bedrooms that are too small to maintain individual privacy requirements.

Hygiene

The need to cleanse the body, in order to maintain one's health and prevent diseases, is basic to man's existence and fundamental to the act of dwelling. Distinctive facilities for the home have been developed for this purpose, and with the aid of technology, a high level of sanitary control is now expected in the urban Canadian context. Within the home, the bathroom has become the center for the performance of this act. It is typically furnished with a minimum of three fixtures linked to a hot and cold water supply system and a waste drainage system. These are a lavatory, a water closet and toilet, and a bathtub or shower. A high degree of privacy is expected for the hygienic act. This, combined with the humidity build up and odor problems, has resulted in the bathroom becoming a separate and often lockable room. When economics allow the bathroom is often subdivided for each of the facilities for added privacy.

The building standards define, for the designer, the minimum number of fixtures acceptable as well as the spacing between each. The MHRC Design Specifications require that the bathroom contain a toilet,

a lavatory and a shower in combination with a bathtub, and that four and five bedroom units be provided with an additional half-bath. This shows recognition of the increased demand exerted by larger families upon such facilities at peak times of the day.

Latent functions assumed by the bathroom in the Canadian context include: a place for the soaking and/or washing of smaller articles of clothing, a place where family members groom themselves, a place of retreat to obtain total privacy, a place of storage of family health aids and over the counter drugs, and a place of storage for wash cloths, towelling, and other associated hygienic equipment.

Work/Leisure/Play

The fifth activity group is referred to as work/leisure/play and accounts for the specific roles each family member assumes at home. It reflects man's need to be productive, to perform a task that occupies his time and is self rewarding, and to relieve himself of excess energy. Only those activities that are typically performed in the home environment are considered herein. Included in this group are: the task of housekeeping and home maintenance, play activities of the children (and adults) both indoors and outdoors, entertainment, and hobbies of adults and children.

1. Work:

   Despite the women's liberation movement, the majority of the housekeeping activities remain the responsibility of the housewife. Fundamental to the housekeeping activities are food storage and preparation, housecleaning, and laundry. The MHRC Design Specifications are the most definitive of the Standards. They require

the provision of the kitchen equipment previously cited, and laundry and storage facilities. Plumbing hook-up equipment is provided in the basement for a washing machine. Dryers are furnished so that clotheslines do not clutter up the project site. It has also been determined that the majority of the low income families own a washing machine but not a dryer.

Facilities in the form of broom closets are provided for the storage of housekeeping tools, such as mops and brooms, pails, cleansers, and vacuum cleaners. Open storage space in the basement is provided, for rakes, shovels, lawn-mowers, and garden hoses. Linen closets are provided for the storage of bedding.

2. Leisure:

In the Canadian context, the family or recreation room has become a specialized area within the home, a direct reaction to the leisure time needs of the family. In the family room the overlapping activities assumed by individual members can occur without disrupting primary functions of the other areas of the home. Games and hobbies may be left undisturbed on work surfaces. Individualized interests may be pursued simultaneously or while guests are being entertained in the living room without each disrupting the other. Facilities commonly found in the family room include: shelving and storage cabinets for books, hobbies, and games, countertop or tabletop work surfaces, and comfortable furniture for lounging, reading, watching television, or listening to music. The family room is unlike the living room in that it is primarily for the use of family members and is, consequently,

very personalized and informal in nature. It does not have to be a showpiece for guests. When more intimate friends are entertained in the family room they are intuitively aware that they are considered to be part of the family: an honour to close friends.

The economic constraints of Public Town Housing do not allow the provision of a family room. The basement of the unit is left unfinished and tenants are allowed, upon consent of the Management, to convert it into family and work rooms. The majority of the low income users have neither the money nor the inclination to exert such efforts into rented accommodation. The family activities typically relegated to a family room must then be accommodated by the other areas of the house. As indicated previously, the atmosphere within the bedrooms, and their respective sizes, are not conducive to comfortable use in this regard. Because of the prime function of the dining room and the living room, these areas are not convenient for use as hobby and game areas.

Many low income mothers knit and sew clothing for customers as a supplement to the family income. This requires an area where the work can be left undisturbed when not being attended to. Since no work room or family room is provided and because the living, dining and bedrooms are not suitable, these families experience an increased inconvenience. These families often will convert the smallest bedroom into a work or study room, to obtain the degree of diversity and privacy necessary for such activities. This is normally accomplished by requiring that three or more children share one bedroom. Often the parents will move to a

smaller bedroom and leave the larger master bedroom for these children. This becomes increasingly more difficult for the larger families who in turn are in a greater need for such provisions. The bedroom that is converted is also so small that it is unsuitable for more than one activity at a time.

3. Play:

The opportunity for playing freely, safely, and constructively, is essential to physical, emotional, and intellectual growth. As Bengtsson indicates,

> "'Research shows that the first four or five years of a child's life is the period of most rapid growth in physical and mental characteristics and of greatest susceptability to environment(al) influence. Consequently, it is in the early years that deprivation is most disastrous in its effect.'..."[10]

Piaget has shown that children's play is fundamental to not only the acquisition and development of physical skills, but also to the socialization process.[11] The younger children must play safely. Their play area must be within the immediate environment of the housing unit and within sight and sound of mother.[12]

For the child, up to the age of three to five years, play is typified by the acquirement and development of manipulative skills. Socializing with other children becomes important as the ability to communicate and the need for companionship increases. Play for this age group is essentially passive in nature and requires suitable play surfaces: hard, smooth areas for push-toys and tricycles, and sand for manipulative and constructive play. Grassed surfaces, proximity to water, and a variety of facilities are

important:[13]

-A fenced or walled in area for the very young, who are liable to wander away, unattended.

-Slightly older children also require provisions for a feeling of spatial confinement. Comfortably sized areas defined by low walls, vegetation, or fencing create not only a protection from the hot sun and the wind, but also a pleasant feeling of intimacy.

-As the child grows and begins to play with other children, more furnishings for togetherness are necessary. Corners, hiding places, ground level and textural changes, and raised work surfaces aid in group play.

Play for the very young also consists of watching older children play, (part of the socialization process), and watching adult activity, such as father going and coming home from work, delivery vehicles and garbage collection activities, and mothers "neighbouring". These create an insight into the adult world.

The built Public Town Housing environment must accommodate the play activity of the youngest of its residents. Typified by concentrations of underprivileged families and often overcrowded with large numbers of children using the facilities at peak times, the organization of the environment must present adequate opportunities for the young to play safely. Their need to watch the residential and play activities of the rest of the residents renders the unit entrance areas, the centers from which all activities radiate, the logical play area for the young.

As children approach school entrance age, their independence increases. They search for an increasing variety of play environments and a greater number of organized group activities. Young children, aged three or four to six or seven years, require more active play areas that can still be supervised and are relatively safe. Their play area remains within the immediate housing environment, but ranges beyond the younger children's area, and beyond a continual and direct contact with home. A wide variety of play surfaces are required to accommodate such play activities as: climbing, sliding, swinging, jumping, running, splashing, building, and bicycling. Socialization and group play activities assume greater significance. The self-identity, the need for self-reward, and leadership needs increase. These specific activities should be separated from those of the younger children not only for reasons of safety, but also because they are incompatible. A visual link and close association between the two is preferred as a learning tool for the younger ones.

The need to identify dangerous influences and to cope with rather than avoid them, influences play activities of the older child. The playing with fire and the climbing of trees are some examples of dangerous temptations the child of eight years and over experiences. Play amongst parked cars and in the streets quickly teaches the child a respect for the dangers of vehicular traffic. It is interesting to note that children growing up in more densely populated and traffic congested areas gain a feeling of independence at an earlier age. They also are able to get along with others at a younger age. They are found to be able to make deci-

sions for themselves, earlier than are children living in either a rural or low density suburban area.[14] Parents of these urbanised children also tend to feel less apprehensive about their young children playing away from home, and are more willing than other parents to grant them a greater degree of independence.

An ever increasing emphasis is placed on organized activities, including sports, which require larger play fields and distinctive facilities. The range of activities and distances willingly travelled to participate in them, render the provision of these play fields beyond the scope of the immediate housing environment. Public parks and playgrounds are the primary centers generating such activities.

Nowhere do the present codes or housing standards define, for the designer of Public Town Housing in Winnipeg, the importance of sensitively designing for children's play, however the CMHC is moving in this direction. Town housing projects for the Low Income are too often designed with a maximum efficiency and economy of service utilities dictating the unit clustering. Play areas for children are located in "left over" spaces, between buildings and roads. The insensitivity of this approach results in: a lack of use or a misuse of the play areas created, pedestrian traffic patterns not corresponding with the sidewalk system, or conflicts between child play, pedestrian traffic, vehicular traffic, and the privacy of the unit. These can culminate in conflict between neighbors and the deprivation for the child of adequate and safe play opportunities. In combination with the other problems of the deprived low income family, a detrimental

effect on the psychological well-being of the long-term resident can be expected.

Socialization/Entertainment

1. Socialization:

Socializing, the active participation in a social group, ranges from being very spontaneous, informal and unstructured in nature, to being highly planned and formal. It is fundamental to the needs for companionship, an identity, and a role in society. Different types of associations with a wide range of acquaintances is prerequisite. To form a group identity in the immediate residential environment, it is necessary that one be able to identify and associate spontaneously with one's neighbors. Although neighbors may remain as only visual acquaintances, waved to on the street or from the house, one still recognizes him as belonging to the residential group. This aids in reinforcing self and group identity.[15] A mutual feeling of dependence and reliability upon one another creates a sense of security in the residential environment. Strangers and intruders are then readily identifiable and protection over one and another's children and property occurs. A lack of opportunity for spontaneous socializing is disruptive to the formation of a neighborhood identity.

Equally disturbing is being continually on view and in contact with the neighbors.[16] It is almost impossible not to meet somebody when leaving or returning home, while sitting outside or, for the children, while playing outside in the concentrated Public Town Housing environment. This environment must be created in

such a manner that the neighbor acquaintanceship is maintained at a level that reinforces the security of group membership and is at a comfortable intensity. The identity of the individual and of the individual home must not be lost to the group identity. It must allow the chance of withdrawal from association when individual privacy is required or when interneighbor conflicts arise.

To the young children, play and socialization are inseparable and they occur spontaneously wherever the individuals may be at any given time. The "neighboring" of mothers also goes hand-in-hand with the supervision of the younger children's play. Together, these form a network of neighbor acquaintances within the immediate Public Town Housing environment. Socialization also occurs in the parking lot--where adults leave and return home, and where the men wash and work on their cars--and wherever the residents are brought together for common purposes.

The need for the individual or the family to sit outside in total privacy is as important to the Public Housing resident as it is to the more fortunate suburban middle or upper class resident. The ability of the built-environment to allow for this is more restricted in town housing and the designer must therefore recognize the implications that higher density living has on privacy requirements as well as on controlled group formulations.[17]

2. Entertainment:

At the opposite end of the socialization spontaneity scale is guest entertainment. Entertainment assumes an increasingly more

defined context as the familiarity between the participants decreases. In many situations, close friends may drop in unexpectedly without feeling that they are imposing. As acquaintanceship decreases, an invitation to the home by the hosts becomes necessary. They must be able to prepare themselves and to assume varying roles and appearances appropriate to the degree of familiarity. Entertainment conducted within the home environment allows the mother to display her control, real or superficial, over the family situation. Her skills as a housewife and the real or apparent affluence of the family are displayed to the guests. The family identity is reinforced by exposures to a variety of personalized family situations witnessed when visiting.

It seems to be a tendency of middle class entertaining to "display", on behalf of the guests, a portrayal of a congenial home life.[18] This is best accomplished by maintaining a very neat and tidy appearance in the living room, with everything in its place. Only very close friends, for whom a display is unnecessary, may be entertained in a family room or a more personalized or intimate area of the home. The superficiality of such a "ritual" is further exemplified by the fore-mentioned emphasis on the apparent ease at which the middle class housewife prepares snacks for her guests. The tendency is to prepare these before guests arrive and to clean up after they have left. In this way little time is spent in the kitchen. Another interesting point is that children are seldom allowed to participate in guest entertainment. Because they are noisy, untidy, and distracting, they must play elsewhere by themselves. In this manner, proper control over the children and the

family situation is portrayed.

The low income, working class tend not to be so superficial.[19] Guest entertainment is less formal, less exhibitious, and more "down to earth". The emphasis is on making the guests "feel at home". Good housekeeping and a happy home atmosphere are portrayed, not by contrived displays, but by allowing the guests to feel as part of the family. The housewife as well as her female guests prepare the meals and snacks. She displays her actual housekeeping skills. While the women are in the kitchen preparing food or cleaning up, the men are usually found in the living room attending to their common interests.

## THE CAR: AN EXTENSION OF THE HOME FOR THE LOW INCOME

Winnipeg, like most North American cities, is car oriented. A dependence upon the car is created by the distance of residential suburbs from the city center, the existence of shopping centers, and the inadequacy of public transportation systems. People who do not own cars are disadvantaged in their real and potential physical mobility within the city. The particularly harsh winter climate of Winnipeg, wherein the possibility exists of freezing while waiting for a bus in -35°C weather, further augments the importance of car ownership. The purchase of a car proves to be the largest single financial investment for the majority of the Low Income, therefore its importance is magnified.

In the new suburbs, where the majority of the Winnipeg Public Town Housing projects are located, retail and commercial amenities are

located in shopping centers. These are geared to serving the larger urban district, and they are within easy walking distance to a minority of the residents. The majority must depend upon vehicular access to them.

When such suburbs are new and under construction efficient bus service is unavailable and extensions to the routes and increases in service are not implemented until the area is almost fully developed. The residents interviewed in the survey complained of intervals between buses of a half-hour to an hour as well as lengthy walks to the bus stops. The consequences of missing a bus when going to work, the inconvenience involved when wishing to go downtown to shop or see a movie, and the difficulties involved in doing the family's grocery shopping all contribute to the feeling of deprivation, alienation, and frustration expressed by the Low Income.[20]

The low income family cannot financially afford to partake of the many types of entertainment activities available in the city. Their major form of entertainment is one of visiting friends. Since the majority of one's friends are scattered throughout the city and beyond a walking distance, the use of a car becomes a paramount amenity.

Because of the dependence upon it, the car to the Low Income who own one, becomes an extension of the self and home. The car is a status symbol.[21] Great pride and ritual are taken in maintaining the appearance of a new car, and large amounts of personal efforts and money are expended on keeping an older car in running condition. Most people, even in the context of higher density town housing, want to be able to park their car at the rear door. They want an immediate visual

and physical control over it.

Immediate access to the car and safe and controlled children's play become conflicting parameters to the designer of the Public Town Housing environment. Vehicular traffic augments children's play, pedestrian activity, and casual socialization.[22] The place where the car and the pedestrian meet is a potential area of activity generation, and a place where the young learn to respect the dangers of automobiles. Both assume a degree of importance in the design of a site, however, the safety of the young child must be given priority over ease of access to the parked car.

In addition to the needs in the act of dwelling, man possesses a number of psychological urges that revolve around his needs for identification and individuality. The establishment of an identity indicates a recognition of one's place and role in society. This in turn results in the creation of one's individuality. Many activities are consciously and unconsciously undertaken to establish and reinforce these needs. The built housing environment accommodates these and additional psychological urges that include: territoriality, ownership, personalization, creativity, and group membership. An analysis of these urges is conducted in the following section, and through a delineation of each, the role of the built housing environment in providing opportunities for their realization is investigated.

## PSYCHOLOGICAL URGES

As Dr. John T. Flynn suggests,

> "(H)uman behavior is dominated by the growth and operation of two antagonistic but cooperating instincts--the need for identification and the drive toward individuality...
>
> "The instinct for identification is the inner need to establish unity or combination with one or more other human beings...things and places...
>
> "The instinct for individuality is the inner drive to establish one's self as a separate unique entity independently capable of self-assertion."[23]

The growth and development of these instincts occur throughout the successive stages of human life. In childhood and the adolescent years, the individual progresses through behavioral stages dominated by an increased awareness, and development of, either the individuality or the identification instinct. This explains the confusions and frustrations experienced in these developing years. "Normal" maturity is reached once these two instincts have assumed a state of equilibrium within the individual. Immaturity or abnormal behavior signifies that either one or both are inadequately developed. One may then begin to relate positively to both the physical and societal environments once a normal and strong identity and individuality has been established.

Several needs are inherent in this development of the individual personality. Alexander Leighton has isolated ten "essential striving sentiments" that he suggests are fundamental to the achievement and maintenance of a healthy personality. These are;

" 1. physical security
2. sexual satisfaction
3. the expression of hostility
4. the expression of love
5. the securing of love
6. the securing of recognition
7. the expression of spontaneity (...positive force, creativity, volition)
8. orientation in terms of one's place in society and the place of others
9. the securing and maintaining of membership in a definite human group
10. a sense of belonging to a moral order and being right in what one does, being in and of a system of values."[24]

In man's interaction with the environment, additional urges surface that Leighton seems to have overlooked in his categorization. One of these is territoriality: the securing, personalizing, and defense of a territory. According to such authors as Alan Lipman, Edward T. Hall, Robert Sommer, and Oscar Newman, this appears to be an instinctive urge of mankind.

> "'Everyone has an instinctive psychological urge to have his own private territory, on which he can imprint his personality and express himself as he chooses by means of personal possessions. In the modern world these urges are reflected in the different ways that people plant their gardens, paint their front doors, exhibit their motor cars and display family souvenirs.'"[25]

As suggested by the previous quote, ownership and the display of artifacts, holding important symbolic and sentimental values to the individual, exemplify a behavioral urge that may be considered a manifestation of territoriality.

The territorial urges and personalization, the expression of spontaneity, are worthy of further investigation in this thesis. The built housing environment plays a significant role in the fulfillment of these respective urges. An analysis of the Public Town Housing environments

in Winnipeg will indicate that their significance are not fully understood by the architects.

Territoriality

All animal forms display instinctive behavior mechanisms with regard to physical space within the immediate environment. Experiments on animal populations have created insight into man's behavioral patterns in the environment.

> "Territoriality, a basic concept in the study of animal behavior, is usually defined as behavior by which an organism characteristically lays claim to an area and defends it against members of its own species."[26]

Territoriality insures the propogation of the species by regulating density, reinforces the integrity of social groupings, provides for protection from predators, protects the environment from overexploitation, and reinforces social status and individuality.[27]

Man has developed complex rituals for securing and defending his territory. With the growth of civilization and population densities, the establishment and maintenance of one's territory has become increasingly more difficult.

> "The history of man's past is largely an account of his efforts to wrest space from others and to defend space from outsiders. A quick review of the map of Europe over the past half century reflects this fact. A multitude of familiar examples can be found to illustrate the idea of human territoriality. Beggars have beats, as do the policeman who try to get them to leave, and prostitutes work their own side of the street. Salesmen and distributors have their own territory which they will defend like any other organism. ...To have a territory is to have one of the essential components of life; to lack one is one of the most precarious of all conditions."[28]

Laws of home-ownership, trespass, property, and possession all

illustrate the importance society places on the various aspects of territoriality. Identity with, and ownership of, a plot of land remains the ultimate goal in the fulfillment of the housing needs of the majority of modern urbanized North American families. This instinctive urge has resulted in the creation of the suburban single-family dwelling. Many aspects of cultural values are based upon, and reinforced by, land-ownership. The importance and status associated with land-ownership illustrates this.

> "...the single-family house set on its own piece of land, isolated from its neighbor by as little as six feet, has been the traditional expression of arrival in most every Western culture. It is the symbolic token of having a stake in the social system; it is deeply rooted in notions of proprietorship and belonging to the establishment. To many it represents the reaching of maturity and the achievement of success and potency. In certain cities...home ownership brings with it special rights and responsibilities which relate to participation in legal processes, and the opportunity to reinforce existing societal values."[29]

The definition of the single-family dwelling territory is accomplished by means of decorative fences located along the property lines.[30] The physical nature of the fence is inadequate in preventing intrusion. Its symbolic representation of the yard as an extension of the family's personal space, however, is readily understood by any potential intruder.

As urban areas become densely populated the total percentage of residents able to live in or to own single-family housing, decreases. Land shortages, increased property values and servicing costs, and increased travel distances back into the city are inherent manifestations of urban crowding. As the degree of crowding increases, so does the need for an autonomous territorial identity. High rise apartment living is commonplace in the more populated urban areas. This type of

housing inhibits the establishment of territorial identity beyond the realm of the interior of the unit. Only a network of uncontrollable corridor, stairway, elevator, and lobby entrance areas exist outside the apartment unit.

The typical low income urban dweller finds his home in the congested areas of the city, and in areas of substandard housing and physical insecurity due to crime. The length of tenancy at such a residence is often short-termed. Territorial definition and control in such cases are very difficult to achieve and behavioral problems become more prevalent than in "healthier" areas of the city.

Ownership of Symbolic Objects

An extension of territoriality is the human urge for the ownership of symbols--objects that relate directly to the owner's values. As Leighton suggests, symbols play a double role in the identity-formulation process, "...one in mentation and one in communication."[31] "Mentation" in this context refers to a mental image. Objects are collected by the individual to substantiate, within him, his feelings of pride, virtue, assurance, nostalgia, and pursuit. The objects mean these things to him and by collecting many of them, his identification and individuality instincts are reinforced.

By displaying these objects man communicates to others the personal importance of the object. An essence of the individual's personality is also communicated through the ownership and display of several different objects. Examples of this inlucde: athletic trophies and their display in an honored place, as a means of communicating one's physical competence and reinforcing one's ago; the parking of one's car

in front of the house, thereby communicating to all one's wealth, social status, and personality; and the display of valuable art objects as a means of broadcasting one's intelligence, refined tastes, and artistic appreciation.

Territoriality is reinforced by the display of these objects within the boundaries of one's personal territory. We are all familiar with trophy rooms, wherein one's athletic and/or hunting victories are proudly displayed. Such rooms strongly communicate the individual's personality. Territoriality is also communicated to such an extent that to enter the room without consent is unthinkable. We are also familiar with the chair of the man of the house. Edward Hall questions why the owner is always somewhat apologetic about the territorial extension that it signifies:

> "(h)ow many people have had the experience of coming into a room, seeing a big comfortable chair and heading for it, only to pull themselves up short, or pause and turn to the man and say, 'Oh, was I about to sit in your chair?' The reply, of course is usually polite. ...For some unknown reason, our culture has tended to play down or cause us to repress and dissociate the feelings we have about space (and territory)."[32]

Archie Bunker's[33] obstinate claim to and defense of his chair in All in the Family illustrates our inner reactions to territorial invasion. Our culture renders this overt action as unacceptable and encourages restraint and tolerance of such invasion.

Personalization

Man possesses creative abilities which he utilizes to express and reinforce his individuality. Prehistoric man's desire to personalize his environment is illustrated by the paintings of him, his environ-

ment, and his fantasies on the cave walls. Early man's creativity is also recognizable in the articles of clothing and vessels that bore the designs of their creators. Altering and manipulating the environment in some manner helps reinforce man's identity with it and his self-felt individuality.

Today man's creativity has been stunted by industrialization. Manufacturing and mass production of clothing, artifacts, and housing all inhibit spontaneous creativity. Mass produced sculptures and photographic reprints of paintings are readily available and are of a higher technical quality than those attempted by the less creative individual. The creative expression of the average person is often limited to the following:

-The purchase and display of a chosen number of these manufactured artifacts.

-The personalizing of clothing by altering their shape and by painting designs on such articles as blue jeans and T-shirts.

-The selection of styles expressing personal preferences for the individual family's housing needs. An example is the choice of a three-bedroom bungalow with a "ticky-tacky" Spanish-Mediterranean facade, with green walls, a red roof, and a blue door.

Few are able, or have the desire, to create their own artwork, clothing, or home. The ways in which man personalizes his home environment is highly dependent upon cultural heritage. Any form of personalization strengthens the territorial identity with the home and the individuality of the family.

The importance as determined by cultural, social, and functional values of the various rooms is reflected in their size and design in relation to other spaces. Furnishings and displayed artifacts are utilized to further reflect the family's individuality.[34] The home owner is able to alter his home environment by relocating partitions and by adding rooms as the family needs change. The family that rents its housing does not possess equal opportunities to personalize. He often relies totally on a display of personal artifacts as a means of self-expression. Often altering or painting the rented accommodation is not allowed. As the family needs change, it is obliged to move to different accommodations in order to satisfy these needs. Many architects specify certain colors of drapery for apartment buildings in order to achieve a desired aesthetic effect. In so doing, the tenant is deprived of his desire to express his individuality to the outside world. As Robert Sommer concludes; "To be fully human means to create as well as to choose, to make things beautiful as well as to admire beauty..."[35] The color schemes and the plastic artifacts chosen by the "common man" may, understandably, insult the values of the artistically educated, such as the architect. To deny the user his right to personalize the housing environment is to deny him an aspect of the human instinct towards individuality through self-expression.

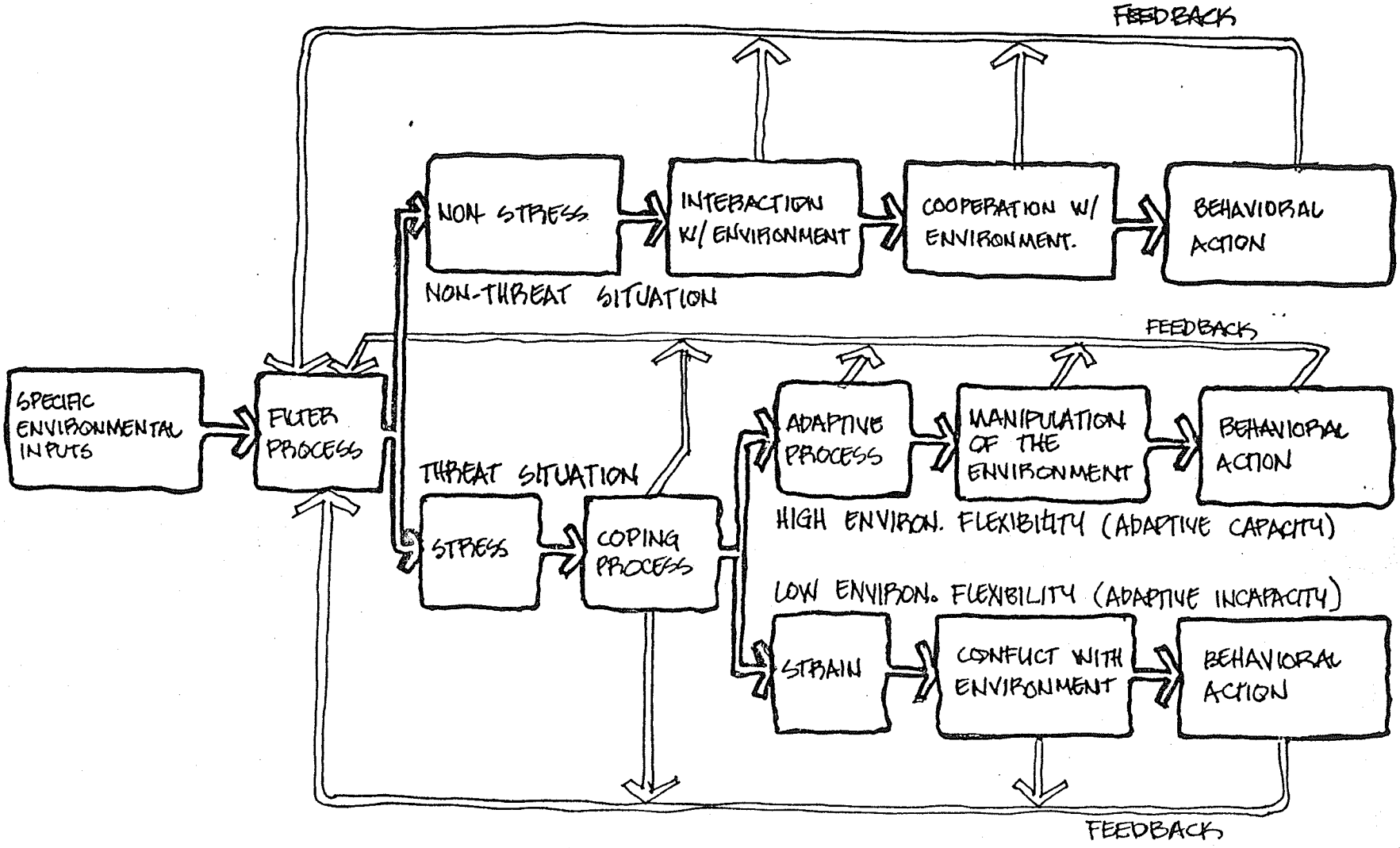
As discussed at the beginning of this chapter, human actions within the built environment are determined by the individual's behavior-filter system. The human need systems and the socio-cultural background of the individual, form the basic structuring and the fundamental components of this filtering system. As Turan's hypothesis suggests:

> "Behavior or action is a result of the basic needs and the personality structure of the individual combined with a series of processes of adjustment to different situations and physical conditions. ...Human behavior is not merely a passive adjustment process. Subjective appraisal of the external environment often interferes with our psychological state. A stress may occur as a function of this subjective perception of the environment. This is analogous to the physiological forms of stress in which there are some traceable changes within the organism such as autonomic disturbances or microbehavioral reactions due to a discrepancy between the demands of the external environment and the individual's ability to respond to these demands. If our cognitive functioning is disturbed, our behavior pattern will be modified. The physical conditions of the environment are felt socially and psychologically and their final influence has both psychological and physiological manifestations."[36]

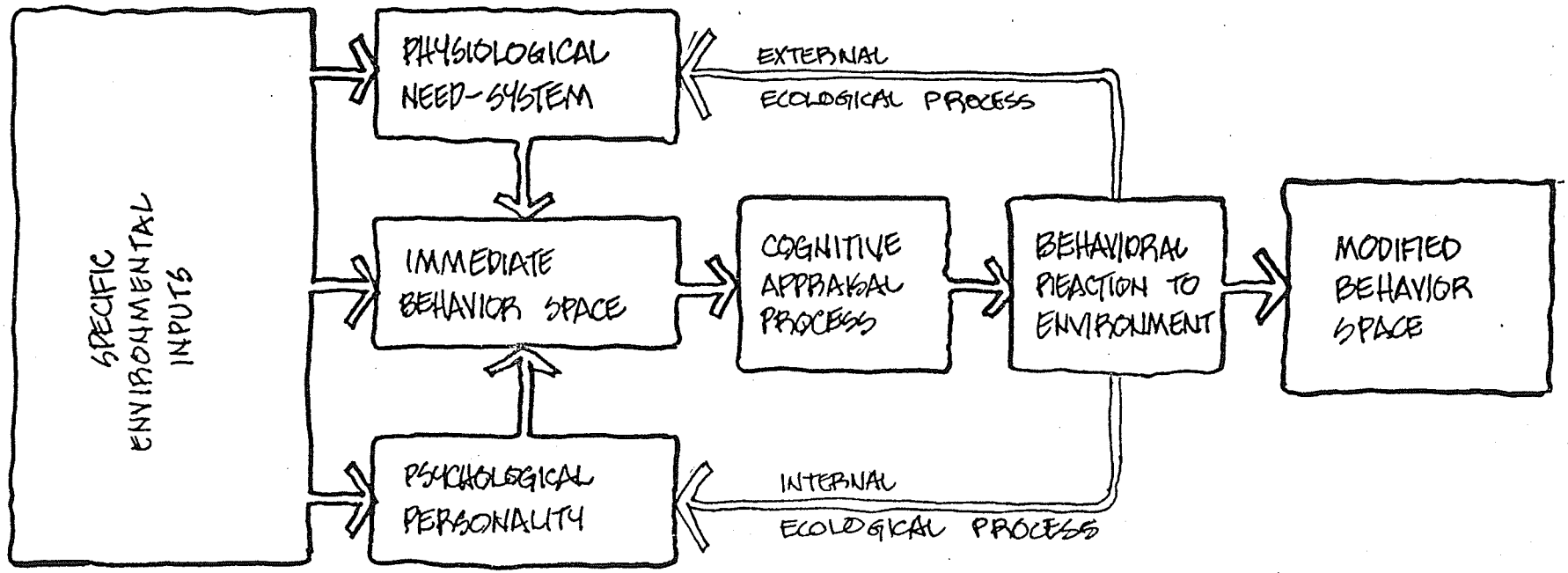
This notion emphasizes the role that the physiological need system and the personality structure play in establishing a behavioral space within the individual that acts as a filter in analysing external environmental inputs. Through this filtering system, inputs are appraised and determined to be either threatening or non-threatening in character. (Please see the diagrams on the next two pages). Examples of threats as illustrated by Turan are:

> "the inability of a mother to be in visual or verbal contact with her child while she is in the house and the child plays out of doors; inadequate acoustical insulation of the sleeping areas of the house; ...(and the) inappropriate layout of different areas of a house in terms of their function...."[37]

The inability of the individual to cope with such threats, or stresses, is dependent upon the interplay of two factors: firstly, the nature and integrity of the behavioral-filter system, and secondly, the degree of flexibility possessed by the environment. In this regard, human adaptation is important since an adaptive response illustrates a failure to cope with a given stress. Strain is a result of




HUMAN REACTION TO THE ENVIRONMENT




APPRAISAL-FILTER PROCESS

stress and the inability to cope with stress. Analogous examples of strain are: worry about a child playing outside when he cannot be seen from the unit, the annoyance with the noise coming from the neighbors or that may disturb one's sleep, and frustration with the arrangement and relationship of different functional spaces within the house. Strain can be eliminated, or at least minimized, if the built environment is responsive to the needs of different users and yields either through modification, adjustment, or momentary accommodation capacities.

At this juncture, it is important to discuss human adaptive responses, and the consequences of maladaption that creates a strain upon the stability of the behavior space.

## NON-FIT IN THE BUILT ENVIRONMENT AND ITS CONSEQUENCES

### Adaptation

Man possesses many different mechanisms that allow him to adapt to new environmental situations. His biological and social versatility has allowed him to survive in environments, contaminated by industrial pollutants, and overpopulated to the degree that privacy is a luxury available only to a minority. Through technology, man can artificially control environments and thereby avoid employing his natural adaptive abilities. Central heating and air conditioning allow him to live and work comfortably on the North Pole, under the oceans, or in outer space. As René Dubos warns, however;

> "Since man is able to eliminate or avoid many of the struggles and stresses which used to be his fate, it seems to follow that his biological mechanisms of adaptation have become useless, or at least obsolete. Paradoxically, however, the very avoidance of stresses may in itself constitute a new kind of threat to health if it is carried too far, because the body and the mind are geared for responding to challenges; they lose many of their essential qualities in an environment that is so bland as to make life effortless."[38]

He further cautions about the unknown price of human adaptation to modern life in the following passages:

> "The potential ability of mankind to survive crowding, emotional misery, environmental pollution, shortages of natural resources, and other kinds of threats constitutes but a limited aspect of the problem of adaptation. Other aspects have their origin in the fact that human life involves values which have little to do with biological needs and which transcend the survival of individual persons. All too often, the biological and social changes that enable mankind to overcome the threats posed by the modern world must be eventually paid for at a cruel price in terms of human values.
>
> "Sudden and profound changes in the ways of life, whatever their nature, always bring about a decrease in the resistance of the body and the mind to almost any kind of insult. But the social and medical problems associated with this early phase of change tend to be transitory. More important in the long run, even though less dramatic, are the distant consequences of some of the adaptive processes that make it possible for man to survive the deleterious consequences of the rapid changes brought about by technological innovations and by social revolutions. ...(Man) usually manages to conceal his impatience, irritations, and hostile feelings behind a mask of civil behavior. But inwardly he still responds to emotional stimuli by means of physiological mechanisms inherited from his Paleolithic ancestry and even from his animal past. ...It is probable...that these misguided responses leave scars which eventually threaten the body and the mind as they accumulate through the years."[39]

Since man is so adaptable, he easily becomes accustomed to habits and ways of life in which many of the unique human values no longer exist. People living in metropolitan areas indifferently spend hours on freeways in a bumper-to-bumper, carbon monoxide-filled environment.

In certain areas of the city the urban dweller does not go outside at night because of the high rates of crime. He does not even question the anonymity associated with the deprivation of the territorial instinct, as manifest by life today, in the monotonous, shapeless, and uninspiring high rise apartments.

Crowding

The urban environment is typified by concentrations of people living in crowded and congested cities. The word "crowd" itself

> "...evokes disease, pestilence, and group-generated activities often irrational and either too submissive or too aggressive. ...(Crowding) facilitates the spread of infective agents; ... modifies the manner in which men and animals respond to the presence of these agents...; (and) affects the response of the individual and social body, not only to infection, but also to most of life's stresses."[40]

Deviant behavior and social conflicts intensify as the population density increases. Behavioral experiments on animals living in crowded conditions confirm this. In the experimental situation a natural reaction to social pathology is the development of a complex social organization. Hierarchies exhibiting the so-called "pecking order" are developed. Once this social system and the corresponding hierarchical order have been established and uniformly accepted, the social conflict and tensions decrease.[41]

It is unwise, however, to relate such behavioral patterns exhibited by experimental animal populations directly to man. The effects of crowding and the proper comfortable distances between persons in a group are largely culturally determined by man. As Edward T. Hall indicates, man carries with him a series of "bubbles", separation dis-

tances, used in interpersonal interaction.[42] These distances, and especially those in the personal and intimate range, change dramatically from one culture to another. The uneasiness experienced when talking at an uncomfortably close distance with someone from another culture illustrates how strongly these distances are defined. The problems associated with crowding of human beings are complex due to cultural engraining. The term "mob psychology", for instance, illustrates how group-generated activities can affect social behavior.[43]

Pruitt-Igoe, a Consequence of Non-Fit

It is often argued that housing is a social, not an architectural problem. The provision of adequate housing for the whole of society does not, by itself, alleviate the many and varied social problems typical of modern urban life. That is why there exists several different social and housing aid systems. The built environment can have a very marked effect on social behavior. This is best illustrated through an examination of the disastrous effect that a well intended design can have when the essential needs and values of the users are misunderstood or misrepresented.

An infamous example of an inappropriate design for a low income population is the 2764 unit Pruitt-Igoe Public Housing project in St. Louis, Missouri. Published in the 1951, Architectural Forum, the design was applauded as being innovative and imaginative.

> "Replacing ramshackle old houses jammed with people--and rats--will be 11-storey apartment houses.... Skip-stop elevator service will be combined with open galleries every third floor to build vertical neighborhoods.... Compared with the unimaginative public housing prototype the architects were given to match, the new plan saves not only people, but money."[44]

The open galleries, intended to be safe neighborhood playground and meeting areas, became unpoliceable zones for gangs of muggers, rapists, and thieves. Territorial control over the galleries was impossible since no apartments opened directly onto them. This was further aggravated by the use of skip-stop elevators which necessitated use of the galleries by all residents above the third floor. As Roger Montgomery suggests, the Architect did not understand the life styles of the tenants.

> " The unconsciousness of class and its effect on behavior within a building environment receives graphic representation in the architect's preconstruction rendering which showed these galleries filled with evidently middle class, white mothers and their many soberly behaved youngsters. In reality the harried Negro mothers are barely eking out enough to live on with day work and ADC, and the galleries are empty."[45]

Living above the third floor became impossible. These floors became vacated and then irreparably vandalized. All but two of the original thirty-three blocks have since been demolished, and a new development of less density has been designed that integrates the income levels more effectively, and respects the needs for territoriality and a working neighborhood.[46]

## ANALYSIS OF THE TEN PUBLIC TOWN HOUSING PROJECTS

At this time user satisfaction within the ten Public Town Housing environments studied is worthy of investigation. This leads to insight into the sensitivity of the designs in meeting user needs and expectations. The survey was the first to be conducted upon its tenant families by the Corporation. Several questions sought tenant reactions to

such things as the management of the developments and the value of tenant association groups, thereby limiting its use in this thesis. A survey geared primarily to user reactions to the built environment might have been more valuable to this thesis.

The design of the survey allows for an understanding of user feedback to aspects of town housing design. The first aspect, site planning, analyses the effectiveness of the transitions created between such site components as vehicular traffic, pedestrian traffic, tot lots, front and rear yards, public green spaces, and the unit. The second aspect, the unit, analyses the relationships primarily between the kitchen, dining, and living areas, their relation to the yards outside, and the adequacy of the remaining facilities in the unit.

## Site Planning

The basic differences between the four project types become apparent, and the inadequacies can be isolated by examining the site planning of each. As described in Chapter 2, these site planning hierarchies are initially oriented around the car. The access of the car to and through the site, the place and manner in which it is parked, and the relationship of the parking lot to the tot lots and the units each are assigned a different degree of importance in each project type. Please refer to the appendix for detailed feedback information, and to Chapter 2, pp. 41 to 86, for plans and detailed descriptions of the projects involved.

1. Vehicular Parking:

   One might think that the convenience of user parking is related directly to the distance that it is provided from the unit. This

is not altogether the case. The loop road residents, whose parking is situated closest to the rear doors, as a group were the most dissatisfied with it, 14%. Residents of the street oriented project, David, whose parking is very close to the rear door, were also very discontent, 32%. Only Maples Two residents, many of whom are subjected to lengthy walks to their parking spots, were discontent as a result of the length of walk. The residents who park at their rear doors complain also about the dangerous vehicular traffic and the lack of separation from children's play. The worry expressed by these mothers is transformed into these feelings of inconvenience.

The majority of the residents, 60%, were discontent with provisions for visitor parking. The greatest amount of dissatisfaction was expressed by the street oriented and playground cluster project residents, 80% and 72% respectively. There was also a correlation between poor provisions for visitor parking and an increase in the number of tenants owning cars. Larger projects which have larger parking lots provide more visitor parking than do smaller ones. The smaller projects tend to rely on street parking for visitors.

2. Younger Children's Play:

Thirty-eight per cent of the younger children's play tended to be within either the tot lot provided or in the rear yards, 32%. Supervision of these children from the house was important. Seventy-two per cent of the mothers revealed that they kept an eye on them. As the play areas became less conducive to play the ability to supervise decreased, charts IV 35, 36, and 37 on pages 266 and 267.

When a well defined or more suitable play area was available, this fear decreased. The amount of play within the yards of the units increased whenever tot lots were located adjacent to a group of rear entrances as in Maples Two and all of the playground cluster and the street oriented ones. In the second street oriented project, Marlene, the loop road traffic and the children's play conflicted. These mothers were concerned with the vehicular traffic and their supervision over children's play was the greatest.

Fear was also high in the street oriented projects and the Birds Hill development. The Birds Hill mothers complained also of an inability to supervise the children at play. They did not berate the inadequacy of the tot lot. These anxieties may be because each of the projects are either oriented towards the existing streets or because the tot lots are very close to the street traffic.

When asked where they would prefer the play areas to be situated, 39% of the interviewees chose a location adjacent to the unit, and 59% preferred a more centralized location on site. This confirms the need for a supervisable area near the home for the younger ones, as well as a centralized playground for the active play of the slightly older children.

3. Pedestrian Traffic:

The survey was inadequate in its attempts to determine the success of the site plan designs in controlling pedestrian traffic. On-site visits were necessary to complement the data. The user feedback did indicate the adequacy of the sidewalk systems of the various projects. In this regard, the parking lot cluster group

appears to be the most successful of the project types. A review of the various site plans indicates that this group does not utilize greater quantities of sidewalks. The linkage of the unit clusters to the parking areas are relatively direct and the sidewalks tend to follow these routes closely. The Raleigh project is especially successful. This appears to be due to both the scale of the cluster groups and the highly controlled definition of the front and rear yards, the play areas, and the sidewalks that link the various public spaces. Few of the projects illustrate an equal degree of transitional definition.

The loop road projects are the second-most successful group. These developments contain sidewalks that link the parking lots together and run parallel to the loop roads. The connections between parking and the units are most direct for these projects and the overall adequacy is reflected in the users' reactions. Control of pedestrian traffic in the front yard and green space areas is, however, less successful. The apparent failure of Marlene is largely due to the fact that the construction of sidewalks was incomplete at the time of the survey.

The playground cluster group illustrates highly controlled designs of the sidewalk systems in the entrance courts, yet it is unsuccessful in the minds of the users. An on-site visit to Carriage Road, reveals that the tot lot entrance courts are so highly used by the children that their play activities spread onto the neighboring rear yards. An insufficient separation between these areas results in the grass and shrubbery being trampled underfoot. Also, no side-

walks link the front yards to the adjacent green spaces. The dirt paths in these areas indicate where sidewalks are required.

The failure of Birds Hill Road, the second playground cluster project is a mystery. Since residents had lived there for only a few weeks prior to the survey, their living patterns were not developed to the extent that they were in the other projects.

The street oriented group is equally unsuccessful. The pedestrian traffic in the rear yard areas is highly controlled by fencing and sidewalks, however, the definition of the front yard areas is not clear and traffic cuts across the front lawns.

4. Unit Orientation:

When asked whether they preferred having the living room oriented towards the parking area or an internalized green space, the vast majority, 72%, preferred an orientation towards a green space. It is interesting to note that 80% of the street oriented project residents preferred a parking lot orientation. The residents of the first loop road project, Keenleyside, voiced an almost equal split between the two orientations. Nearly ninety per cent of the living rooms of the Keenleyside units are oriented towards a street, a lane, a driveway, or a parking lot. This tends to indicate that when street orientations are available they are preferred and that green space orientations become more acceptable after the tenant has lived in a Public Town Housing development over a period of time.

Unit Design

When analysing the design of the unit, the subtleties of the arrangement of the individual spaces, the relationship between the internal functions, their connection to the front and rear yards, and the transition from the yards to the various public areas of the site become critical. Each of the unit designs belong to one of two basic types. These are differentiated according to the organization of the family areas on the ground floor. The two philosophies evolve around combining the dining area with either the kitchen or the living room. At first glance, the distinctions between the two may appear inconsequential. The user feedback, however, illustrates that this is not the case.

1. Kitchen/Dining Arrangement:

All but three of the projects surveyed contained units with dining areas in combination with the kitchen. This arrangement recognizes the close relationship of food preparation and clean-up with dining. The need to confine cooking odors and humidity in a minimally-sized housing unit is also a determinant. The diverse family functions relegated to the ground floor can be separated into two main areas, the kitchen/dining and the living areas, thereby allowing two different group functions to occur simultaneously: men vs. women guest entertainment, adult vs. children's group activities, housework, studying, or hobbies vs. guest entertainment or family lounging.

The feedback indicates that the users were generally satisfied with the arrangement of this aspect of their unit. The following

is a brief resume of their voiced reactions:

-The satisfaction with the kitchen/dining relation was high, at 90%. A few, however, preferred separate dining rooms, 5%.

-The secondary activities performed in the kitchen/dining areas were diverse. In decreasing order of intensity these latent activities were entertaining, ironing clothes, children's play activities, sewing, washing clothes, and studying.

-The recommended improvements to the kitchen area included painting and wallpapering privileges (unknowingly available to them), double sinks, and exhaust fans. Built-in dining tables were suggested in units with galley-kitchens and relatively small dining areas.

-Eighty per cent of the users were satisfied with the kitchen counters and the cupboard space provided, however, they expressed dissatisfaction with the amount of space in the galley-kitchens. The relationship of the refrigerator, sink, and stove in the galley-kitchens was suspect. The location of the refrigerator next to the stove was disliked.

-Ninety per cent of the users were satisfied with the size of the dining areas. The dining areas for the Raleigh units were located adjacent to a galley-kitchen and 40% of the users felt this was inadequate.

-Eighty-two per cent were satisfied with the living room locations and 85% with their sizes. Those who complained indicated that they would prefer it to be combined with the dining and/or the kitchen, probably to increase its apparent size.

-Only 55% of the users approved the front door opening directly into the living room. As a solution 10% of the users suggested an entrance hallway.

-Arrangement of furniture in the living room did not appear to be a major problem although the Raleigh residents complained of a small, poorly-shaped living room. This design had three entrances into the room, the front entrance from the patio, the access to the galley-kitchen, and the access to the hallway linking it to the stairway, the dining area, and the rear entrance. The resulting fragmented wall areas and the through traffic made furniture arranging very difficult.

-Two projects, Birds Hill and Maples Two, had sliding glass doors linking the living rooms to the patio. A 70% satisfaction with them was voiced. Frost build-up and difficulty in opening them were the primary complaints of those dissatisfied.

2. Living/Dining Arrangement:

The unit designs of three projects were of the combined living/dining variety: Carriage Road, Marlene & Beliveau, and Gordon Avenue. The philosophy behind this arrangement was to increase the apparent size of the living room by combining it with the dining area. The food preparation function was regarded in these designs as being of secondary importance and consequently the kitchens were minimally-sized galleys.

The data illustrates that this arrangement is generally less acceptable to the users than a kitchen combined with a dining area.

Following is a resume of the users' reactions:

-Sixty per cent of the users were dissatisfied with the living/dining arrangement. Ten per cent preferred a kitchen/dining arrangement while 50% preferred a separate living room.

-Secondary uses of the kitchen were extremely limited. Ironing clothes, at 7%, and washing clothes, at 3%, were the primary latent functions. Other combined functions capable of being conducted in the kitchen were negligible.

-Recommended improvements to the design of the kitchen included a larger area, 30%, and a built-in table, 7%. Twenty-five per cent of the Gordon Avenue users, 5% of the total, wanted kitchen exhaust fans.

-Eighty per cent expressed general satisfaction with the size of the dining areas. This compares to the 90% satisfaction expressed by the users with kitchen/dining arrangements.

-Twenty-five per cent of the residents complained of difficulties encountered when arranging living room furniture. This was primarily attributed to the shape of the room. The residents of Carriage Road and Raleigh Street, however, objected to the location of the doors in this area.

-Twenty-five per cent of the uses suggested the use of hallways at the front door instead of entering directly into the living room.

3. Front/Rear Yards:

The yards were used extensively by the residents. Each yard, how-

ever, assumed varying importance for the different age groups. The rear, semi-public, yard was used 55% of the time for children's play activities while the front, private, yard was played in 25% of the time. The children utilized both equally 15% of the time. Adults, on the other hand, used the rear yard 45% and the front yard 35% of the time. Less than 15% utilized both equally.

Use of the yards by the children was related directly to play activities. The rear yards which flanked the pedestrian and vehicular activity were used for group play. The private yards were suitable for secluded play.

The adults utilized the yards for two aspects of outdoor living. During the day, mothers were sitting alone or in groups on the rear steps watching over the younger children at play. Activities in the front yard included relaxing alone, with the family, or with friends and barbequing. Fifty-eight per cent of the users were satisfied with the degree of privacy available to them in the front yard. As a group, the playground and the parking lot cluster residents were the most satisfied. The loop road users were the least. Seventy-five per cent of the total group felt that the privacy in the rear yards was inadequate. Once again the loop road users were least content and the playground and the parking lot cluster residents were the most.

The particular designs must be analysed to determine why the provisions for privacy in the front yards of certain projects, and project types, is more successful than in others. The playground cluster projects have small numbers of units in a cluster group.

Public green spaces opposite the living rooms are similarly enclosed by small groups of units. Views from the front yards and overviews from the living rooms of the Carriage Road development are controlled and only small numbers of units can be seen. Two parking lot cluster projects, Raleigh and Gordon, have similar, easily identifiable cluster groups. Views from the Gordon front yards are controlled in a like manner. When sitting outdoors in these developments one does not feel as if he is in an arena surrounded by prying eyes. The rest of the projects either lack fencing around these areas or contain large groups of units surrounding large green spaces.

Fences in the rear yard areas existed in only three projects. These fenced enclosures were in: the street oriented project, David, all but the eight units at the west end of the street oriented, Lumsden project, and all of the units facing Keenleyside Street in that loop road development. Of these, 50% of the Lumsden residents were satisfied, compared to 30% of the Keenleyside residents and 20% of the David. The fence heights for these were five feet with three-foot high end sections, and four feet respectively. The data indicates a direct correlation between the amount of privacy and the fence heights. The degree of privacy in these yards was also related to cluster group sizes. Even when yards were fenced, larger clusters had less privacy than the smaller ones.

4. General Concerns:

The following is a list of general concerns voiced by the users which relate more to the general design standards of Public Town

Housing than to the particular, individual designs. Some of these users' comments were expressed in an annually-held Housing Association Workshop.

-Seventy-eight per cent of the users were satisfied with the sizes of the bedrooms. Approximately 10% reported that another bedroom was required. This may indicate that there is a need for a greater percentage of four and five bedroom units.

-A diversity of activity was conducted in the basement even though it was unfinished: laundry, 100%; children's play, 80%; storage, 75%; workshop, 30%; and entertainment, 15%.

-Sixty per cent of those interviewed relied on wringer-style washing machines for laundering. Only 35% had automatic washers. The remaining 5% washed either by hand or at a commercial facility.

-All of the users interviewed were provided with clothes dryers, although 50% indicated that they would also like to have clothes-line facilities, and 8% preferred clotheslines to dryers.

-Fifty-eight per cent of the users were dissatisfied with the quality of soundproofing in the party walls. Impact noises, footsteps on stairways, were the most common complaints.

-Grievances were voiced about poorly fitting windows that resulted in moisture and air leakages. The users also complained of the windows being too small. Some individuals indicated problems with excessive condensation in the winter which they attributed to poor air circulation.

-The largest single complaint with the heating and ventilation system was that the unit was cold in the winter. Most unit designs incorporated hot air furnaces, with only one or two centralized return-air ducts. As a result, when furniture was placed under windows, air circulation was poor.

-Housewives complained of difficulties in cleaning and maintaining textured floor tiles. Various residents also voiced complaints with the lifting of floor tiles in kitchens and bathrooms. Some suggested that excess humidity may have a direct bearing upon this problem.

General Observations

A few pertinent observations that relate to the fore-mentioned psychological urges from other forms of feedback are worthy of mention. This feedback is voiced daily in the form of calls for maintenance. Those attributable to user neglect and misuse are of definite importance here. The MHRC Project Management personnel have noted with particular interest that as opportunities become realistically available for territorial definition, an approximation of ownership, and personalization, the users' respect for, and care of, the rented Public Housing unit increase in direct proportions.

1. Territoriality:

Territorial definition is readily available to those living in single family and semi-detached Public Housing. This is not the case in the higher density Public Town Housing developments. Occasionally the users have exercised their urge for territoriality in these developments and the results have been positive. For

example: a common complaint by the Public Town Housing user is the damage caused by children on trees and other landscaping elements. Trees and shrubbery located in undefined, public green spaces or cluster courts are the first to be destroyed. On the other hand, trees located within a defined yard are automatically associated with the particular unit. The user tends to protect the tree because of his territorial association with it. Such is the case for shrubbery, flower beds, and lawns whether planted by the Management or by the user. Whenever territorial definition is available to the user maintenance costs to landscape materials and outdoor facilities decrease. Correspondingly, protection over one's and one's neighbor's property increases.

2. Approximation of Ownership:

Tenant ownership of rented housing units is approximated by the single-family and semi-detached Public Housing units. As the nature of the housing unit and its environment approaches that of the single-family dwelling, complaints and damage due to user misuse decrease significantly. These tenants readily assume at least apparent ownership of the unit. Territorial definition is strong and the unit blends into the neighborhood. The anonymity associated with the larger, Public Town Housing development is non-existent. Since it is not identifiable as Public Housing, it is assumed to belong to its residents, rather than a large Corporation. Maintenance costs in projects of this nature are minimal in comparison to the large scale development. Inter-neighbor conflicts are also fewer in number.

3. Personalization:

Opportunities to personalize the rented unit are available to all Public Housing tenants. Fencing materials are supplied to those wishing to build a fence and paints are available to those wishing to repaint the interior of the unit. The only requisite is that these changes meet with the approval of the MHRC. In Public Town Housing projects, users are able to build low fences in the rear yard areas and gates for the front yard fences. Those who do personalize the environment in this way develop an inherent identity with it. As a result, they maintain it and protect it from damage and neglect.

The analyses made in this chapter provide important insight into Public Town Housing and the response of its design to the needs of the user. When Public Town Housing is treated as a commodity and designed with little regard for the physical and psychological needs of the users, the chances of creating insensitive housing environments increase. Certain existing developments and designed components of these developments resolve the concerns more adequately than do others. The two major concerns isolated are:

-the financial, behavioral, and structural uniqueness of the low income family in relation to the minimal character of Public Town Housing; and

-the conflict between the psychological urges relating to identity and individuality, and the nature of the Public Town Housing rental situation.

The potential dangers of forcing humans to adapt to insensitive built environments is not fully understood. The criminal and pathological behavior typical in urban centers indicates there is some relation between crowding and poor housing, and deviant behavior. Their financial level makes the Low Income vulnerable as does their inability to own a defensible territory. Rented accommodations do not always suit the particular needs of the family and they inhibit the territorial and personalization urges. The design of the Public Town Housing environment must allow the user to fulfill these needs.

The object of Part Two is to create a functional link between these idiosyncratic needs and the design of the Public Town Housing environment. This link will act as a design aid for architects working under the existing delivery system. It will serve as a means, whereby the Architect;

-is made more aware of the uniqueness of the Low Income and their needs,

-can learn from the successes of previously constructed Public Town Housing environments and thereby add to them, and

-can understand how to resolve the critical transitions from one aspect of the Public Town Housing environment to another, through a defined series of component relationships.

FOOTNOTES

1. Sym Van der Ryn and Murray Silverstein, "The Room, A Student's Personal Environment" Dorms At Berkeley. (Berkeley: University of California, C.P.D., 1968), p. 431.

2. Robert Sommer, Design Awareness. (Corte Modeva, California: Rinehart Press, 1972), p. vii.

3. M. H. Turan, "Environmental Stress and Flexibility in the Housing Process" Environmental Design Research. (Stroudsburg, Penn.: Douden, Hutchinson & Ross, Inc., 1973).

4. Cassel, "Health Consequences of Population Density and Crowding" People and Buildings. (New York: Basic Books Inc., 1972).

5. Christopher Alexander, "The City as a Mechanism for Sustaining Human Contact" Ibid.

   Lee Farr, "Medical Consequences of Environmental Home Noise" Ibid.

6. Daniel M. Wilner et al., "The Housing Environment and Family Life" Ibid.

7. Lee Rainwater, "Fear and the House as Haven in the Lower Class" Ibid.

8. Maurice Broady, "Social Theory in Architectural Design" Ibid.

9. John Zeisel, "Fundamental Values in Planning with the Non-Paying Client", Architecture For Human Behavior, op. cit., p. 24.

10. Arvid Bengtsson, Environmental Planning for Children's Play. (London: Crosby Lockwood and Sons Ltd., 1970), p. 14.

11. Anthea Holme and Peter Massie, Children's Play: A Study of Needs and Opportunities. (London: Michael Joseph Ltd., 1970), pp. 31-41.

12. Bengtsson, op. cit., p. 90.

13. Bengtsson, Ibid.

14. Holme and Massie, op. cit., p. 58.

15. Leon Festinger, "Architecture and Group Membership" People and Buildings. (New York: Basic Books, Inc., 1972), pp. 120-134.

    Christopher Alexander, "The City as a Mechanism for Sustaining Human Contact" Ibid., p. 421.

16. Barry Schwartz, "The Social Psychology of Privacy" Ibid., pp. 152-166.

17. Pynos, J., Schafer, R., and Hartman, C. (ed's.) "Social Aspects" Housing Urban America. (Chicago: Aldine Pub. Co., 1973), p. 135.

18. Lee Rainwater, "Fear and House-As-Haven in the Lower Class" People and Buildings. (New York: Basic Books, Inc., 1972), p. 301.

19. Ibid., p. 303.

20. Ibid., p. 305.

21. Christopher Alexander,"A City is not a Tree" Architectural Forum; vol 122, no 1, pp. 58-62; and no 2, pp. 58-61.

22. Ibid., Houses Generated by Patterns. (Berkeley: Center for Environmental Structure, 1970), p. 80.

23. John T. Flynn, M.D., Identification and Individuality. (New York: The Beckman Press, 1970), pp. 1 & 2.

24. Alexander Leighton, My Name is Legion. (New York: Basic Books, Inc., 1959), p. 148.

25. Allan Lipman, "Territoriality: a useful architectural concept?" RIBA Journal; Feb. 1970, p. 68.

26. Edward T. Hall, The Hidden Dimension. (Garden City, N.Y.: Doubleday & Company, 1966), p. 7.

27. Ibid., pp. 8 & 9.

28. Hall, op. cit., p. 51.

29. Oscar Newman, Defensible Space. (New York: The Macmillan Company, 1972), p. 51.

30. Amos Rapoport, House Form and Culture. (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1969), p. 133.

31. Leighton, op. cit., p. 257.

32. Edward T. Hall, The Silent Language. (New York City: Doubleday & Company, Inc., 1959), p. 147.

33. CBS, "All in the Family".

34. Rapoport, op. cit., pp. 130 & 131.

35. Robert Sommer, Design Awareness. (Corte Modeva, Calif.: Rinehart Press, 1972), p. 59.

36. Turan, op. cit., p. 47.

37. Ibid., pp. 49 & 50.

38. René Dubos, Man Adapting. (London: Yale University Press: 1965), p. 270.

39. Ibid., pp. 275 & 277.

40. Ibid., pp. 100 & 101.

41. Ibid., pp. 106 & 107.

42. Hall, The Hidden Dimension., pp. 107-122.

43. Dubos, Ibid., p. 109.

44. "Slum Surgery in St. Louis" Architectural Forum, 94:4, p. 129.

45. Roger Montgomery, "Comment on 'Fear and House-As-Haven in the Lower Class'". AIP Journal. Jan. 1966, p. 33.

46. George McCue, "$57,000,000 Later" Architectural Forum., 138:4, pp. 42-45.

# PART TWO
# a pattern language for public town housing in winnipeg

# the pattern language system

"By separating out the design program as anterior to the designer's conception of a new environment instead of being integral to it, the original control of these criteria belongs to the inhabitants, just as the environment belongs to them after. Unfortunately a prevalent attitude among working designers is, however, that their function is to tell the client what he wants."[1]

"If the use of the environment is heavily influenced by the people who will inhabit it, regardless of what the architect may intend, then it is encumbent on the designer to consult his prospective user before he develops a design..."[2]

"The struggle will be between the designer's preconceptions and what the data will reveal: his job of creating order out of human values is a much deeper challenge than that of creating order out of physical disorder."[3]

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footnotes for this chapter p. 160.

## THE PATTERN LANGUAGE SYSTEM

Christopher Alexander and the Center for Environmental Structure in Berkeley have created a design approach whereby user needs can be directly related to a series of prescribed component organizations within any given built environment. The Pattern Language, as it has been named, tackles the man-environment relationship at four levels. Firstly, it relies on a methodic investigation and analysis of the user, his life style, and needs; secondly, it relates these needs to the spatial organization of the built environment; thirdly, it translates physical relationships, sensitive to the users' needs, into prescribed design directives; and finally, it catalogues these relationships in an orderly manner, a series of patterns, for their combination and implementation in the planning and design processes.

The pattern language system is readily adaptable to a multitude of design approaches and a variety of design problems.

> "(It) extends the usefulness of traditional design principles by increasing the architect's understanding of the relationships they define."[4]

The series of relationships are called patterns. A pattern

> "...defines an arrangement of parts in the environment, which is needed to solve a recurrent social, psychological, or technical problem."[5]

Each pattern is composed of three distinct components: the context, the solution, and the problem.

The context defines a set of conditions. The solution defines a prescribed ordering of physical components within the built environment which must be present in the given context in order to solve the essential needs. The problem defines the essential needs which arise within the given context.

An example of a pattern statement, as taken from the pattern language devised by the Center for Environmental Structure for a low income housing competition in Lima, Peru, follows:

"THE GENERAL PATTERN IS:

CONTEXT
Any Peruvian house for large low income families.

SOLUTION
The kitchen is large enough to contain a kitchen table, and at least 3.60 meters of counter.

PROBLEM
In a Peruvian household, the kitchen is often used by several people at once. This is especially important during a fiesta, when all the women of the family will crowd into the kitchen to help prepare food and serve guests.

At such times, or if anyone is trying to eat in the kitchen, there must be plenty of room in the kitchen - at least room for a table, and room for three people working (3.60 meters, at 1.20 meters each)."[6]

This system of analysis and design prescription is particularly useful to architects embarking upon a problem previously not encountered or one that involves complex and changing user needs. The Architect becomes aware not only of the essential needs to be resolved but also the nature of these needs. Components of the built environment that overcome these problems are then prescribed for him. The Pattern Language system requires that the changing needs be continually researched and that improved solutions be sought. In this way, the patterns are re-

usable from problem to problem.

The next two sections are devoted to the development of a "Pattern Language for Public Town Housing in Winnipeg". The resources for the pattern statements come from the User Feedback Survey, the analysis of the ten projects, and the observations of the housing delivery system of The Manitoba Housing and Renewal Corporation. Preceding the pattern statements is a list of assumptions necessitated by the context of Public Town Housing in Winnipeg. The patterns are then presented in a sequence beginning at the site planning scale and ending with detailed unit design components.

FOOTNOTES

1. Constance Perin, With Man in Mind. (Cambridge, Mass.: The MIT Press, 1970), p. 108.

2. Maurice Broady, "Social Theory in Architectural Design" People and Buildings. (New York: Basic Books Inc., 1972), p. 170.

3. Perin, op. cit., p. 78.

4. Jon Lang, "Architecture for Human Behavior: The Nature of the Problem" Architecture For Human Behavior, Collected papers from a mini-conference. (Philadelphia: Philadelphia Chapter, American Institute of Architects, 1971), p. 7.

5. Christopher Alexander, et al., Houses Generated by Patterns. (Berkeley: Center for Environmental Structure, 1969), p. 53.

6. Ibid., p. 151.

# contextual assumptions

## CONTEXTUAL ASSEMPTIONS

In the creation of this pattern language, several key assumptions have been made for the purpose of simplification. These assumptions directly affect the general nature of the form of housing that the pattern statements define. If and when an assumption is incongruous with the reality of a particular Public Town Housing design situation certain modifications will be necessary. On the whole, however, the essence of the patterns will remain fixed for the majority of problems encountered. The assumptions made follow:

### Assumption 1

It is assumed that there will continue to exist a need for Public Town Housing in Winnipeg, delivered and administered by The Manitoba Housing and Renewal Corporation.

### Assumption 2

The provisions within the National Building Code, the Canadian Code for Residential Construction, the CMHC Site Planning Handbook, and the MHRC Construction Specifications have all been accepted.

### Assumption 3

The use of traditional, North American housing construction materials and techniques is assumed. The two principle ones are wood frame and concrete block combined with wood frame.

### Assumption 4

The housing density of approximately thirteen units per acre and the unit-breakdown presently employed by The MHRC are assumed.

Unit-Breakdown:

2 bedroom units ... 30%
3 bedroom units ... 50%
4 bedroom units ... 15%
5 bedroom units ... 5%

Density: 64 people per acre (max.)

Assumption 5

The environmental and climatic conditions of Winnipeg, Manitoba, Canada are recognized as fact.

Assumption 6

Although each neighborhood area portrays an inherent uniqueness, it is assumed that certain organizational principles are valid from one community to another.

It must be reiterated that by no means are the patterns absolute. They are open to and encourage criticism and re-evaluation in order to maintain their validity.

# the pattern statements

"The human studies made during programming...(will) discover previously unacknowledged hierarchies, intensities, and relationships of behavior. These will become the basis for creating the physical resources needed for carrying them out. What those resources are determine the size, shape, location, distribution, and connectivity of buildings and sites --- the very questions of environmental design."[1]

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footnotes for this chapter p. 219.

# INDEX OF PATTERN STATEMENTS

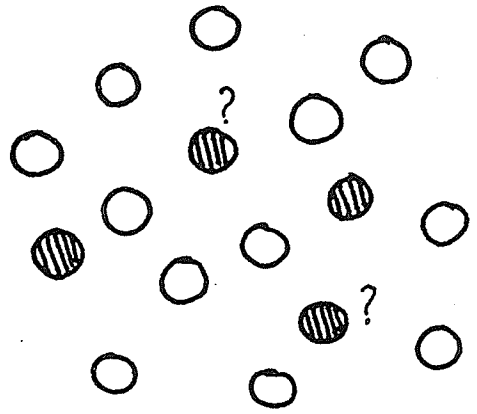
# NEIGHBORHOOD PATTERNS

## 1. INTEGRATION WITHIN A RESIDENTIAL AREA

THE GENERAL PATTERN IS:

Context.

Any Public Town Housing project for low income families in Winnipeg.




Solution.

A Public Town Housing project shall be integrated within an existing or a proposed residential area.

Problem.

All too often, land offered to the Provincial government for Public Town Housing purposes is undevelopable within the private housing market. Odd-shaped lots that border railroads, highways, and industrial areas or that are great distances from supportive commercial, recreational, and public service amenities are typical of Public Town Housing locations in Winnipeg. This is the case largely because the development of these lands into private or normal rentable housing is not economically viable.

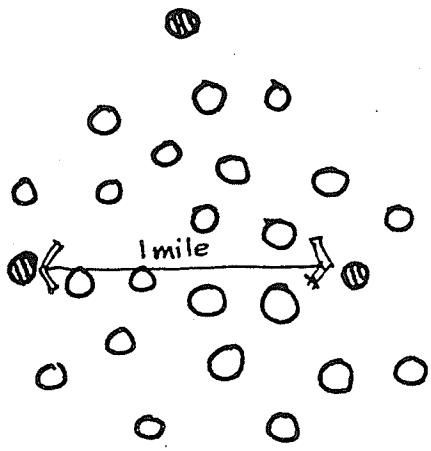
The feeling of alienation expressed by the Low Income is only intensified by such a location, and physical isolation of those residents without automobiles is intensified.

## 2. BUFFER BETWEEN PUBLIC TOWN HOUSING PROJECTS

THE GENERAL PATTERN IS:

Context.

The location of any Public Town Housing development.




Solution.

Avoid locating two (or more) Public Town Housing projects within close proximity of each other, one mile distance minimum.

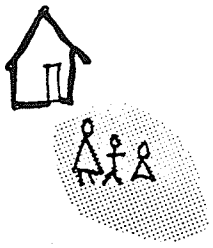
Problem.

Communities in Winnipeg that have two or more Public Town Housing developments within a half-mile radius of each other (East Kildonan, St. James, and Fort Garry) complain of the concentrations of low income families and of the resulting impact upon educational facilities. Assimilation of the low income projects into the urban fabric is a task difficult enough without concentrating a number of projects into a small area. The visual identification of a project as Public Housing should be avoided. This anonymity is more difficult when these projects are located close together.

## 3. WALKING DISTANCE TO A BUS ROUTE

THE GENERAL PATTERN IS:

Context.



The location of any Public Town Housing development.

Solution.


The project shall be located within a maximum walking distance of 1500 feet to a transit bus route that provides access to community facilities.

Problem.

Fifty per cent of the Winnipeg Public Town Housing families own, or have full-time access to, an automobile. Being able to walk to a bus route for purposes of grocery shopping or going to work is especially important in the winter. The maximum comfortable walking distance is three blocks or 1200 to 1500 feet, ten minutes, when it is -35°C.

## 4. WALKING DISTANCE TO ELEMENTARY SCHOOLS

THE GENERAL PATTERN IS:

Context.

The location of any Public Town Housing development.

Solution.

The maximum walking distance

to a public elementary school shall be 1500 to 2000 feet.

Problem.

Low income families tend to be larger than normal. Any sizable development, 50 units or more, has a large number of children attending elementary school. The impact that a development will have upon educational facilities within an established neighborhood shall be considered in the location of projects within existing communities. Projects located within developing neighborhoods shall be similarly coordinated with proposed school locations.

Few children are driven in cars to school. Weather that reaches -35°C limits comfortable walking to a distance of 1500 to 2000 feet.

## 5. WALKING DISTANCE TO A PUBLIC PLAYGROUND OR A PARK

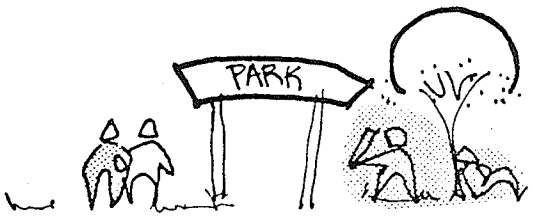
THE GENERAL PATTERN IS:

Context.

The location of any Public Town Housing development.

Solution.

Maximum walking distance to public parks or playgrounds shall be 1500 to 2000 feet.




Problem.

The large number of children present in any Public Town Housing project requires that intense, active group amenities be located nearby; the type of facilities that cannot be realistically provided

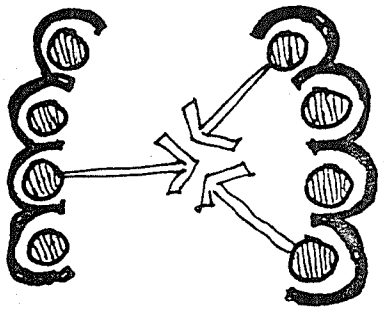
within the development. Where these amenities have been lacking, the children tend to roam aimlessly throughout the surrounding neighborhood. Public areas within the project are often over utilized, and the younger children's play areas are invaded by the older ones. The noise generated by group activities in the late evening within the development create privacy problems and inter-neighbor conflicts. The frustrations resulting from "nothing to do" often lead to vandalism upon cars in parking lots, street-lighting fixtures, and private property in the surrounding neighborhood. All of these increase the negative image associated with a Public Housing development.

The harshness of the winter climate limits the acceptable walking distance. Amenities beyond a comfortable walking distance tend to be ignored in the winter.

# SITE PLANNING PATTERNS

## 1. SMALL NEIGHBORHOOD UNIT GROUPS

THE GENERAL PATTERN IS:



Context.

Any unit grouping within a Public Town Housing project.

Solution.

Unit groupings shall be of a comfortable and identifiable size of not more than 12 to 14 units.

Problem.

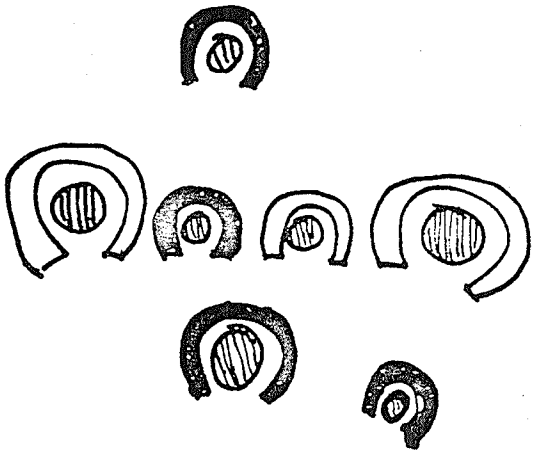
Large unit groups result in anonymity and a lack of control over activities in the public areas. The anonymity lessens the ability to identify intruders. A community spirit and a reliance on one's neighbors result when there is familiarity with one's neighbors. Familiar neighbors tend to protect one another's property or children from intruders. Identity with the town housing unit also is less with the larger unit groups. This can affect the respect for, and control over, it. Larger unit groupings also require larger parking lots located at greater distances from them. Visual control over these parking lots is difficult. Smaller unit groups with smaller parking lots aid in overall unity, identity, and control.

## 2. DISPERSE LARGE TOWN HOUSING UNITS

THE GENERAL PATTERN IS:

Context.

Any Public Town Housing project that contains 2, 3, 4, and 5 bedroom units.



Solution.

The larger four and five bedroom units shall be dispersed throughout the site, preferably at the ends of rows of units.

Problem.

Some projects created by the MHRC exhibit concentrated groups of 4 and 5 bedroom units at various locations on the site. This results in concentrations of large families in certain areas. The recreational demands of the large number of children tax the facilities directly adjacent to the unit groups. Lawn areas, shrubbery, and trees in these areas are subjected to greater abuse. The noise generated from the play activities of the children is concentrated and privacy available to neighboring units is limited.

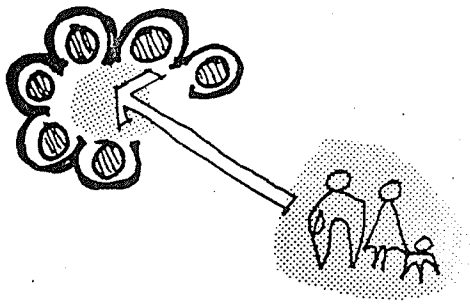
By dispersing these larger units throughout the site, the concentrations of children, the play activities, and the impact upon the project facilities are similarly dispersed.

## 3. AN ENTRY COURT FOR EACH NEIGHBORHOOD

THE GENERAL PATTERN IS:

Context.

A unit group within a Public Town Housing project.



Solution.

Access to a neighborhood group of units shall be through an entrance court.

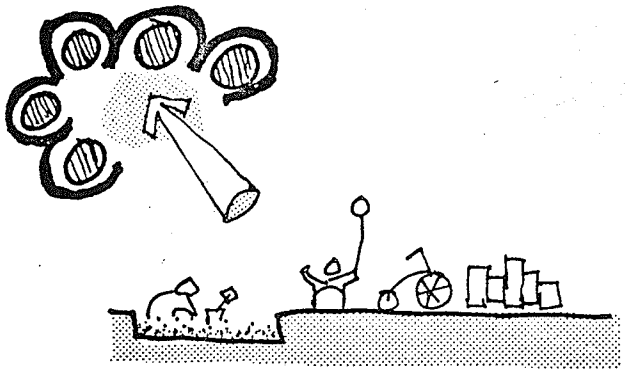
Problem.

The analysis of Public Town Housing projects indicates that neighborhood groups are best created around an activity generator common to all residents therein. In Public Town Housing two activities augment one another in this regard. These are the play activities of younger children and the vehicular parking lot.

Younger children require a variety of surface materials for their play. Tricycling, the primary activity, requires a hard surfaced area that is kept clear in the winter. Parking lots, driveways, and sidewalks provide the most suitable surface. These are zones of continuous activity, fathers going to work, mothers going shopping, and delivery and garbage trucks coming and going, and are of particular interest to the inquisitive young children. Mothers supervising the play of these children like to also congregate and gossip. When common entrances to a group of units are oriented around such activity, socialization between neighbors is increased thereby strengthening the neighborhood identity.

## 4. TOT LOT FACILITIES IN EACH ENTRY COURT

THE GENERAL PATTERN IS:



Context.

Any entry court to a group of Public Town Housing units.

Solution.

The entry court shall contain the following tot lot facilities:

1. a large area of hard-surfacing for a tricycle circuit,
2. a sand pit (minimum depth of sand to be 18") surrounded by hard-surfacing and properly drained. The surface of the sand shall be six inches below the surrounding hard-surfacing.
3. low walls or fences that aid in defining play spaces and serve as wind and sun screens.
4. low and stationary objects that allow for climbing activities: short tree stumps, low walls, or concrete climbing blocks.

Problem.

Younger children prefer to play where they can be close to home and watch adult activities. Their play, though passive in nature, requires distinctive physical amenities. Tricycling, a primary means by which the children move about while playing, requires hard-surfacing adjacent to activities of interest. Sand pits, for manipulative play,

must be properly drained for sanitary reasons, 18" of sand over 6" of coarse gravel. The sand must be deep so that the children do not dig down to the gravel and to the dirt below. They should be surrounded by hard-surfacing to aid in clearing spilt sand. A grassed area will die from the spread of sand. The surface of the sand should be at least six inches below the hard-surfaced surround to act as an edge to sit on or lean against. It also minimizes the spillage of sand.

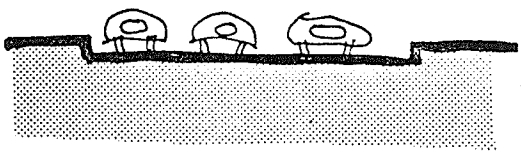
Younger children tend to prefer playing in outdoor "rooms" with walls and fences that define imaginary buildings and houses and act as hiding places. Low walls, 18" to 24", facilitate this. They shall be a minimum of four to six inches thick so that they double as raised play surfaces and as climbing apparatus. Short tree stumps set side-by-side or low concrete blocks can also act as space dividers and climbing devices.

## 5. VERY SMALL PARKING LOTS

THE GENERAL PATTERN IS:

Context.

Any Public Town Housing project that provides parking for its residents in the form of parking lots.



Solution.

Parking at the rate of one spot per unit shall be provided in small lots with a maximum of 5-7 cars per lot. The maximum walking

distance from any unit to its parking spot shall be 150 feet.

Problem.

Fifty per cent of the Public Town Housing residents own cars. A maximum realistic requirement is one parking spot per unit.

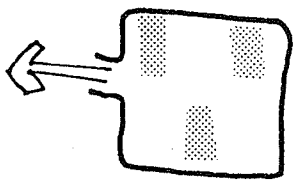
Large parking lots create a sense of anonymity and decreases visual protection over the automobile.

> "It is hard to pin down the exact size at which parking lots become too big. Our informal observations suggest that parking lots for four cars are still essentially pedestrian and human in character; that lots for six cars are acceptable; but that any area near a parking lot which holds eight cars, is already clearly identifiable as 'car dominated territory' ... A collection of less than 5-7 objects can be grasped as one thing, and the objects in it...as individuals. A collection of more than 5-7 things, is perceived as 'many things'."[2]

Small parking lots are less prone to litter and debris, and to snow build-up. Residents tend to pick up litter and clear their parking spot of snow if the lot is small. The control over and identity with one's, and one's neighbor's, parking spot is increased in the small parking lot.

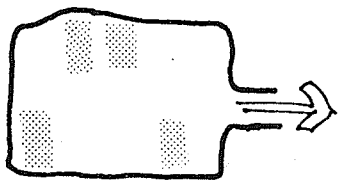
## 6. SEGREGATED PARKING LOTS

THE GENERAL PATTERN IS:



Context.

The parking lots of any Public Town Housing project.



Solution.

Parking lots shall not be connected by loop roads.

Problem.

Loop roads, although allowing for additional street oriented units, promote excessive vehicular through-traffic. Through-traffic creates a high risk for the younger children's play activities.

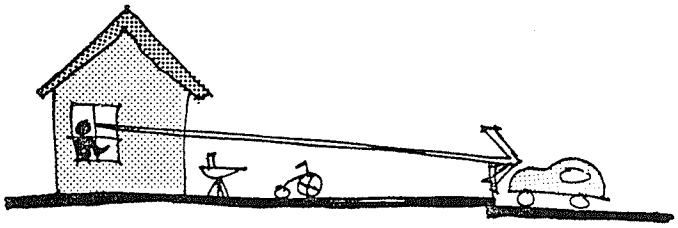
Individualized parking lots localize the traffic and vehicular speeds are reduced.

## 7. VISIBLE PARKING LOTS

THE GENERAL PATTERN IS:

Context.

Any parking lot within a Public Town Housing development.



Solution.

Each parking lot shall be located adjacent to the entry court. The cars parked in the lot shall be visible from the housing units around the court.

Problem.

Fifty per cent of the Public Town Housing tenants in Winnipeg own cars. To those that do, it is an important possession and often their most valuable one.

A distant parking lot hidden from the house is unacceptable to the Public Housing tenant. It is important to him to be able to see it from his home and to protect it from theft or vandalism.

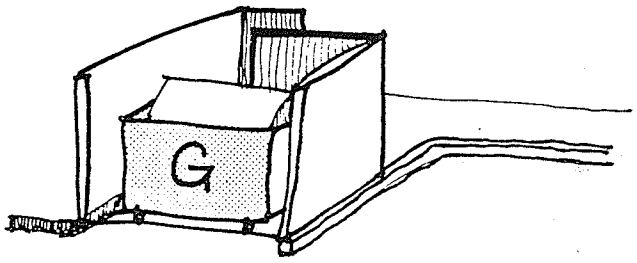
Car owners use the entrance to the unit closest to where the car is parked. For this reason, the location of the parking lot adjacent to the entry court enhances its use as the common entrance to the unit cluster. The cars parked at this entry court are visually associated with the housing units therein.

## 8. GARBAGE ENCLOSURES IN THE PARKING LOTS

THE GENERAL PATTERN IS:

Context.

Any garbage collection station in a Public Town Housing development.




Solution.

Bulk garbage collection stations shall be located within the parking lots. Each collection station shall have one three yard container for every fifteen town housing units. Each station shall have:

-a walled or fenced enclosure, five to six feet in height, that surrounds a three cubic yard garbage container,

-a hinged gate, nine feet wide, to allow direct access by a garbage truck to the container,

-a clearance 10 feet wide by 35 feet shall provide truck access by the gate. A reinforced concrete pad 10'x25'x6" thick shall be located immediately in front of this gate.

The enclosure around the container shall screen view of the container from the outside. It shall be large enough to contain and screen excess over-flow garbage. Pedestrian access to the container shall be provided without the use of gates.

Problem.

Centralized garbage collection stations utilizing large garbage containers have proven to be the most efficient means of disposing garbage. The container and the litter that accumulates around it are unsightly. These must be screened visually. A wall or fence enclosure that blends with the design of the yard fences eliminates this visual problem. Man-gates should be avoided because of the inconvenience of opening one while carrying a load of garbage.

The garbage trucks have pneumatic dumping hoists and require a large area of clearance to dump the container. Since on hot summer days the front wheels of the trucks sink into an asphalt driveway, a reinforced concrete pad is required to support the truck.

## 9. TRANSITION BETWEEN THE PARKING LOT AND THE TOT LOT, ENTRY COURT

THE GENERAL PATTERN IS:

Context.

Any tot lot, entry court located adjacent to a parking lot.

Solution.

The tot lot and entry court shall be separated by an abrupt elevational change of not less

than six inches and by 18" to 24" high walls or transparent fences from the parking lot. Three-foot high fences shall be located at the edge of the parking lots wherever headlights from parked cars will glare upon neighboring units.

Problem.

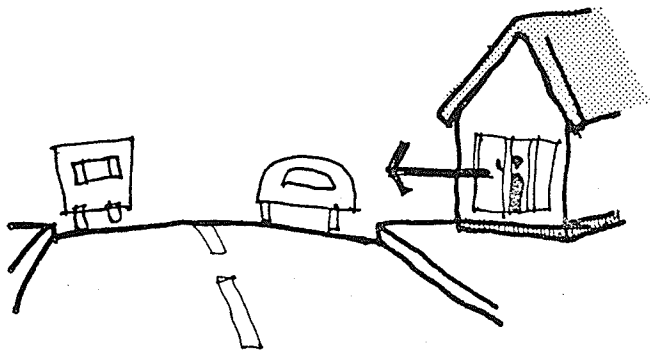
Younger children want to play and should not be stopped from playing where they can watch vehicular activity. This is an educational process for them. An abrupt elevational change and low walls or fences can be used to eliminate direct access to the driveway by the child running or riding a tricycle. These walls or fences can also aid in breaking down the scale of this car dominated area. These should not, however, restrict a view from the car of the children playing in the tot lot or about to enter the parking lot. Low walls or visually transparent fences provide the required degree of transition.

## 10. ORIENTATION TO THE STREET

THE GENERAL PATTERN IS:

Context.

Any Public Town Housing project that is flanked by residential streets.



Solution.

Orientate living room sides of units along the edge of a site bordered by a street, to the street.

Problem.

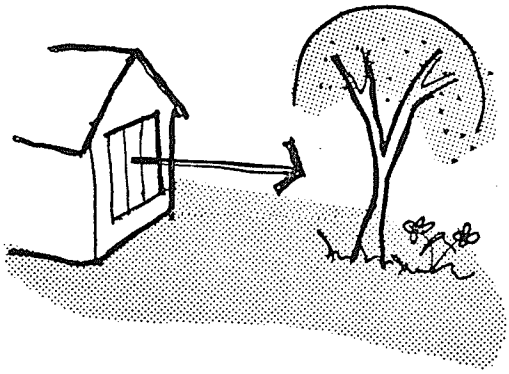
Winnipegers tend to prefer the traditional suburban street oriented housing. In Public Town Housing projects that offer both street and green space orientations for the living rooms, usually the street oriented ones are preferred. A close identity with a street and a street address seem to be the concerns of those moving into Public Town Housing.

## 11. ORIENTATION TO A GREEN SPACE

THE GENERAL PATTERN IS:

Context.

Any large Public Town Housing site.



Solution.

Living room sides of units that cannot be oriented towards an existing residential street shall focus on green space areas. Orientations towards active play areas shall be avoided. The greenspace shall be landscaped with sodding and plant material as indicated in the Landscape List, pattern II-18, p. 191.

Problem.

Although many people prefer a street orientation, only a limited number of the units within a larger project can have this orientation. Those on the interior of the site require a controlled view from the living room. The privacy requirements of guest entertainment or of casual family relaxation in the living room, suggest that this side of

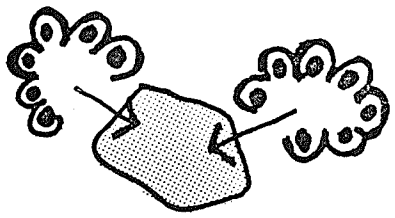
the unit be oriented towards a quiet area of the site. Views of active play areas, tot lot, entry courts, and parking lots are less acceptable.

## 12. ACTIVE PLAYGROUNDS

THE GENERAL PATTERN IS:

Context.

The play area for children between the ages of 4 to 8 years.



Solution.

An active play area(s) for children of four to eight years of age shall be visually connected to the tot lots but not physically a part of them. They shall be located at the edges of unit groups and not adjacent to the front yard areas.

Problem.

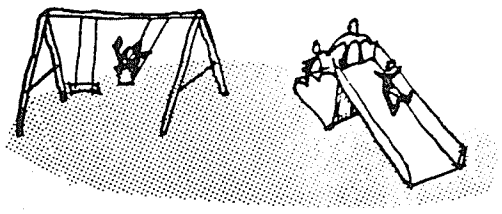
Active play facilities are required for children between four and eight years of age. The passive nature of the tot lot areas make them unsuitable and the two cannot be combined because the activities of the older children tend to invade the entire area, thereby displacing the younger children. Visual connection to the tot lot is important as an educational process for the younger ones. This also allows the mothers to supervise these activities from a distance.

## 13. ACTIVE PLAYGROUND FACILITIES

THE GENERAL PATTERN IS:

Context.

Any active play area within a Public Town Housing development.



Solution.

A variety of active and indestructible play apparatus shall be provided within the active play area(s). The facilities provided shall include:

-apparatus for climbing, swinging, sliding, and jumping,

-open areas for running and games of pursuit, and

-a variety of surface materials including grass, sand, and paving.

Problem.

The play facilities for the older children must allow them to develop physical coordination and related skills. Apparatus involving climbing, swinging, sliding, jumping, crawling, running, and bicycling for both individuals and small groups are required. A minor element of danger must be present in some of these activities since the children need to seek, confront, and overcome challenges. The workings of the apparatus, however, must not be dangerous to the users. They must be of sturdy and relatively indestructible construction, and the workings should not generate noises.

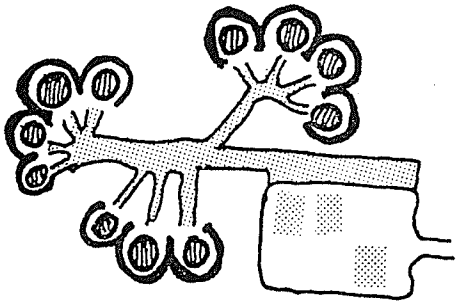
Certain group activities require a larger, open area.

## 14. SIDEWALKS ALONG PREDICTED PEDESTRIAN ROUTES

THE GENERAL PATTERN IS:

Context.

Areas of a Public Town Housing sites which will be used as pedestrian traffic routes.



Solution.

Adequate hard-surfaced sidewalks, five feet wide for collector sidewalks and three feet width for private sidewalks to the units, shall be provided as follows:

-Along the most direct routes connecting parking to cluster courts, cluster courts to units, and cluster courts to each other. Sharp, ninety degree, turns shall be avoided. Pedestrian traffic tends to cut short sharp turns and to follow the most direct route between any two points.

-Sidewalks elevated at least six inches and doubling as curbs, shall be located at the edges of all driveways where pedestrian traffic is expected to flank it.

-Wherever pedestrian traffic is expected to flank vehicular driveways, sidewalks elevated by six inches and doubling as curbs shall be provided.

-Tot lot, entry courts, being primarily hard-surfaced, can serve also

as the public sidewalk system within this area. In addition to this, individual three-foot wide sidewalks shall be provided to the rear doors of the units.

-Wherever excessive pedestrian traffic, including children's play activities, is expected in zones connecting various outdoor areas, the widths of the walks shall be increased.

Problem.

Sidewalk systems serve two primary functions: as a smooth, durable surface for walking, and as a means of controlling and directing pedestrian traffic. In Public Town Housing developments, controlling the pedestrian is of prime importance. This is necessary to ensure that the traffic does not conflict with vehicular traffic, private yards, and the landscape materials. This control is easily established when the links between the various spaces are maintained, obvious and direct, and paved in a manner suitable to the amount of traffic.

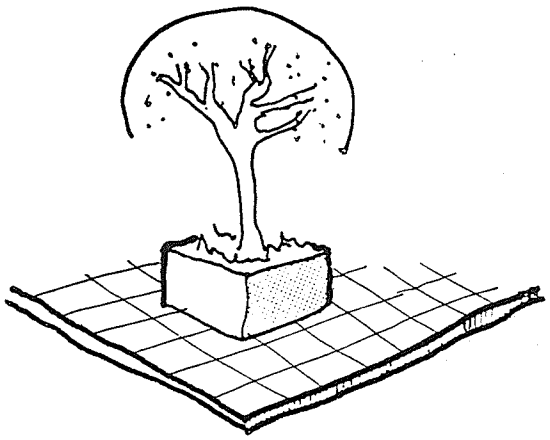
People will cut across corners rather than follow a ninety degree turn. To stop people from cutting across lawns, and through yards, the design of pedestrian circulation system must account for the location of these elements.

## 15. BUFFERS AT THE EDGE OF THE SIDEWALK SYSTEM

THE GENERAL PATTERN IS:

Context.

Any sidewalk system within a Public Town Housing development.



Solution.

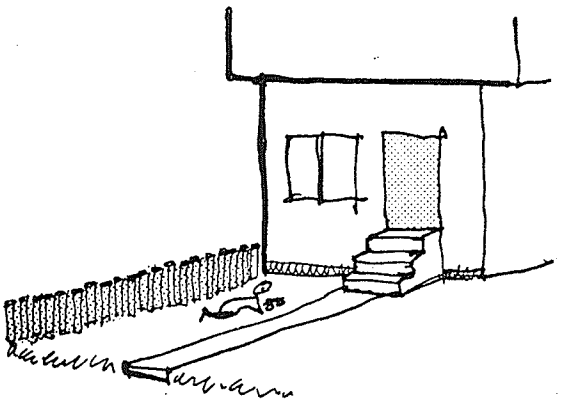
Buffers in the form of permanent low walls, fences, or retaining walls supporting vertical grade changes shall be utilized to deter traffic from flowing onto landscaping materials, individual yards, or green spaces. Flower beds and shrubbery are inadequate as buffers by themselves.

Problem.

Landscaping material softens the harshness of an extensively paved area. These, however, must be adequately protected from pedestrian traffic and the wandering of tricycles. A visit to any Public Town Housing project in Winnipeg will reveal several dead trees and shrubs, and flower beds that have been trampled underfoot. Control is important wherever traffic is highly congested and where abrupt corners in the sidewalk system cannot be avoided. Fences, walls, or retaining walls act most effectively as a deterrent to wandering traffic. These elements must, however, be approximately 18 inches high as stepping over lower ones is too easy. Used in creative ways, these can also serve as buffers between young children's play areas and driveways and parking lots.

When pedestrian traffic is to be totally discouraged from entering a given area, walls or fences in excess of four feet high must be used. Fence climbing can never be totally discouraged, however, higher fences will deter the majority of the unwanted traffic.

## 16. DEFINED REAR YARD TERRITORIES



THE GENERAL PATTERN IS:

Context.

The outdoor, rear yard areas of Public Town Housing units.

Solution.

The territory of the outdoor area at the rear entrance to the unit shall be defined by such physical elements as:

-low fences extending out from the party walls to a minimum length of between 11'-6" to 17'-6", or

-a change in grade raising the rear yard not more than 18" above the adjacent cluster court. This raised area shall be 11'-6" to 17'-6" deep and as wide as the unit. Steps for the pedestrian shall define the transition from the entry court to the rear yard, and,

-by staggering adjacent units two feet or more, or

-flower beds and/or shrubbery in connection with fences along the boundary lines.

Problem.

An adequate transition from the public entry court to the privacy of the housing unit is important. To control access to the unit by intruders, the area immediately in front of the rear entrance should be readily recognizable as an extension of the unit itself. One should feel, as he approaches the unit entrance, that he is intruding upon "private property". This type of transitional, sense of entry can also aid in increasing the identity, individuality, and security of the unit. Territoriality is further reinforced when the users locate lawn furniture and toys within this area. It is then turned into an outdoor room.

Physical elements such as fences and grade level changes inhibit pedestrian and tricycle traffic from cutting across the rear yard areas. Flower beds and shrubbery, by themselves, are insufficient in defining a territory. When young, they are too susceptible to damage and too easy to step over. Fences used in conjunction with these plants provide an adequate definition. The users tend to protect planting when it is located within the defined boundary of their yard.

These fences should be kept low. The view from the unit or the rear yard of the child at play in the tot lot should not be obstructed. Low fences also create a greater sense of spaciousness within the entry courts.

The anonymity associated with a long uninterrupted row of town houses is avoided when adjacent units are staggered. The identification of individual units is also increased. Unit staggering, in conjunction with fences or elevational changes, aids in defining the outdoor yard

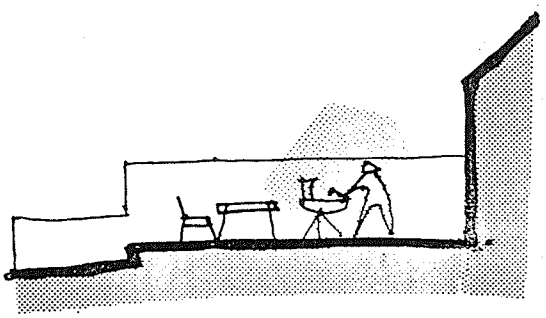
but is insufficient by itself in this regard.

## 17. DEFINED FRONT YARD, OUTDOOR LIVING AREA

THE GENERAL PATTERN IS:

Context.

The front yard, outdoor living area located adjacent to the living room of each town housing unit.



Solution.

The front yard shall be of a minimum depth of 25' and contain the following elements:

-a privacy fence, six feet high, that separates adjacent front yards,

-a three-foot high fence enclosing the end of the yard. This shall act as a control for the view from the living room and the yard to the street or green space beyond.

-a paved patio, minimum size being 10' by 15', for barbecues. This shall be surrounded by a lawn area,

-landscape material according to the Landscape Materials List, pattern II-18, p. 191.

-an area for planting a flower bed by the individual user.

Problem.

The front yard is to serve as an outdoor living area for the users. Privacy in this yard is a primary concern. By juxtaposing high privacy fences and lower fences, a proper relationship of this area to neighboring units and active public spaces on the site is possible. By controlling the view and thereby limiting the number of units visible from the living room and the outdoor living area, the apparent density of the project can be lessened.

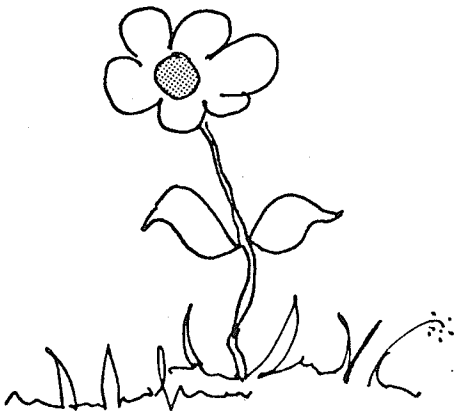
The front yard must be visually recognizable as a private outdoor living extension of the unit to eliminate intrusion. The fences serve to define this territory. Since outdoor living is often associated with eating out-of-doors, a hard-surfaced area for tables, chairs, and barbecue equipment is essential. The size of this area naturally should increase with the size of the unit. Landscaping material in the form of trees will serve as shade from the sun and wind.

## 18. LANDSCAPE MATERIALS LIST

THE GENERAL PATTERN IS:

Context.

Landscape materials for any Public Town Housing development.



Solution.

Planting material in accordance with the following minimum guide list shall be provided. The asterisk (*) denotes planting material which is to be

located within defined unit yards. The material without an asterisk may be located in the public areas, green spaces and entry courts, of the site. This list is adapted from the Landscape List found within the MHRC Design Specifications, and includes:

"1 evergreen tree 6' - 8' high per unit,
1 large growing tree 10' - 12' high with 2" caliper for every two units,
1 major deciduous tree 15' - 20' high with 4" caliper for every two units,
1* large growing tree 10' - 12' high with 2" caliper per unit,
1* small growing tree 6' - 8' high with a 3' - 4' spread per unit, and
15* shrubs 2' - 3' high per unit."[3]

In addition to this, areas for flower beds shall be provided in the individual yards. All areas of the site not covered by buildings, play areas, or hard-surfacing shall be sodded.

Problem.

Trees give shade from the sun and absorb sounds. They help to define public areas and to control vistas. Shrubbery, when utilized properly, defines territorial boundaries and controls pedestrian traffic and the drifting of snow. For some reason the congestion and noise of the city is made bearable if the opportunity exists to find seclusion in a landscaped environment.

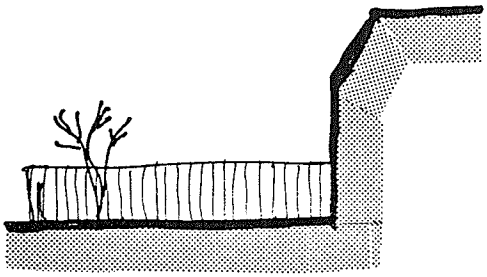
In order to provide to the low income users an opportunity for views of landscape plant material, the provision of transplanted vegetation is necessary. Transplanted material has a greater chance of survival from the abuse that is inherent in a high density development. Young and unestablished trees must be located in areas where abuse is less of a problem.

## 19. UNESTABLISHED TREES LOCATED WITHIN YARD TERRITORIES

THE GENERAL PATTERN IS:

Context.

The yards adjacent to the Public Town Housing units.



Solution.

Young trees that are susceptible to damage shall be planted in the individual unit yards rather than in an anonymous public area. Only larger, established trees shall be located within a public area.

Problem.

It is impractical to locate young trees in large, uncontrollable areas. Until they become established, the trees are very susceptible to damage through abuse by children. They tend to survive best when located within an area recognizable as an outdoor extension of a unit territory. Identity with it by the individual user family is more practical and thereby the user is more likely to protect "his" tree from damage. The larger, established trees are less affected by transplantation, and will withstand abuse. These can be located within the undefined larger, open space.

## 20. TENANT ASSOCIATION BUILDING FOR LARGER PROJECTS

THE GENERAL PATTERN IS:

Context.

Any Public Town Housing development containing over 74 units.


Solution.

A tenant association building with the following facilities is to be provided:

-a multi-purpose space of between 1200 and 1400 square feet. Windows in this area shall have low sills, the maximum height of which shall be 30".

-a lockable office area with a minimum of 75 square feet of area.

-a kitchen with a refrigerator, a range and an over, and a counter and cabinets ten feet long and a double sink.

-male and female washroom facilities.

-coat storage with a minimum hanging space of eight feet.

-storage, mechanical, and electrical rooms, preferably in a basement.

Problem.

Large Public Town Housing developments require a large area for their tenants' association meetings. Additional facilities allow it to

function as a day care center for the children and a party room for larger gatherings. The minimal requirements to create the proper degree of functional flexibility are such amenities as a kitchen, storage areas, an office, and public washrooms.

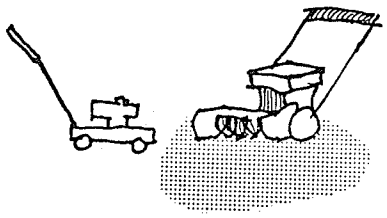
The use of low window sills in the multi-purpose area, improves its use as a preschool children's day care center. They allow the children to easily see outside.

## 21. EQUIPMENT STORAGE BUILDING

THE GENERAL PATTERN IS:

Context.

All Public Town Housing projects with 10 or more units.



Solution.

An enclosed, electrically serviced, and thermally insulated storage building of not less than;

-120 square feet for projects between 10 and 29 units, or

-240 square feet for projects of 30 or more units, shall be provided.

Problem.

The maintenance of the public areas, such facilities as lawn mowers, snow blowers, rakes, shovels, hoes, garden hoses, and lawn sprinklers are required. A building in which such equipment can be securely stored is necessary. Where possible, this should be combined

with the tenants' association building providing there is a separate and direct access to the outside. In any case, it is important to integrate the aesthetics of the equipment storage building with the rest of the project buildings.

# UNIT DESIGN PATTERNS

## 1. LIVEABLE FLOOR AREAS

THE GENERAL PATTERN IS:

Context.

Any Public Town Housing unit.

Solution.

The liveable floor areas of the town housing units shall fall within the following ranges:

| | |
|---|---|
| 2-bedroom unit ... | 800- 950 sq. ft. |
| 3-bedroom unit ... | 950-1100 sq. ft. |
| 4-bedroom unit ... | 1150-1250 sq. ft. |
| 5-bedroom unit ... | 1250-1350 sq. ft. |

The minimum dimension between inside party wall surfaces shall be 16'-0".

Problem.

In Public Town Housing a limited construction cost per square foot, and the most efficient possible use of the floor areas, are very important design parameters. The liveable floor area ranges stated above, which excludes exterior wall stairways, and basement areas, allow for efficiency in both use of space and construction costs. Floor areas below this range become tight and inflexible whereas areas above this range are less efficient from a cost point of view.

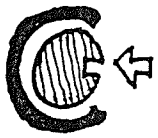
A limit has been set upon the width of the town housing unit mainly because elongated floor plans promote an inefficient usage of floor areas. The typical area required by the stairway that links the ground floor with both the basement and the second floor limits the arrangement of spaces on the two liveable floors when the party walls are less than sixteen feet apart.

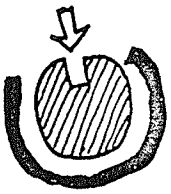
## 2. REAR ENTRY AS THE MOST-USED ENTRANCE

THE GENERAL PATTERN IS:

Context.

The most-used entrance to a Public Town Housing unit.





Solution.

The entrance to the unit that is intended to be used most frequently by the users shall be located:

-adjacent to the tot lot, entry court, and

-adjacent to the kitchen/dining area of the ground floor.

Problem.

The most-used entrance to the housing units should be focused around the entry courts if they are to function as localized neighborhoods. In this way, familiarity with the residents of the court as they come and go to their units is easily established. Similarly, intruders can be readily recognized. This focus also provides for a convenient

control, through casual visual surveillance, of rear yards, tot lots, and parking lots.

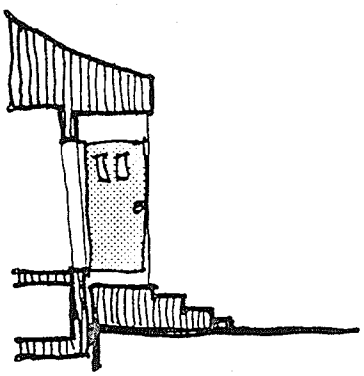
Since groceries are brought through this entrance, it should be located adjacent to the kitchen side of the unit. The tracking of snow and mud through a living room is to be discouraged.

## 3. PROTECTION FOR REAR ENTRANCE

THE GENERAL PATTERN IS:

Context.

The rear entrance to any Public Town Housing unit.



Solution.

The rear entrance shall have a 3'x4' concrete platform one step below the threshold. This platform shall be protected by the following methods:

-a canopy (3'-6"x5'-0" minimum) or

-a roof overhang at least 2'-0" and not more than 5'-0" above the door head and

-a recessed entry with the door set back at least 2'-0" from the wall face or

-wingwalls projecting at least 2'-0" from the wall surface on both sides of the doorway.

Problem.

Protection of the platform from ice build-up is important. The use of roof overhangs or canopies adequately resolves this problem.

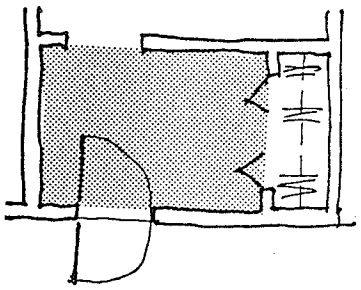
The rear combination doors of Public Town Housing units are often carelessly left open. The wind is funneled between rows of town housing units and damage to these doors results in costly maintenance. By recessing the entrance into the wall surface or by creating wingwalls at either side of the entrance, the doors are less affected by the wind. If left open, they have a solid surface to stop them from swinging.

## 4. A VESTIBULE AT THE REAR ENTRANCE

THE GENERAL PATTERN IS:

Context.

The rear entry to any Public Town Housing unit.



Solution.

A vestibule of a minimum size of 3' x 5' shall be located within the rear entrance. It shall have a tiled floor surface and a coat closet at its periphery with a minimum hanging space of three feet. The hanging space shall be increased by one foot for every additional bedroom over three bedrooms. The vestibule shall not open directly onto any other habitable area of the unit.

Problem.

A transition zone immediately within the entrance to the unit is extremely important in Winnipeg's climate. An area is required within which people can stand and take off winter coats and over-shoes without tracking snow and mud through other areas of the unit. This area must be large enough to accommodate a number of people and still allow for the closing of the entrance door.

The floor surfacing must be able to withstand moisture and mud build-up and be easily cleaned. In essence this vestibule should serve as a "mud room".

The vestibule should not open directly onto either the living room or the kitchen/dining area and should act as a buffer from the winter wind. Access from it to the rest of the unit is best obtained through a hallway that links these areas together. This will limit the intrusion of the cold wind and of mud and sand into the living areas.

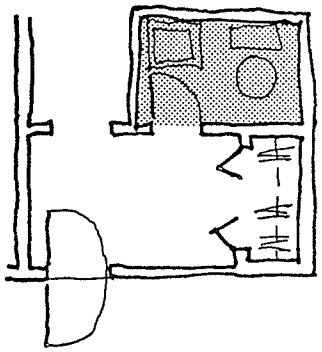
The variety and bulkiness of winter clothing dictate that a coat closet, enlarged in accordance with the unit size, be located at the periphery of this vestibule.

## 5. HALF-BATH LOCATION--DIRECTLY OFF VESTIBULE

THE GENERAL PATTERN IS:

Context.

A Public Town Housing unit that requires an additional half-bath.



Solution.

The half-bath when required shall be located adjacent to the entrance vestibule.

Problem.

Extraordinarily large families are frequently housed in the four and five bedroom Public Town Housing units. The intensified burden exerted on bathroom facilities at peak times of the day dictate the need for an additional half-bath for these larger units. (See pattern III-17, p. 214.)

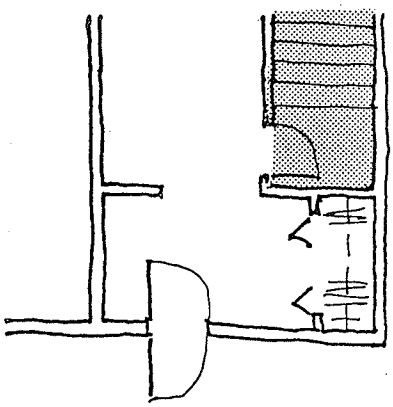
Young children playing outside often require immediate access to washroom facilities because of their forgetfulness. To avoid the necessity of them taking off sand filled or muddy shoes in the urgency of getting to a bathroom, the half-bath is most conveniently located adjacent to the vestibule. In this way, the vestibule can function as a true "mud room".

## 6. BASEMENT STAIRWAY OFF THE VESTIBULE

THE GENERAL PATTERN IS:

Context.

The basement stairway in any Public Town Housing unit.



Solution.

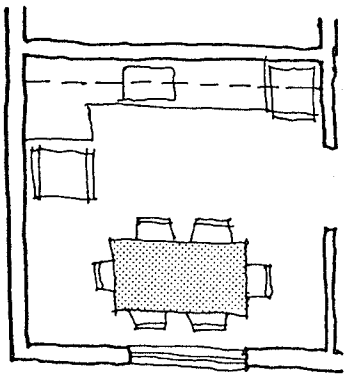
The door to the basement stairway shall open onto the vestibule or be very close to it.

Problem.

The basements of the Public Town Housing units are used for a number of functions. A major one of these is overnight storage of bicycles, tricycles, large outdoor toys, and lawn furniture. Easy access to the basement stairway from the rear entrance is essential since many of these are bulky items. In this way, the tracking of dirt through other areas of the house is avoided.

## 7. A KITCHEN/DINING ARRANGEMENT

THE GENERAL PATTERN IS:



Context.

The dining area of any Public Town Housing unit.

Solution.

The dining area, sufficient in size to allow the entire family

to be seated together for a meal, shall be provided adjacent to, and part of, the kitchen area. The minimum dimension between the walls of the dining area shall be 7'-6".

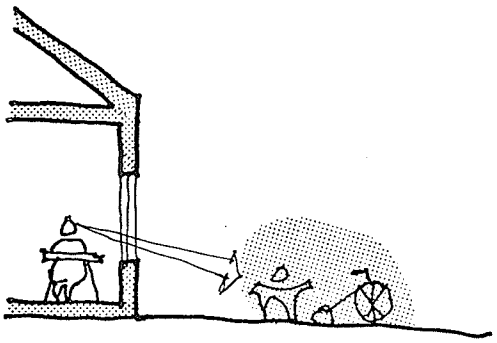
Problem.

The User Feedback indicates that the Public Town Housing units that have kitchen/dining areas are more functional than the living/dining arrangements. The reasons are related directly to the close association between food preparation and eating. The families also need to have physically separate spaces within the home wherein conflicting family functions may occur simultaneously without disturbing one another.

Those interviewed voiced a general dissatisfaction with the galley-kitchen arrangement. Apparently these kitchens are too small to be conducive to the preparation of large meals, especially by more than one person at a time.

## 8. KITCHEN/DINING OVERLOOKING THE ENTRY COURT

THE GENERAL PATTERN IS:



Context.

The kitchen/dining area of a Public Town Housing unit.

Solution.

Provide a direct visual connection between the kitchen/dining area and the entry court by either;

-a window next to the dining table location. The maximum height of the sill shall be 34", or

-a window over the kitchen sink.

Problem.

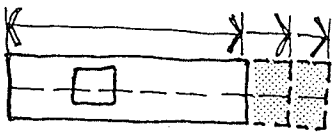
Visual surveillance from the housing unit over the entry court is important. It promotes a familiarity with the neighbors, allows supervision of young children in the tot lot and the car in the parking lot. The kitchen/dining area is a convenient location for this visual connection. Mothers often gossip over a cup of coffee while preparing meals and/or watching the children at play outside. The window, when located next to the dining table should, therefore, have a low sill for easy surveillance. Many housewives, on the other hand, prefer a window over the sink to provide a view to the outside. Both are acceptable. Higher sills, those over the kitchen sinks, should be used when shallow rear yards and poor views cannot be avoided. A variety of both types should be provided in each Public Town Housing project.

## 9. KITCHEN COUNTERS AND CUPBOARDS SIZED IN ACCORDANCE WITH UNIT SIZES

THE GENERAL PATTERN IS:

Context.

The kitchen area of any Public Town Housing unit.



Solution.

The length of the kitchen counter, the storage cabinets below, and the cupboards above shall be increased corresponding to the unit sizes. The minimum length of the counter, including the sink,

shall be:

2-bedroom unit ... 10'-0"
3-bedroom unit ... 12'-0"
4-bedroom unit ... 14'-0"
5-bedroom unit ... 16'-0"

The length of the counter shall be measured along a line at the mid-depth of the counter. Galley-kitchens shall be avoided.

Problem.

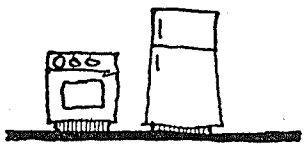
Since many low income families tend to be large, the size of the counters and storage cupboards in the kitchen must reflect the anticipated needs of the users. The User Feedback Survey indicates that galley-kitchen arrangements are inflexible and generally disliked by the residents.

## 10. LARGER KITCHEN APPLIANCES FOR LARGER UNITS

THE GENERAL PATTERN IS:

Context.

The kitchen appliances provided in a Public Town Housing unit.



Solution.

Two-bedroom town housing units shall be provided with a 24" stove and a 10 cubic foot refrigerator. Units with three bedrooms or more shall be provided with 30" stoves and 13 cubic foot refrigerators.

Problem.

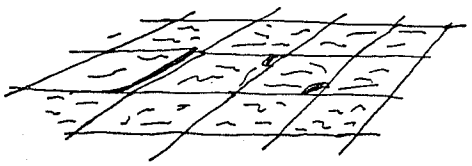
The larger families that are often housed in the three, four, and five bedroom Public Town Houses require additional area for cooking meals and for cold storage.

## 11. SMOOTH-SURFACED FLOOR TILES

THE GENERAL PATTERN IS:

Context.

The tiled floor surface of the Public Town Housing unit.



Solution.

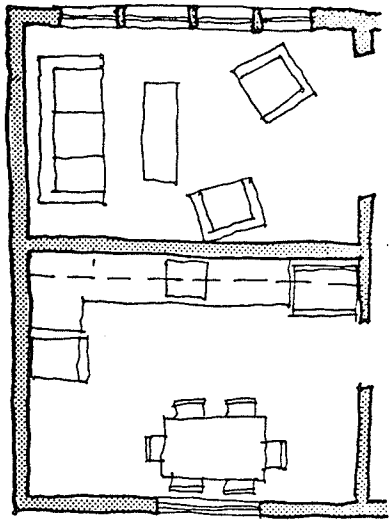
Textured floor tiles shall be avoided in all cases.

Problem.

Difficulties encountered in cleaning and maintaining the textured floor tiles were concerns of the Public Town Housing users. The cost of replacing damaged floor tiles is borne by the MHRC. Turn-over rates in Public Town Housing is high and the floor surfaces are, therefore, subjected to additional abuse from the moving of heavy furniture. Damage to textured floor tiles is more common than to smooth-surfaced tiles.

## 12. A PHYSICAL SEPARATION BETWEEN THE KITCHEN/DINING AND LIVING ROOMS

THE GENERAL PATTERN IS:



Context.

Any Public Town Housing unit.

Solution.

Create a physical separation between the kitchen/dining and living room areas.

Problem.

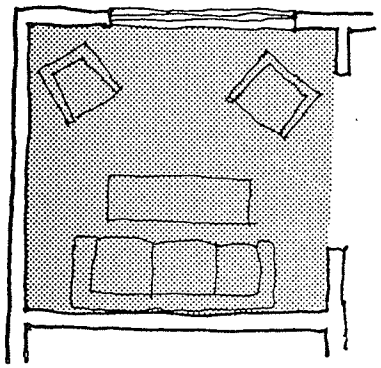
The variety of family functions that can occur simultaneously within a housing unit often require a distinct physical and acoustic separation between them. Such conflicting activities as indoor children's play and adult guest entertainment, and studying and T.V. watching require both kinds of separation. Containment of cooking odors and humidity within the kitchen is preferred to allowing these pollutants to enter the rest of the dwelling unit. This is a particular concern when guest entertainment in the living room is occuring simultaneously.

## 13. INCREASED LIVING ROOM SIZE FOR LARGER UNITS

THE GENERAL PATTERN IS:

Context.

The living room area of any Public Town Housing unit.



Solution.

Living rooms with the following minimum liveable floor areas shall be provided:

2-bedroom unit ... 145 sq. ft.
3-bedroom unit ... 165 sq. ft.
4-bedroom unit ... 185 sq. ft.
5-bedroom unit ... 205 sq. ft.

These areas are to exclude the front door entrance areas.

Problem.

The area required for family relaxation increases in proportion to the size of the family. The living room and the kitchen/dining area are the two spaces wherein group family activities can occur. Each must be able to accommodate a variety of functions.

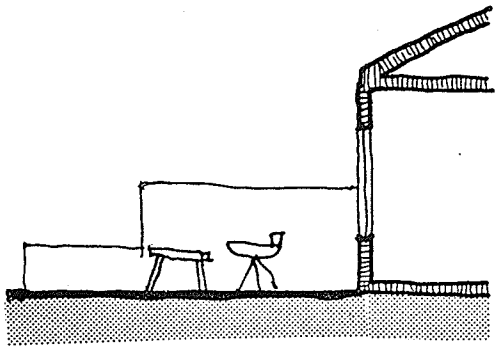
The front door entrance area, when separated from the living room by a divider, cannot be furnished with living room furniture. It is unadvisable, therefore, to include it in the calculations of the living room floor area.

## 14. ACCESS FROM THE LIVING ROOM TO THE FRONT YARD

THE GENERAL PATTERN IS:

Context.

The living room of any Public Town Housing unit.



Solution.

Connection of the living room to the outdoor front yard shall be established in two ways.

-a combination entrance, storm door that opens directly onto the patio area of the front yard and

-a large picture window, subdivided into smaller sections, overlooking the front yard.

The door shall not open directly into the living room, but be separated by a divider that stops wind from blowing directly into the room. This partition may be combined preferably with bookshelving or a coat closet. Sliding glass patio doors shall be avoided in all cases.

Problem.

A direct access between the living room of the unit and the front yard is necessary if the yard is to function as an outdoor living area. Visual connection between the two is also important. The limited size of the Public Town Housing unit does not allow a front entrance hallway. This shall be a secondary entrance to the unit used only as a connection to the front yard.

The MHRC has used sliding glass patio doors that double as a window and an access door in a number of Public Town Housing projects. Although user reactions to these doors has been favorable, the maintenance is excessive. The frequent breakage of glass or damage to the tracks cause high maintenance costs that must be borne by the MHRC. The improper fitting of the less expensive doors results in damage from frost and condensation.

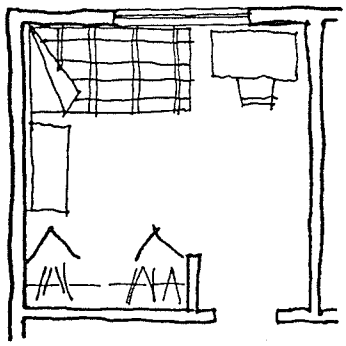
The use of double-glazed picture windows with a single, large expanse of glass has also proven to be impracticable. Since the tenants cannot afford to pay for the repairs, the costs for breakages must be borne by the MHRC. The replacement of a small section of a larger window area is more realistic than the replacement of an entire picture window.

## 15. BEDROOMS TO ACCOMMODATE INCREASED OCCUPANCY

THE GENERAL PATTERN IS:

Context.

The bedrooms of any Public Town Housing unit.



Solution.

Bedrooms shall have the following minimum areas; the master bedroom, 105 sq. ft.; double bedrooms, 95 sq. ft.; and single bedrooms, 75 sq. ft. The geometry of these rooms shall allow adequate space for the following minimum number and widths of beds:

| | 2-bedroom | 3-bedroom | 4-bedroom | 5-bedroom |
|---|---|---|---|---|
| master bedroom | two 3'-6" | two 3'-6" | two 3'-6" | two 3'-6" |
| second bedroom | two 3'-0" | two 3'-0" | two 3'-0" | two 3'-0" |
| third bedroom | | one 3'-0" | two 3'-0" | two 3'-0" |
| fourth bedroom | | | one 3'-0" | two 3'-0" |
| fifth bedroom | | | | one 3'-0" |

In addition to this, space for the following incidental furniture shall be provided:

| | | |
|---|---|---|
| Master bedrooms ... | two dresser cabinets | (1'-4"x4'-0") |
| | one desk c/w chair | (1'-4"x3'-0") |
| Double bedrooms ... | one dresser cabinet | (1'-4"x4'-0") |
| | two desks c/w chair | (1'-4"x3'-0") |
| Single bedrooms ... | one dresser cabinet | (1'-4"x3'-0") |
| | one desk c/w chair | (1'-4"x3'-0") |

The minimum clearance between beds, between beds and furniture, and in front of the closet shall be 2'-6". A minimum hanging space within the closet of a single bedroom shall be 3'-0" and 5'-0" for any double bedroom.

Problem.

The sharing of bedrooms, in the larger units, by two or more persons is to be expected in Public Town Housing. Interviews with Public Town Housing users indicate that the master bedroom does not always accommodate the household head couple. Often a number of children share it.

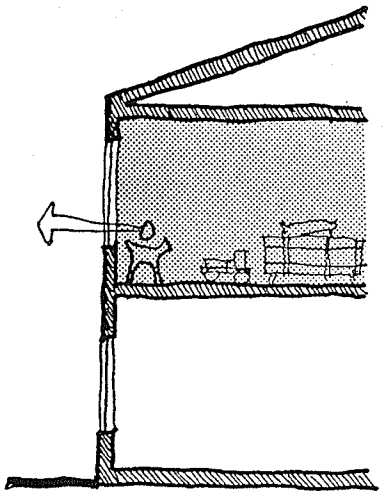
Bedrooms also serve as a study area and for indoor play. The spatial requirements for these activities dictate that the double bedrooms not be of a minimum size.

## 16. LOW WINDOW SILLS IN BEDROOMS

THE GENERAL PATTERN IS:

Context.

The windows in bedrooms of any Public Town Housing unit.



Solution.

Tall narrow windows with sills 24" to 30" above the floor shall be utilized.

Problem.

The use of bedrooms for indoor children's play is important. Users have complained that children who are unable to see outside while playing within the bedroom, do not play for a long time therein. Indoor play appears to be enhanced by views to the outside. The bedroom window sills should be low enough that a young child can see outside without climbing on furniture.

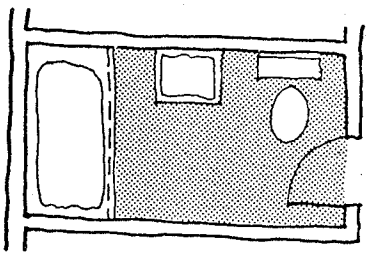
Visual privacy from the outside is not a serious problem since bedroom windows are curtained for an added degree of privacy. By locating lower windows nearer to the corner of the room rather than in the center, potential views into the bedroom are restricted. Windows of this type also provide improved ventilation and air circulation.

## 17. FOUR-PIECE BATHROOMS (AND) TWO-PIECE HALF-BATHS

THE GENERAL PATTERN IS:

Context.

The bathroom(s) for any Public Town Housing unit.



Solution.

A 4-piece bathroom which contains a lavatory, a toilet, a bathtub, and a shower head over the bathtub shall be provided for each housing unit. In addition, a 2-piece half-bath containing a toilet and a lavatory shall be provided for every unit with four or more bedrooms, see pattern III-5, p. 202.

Problem.

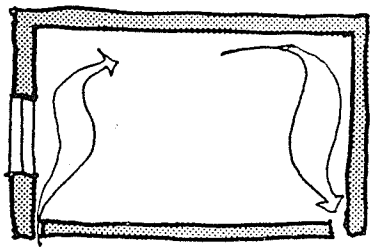
To provide a realistic degree of choice, both showering and bathing facilities are required. The large families that are frequently housed in the four and five bedroom units place an added stress upon bathroom facilities at peak times during the day. For this reason, additional facilities in the form of a half-bath are required for these units.

## 18. FORCED-AIR HEATING WITH INDIVIDUAL COLD-AIR RETURNS

THE GENERAL PATTERN IS:

Context.

The heating system of any Public Town Housing unit.



Solution.

A separate, forced-air heating system shall be provided for each housing unit. This system, regardless of its energy supply, shall have supply ducts to the exterior walls of each room as well as separate cold-air returns in each habitable room. Radiation heating systems shall be avoided.

Problem.

Condensation problems along exterior walls at windows and doors increase with the number of persons housed in a dwelling. This is due to the humidity given off by the human body and the additional load upon washroom facilities. The Low Income must also rely on frying and boiling less expensive foodstuffs, which also increases the amount of moisture in the air. The resulting condensation and frost build-up problems are most noticeable in the winter.

To minimize the build-up of moisture, the air within the individual rooms must constantly circulate. Forced-air heating systems with individual cold-air returns in each room provides adequate circulation of the air. Radiation heating units do not circulate air efficiently,

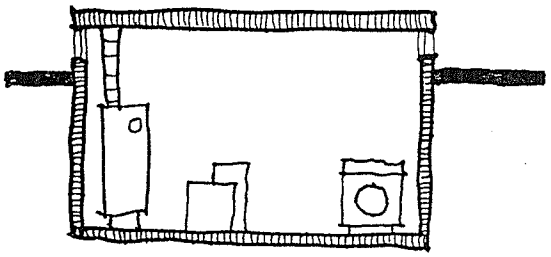
particularly when furniture is located along exterior walls or when curtains or drapery cover windows. The centralized cold-air return does not allow adequate air circulation on the second floor, bedroom area. Such areas as bathrooms and kitchens should also have individual returns as well as exhaust fans to the outside to dissipate the humidity and odor build-up.

## 19. BASEMENT FACILITIES

THE GENERAL PATTERN IS:

Context.

The basement area of any Public Town Housing unit.



Solution.

A full-sized, unfinished basement shall be provided for each Public Town Housing unit. It shall be naturally lit by a minimum of two windows with 3 square feet of glass area each. It shall be provided with plumbing hook-ups and a clothes dryer vented to the outside, for its use as a laundry area. Electrical wiring and lighting shall be provided so it can be used as a storage, hobby, and play area. The furnace and the water heater shall be located in the basement.

Problem.

In Canada, basements are traditionally provided for the vast majority of single family and semi-detached housing units, and have become a multi-purpose area of the house. They are used primarily as mechanical,

laundry, storage, workshop, and family rooms.

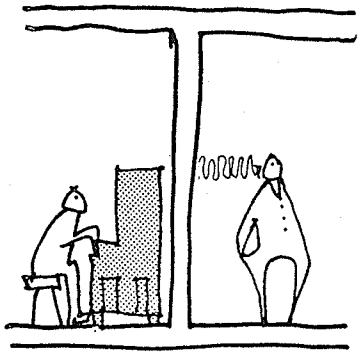
The User Feedback shows that the low income families usually own their own washing machine, while very few own clothes dryers. To eliminate exterior clothes lines in a densely populated development where theft of clothes left hanging outside is a problem, dryers are required for each town housing unit.

## 20. SOUND PROOF PARTY WALLS

THE GENERAL PATTERN IS:

Context.

The party wall separating any two adjacent Public Town Housing unit.



Solution.

The party wall between any two adjacent units, and the floor that separates living areas of two different housing units, shall have a documented STC rating of 50 decibels. Masonry construction is preferred for the party walls. Wood framing construction is acceptable if the party wall is constructed of two separate walls of 2 x 4 construction at 16" OC with 7/16" fibreboard and a ½" air space, properly fire stopped, between the walls. Each wall is to be acoustically insulated with R-7 insulation. The perimeters of each party wall shall be caulked with an acoustic sealant.

Wherever possible, such noise generating facilities as stairwells and bathrooms shall be located back-to-back along the party wall. The

integrity of the party wall and its sound control properties shall be continuous and not be penetrated.

Problem.

The control of sound transmission between adjacent units is necessary in order to maintain acoustical privacy between them. Heavy masonry wall constructions provide the most efficient sound separation. Wood frame construction, when properly detailed, can also provide adequate separation. The most difficult to control are impact noises, therefore stairways should not be located opposite a living or sleeping function in the neighboring unit. For similar reasons, bathrooms which are noise generators and have highly reflective wall surfaces, should not be located adjacent to neighboring living or sleeping areas. Mechanical systems, plumbing and ducting readily transmit sound generated within them or the dwelling itself. These should be acoustically isolated within each housing unit and not be allowed to penetrate the party wall.

FOOTNOTES

1. Constance Perin, With Man in Mind. (Cambridge, Mass.: The MIT Press, 1970), p. 93.

2. Christopher Alexander, et al., Houses Generated by Patterns. (Berkeley: Center for Environmental Structure, 1969), p. 70.

3. "Call for Development Proposals", The Manitoba Housing and Renewal Corporation, Winnipeg, 1971.

# CONCLUSIONS AND FUTURE DIRECTIONS

Many forms of architecture are becoming increasingly divorced from the people for whom they are created. The part of the built environment which is most directly and personally related to the individual is the home. In the home, the individual grows and matures. As a result, both the physical and the behavioral home environment have a significant affect upon the formulation of one's personality. Most experiences encountered throughout one's life are related back to this "home base", the values and ways-of-life learned when young. This thesis serves as an initial attempt towards understanding how a particular form of architecture, Public Town Housing, can be made more responsive to the needs of the anonymous user.

The Pattern Language system can serve as a beginning in this direction. It enables the Architect to search for user needs and the relation of these to the organization of the built environment. The success of any Pattern Language is dependent, however, upon an accurate understanding and representation of the user needs. The information available to this thesis was somewhat limited in this regard and resultingly the patterns themselves are somewhat lacking.

The Pattern Language should not be created solely by architects. The limitations of many Architects' visually oriented interests, skills, and biases make them not the most objective to become involved in this type of behavioral research. His role is best realized at the stage where the data from behavioral investigations are synthesized into

the ordering of the physical environment. The truly sensitive designer, however, must have a basic knowledge of, and interest in, the sociological and behavioral sciences if he is to be involved in translating the recognized needs of others into architectural form. The exercise undergone in the creation of this thesis is valuable in this regard.

Changes to the Delivery System

If an organization like The Manitoba Housing and Renewal Corporation is to seriously continue to create housing for the Low Income, some type of organized search for user needs in, and reactions to, the built environment can only aid in improving its program. Three limitaions in the Public Town Housing delivery system, in Winnipeg, indicate that this is necessary.

-The delivery system presently employed by The Manitoba Housing and Renewal Corporation is inefficient whenever an architectural firm, previously not involved in Public Town Housing design, is retained. It is necessary to revert back to "square one" to educate them. The design and construction specifications define only minimum performance standards and do not fully recognize or take advantage of the experience with past projects. It is difficult to consistently and equitably evaluate development proposals when such information is not readily available.

-Architects and developers have voiced frustrations experienced in the design of Public Town Housing projects. Little concrete direction in the form of prescribed programming has been given to them by the MHRC. A lack of direction has often resulted in time wasted

in dead-end design investigations. Such investigations could have been eliminated or minimized had, a program relating the design to user needs, and with past experiences, been available to them.

-The MHRC experiences a high rate of turn-over of staff at all levels of responsibility. Maintaining a continuity of control over project development is a serious problem. Since no design analysis and documentation is being conducted, the staff has quickly lost its recognition of the evolution of past design developments and refinements to the design specifications. Many of the floor area requirements are being decreased in alarming amounts to offset increased prices. The problems with tenant abuse of the housing unit experienced in the past have been forgotten. Decreasing the standards of Public Housing, to the degree that they are presently becoming, can only frustrate the user and his respect for the housing unit.

The MHRC is presently becoming involved in housing assistance programs recently created by the Federal Government. These include the Assisted Home Ownership Program, the Neighborhood Improvement Program, and the 20% dedication to Public Housing of all forms of residential development requiring Federal subsidies. In all of these cases, the input by the user and by the local community is becoming stronger and more vocal. There is a need for a vehicle that allows these interests to be more realistically involved in the delivery of housing. A Pattern Language approach allows this at various levels of program implementation, project design, and environmental analysis.

Revisions To the Building Codes and Design Standards

The analysis conducted in this thesis indicates that revisions and clarifications to the building codes and design standards are in order. The unique characteristics of the low income family, the need for safe children's play, and the need for territorial control over the environment have very significant implications on the design of rental Public Town Housing. Many aspects not covered in the National Building Code or in the Central Mortgage and Housing Corporation's standards were identified in this thesis:

-Rental Public Town Housing units should be clustered around tot lot, entry courts which are adjacent to very small parking lots.

-Territorial control over the public areas of the site can be established by creating neighborhood clusters of limited numbers of units, visual control from the units over the public realms, distinct transitions between public, semi-public, semi-private, and private areas of the site, and by creating clearly defined outdoor extensions to the town housing unit.

-The functions of, and relationships between, such spaces as: the kitchen, the dining area, and the living room; entrances and entrance vestibules; and single and shared bedrooms dictate that minimum provisions are inadequate for rental Public Town Housing. Spaces that realistically allow for an increased sharing by both people and housing functions are necessary.

Most sociologists agree that the physical environment plays a significantly smaller role than does the behavioral environment in the

formation of one's personality. It is generally agreed, however, that in a very deprived physical home environment, such as the low income ghetto, that behavioral problems per capita are higher than in a typical suburban area. This is because privacy, security, and the control over one's physical environment is unknown.

Perhaps some of the problems of the Low Income can be resolved by creating a housing environment more reflective of their needs--a housing environment wherein the individual can begin to feel that he is not a victim of society--where he is allowed similar opportunities for security, privacy, and control as the rest of society. Perhaps then, some of the incentive programs created by the various levels of government, which largely fail in their attempts, might have a better chance for success.

# APPENDIX

The data from the User Feedback Survey is presented, herein, in four parts: family, residential, managerial relations, and architectural data. In the first three parts the average response data is given for the three town housing types: Public, Limited Dividend, and private. It is presented in bar-graph form for ease of comparison. This allows discovery of the differences between the three tenant groups. The uniqueness of the Public Town Housing tenancy situation in comparison with the rest of society may also be determined.

Each graph represents the variety of responses to a single question posed to those interviewed. The ordinate discloses the percentage of responses ranging from 0 to 100%. Along the axis are located the three town housing types.

In Part IV the Public Town Housing users' responses are given to the architectural section of the survey. The data from each of the developments, grouped by project-type, is presented as is the overall Public Town Housing average. These illustrate the variety of feedback attributable to the design of each development. The ordinate indicates the percentage of responses, from 0 to 100%. The code representing the projects and project-types along the axis denotes the following:

LR (loop road project-type)

LR I - Keenleyside

LR II - Marlene and Beliveau

LR III - Donwood Drive

SO (street oriented project-type)

SO I - David and Fairlane

SO II - Lumsden-Lakeridge Road

PLC (parking lot cluster project-type)

PLC I - Maples Two

PLC II - Raleigh

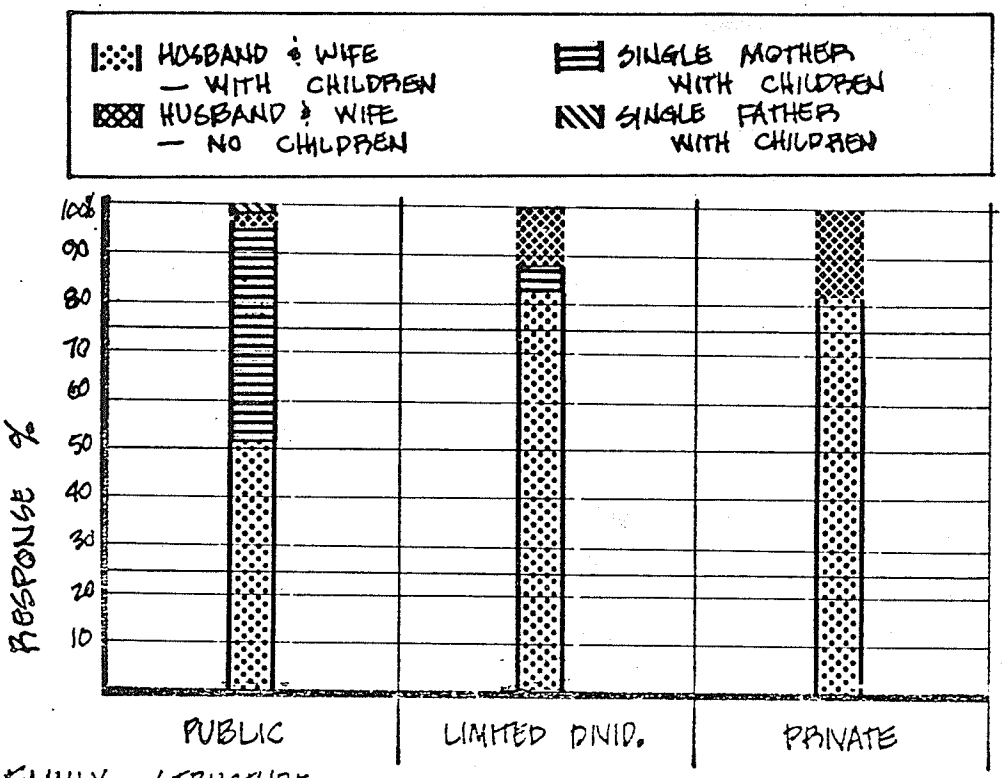
PLC III - Gordon Avenue

PGC (playground cluster project-type)

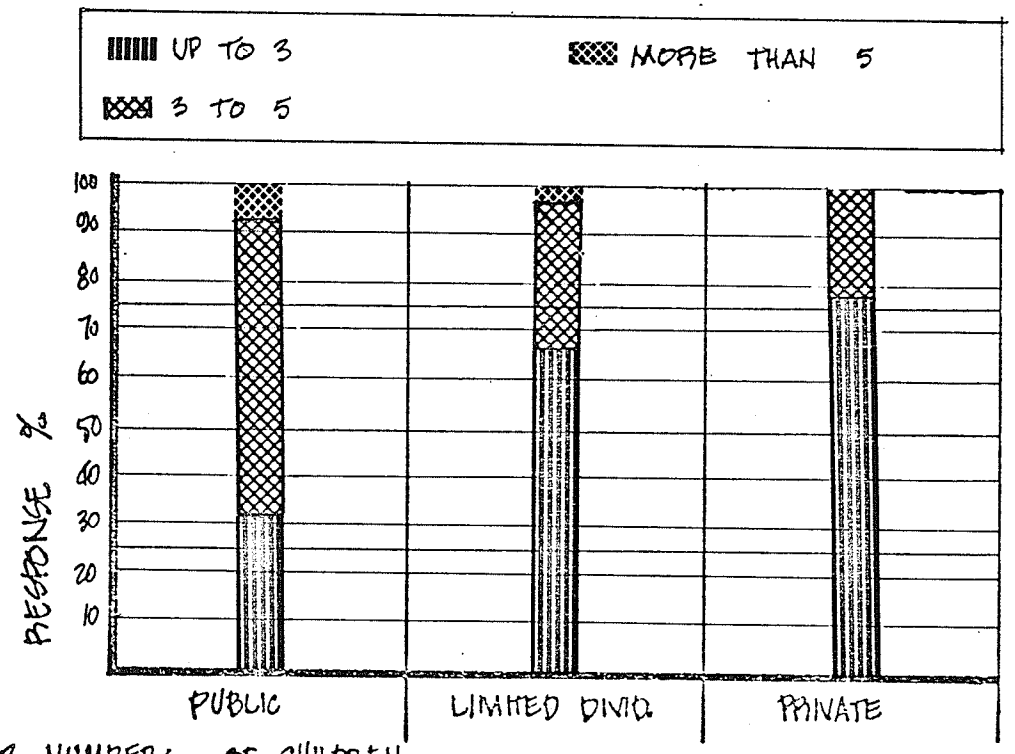
PGC I - Carriage Road

PGC II - Birds Hill Road

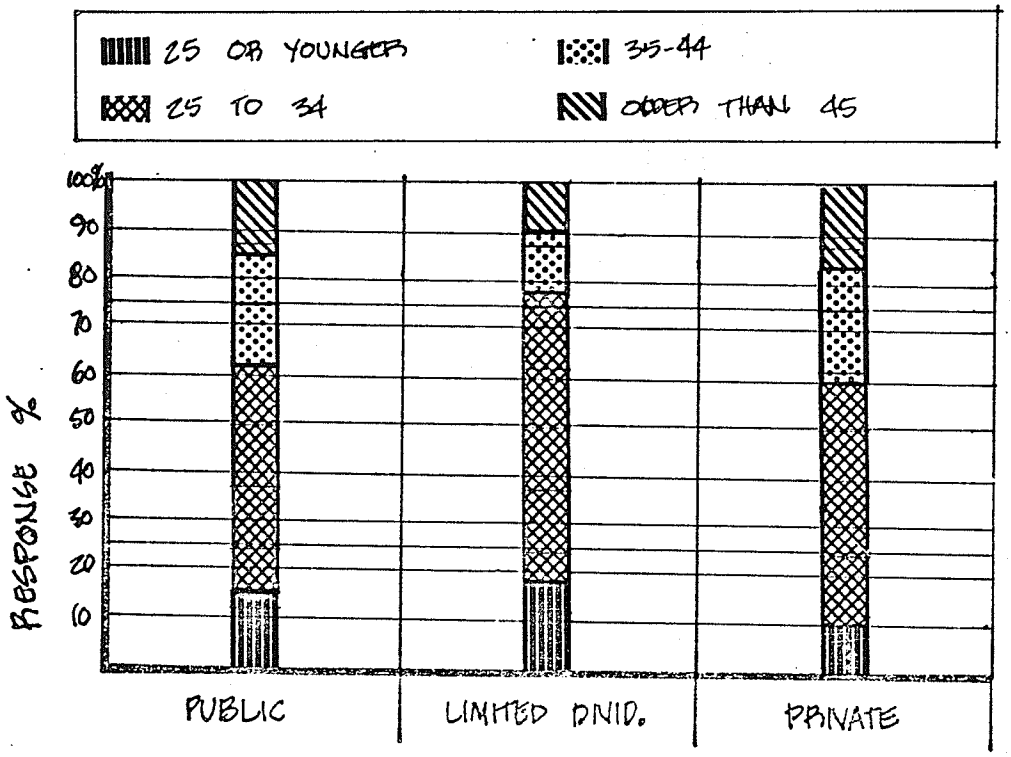
A legend is given above each graph. This decodes the graphic representation of the variety of responses given to each question. The data for the majority of the questions does not total 100%. This is because "not applicable", "no response", and immeasurable answers are not included.



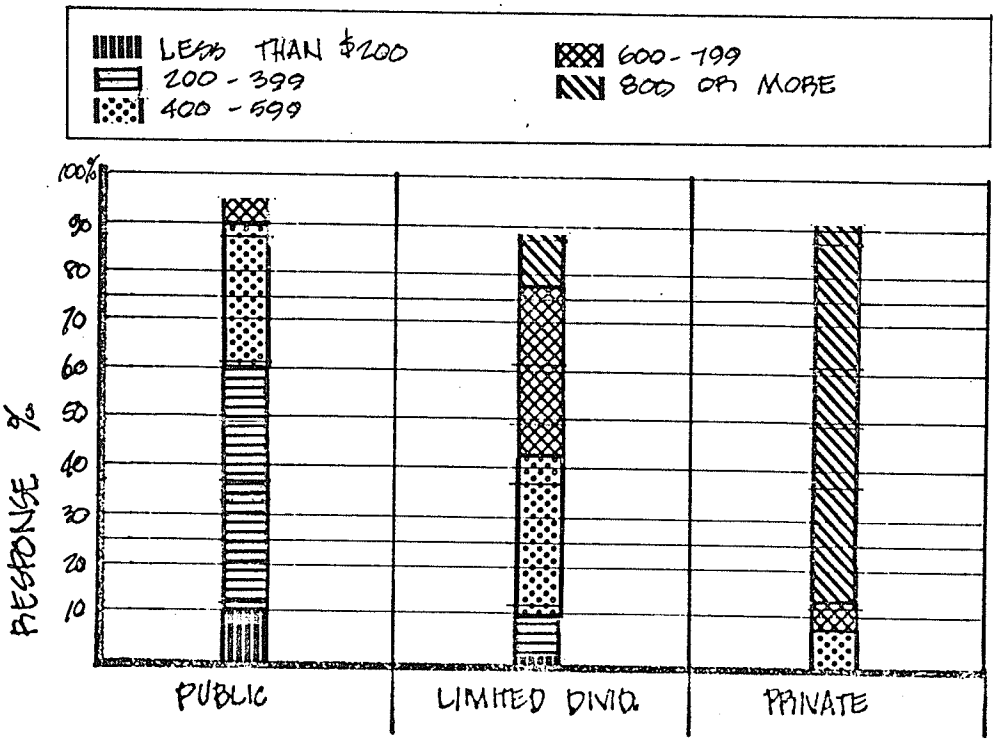

I-1 FAMILY STRUCTURE.



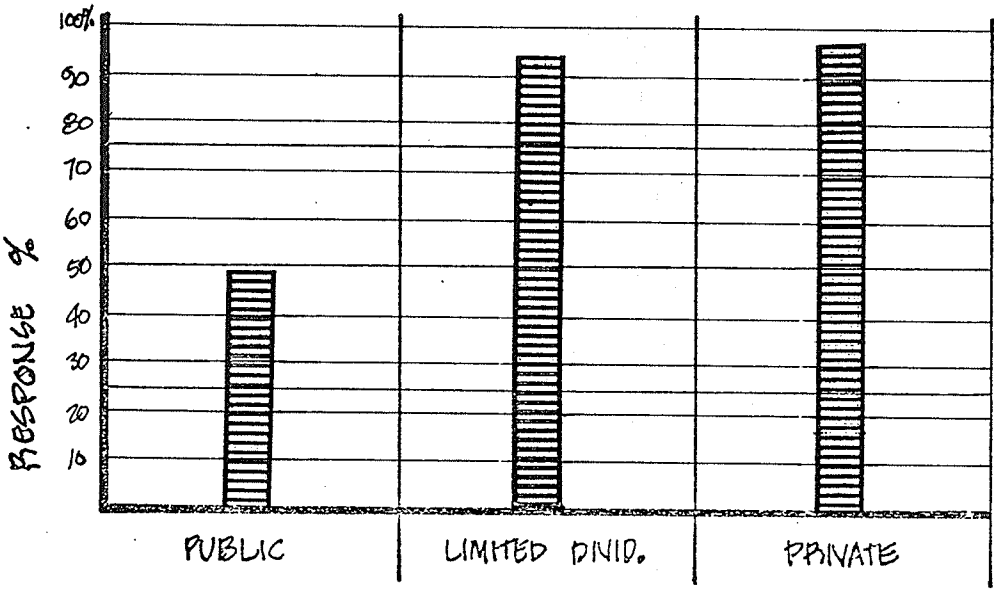

I-2 NUMBERS OF CHILDREN.



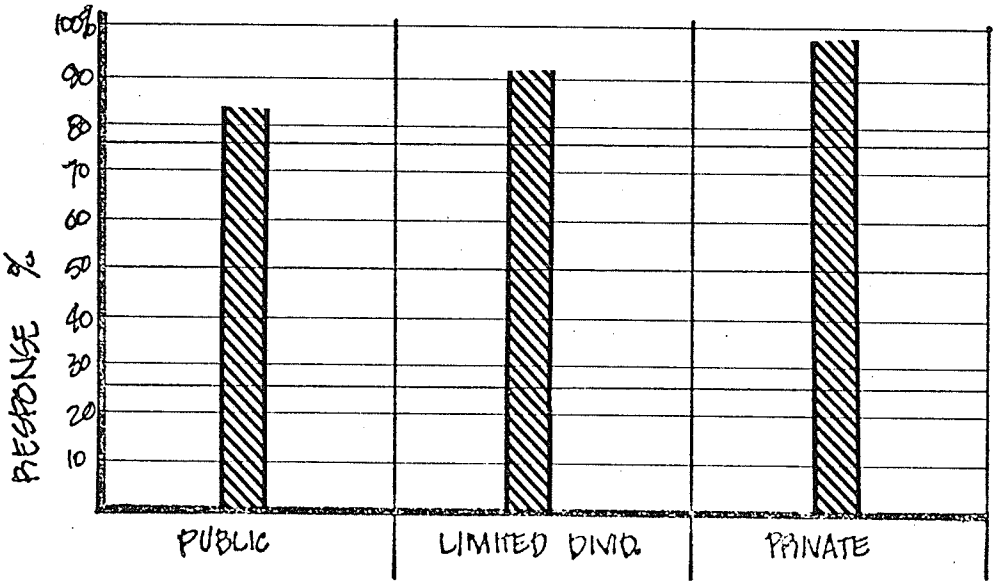

I-3 AGES OF HOUSEHOLD HEADS (YEARS)



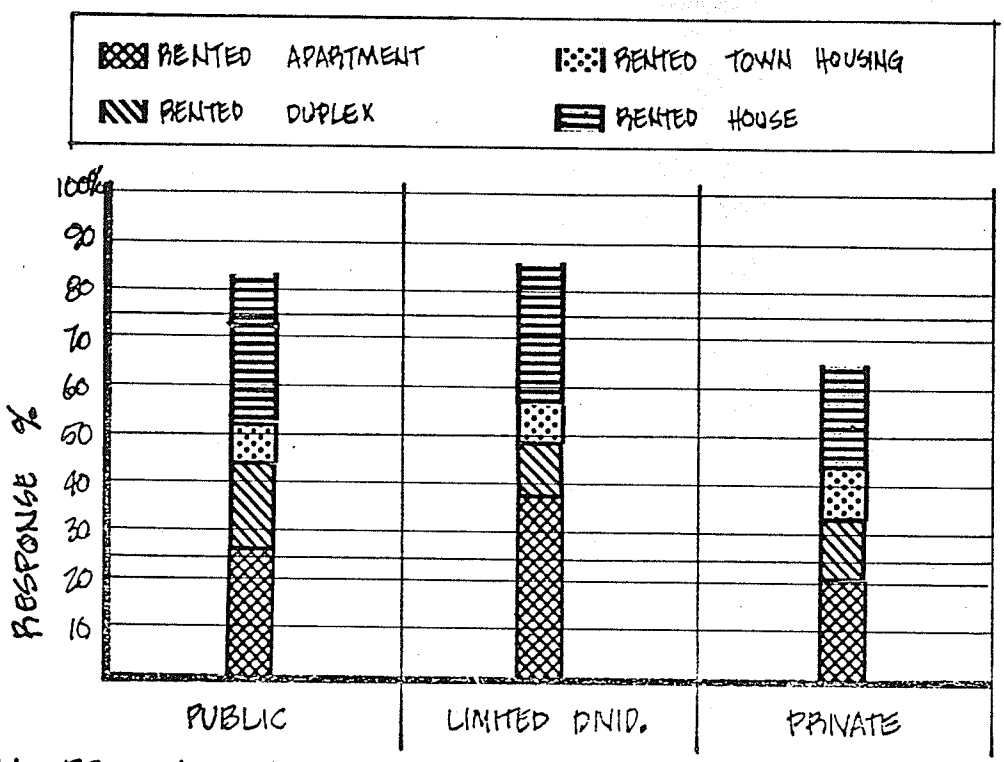

I-4 TOTAL MONTHLY INCOME



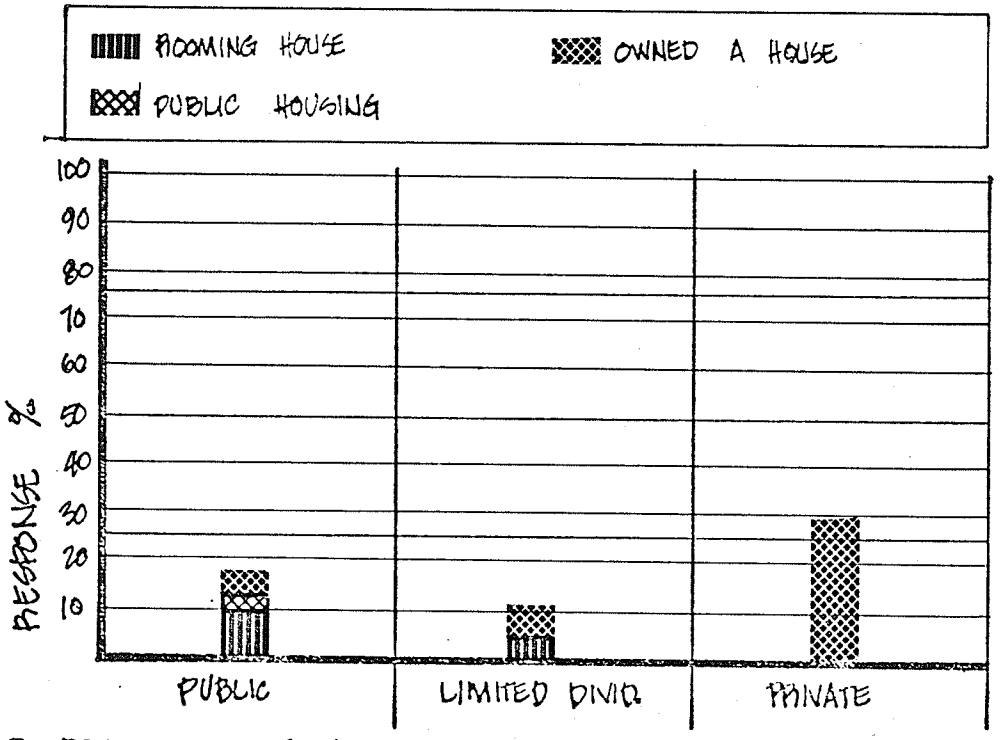

I-5 PERCENTAGE THAT OWN CARS.



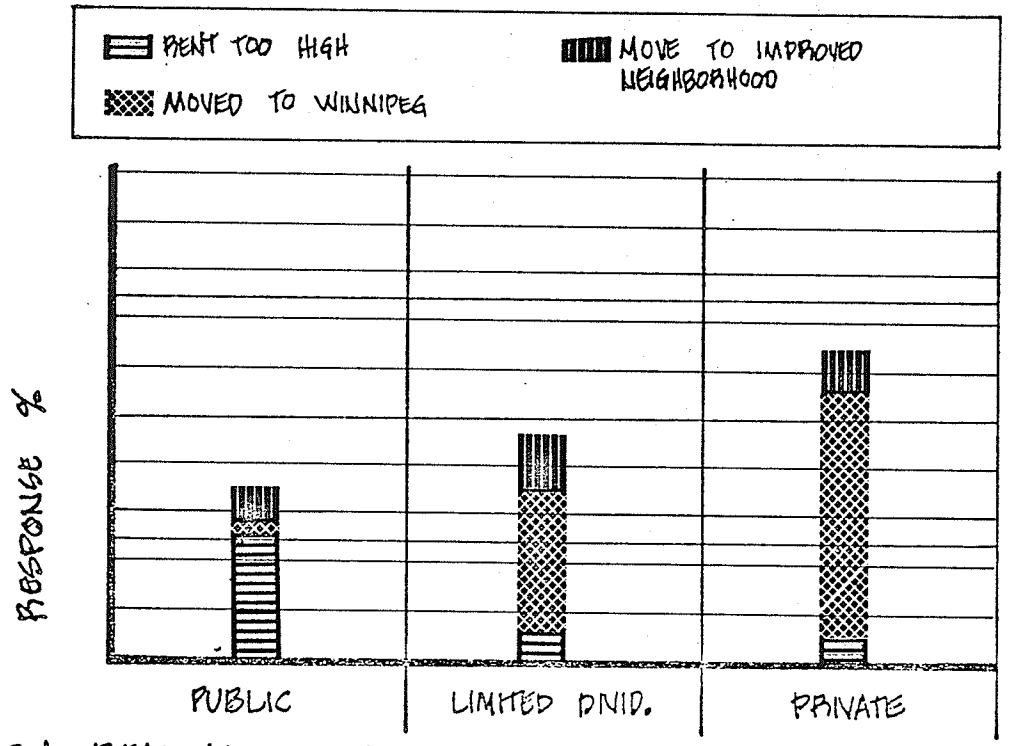

I-6 YEAR-ROUND CAR USEAGE PERCENT



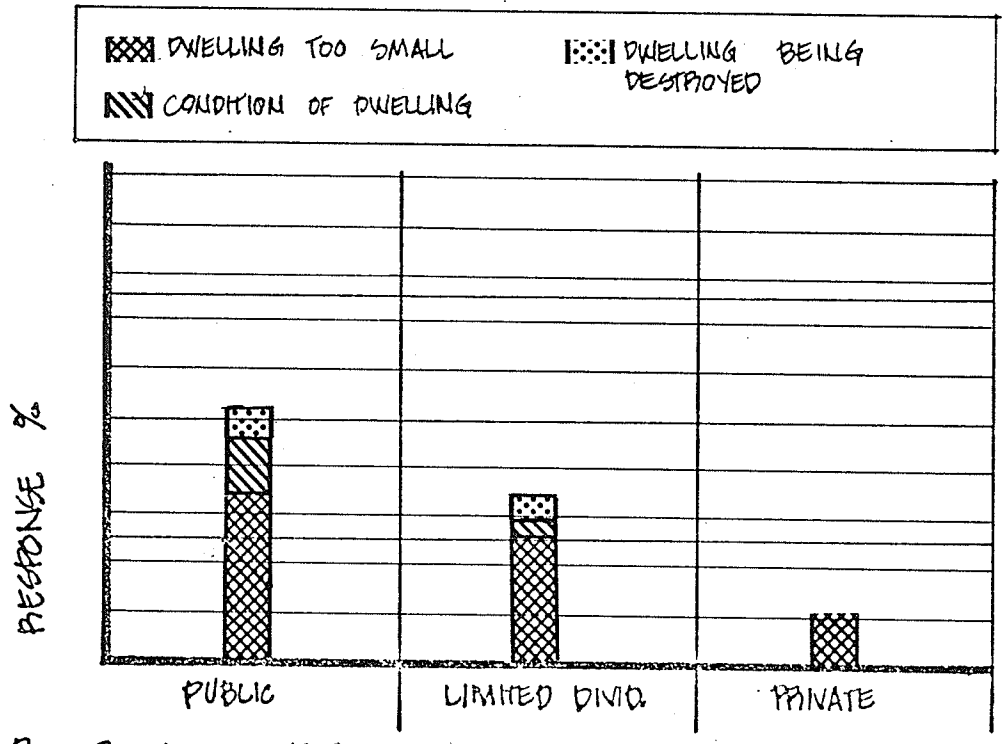

II-1.A PREVIOUS HOUSING



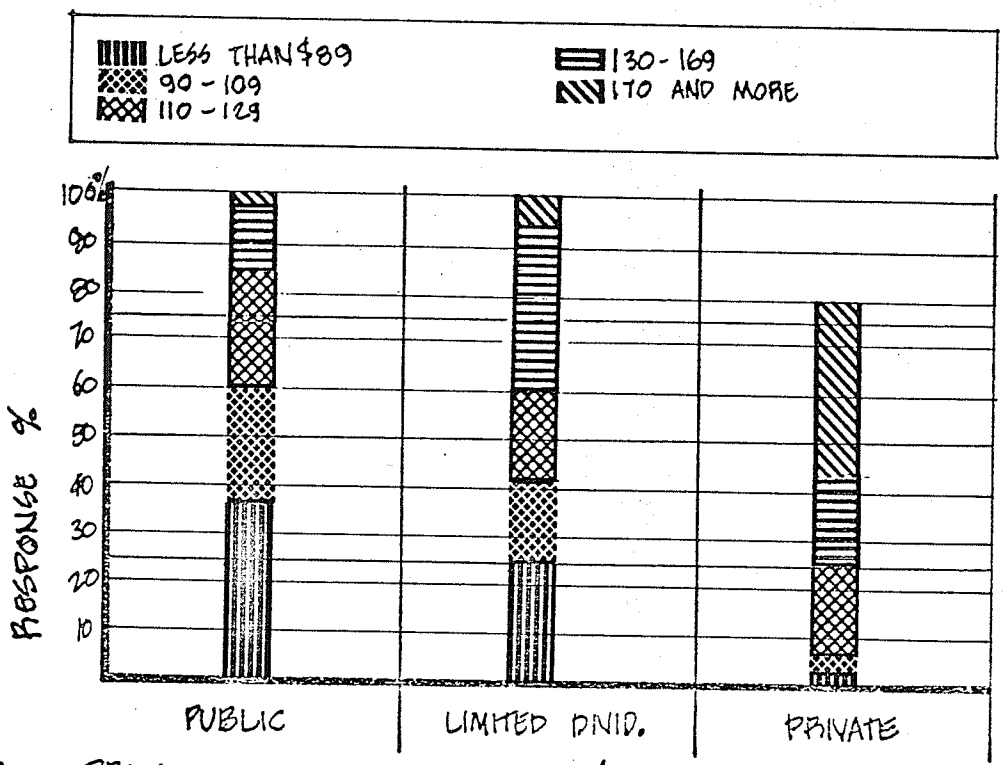

II-1.B PREVIOUS HOUSING



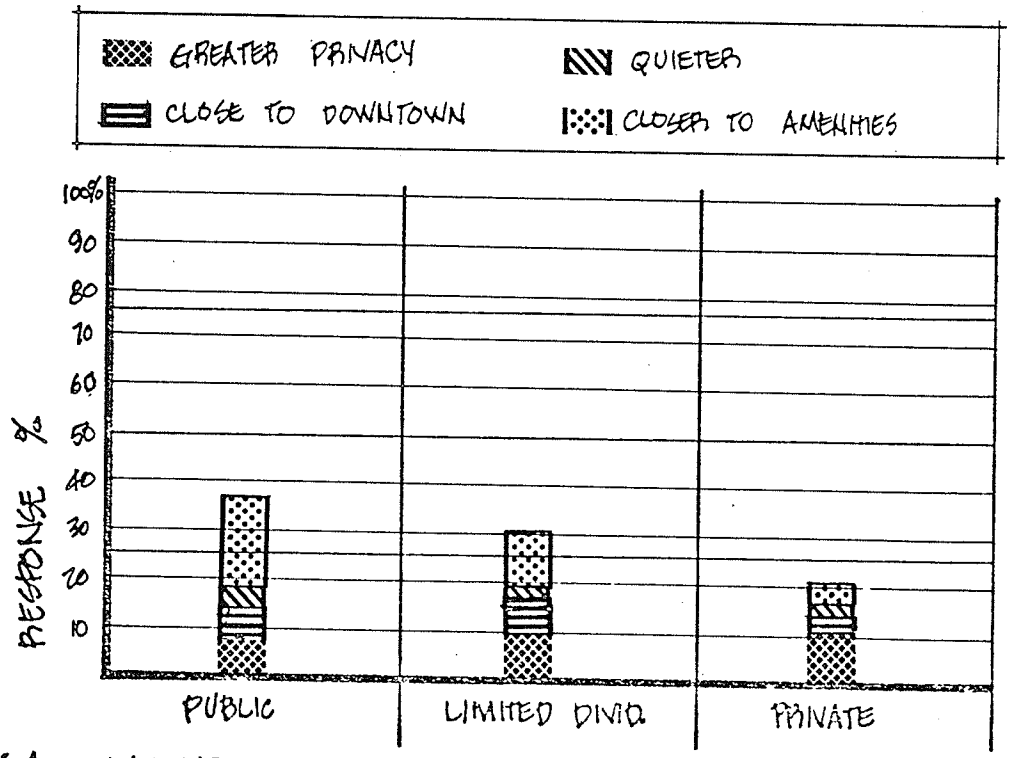

II-2.A REASONS FOR MOVING



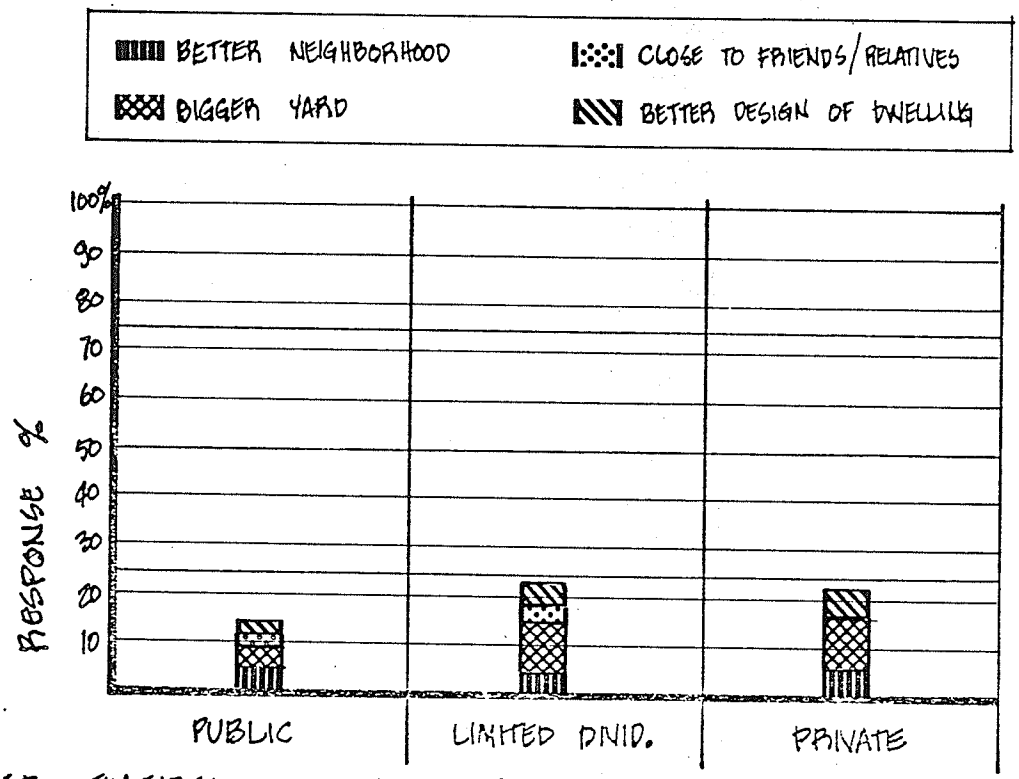

II-2.B REASONS FOR MOVING



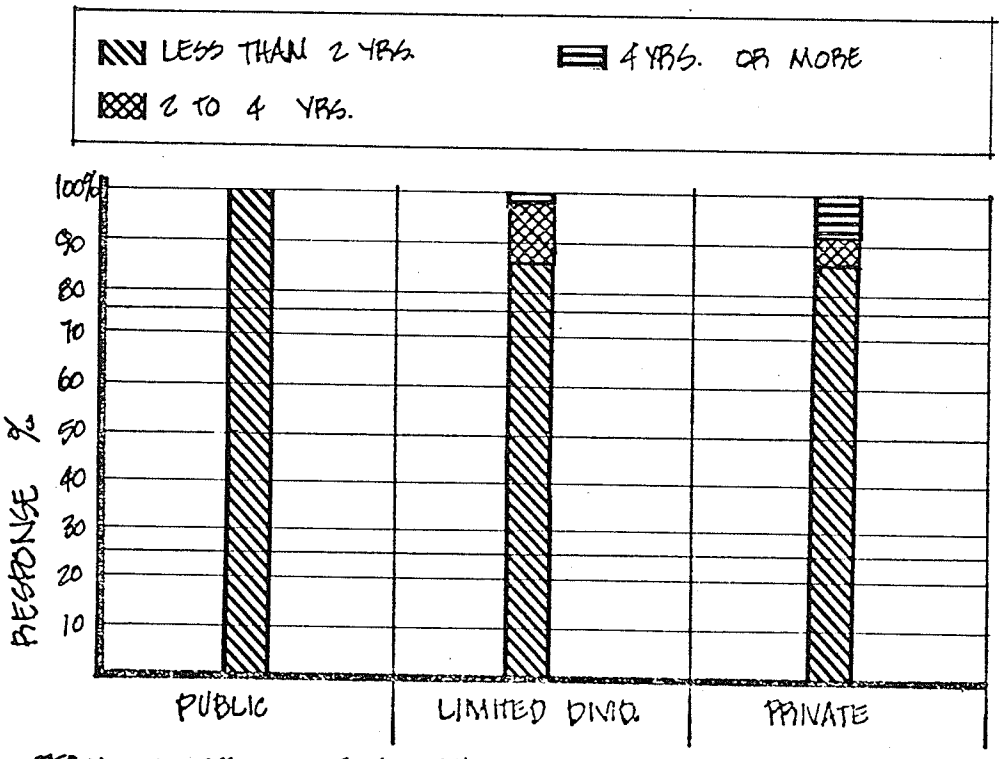

II-3 PREVIOUS MONTHLY RENT / MORTGAGE.



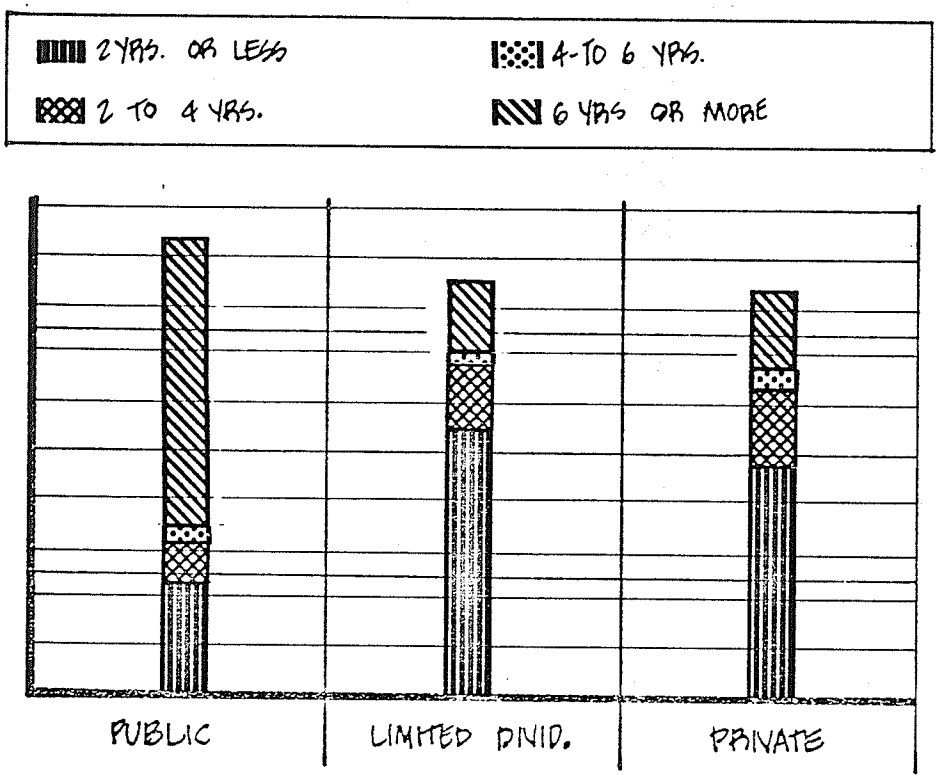

II-4.A FEATURES OF PREVIOUS HOUSING UNAVAILABLE IN PRESENT HOUSING.



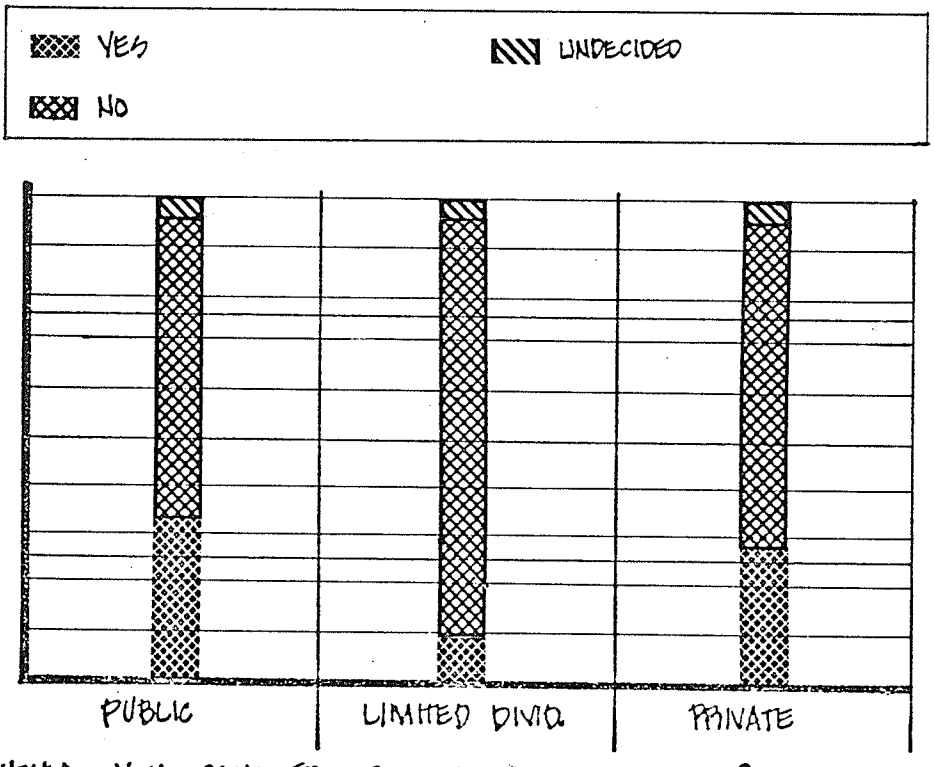

II-4.B FEATURES OF PREVIOUS HOUSING UNAVAILABLE IN PRESENT HOUSING



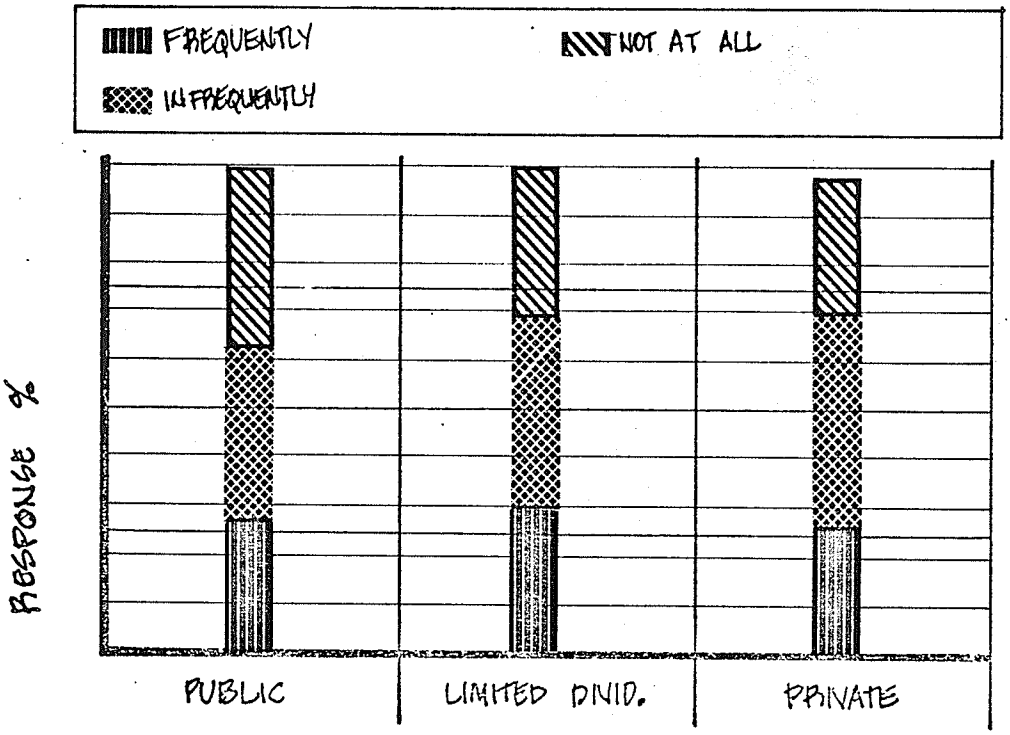

II-5 TERM OF RESIDENCE AT CURRENT HOUSING



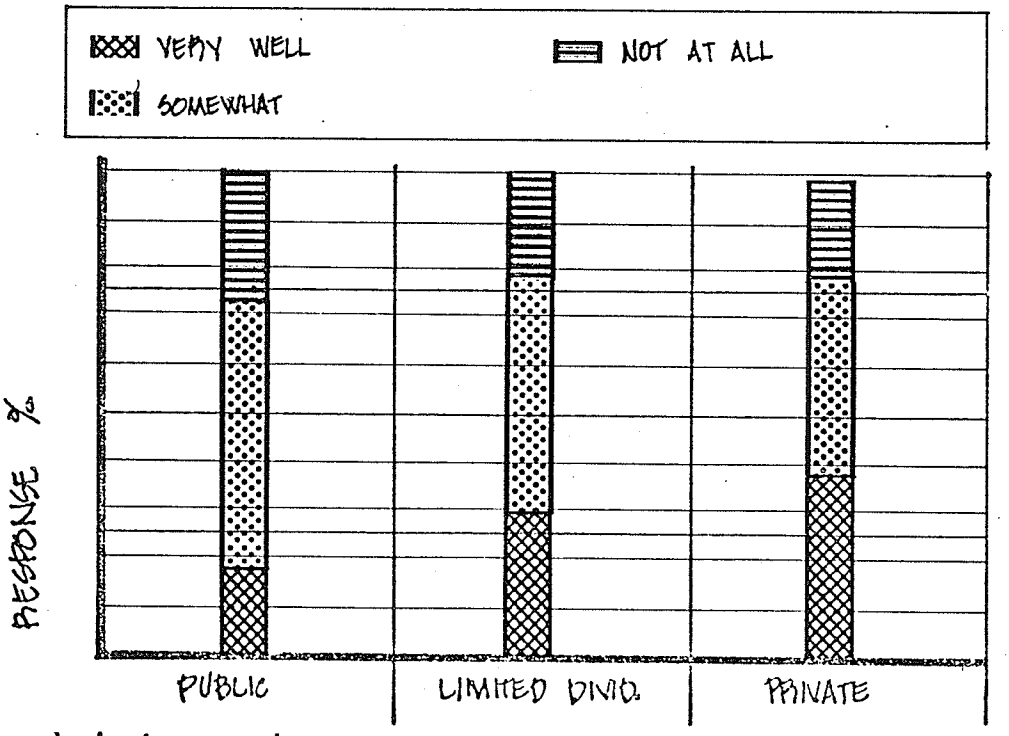

II-6 EXPECTED TERM OF RESIDENCE



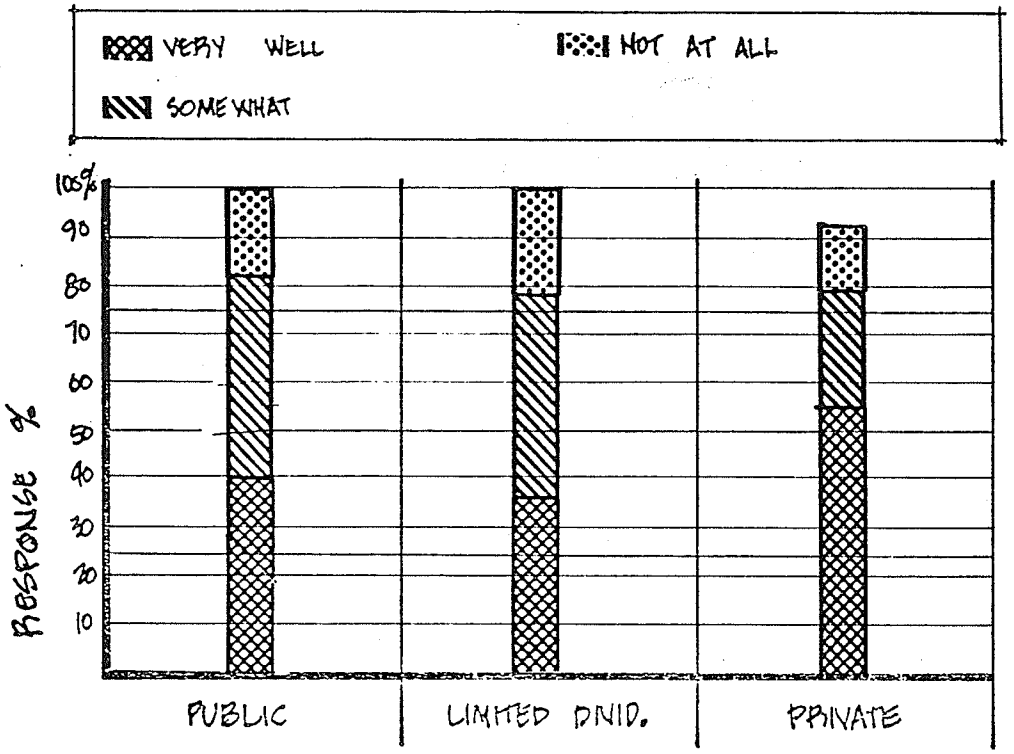

II-7 WOULD YOU CONSIDER BUYING THIS DWELLING ?



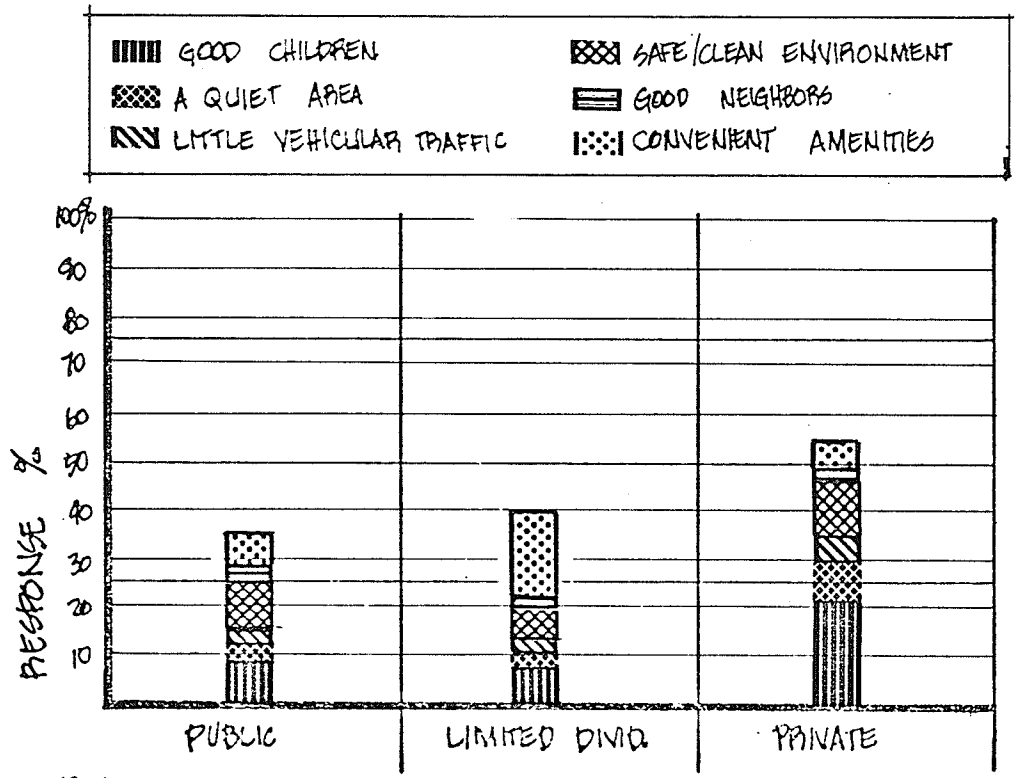

II-8 DO YOU VISIT FREQUENTLY WITH YOUR NEIGHBORS ?



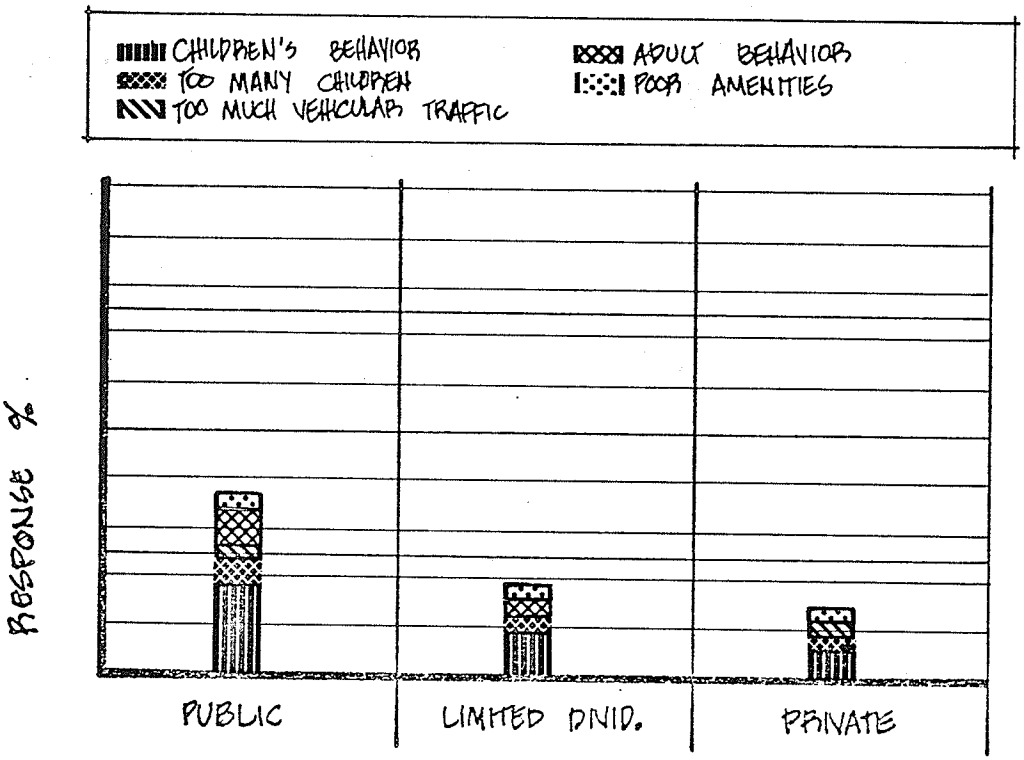

II-9 HOW WELL DO YOU KNOW YOUR NEIGHBORS ?



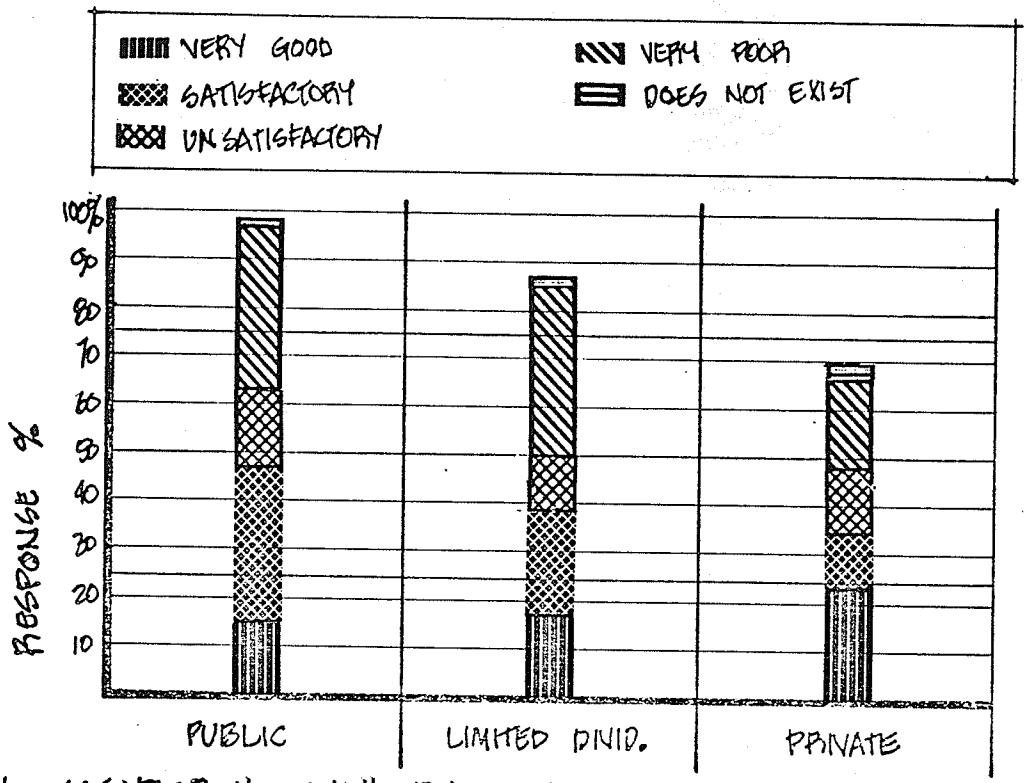

II-10 HOW WELL DID YOU KNOW YOUR PREVIOUS NEIGHBORS?



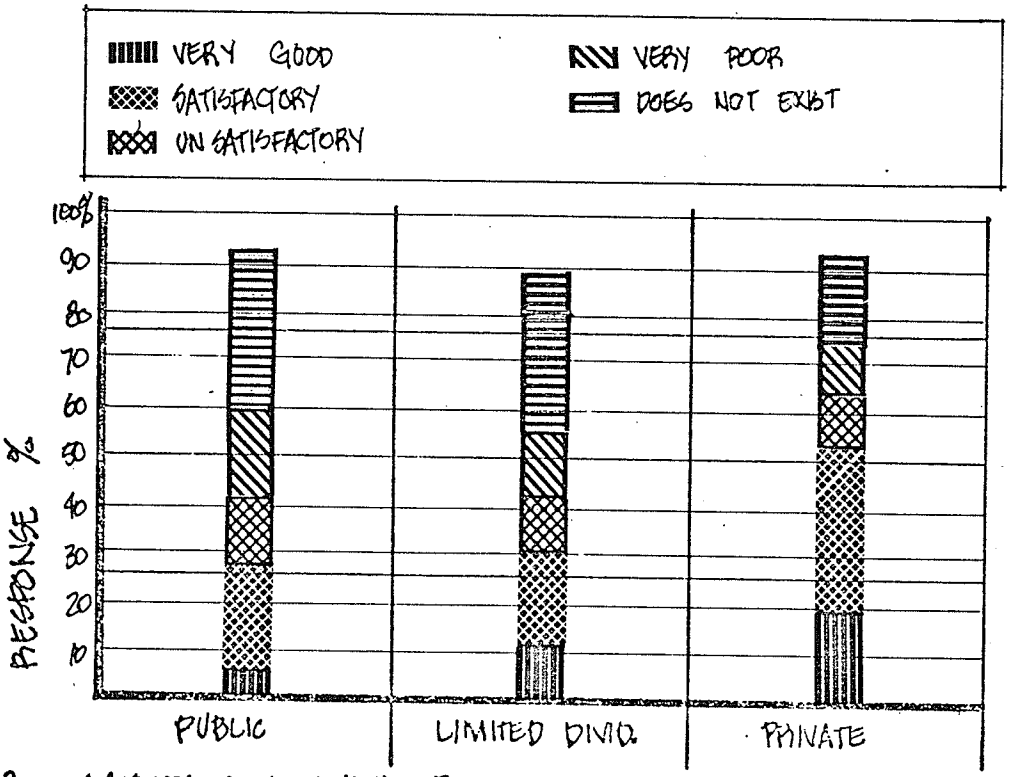

II-11.A REASONS WHY THIS IS A GOOD AREA IN WHICH TO RAISE CHILDREN.



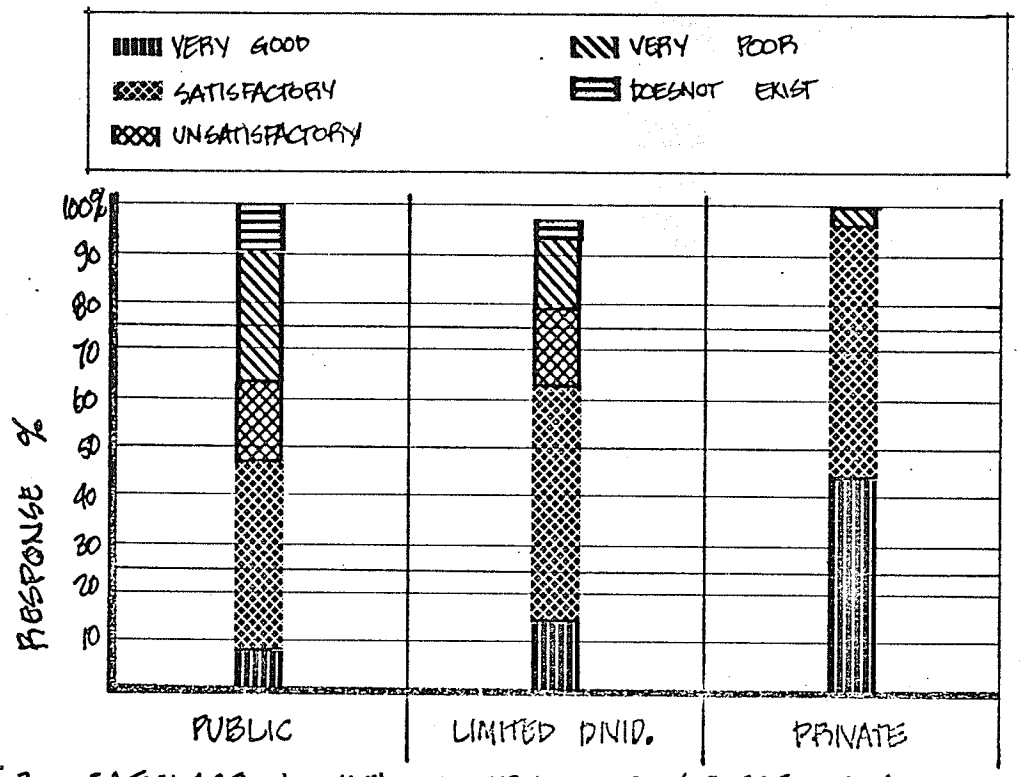

II-11.B REASONS WHY THIS IS NOT A GOOD AREA IN WHICH TO RAISE CHILDREN.



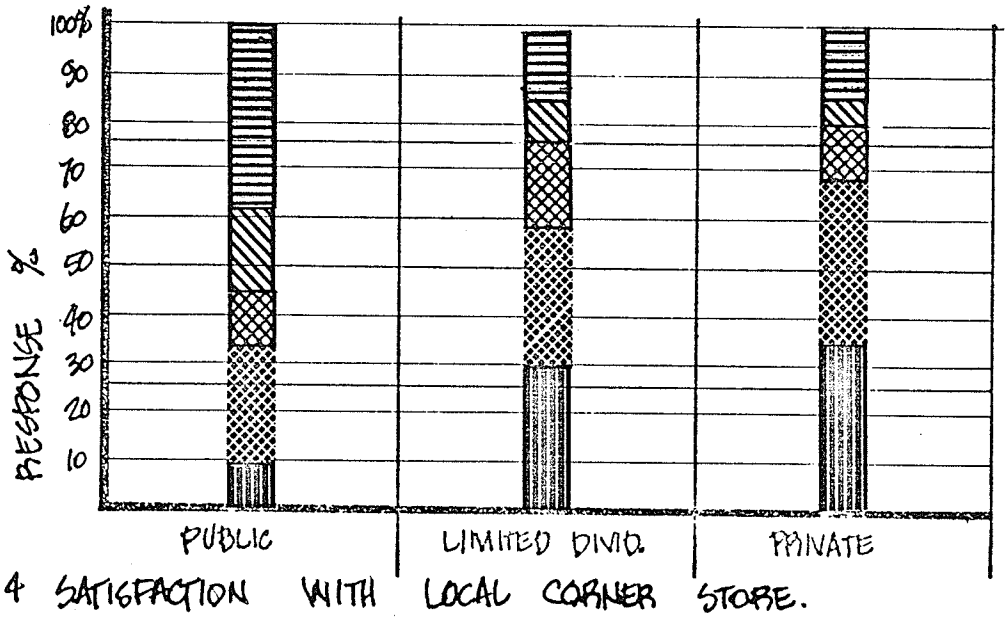

III-1. SATISFACTION WITH BUS SERVICE



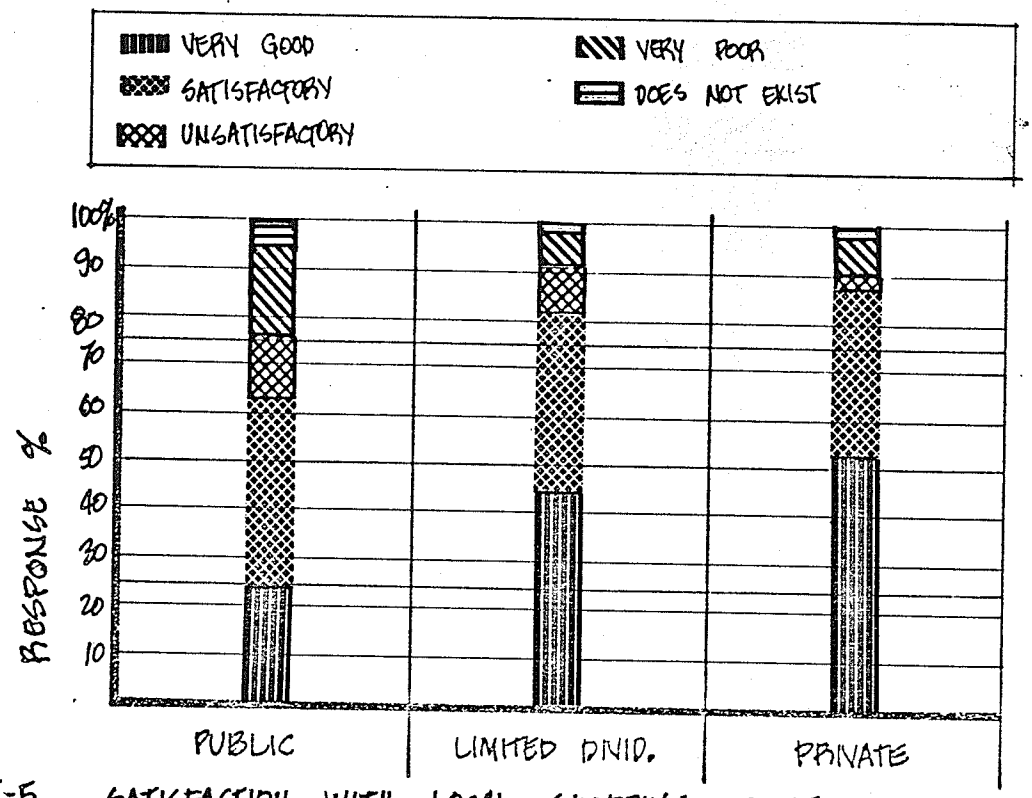

III-2. SATISFACTION WITH RECREATIONAL FACILITIES



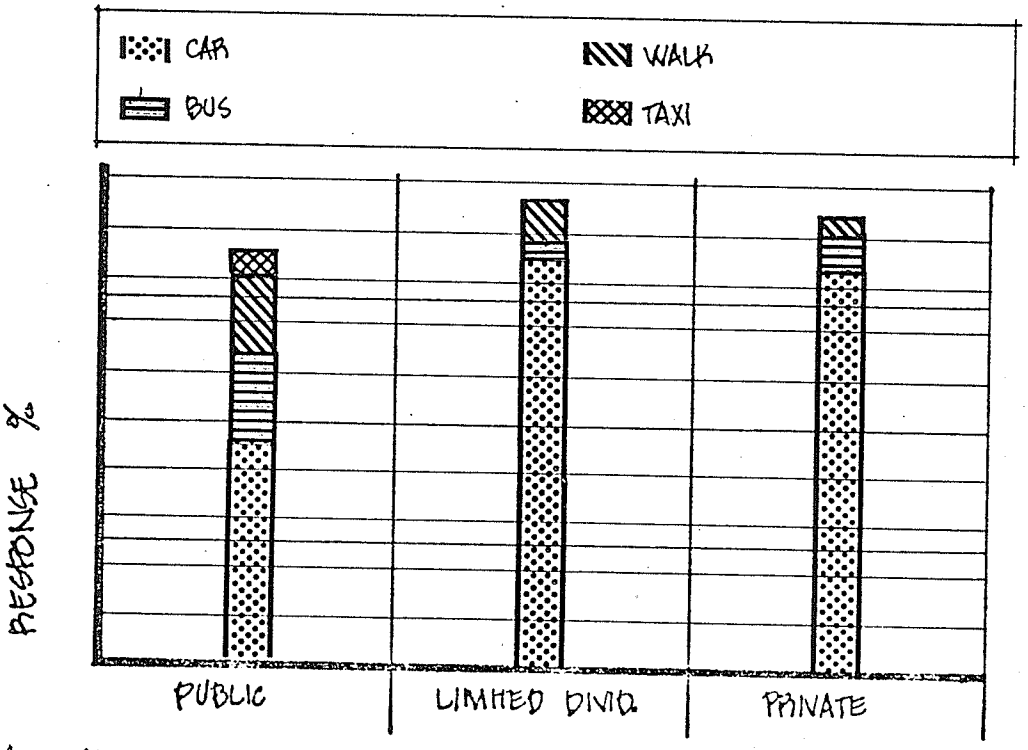

III-3 SATISFACTION WITH CONTROL OF STREET TRAFFIC.



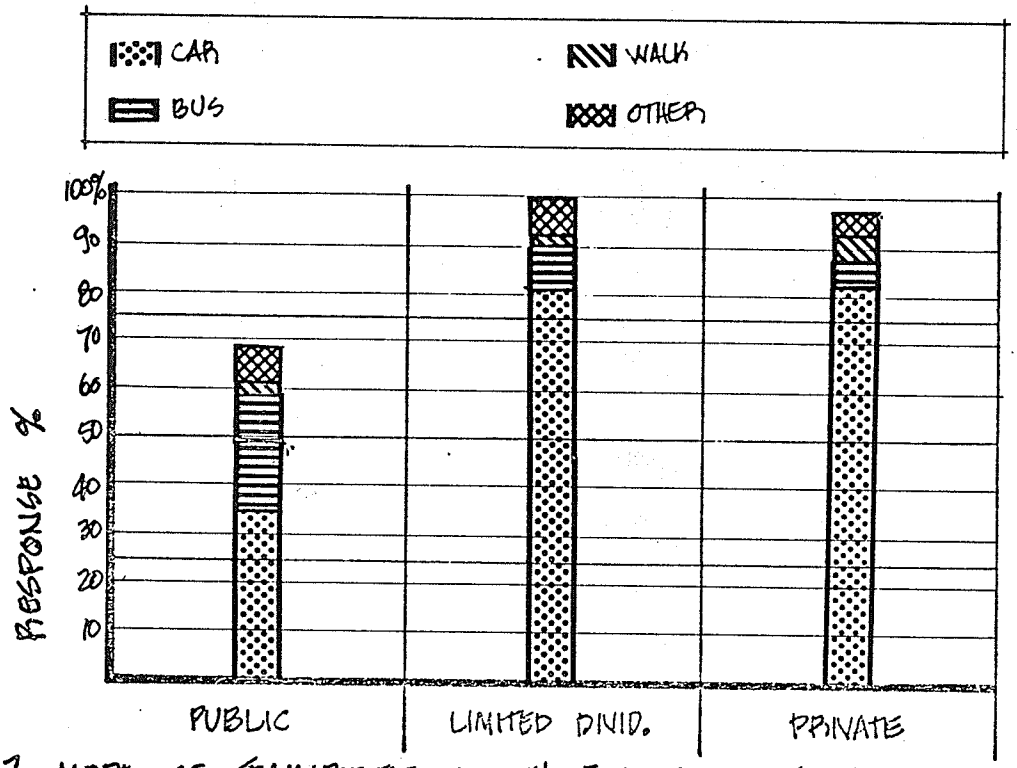

III-4 SATISFACTION WITH LOCAL CORNER STORE.



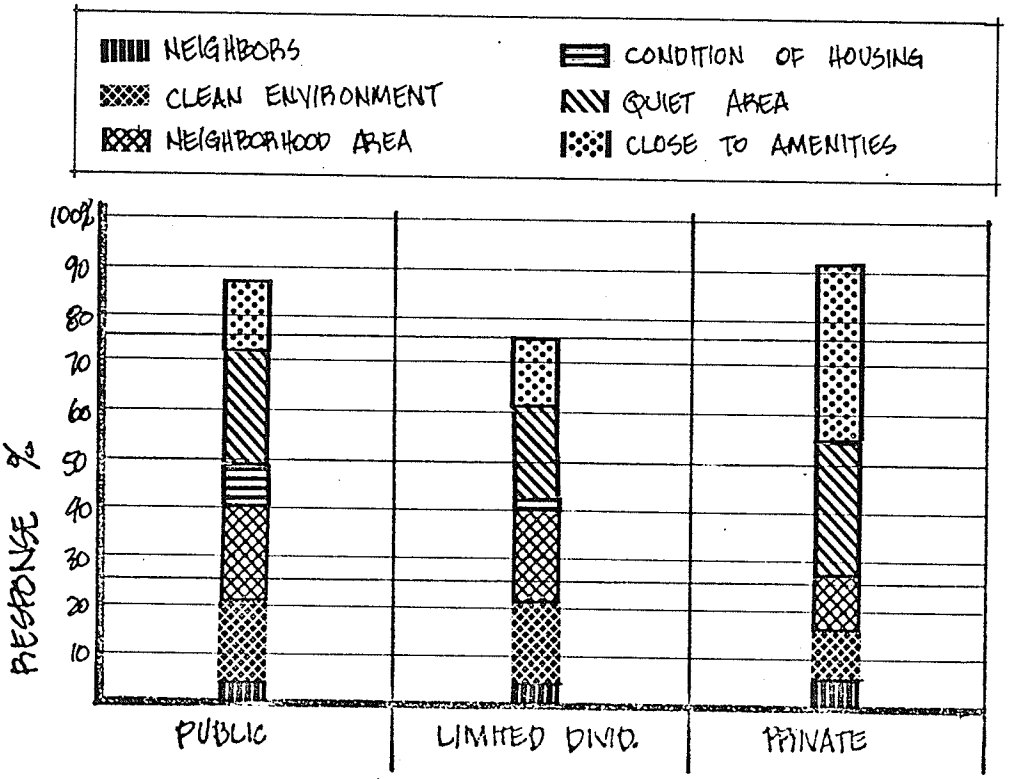

III-5 SATISFACTION WITH LOCAL SHOPPING CENTER.



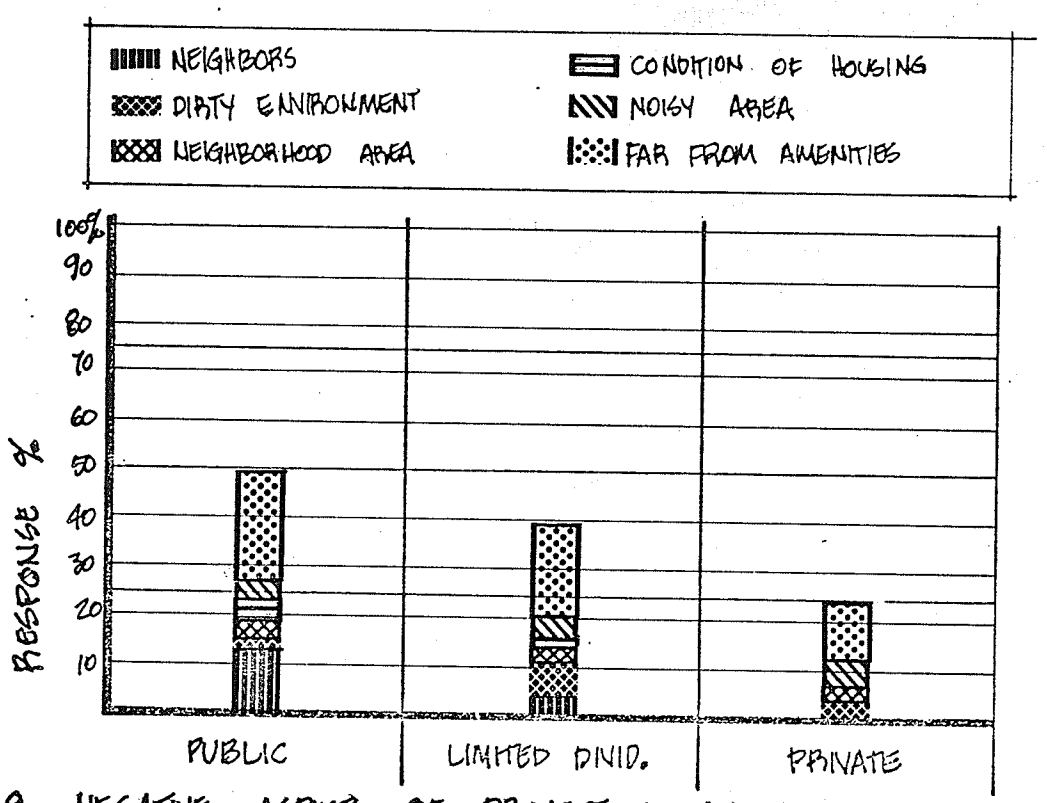

III-6 MODE OF TRANSPORTATION USED FOR SHOPPING.



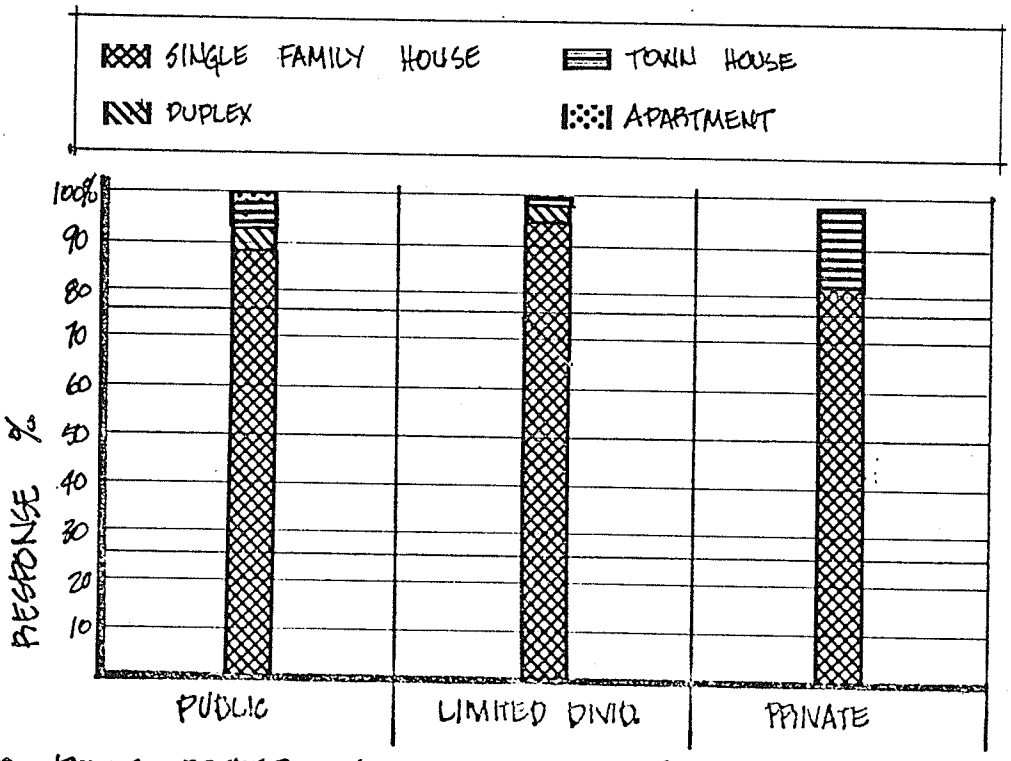

III-7 MODE OF TRANSPORTATION USED FOR GOING TO WORK.



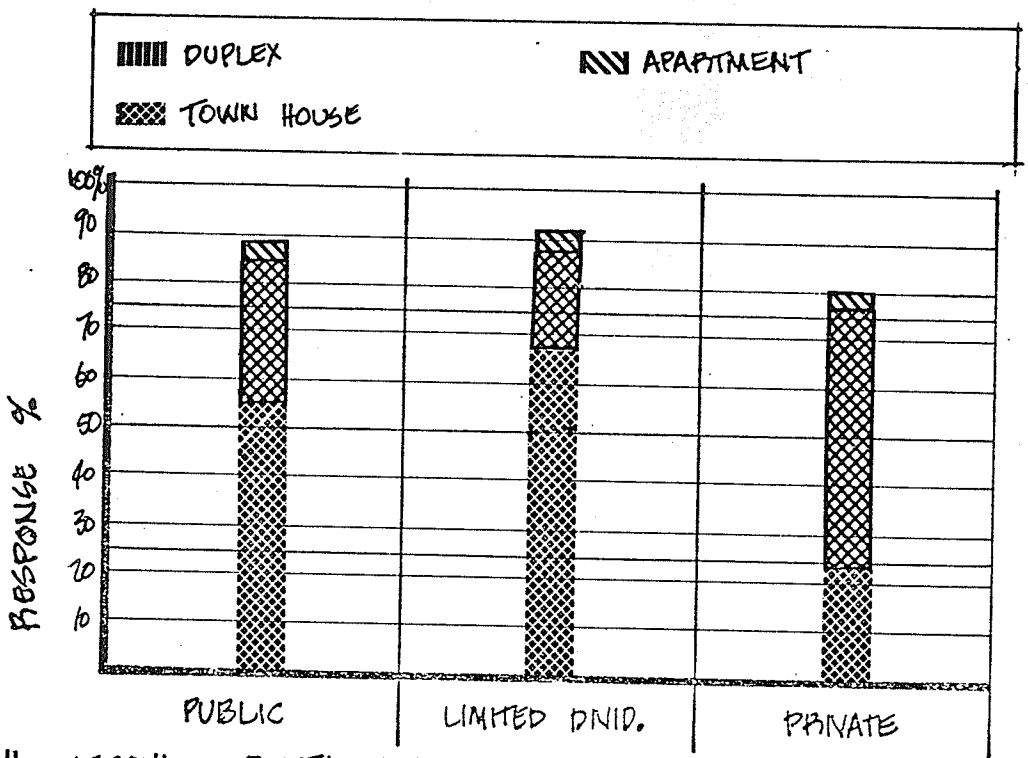

III-8 POSITIVE ASPECTS OF PROJECT LOCATION.



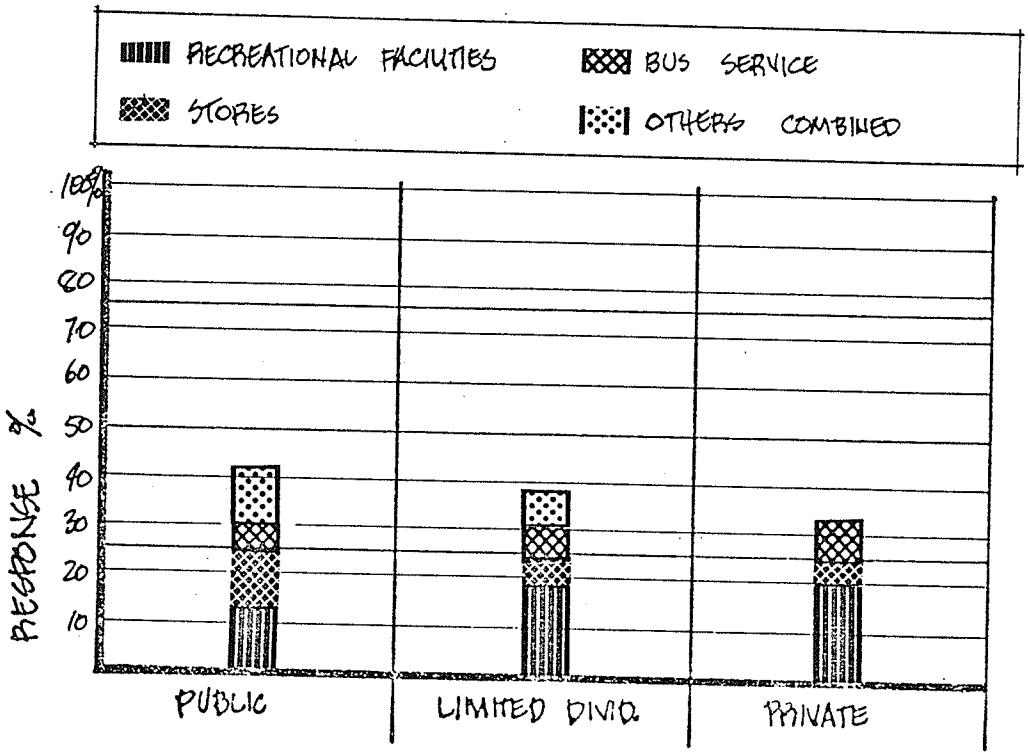

III-9 NEGATIVE ASPECTS OF PROJECT LOCATION.



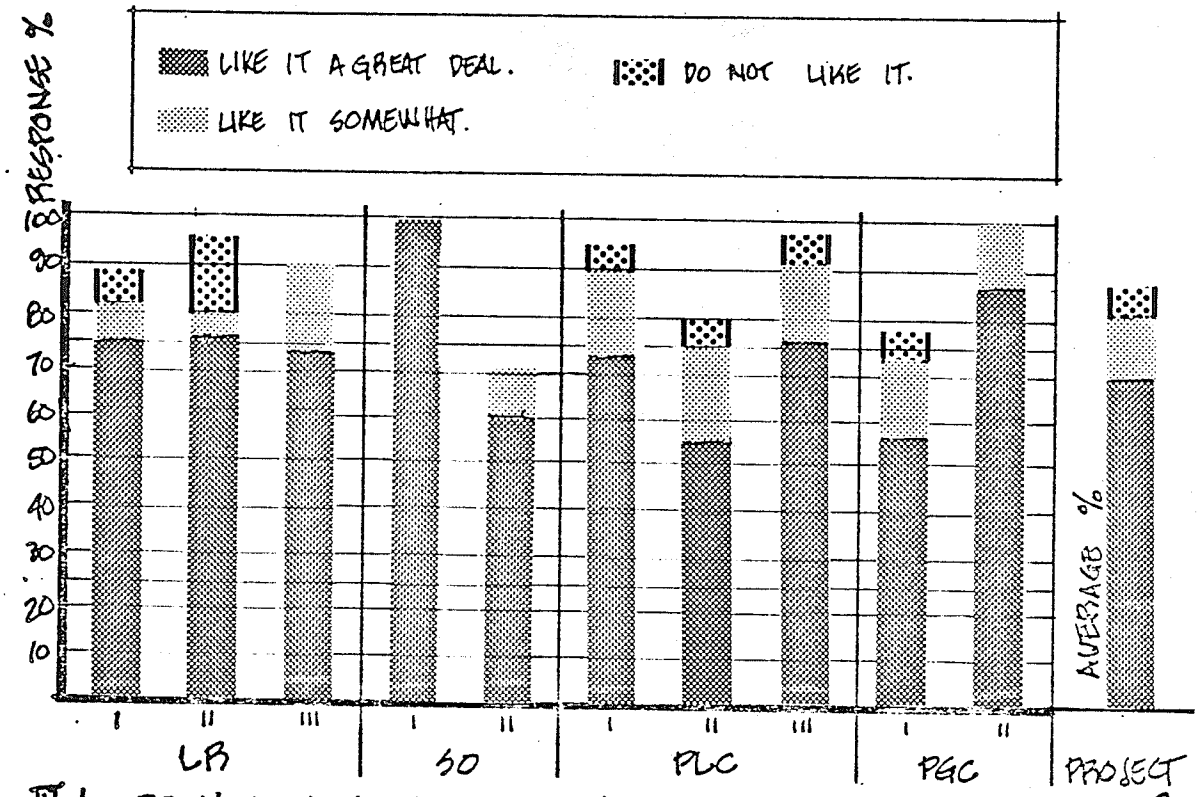

III-10 FIRST PREFERENCE OF TYPE OF HOUSING.



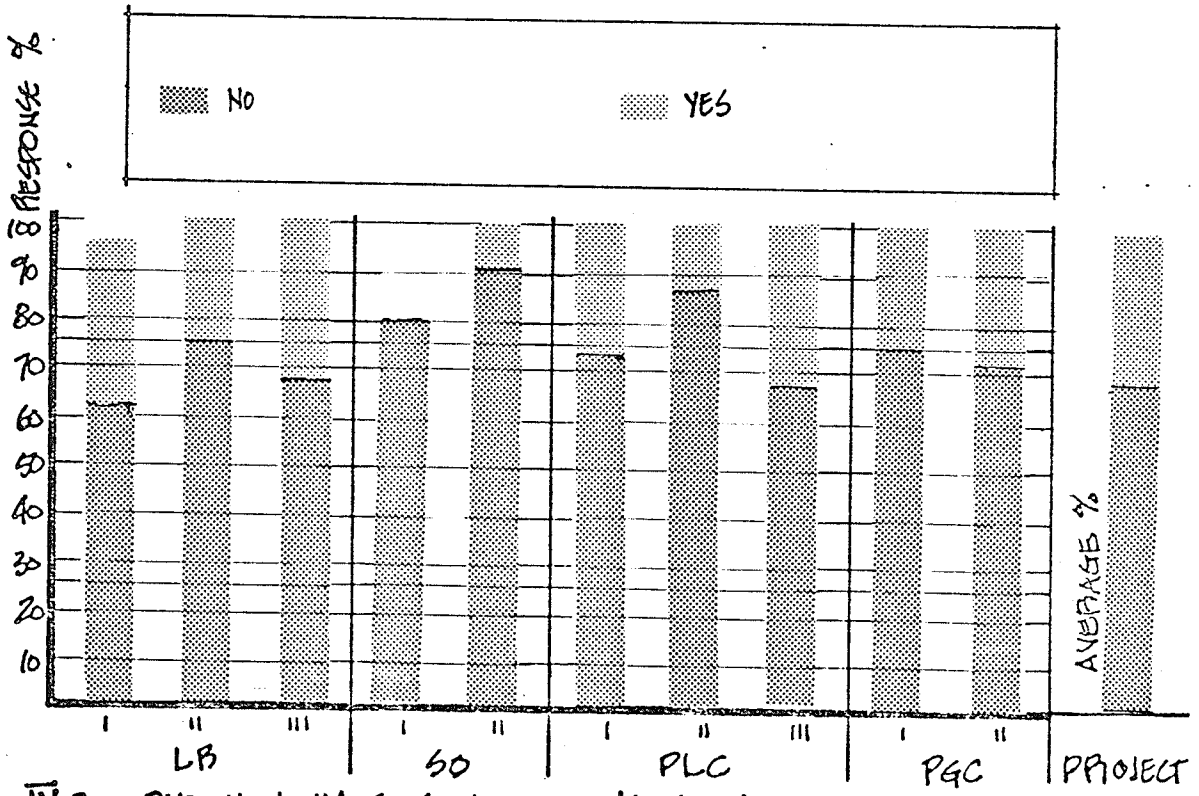

III-11 SECOND PREFERENCE OF TYPE OF HOUSING.



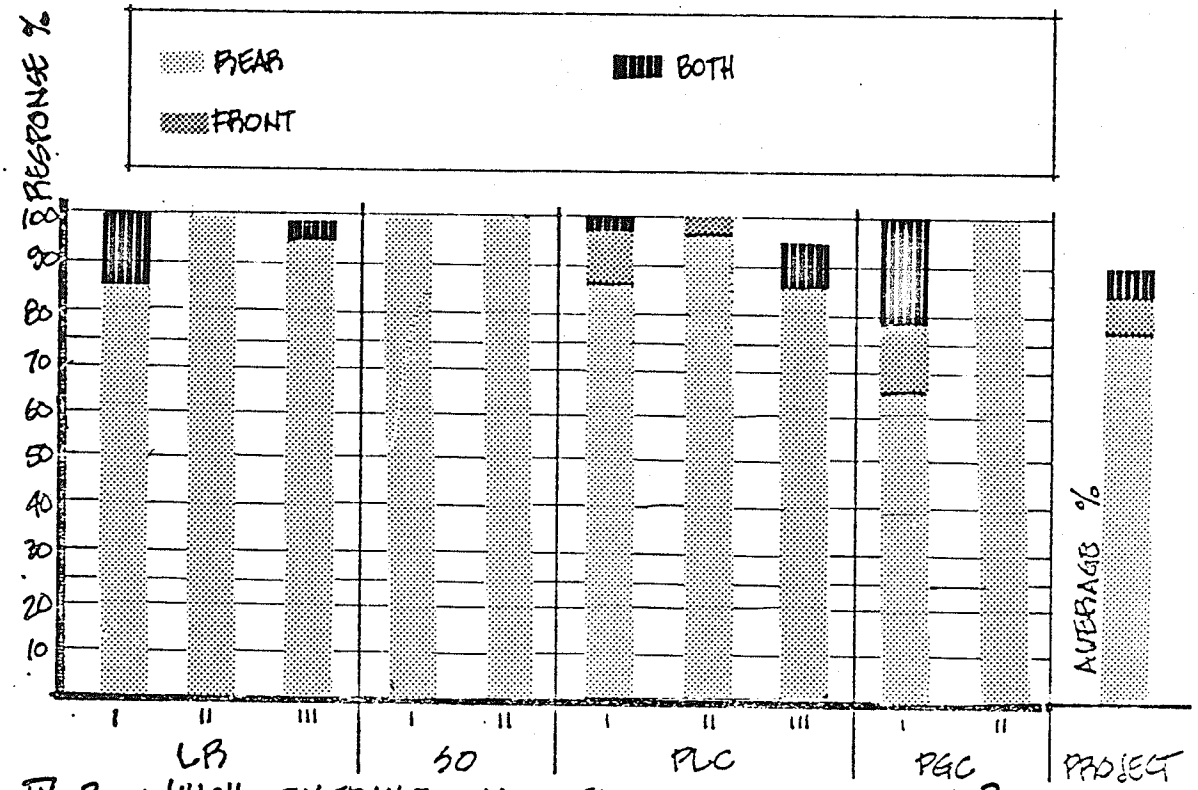

III-12 PUBLIC AMENITIES LACKING IN THE NEIGHBORHOOD.



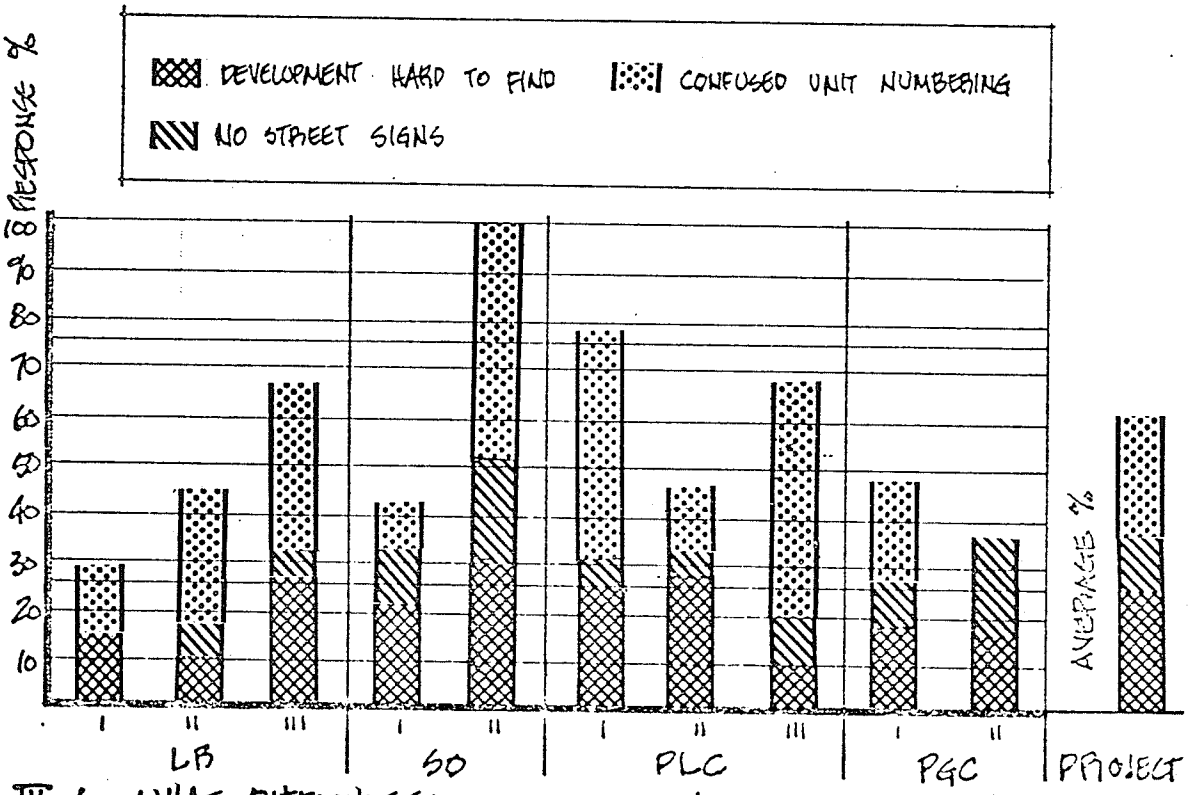

IV-1 DO YOU LIKE THE PHYSICAL APPEARANCE OF YOUR HOME?



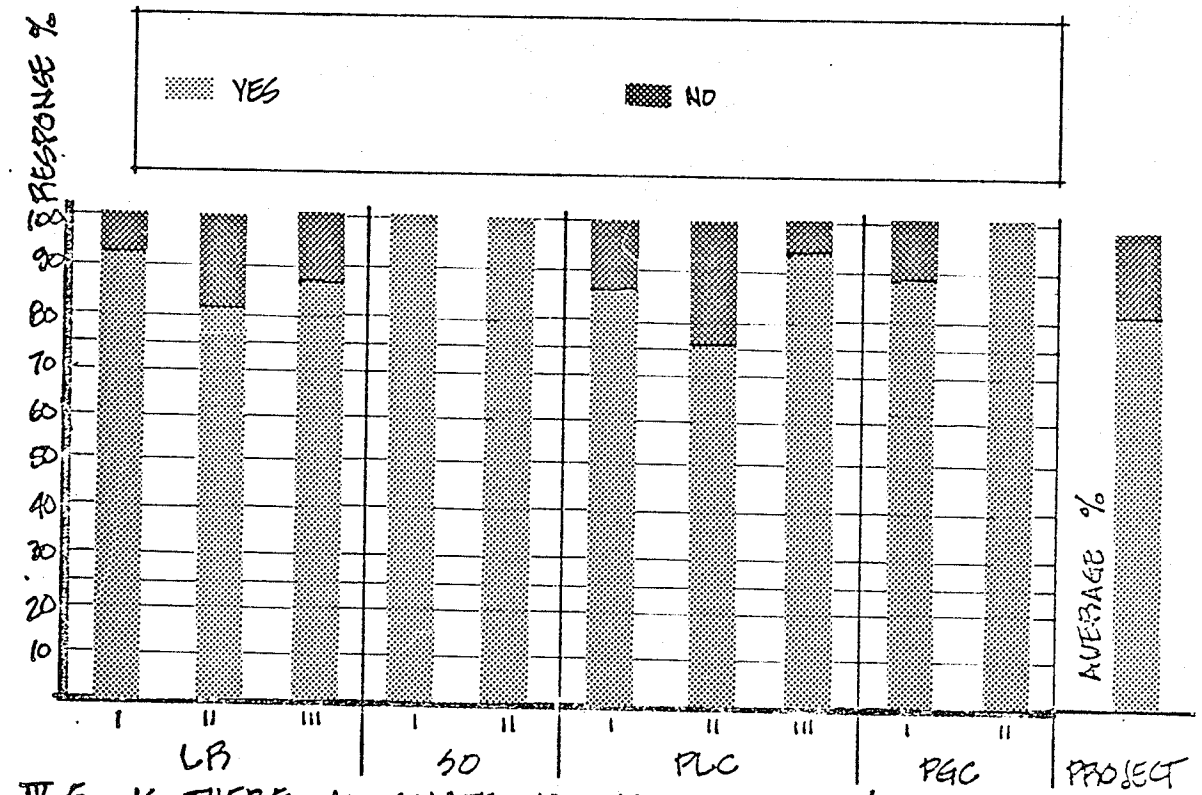

IV-2 DID YOU HAVE ANY COMPLAINTS ABOUT THE UNIT WHEN YOU MOVED IN?



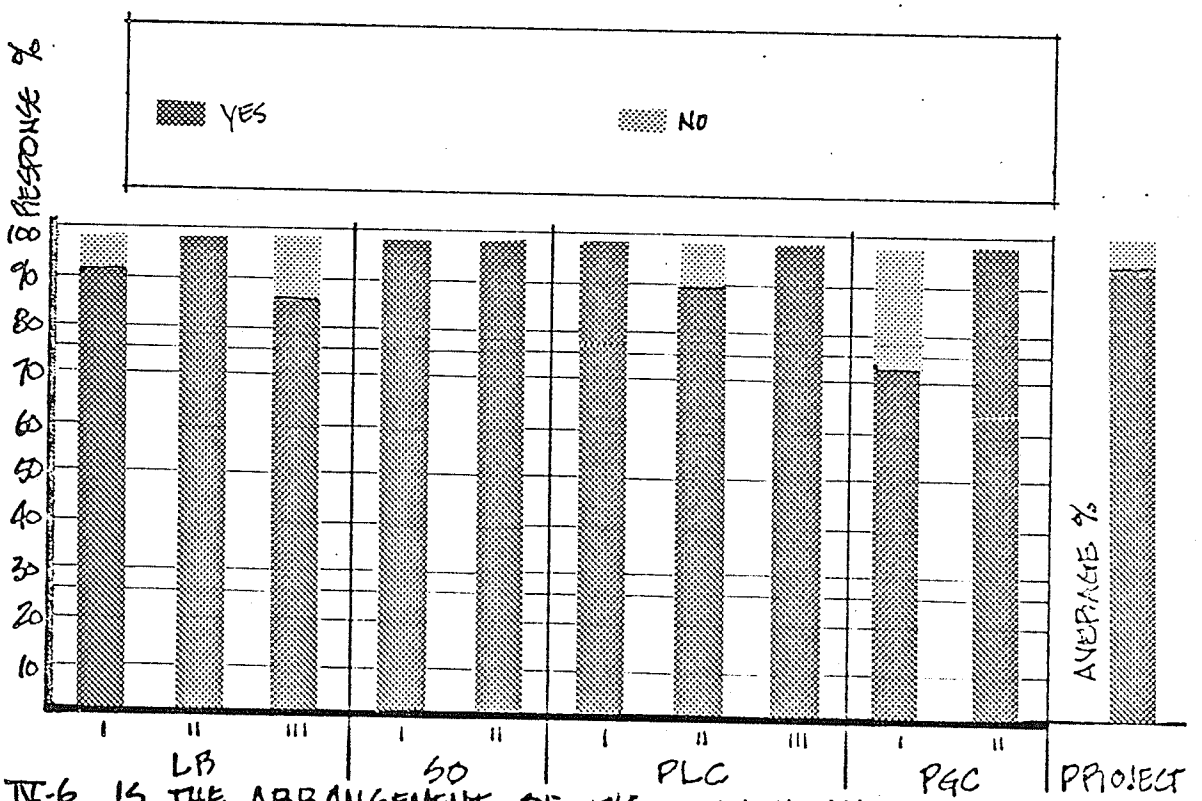

IV-3 WHICH ENTRANCE IS USED MOST FREQUENTLY?



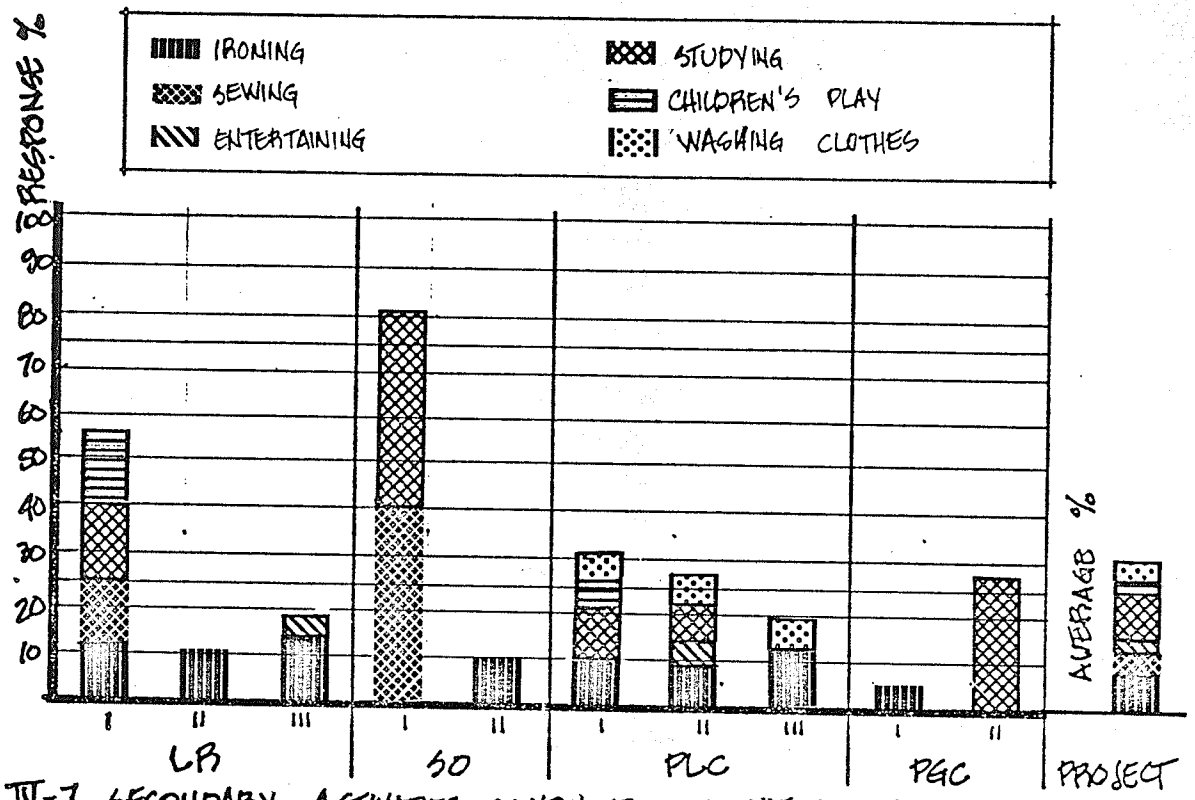

IV-4 WHAT DIFFICULTIES DO FRIENDS/LIVERIES HAVE IN LOCATING YOUR UNIT?



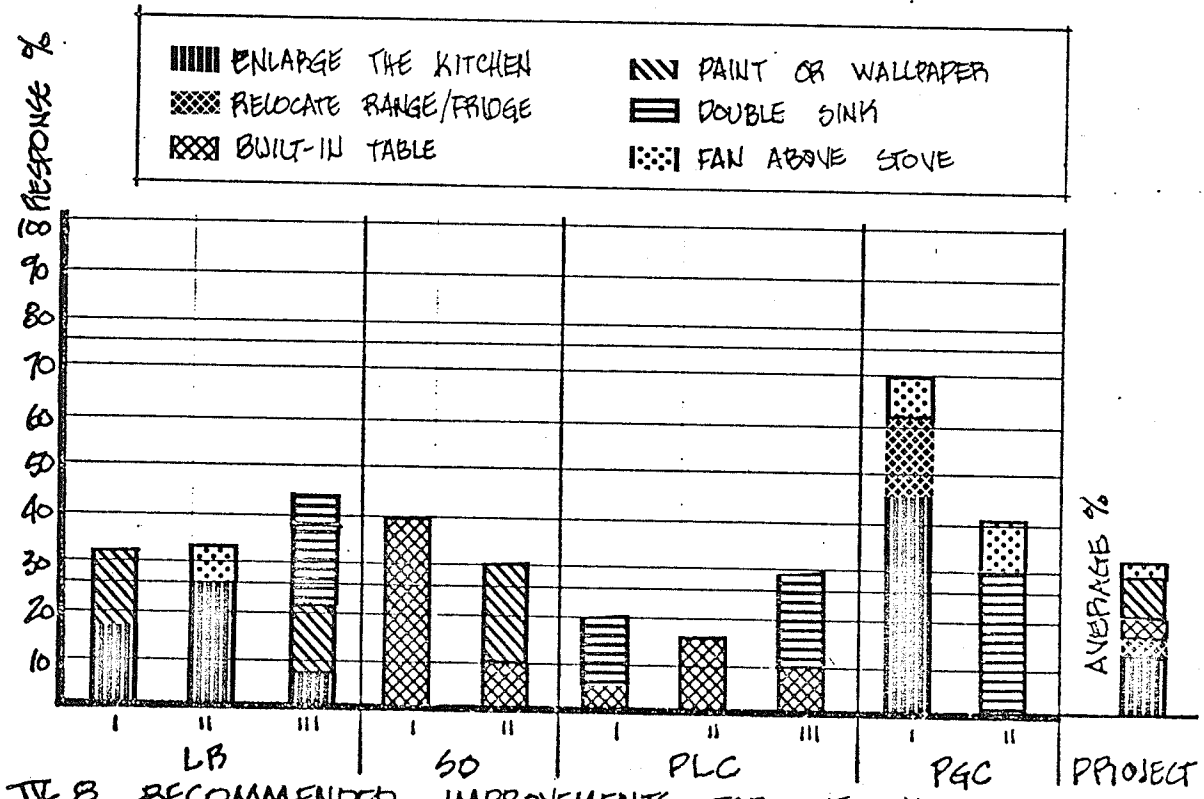

IV-5 IS THERE ADEQUATE KITCHEN COUNTER/CUPBOARD SPACE?



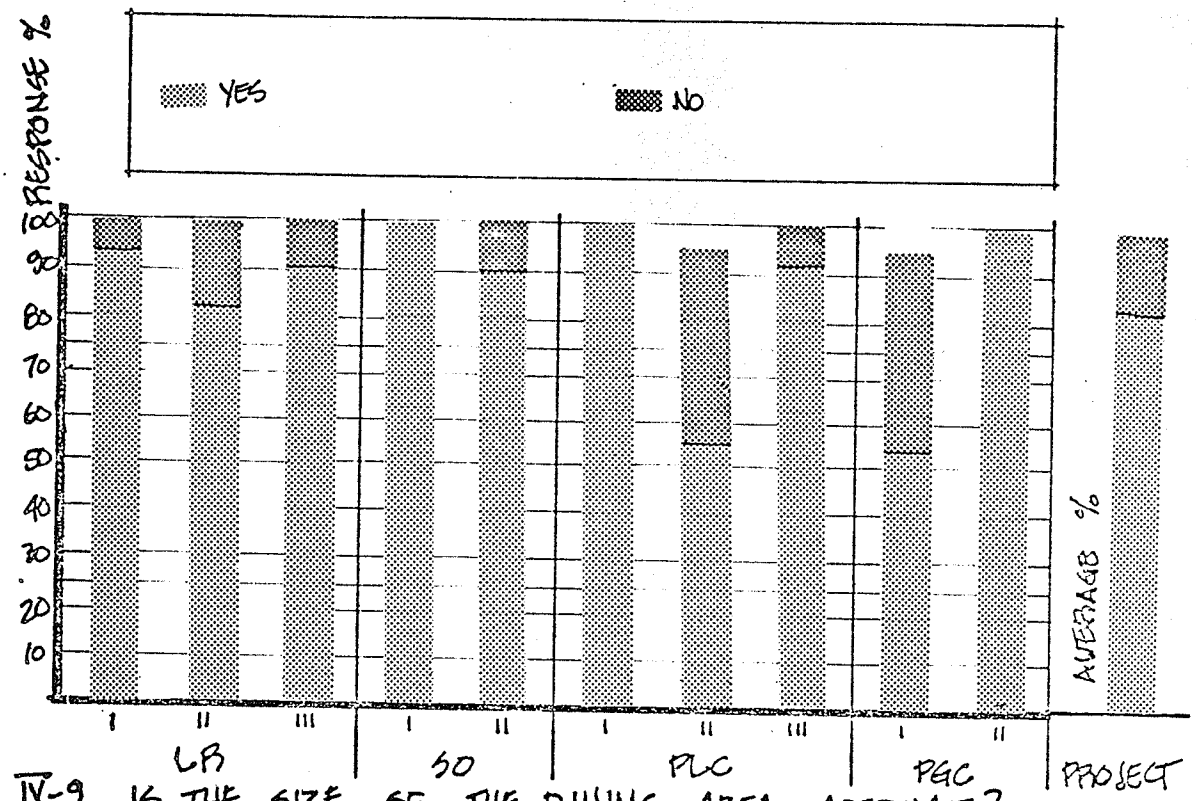

IV-6 IS THE ARRANGEMENT OF THE COUNTER AND THE KITCHEN APPLIANCES CONVENIENT?



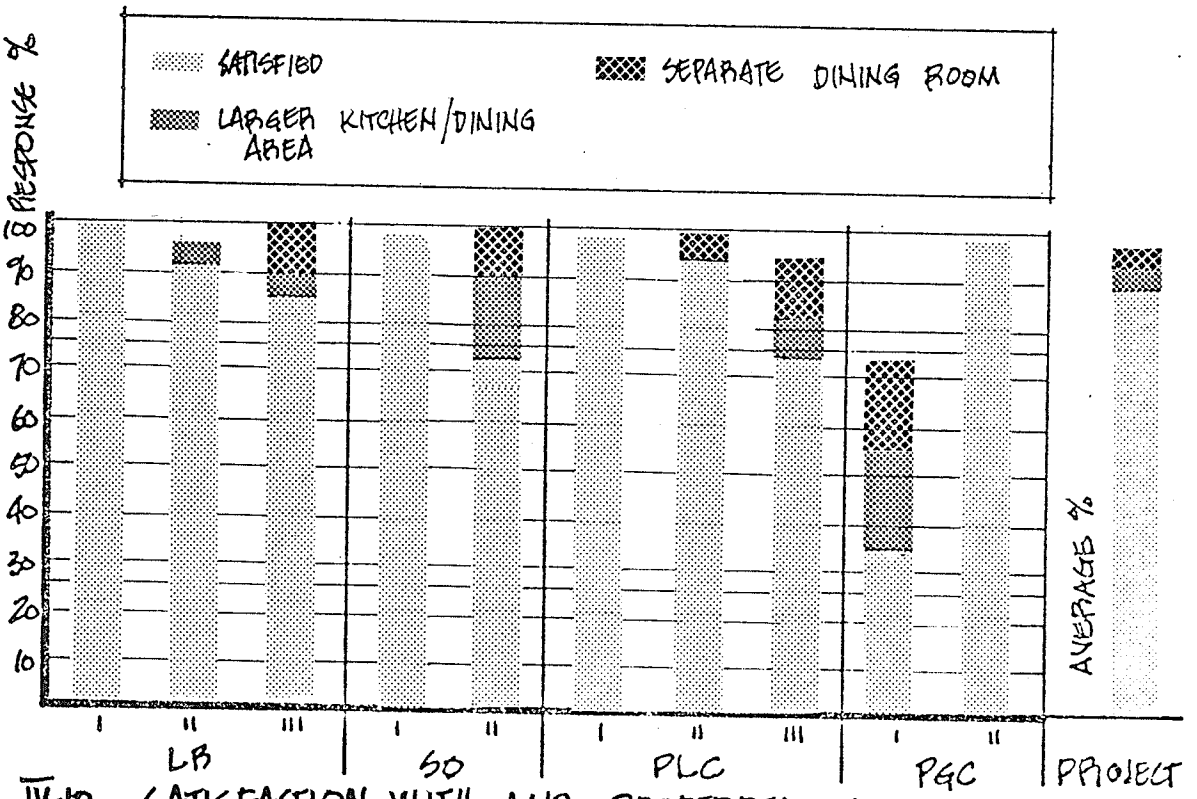

III-7 SECONDARY ACTIVITIES CONDUCTED IN THE KITCHEN.



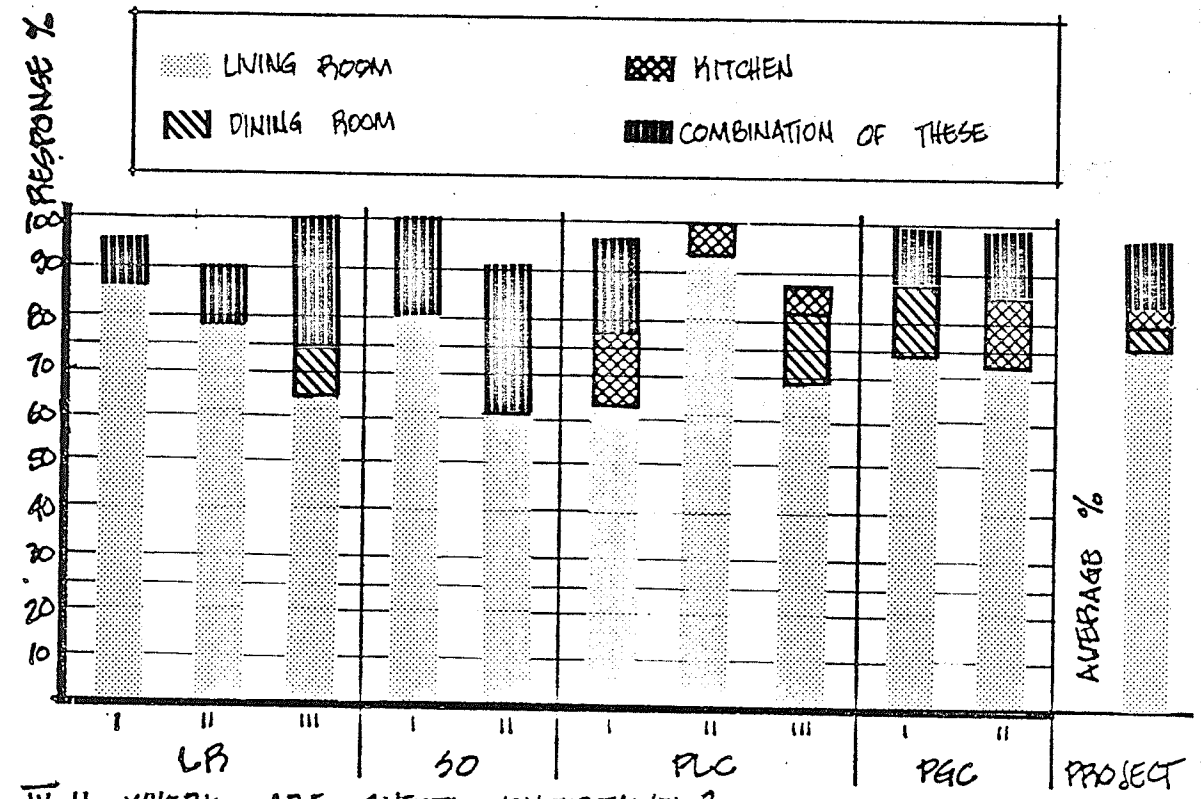

III-8 RECOMMENDED IMPROVEMENTS FOR THE KITCHEN.



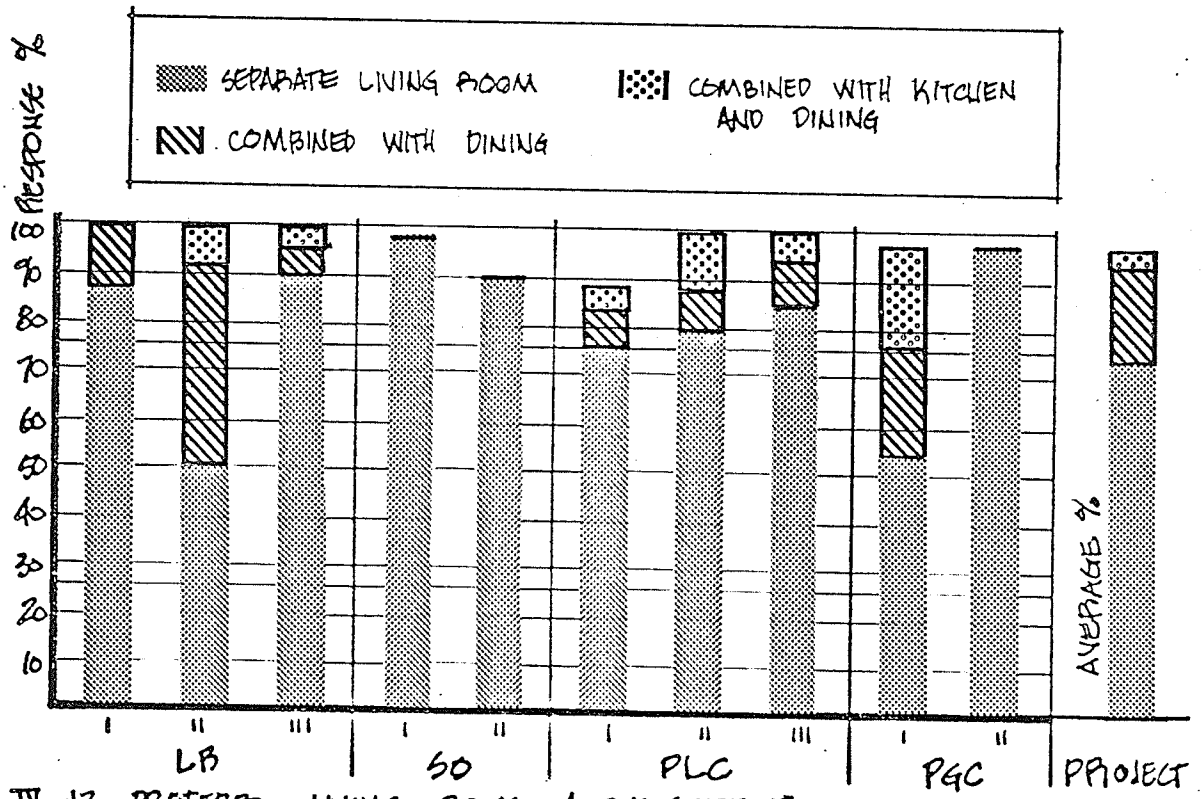

IV-9 IS THE SIZE OF THE DINING AREA ADEQUATE?



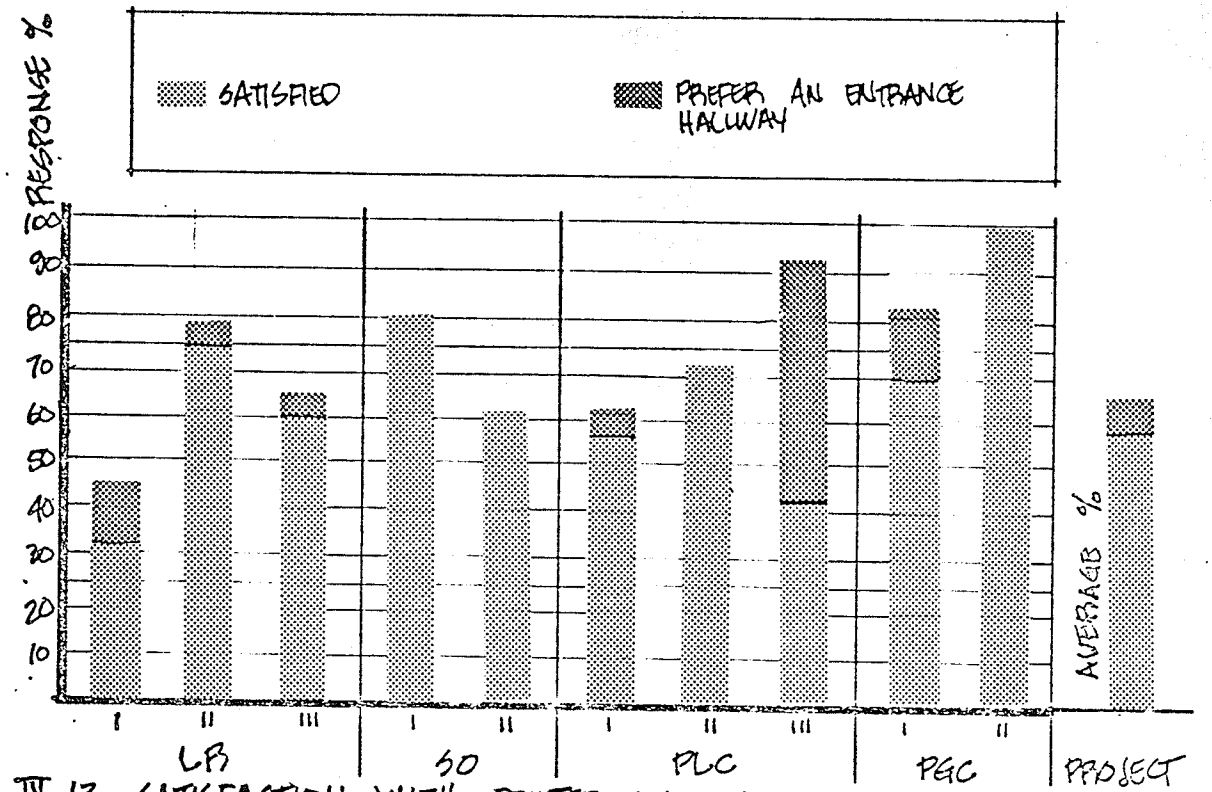

IV-10 SATISFACTION WITH, AND PREFERRED CHANGES TO, THE LOCATION OF THE DINING AREA.



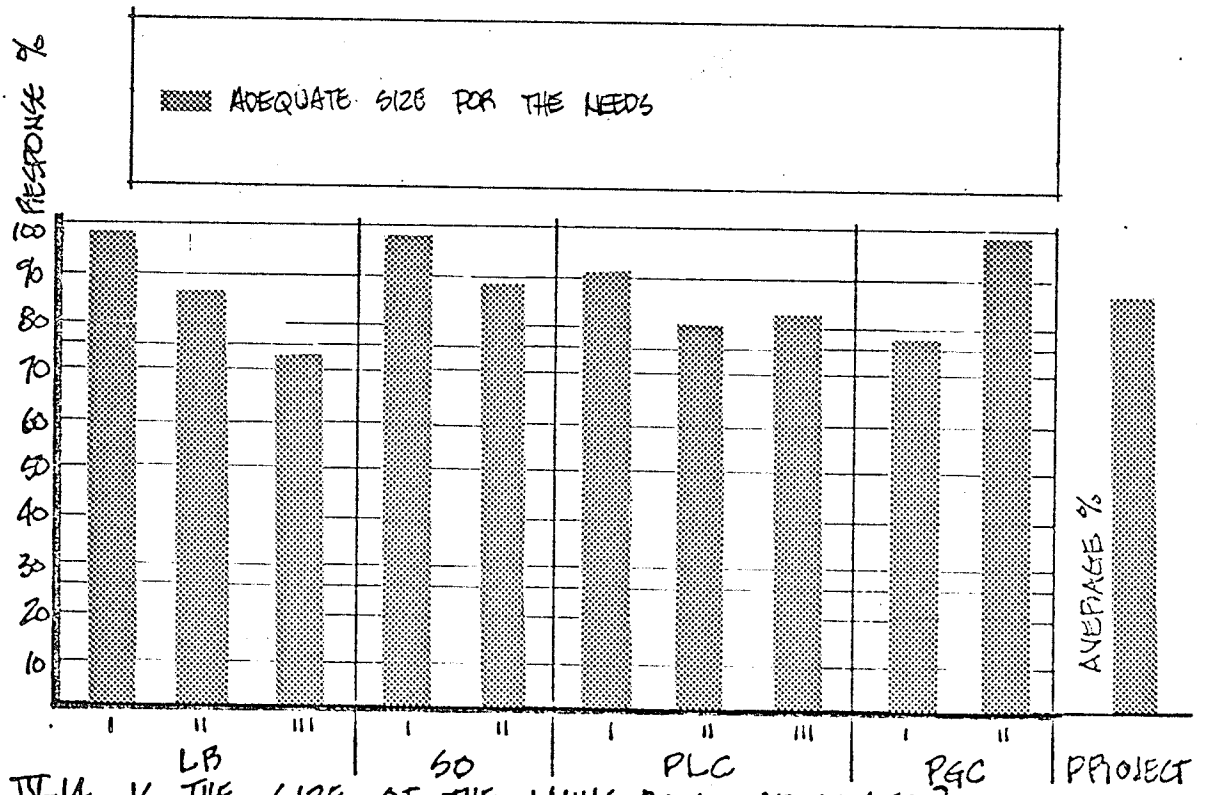

IV-11 WHERE ARE GUESTS ENTERTAINED?



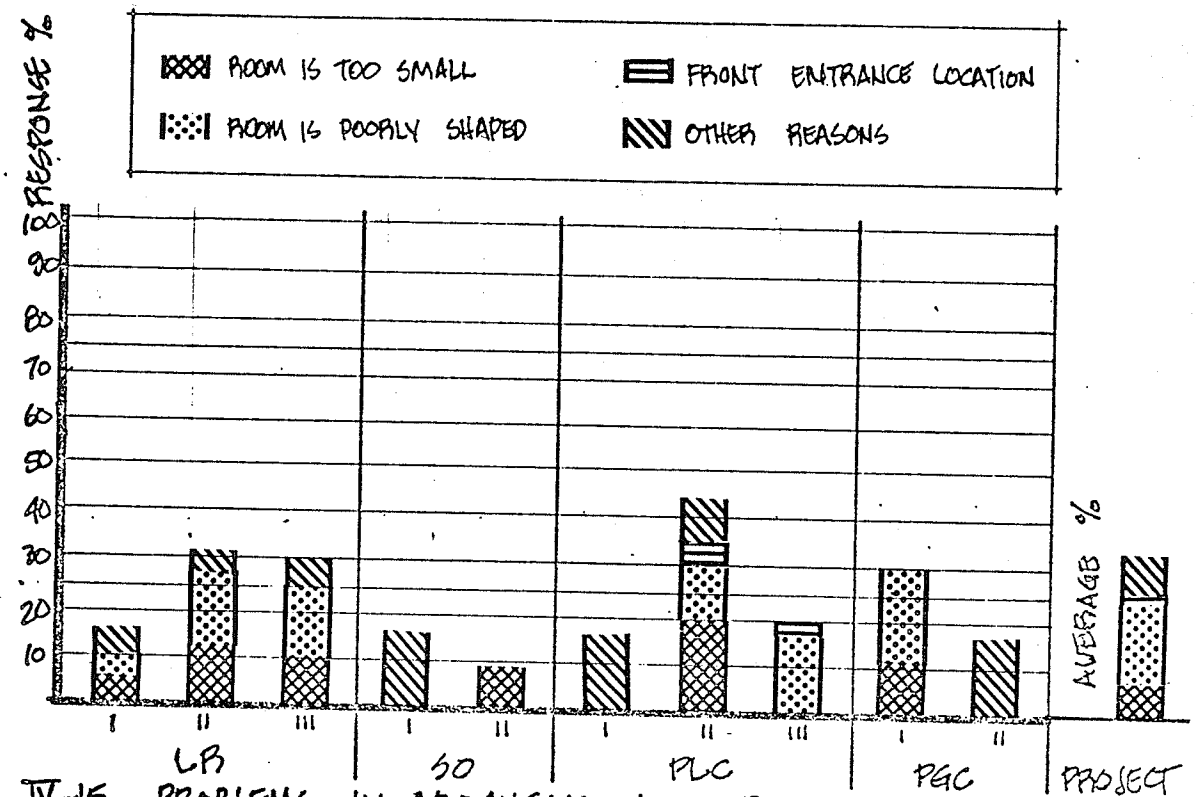

IV-12 PREFERED LIVING ROOM ARRANGEMENT.



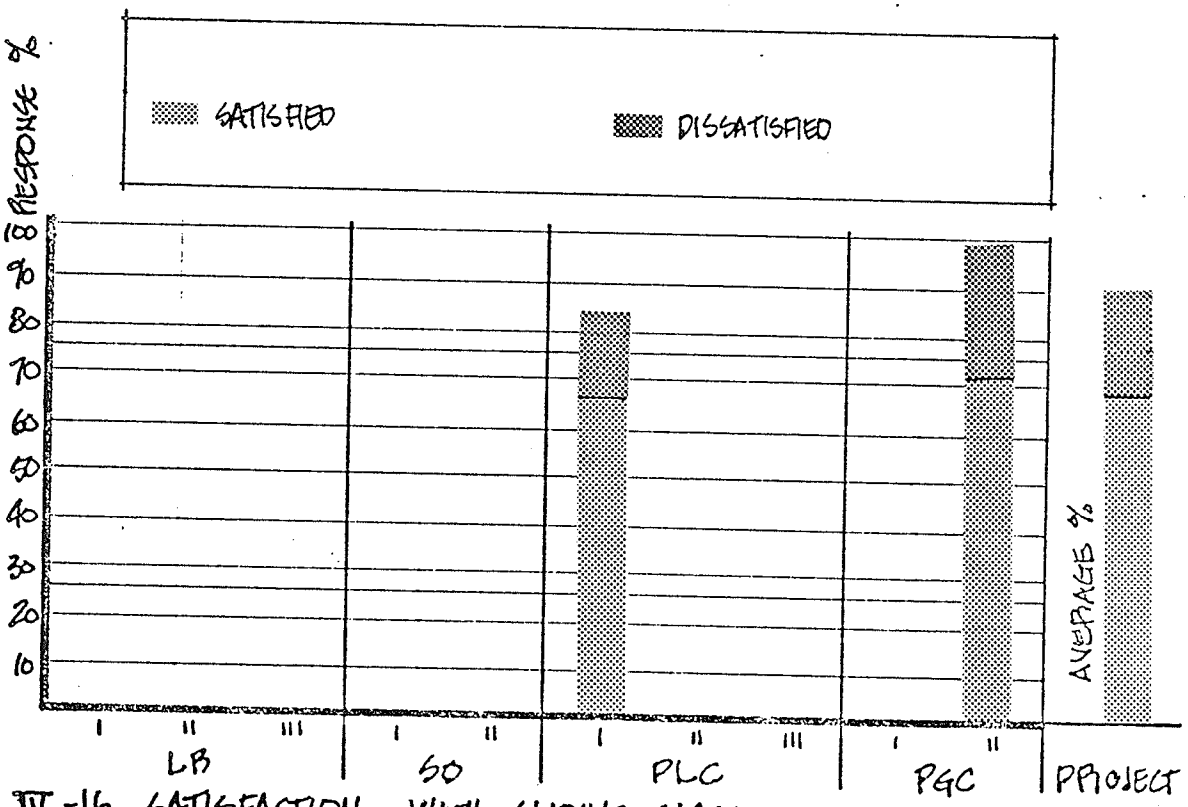

IV-13 SATISFACTION WITH, PREFERENCE OF, FRONT ENTRANCE.



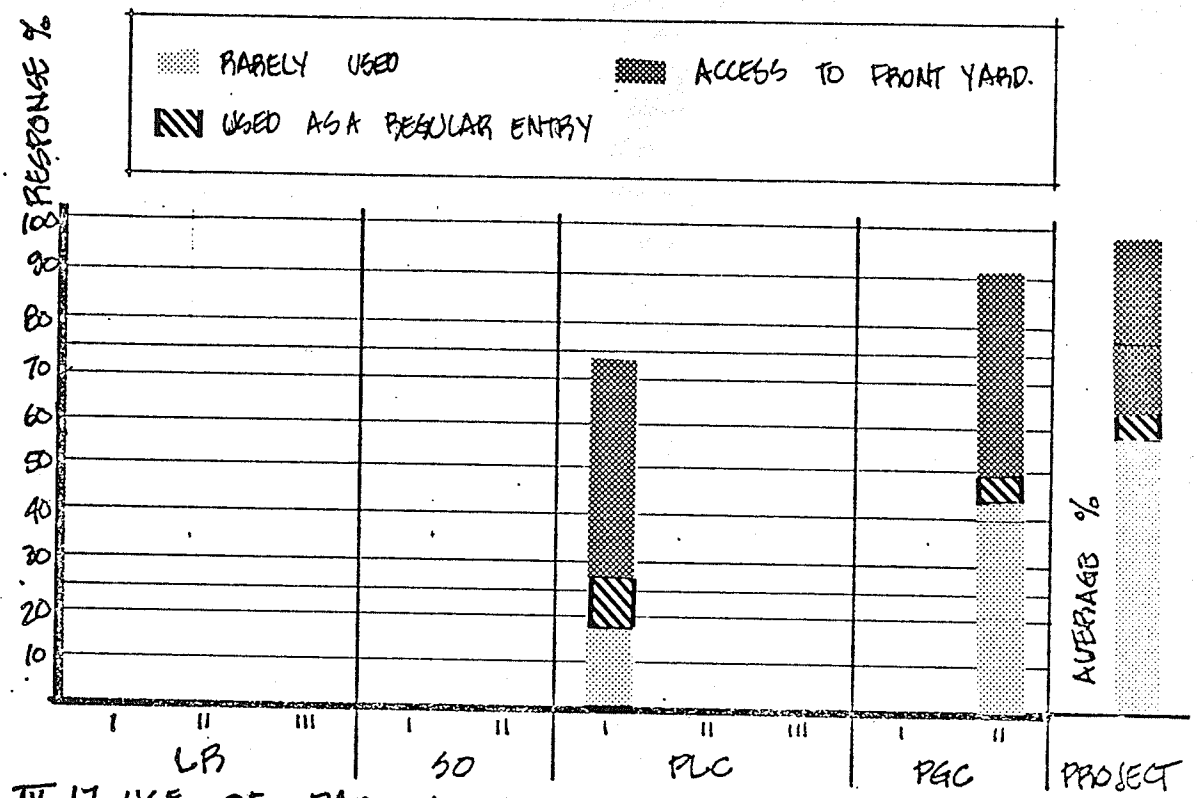

IV-14 IS THE SIZE OF THE LIVING ROOM ADEQUATE?



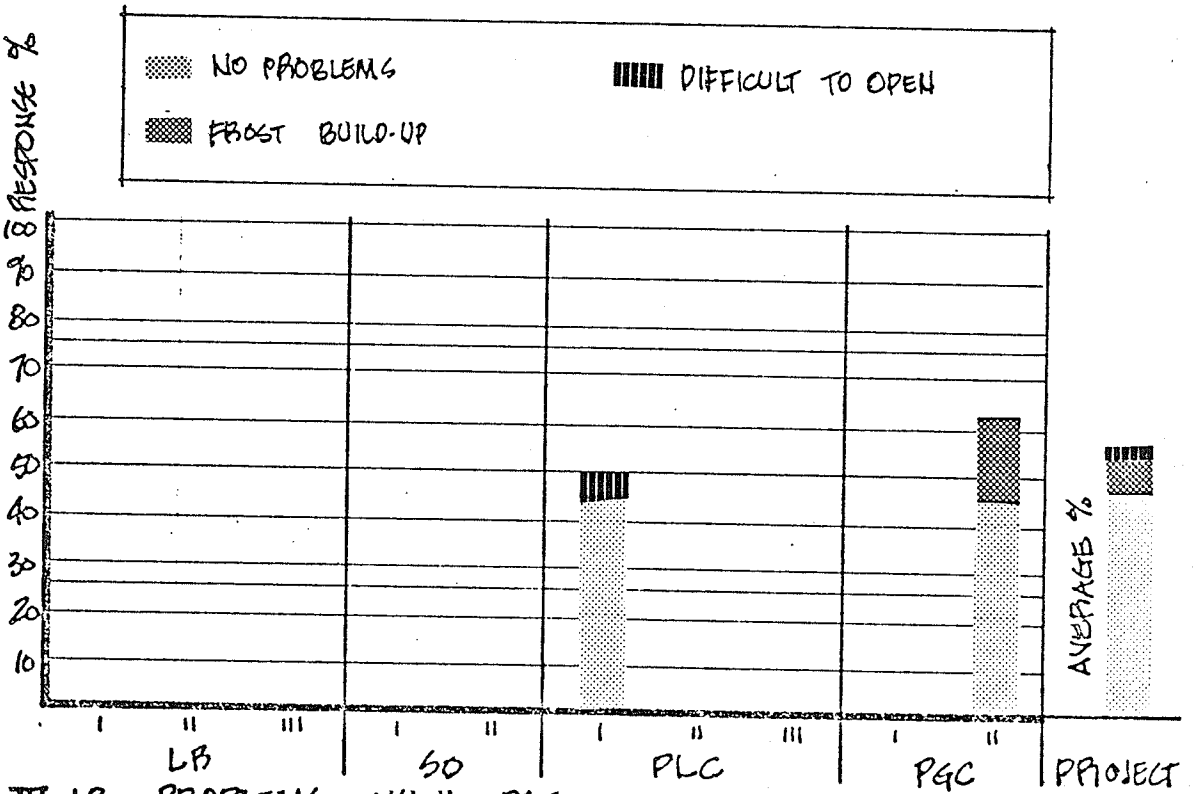

IV-15 PROBLEMS IN ARRANGING LIVING ROOM FURNITURE.



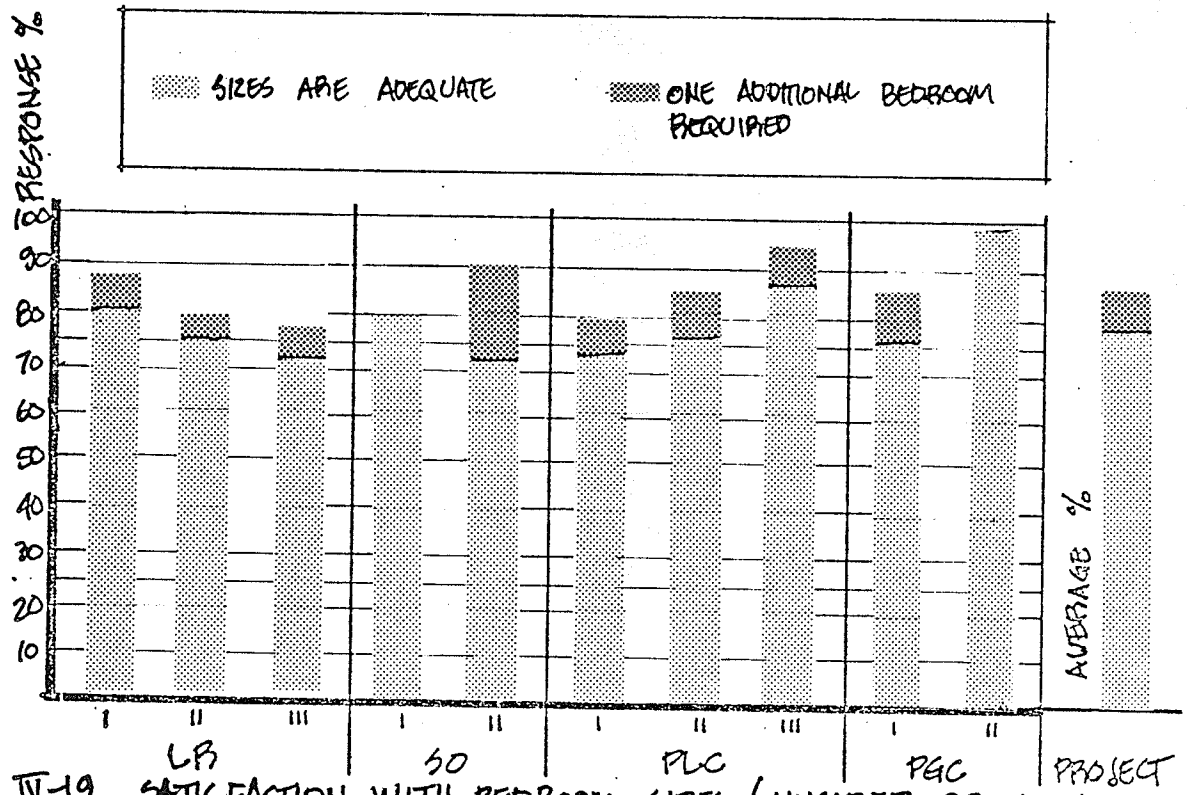

IV-16 SATISFACTION WITH SLIDING-GLASS DOORS.



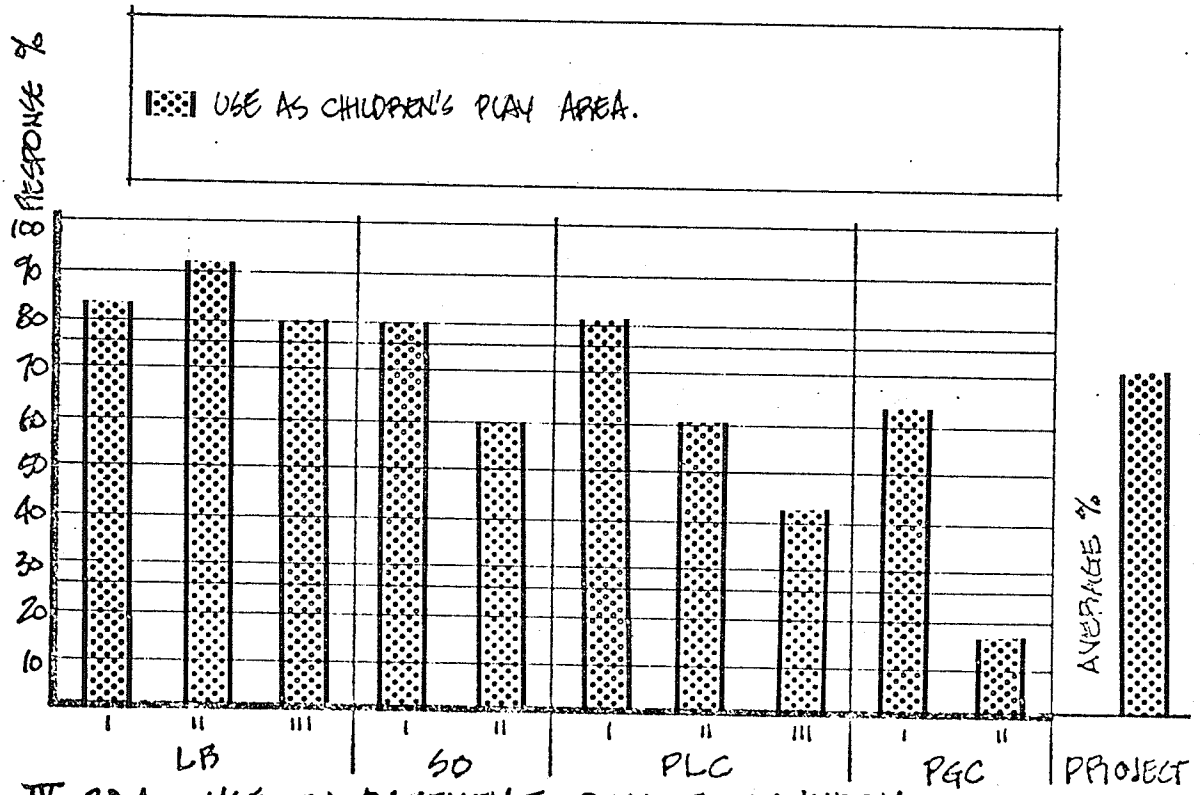

IV-17 USE OF PATIO DOOR.



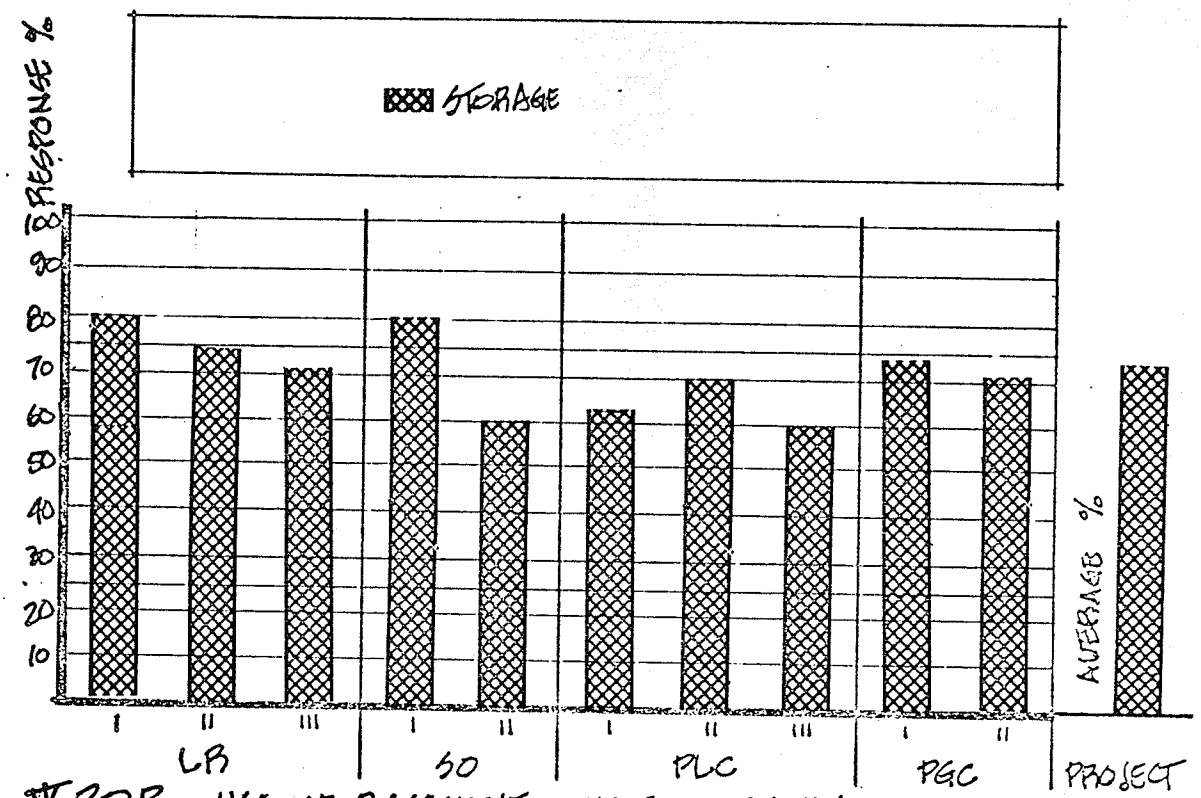

IV-18 PROBLEMS WITH PATIO DOORS.



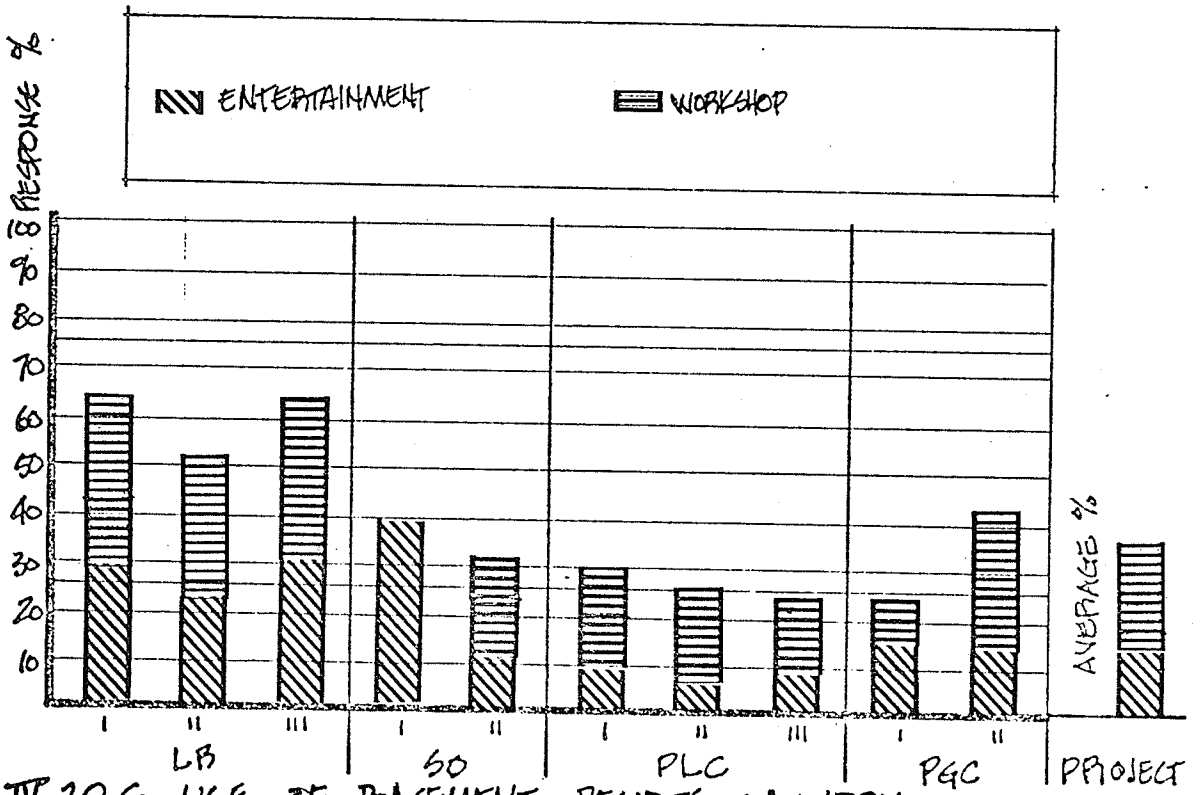

IV-19 SATISFACTION WITH BEDROOM SIZES / NUMBER PROVIDED.



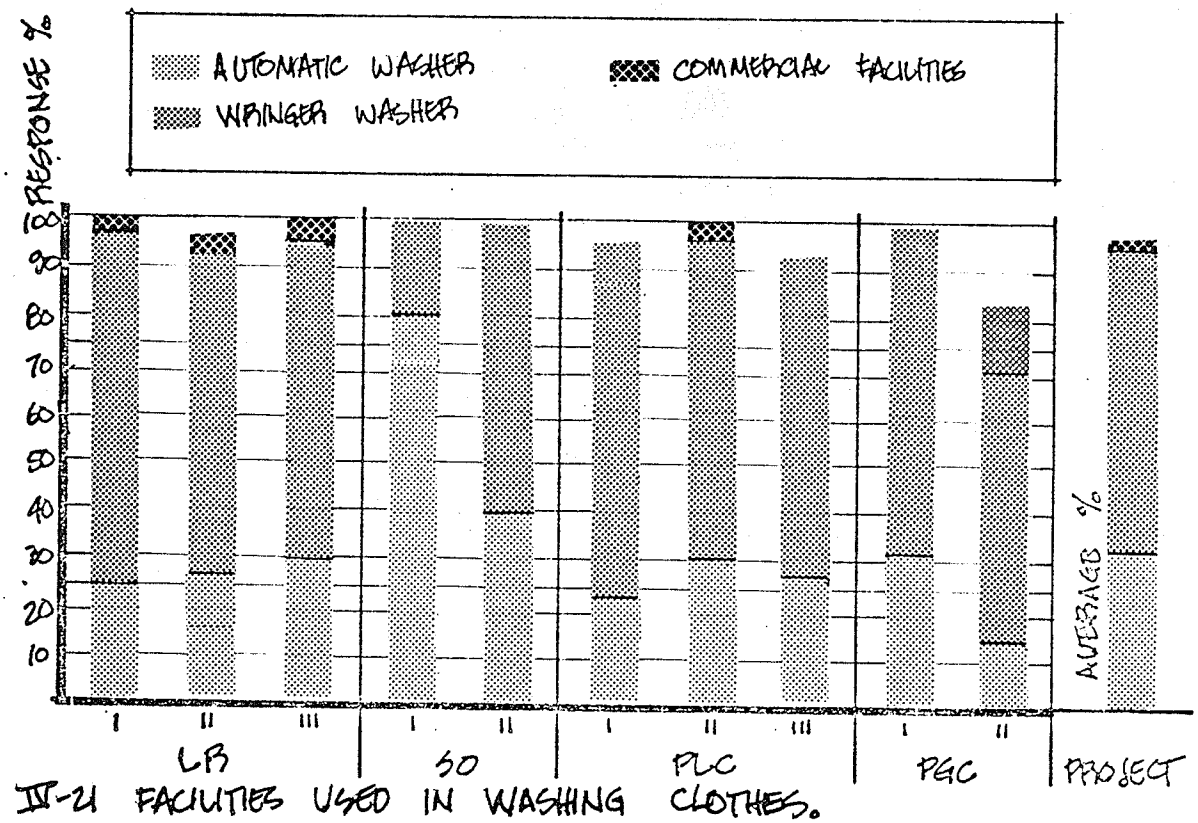

IV-20.A USE OF BASEMENT BESIDES LAUNDRY
—CHILDREN'S PLAY AREA



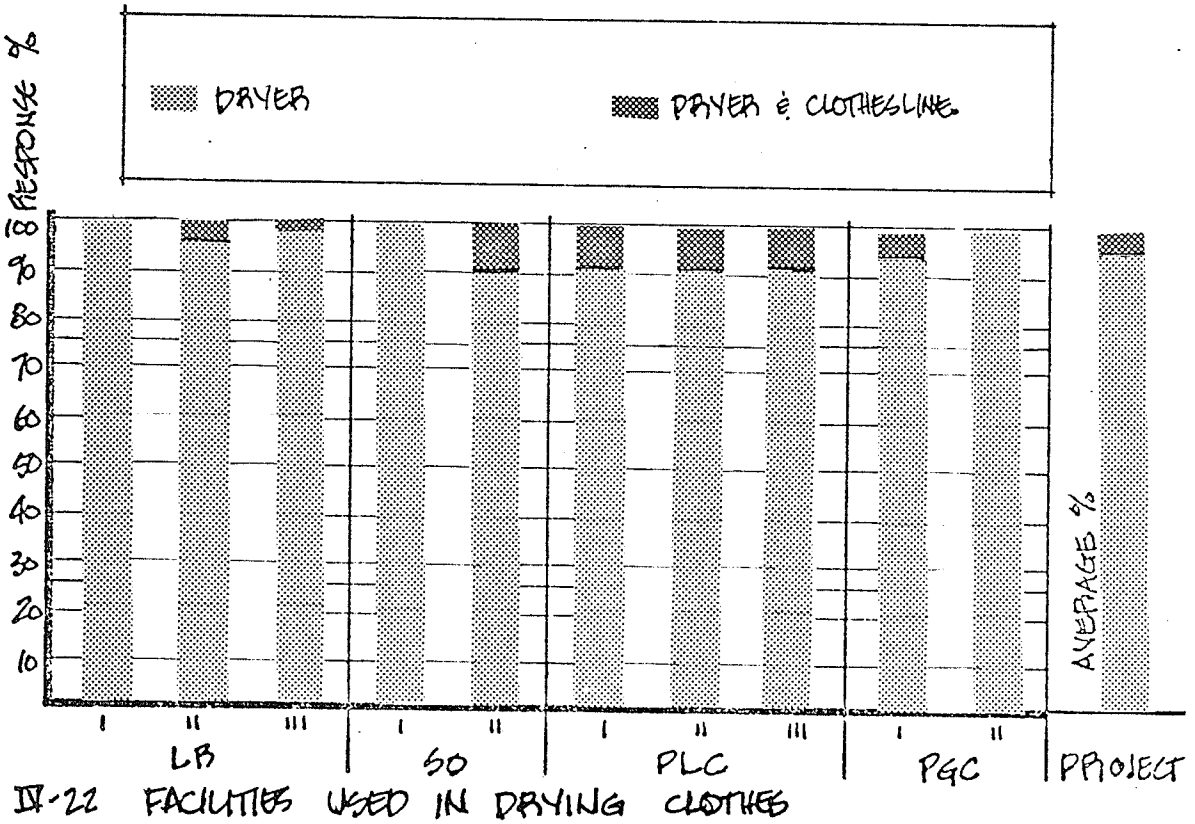

IV-20.B USE OF BASEMENT BESIDES LAUNDRY — STORAGE



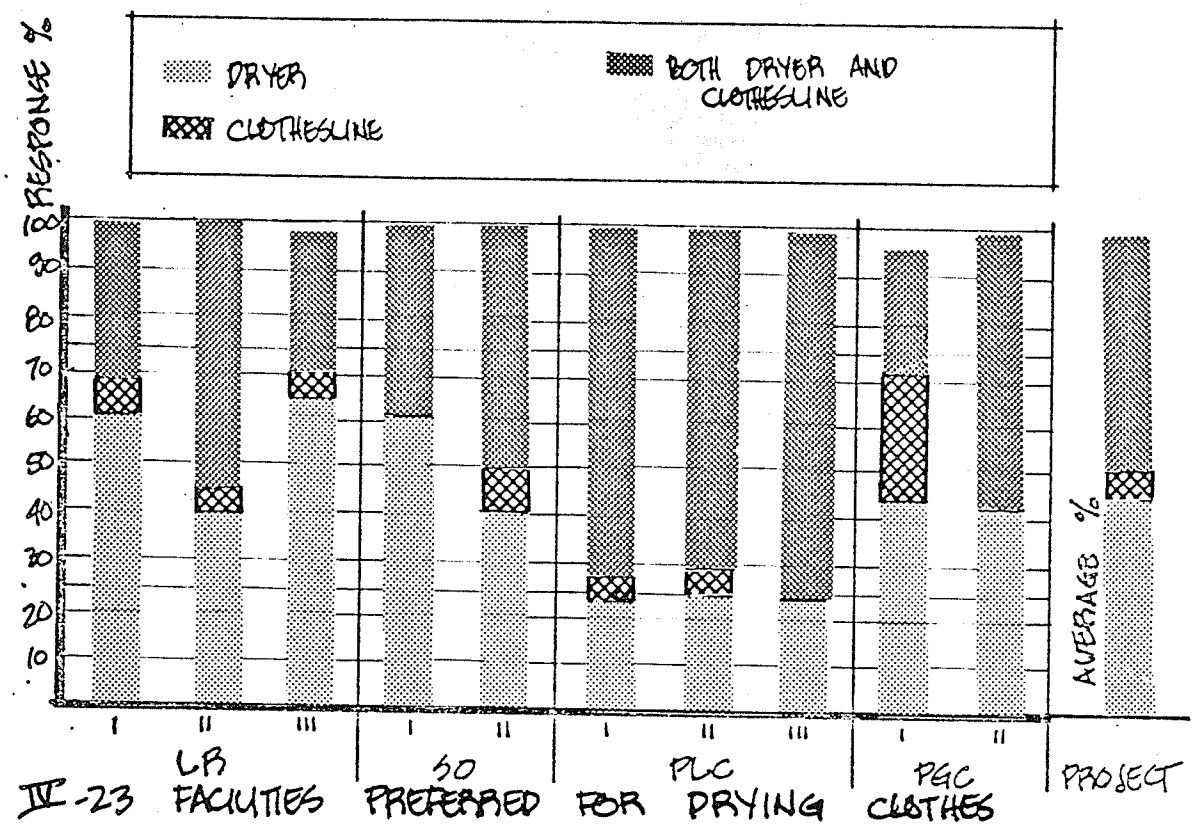

IV-20.C USE OF BASEMENT BESIDES LAUNDRY — ENTERTAINMENT AND WORKSHOP



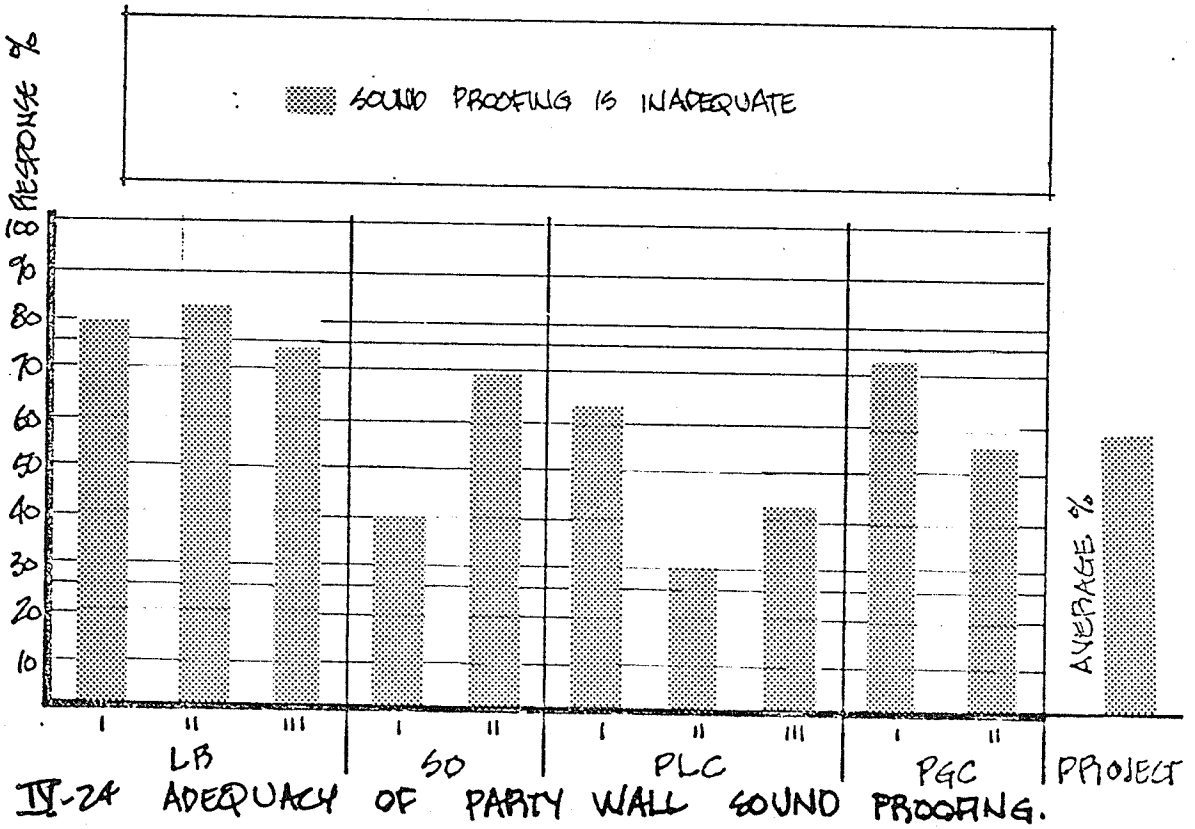

IV-21 FACILITIES USED IN WASHING CLOTHES.



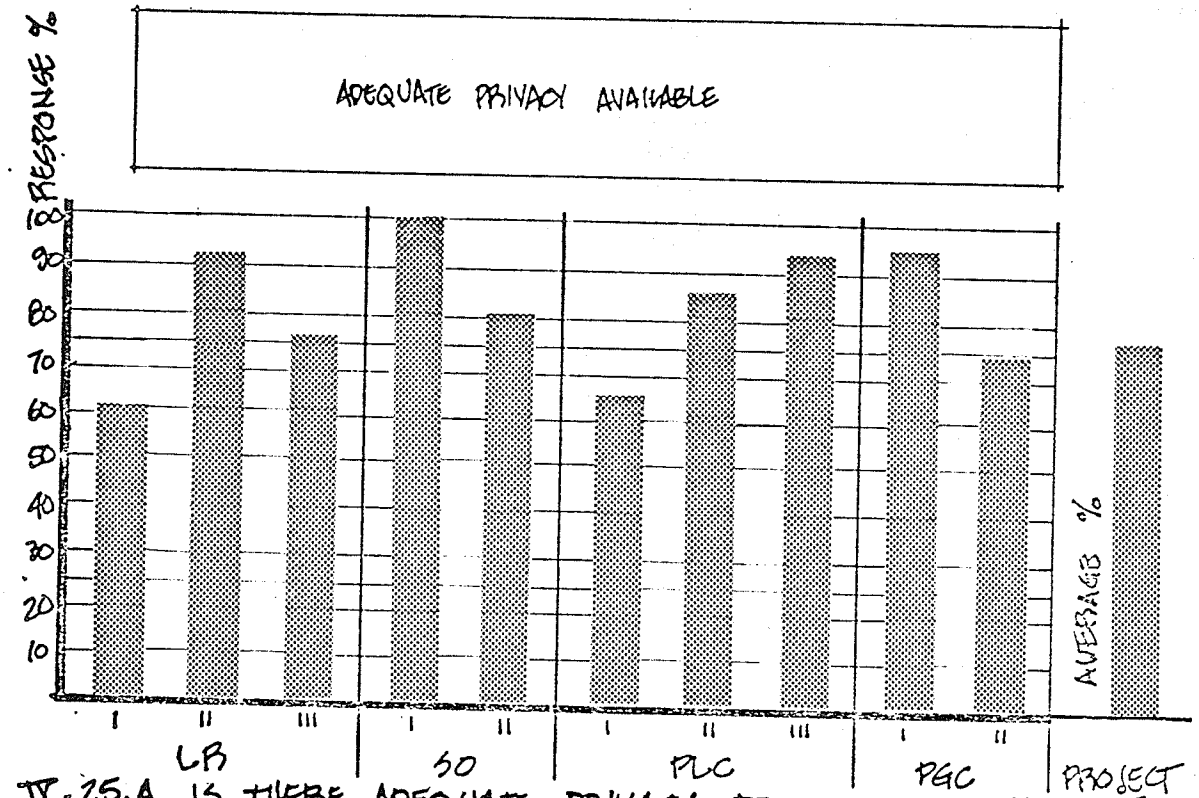

IV-22 FACILITIES USED IN DRYING CLOTHES



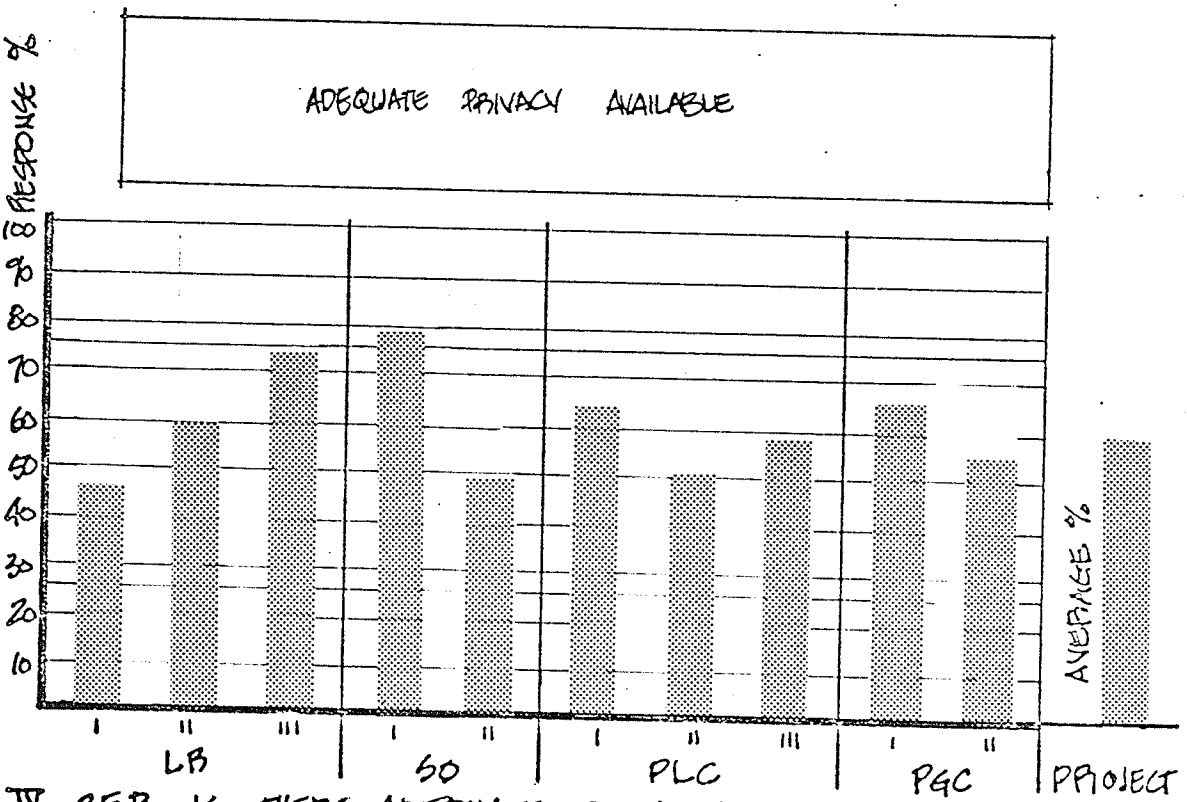

IV-23 FACILITIES PREFERRED FOR DRYING CLOTHES



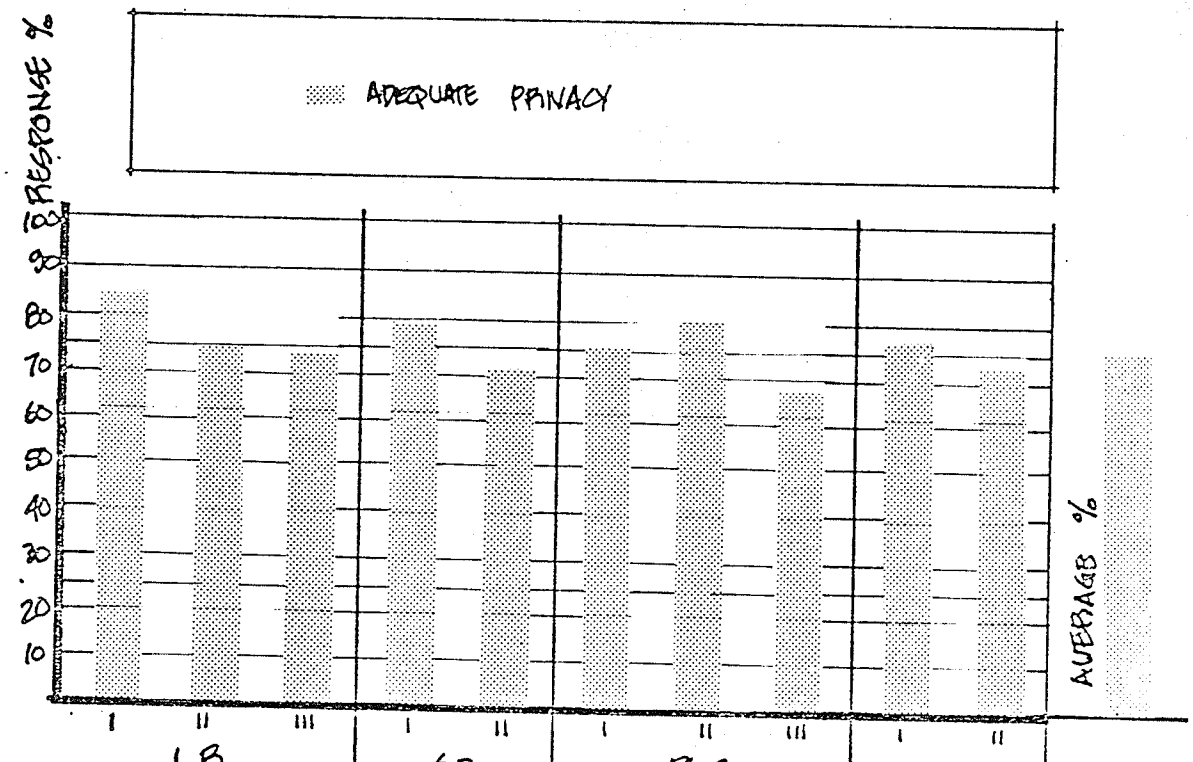

IV-24 ADEQUACY OF PARTY WALL SOUND PROOFING.



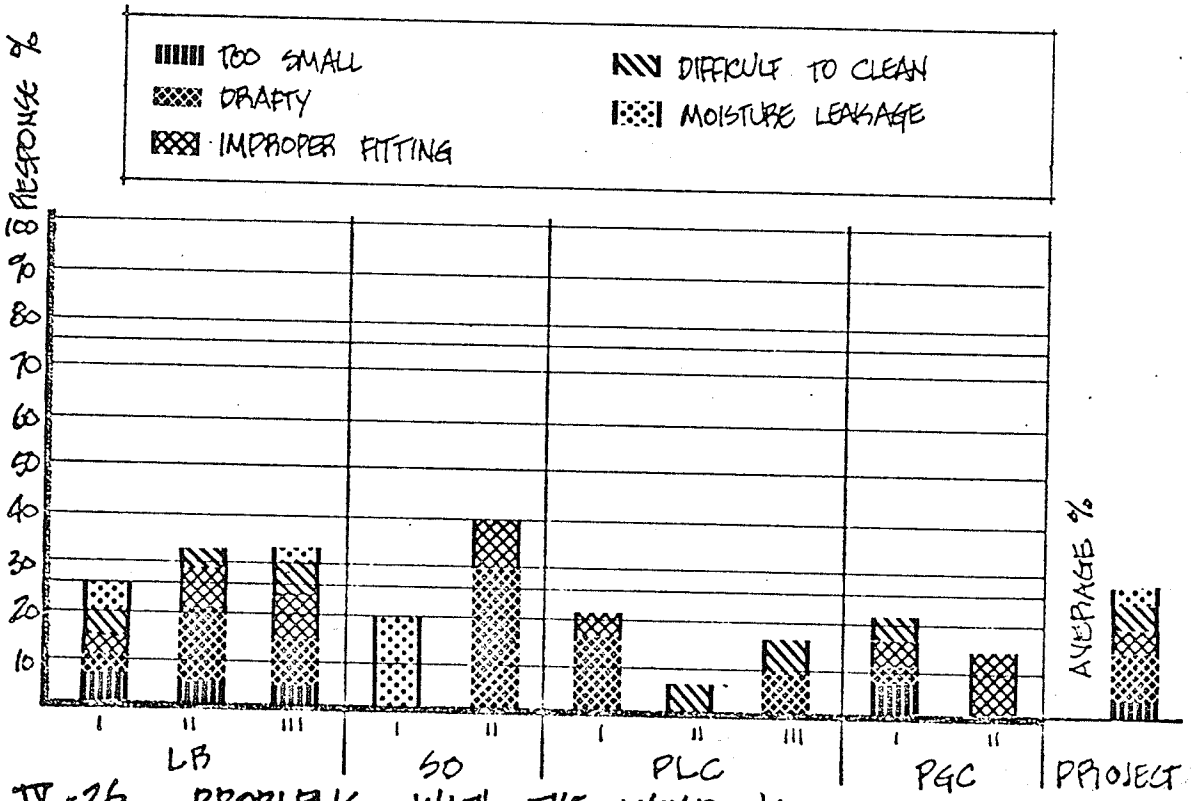

IV-25.A IS THERE ADEQUATE PRIVACY FROM STREET NOISES?



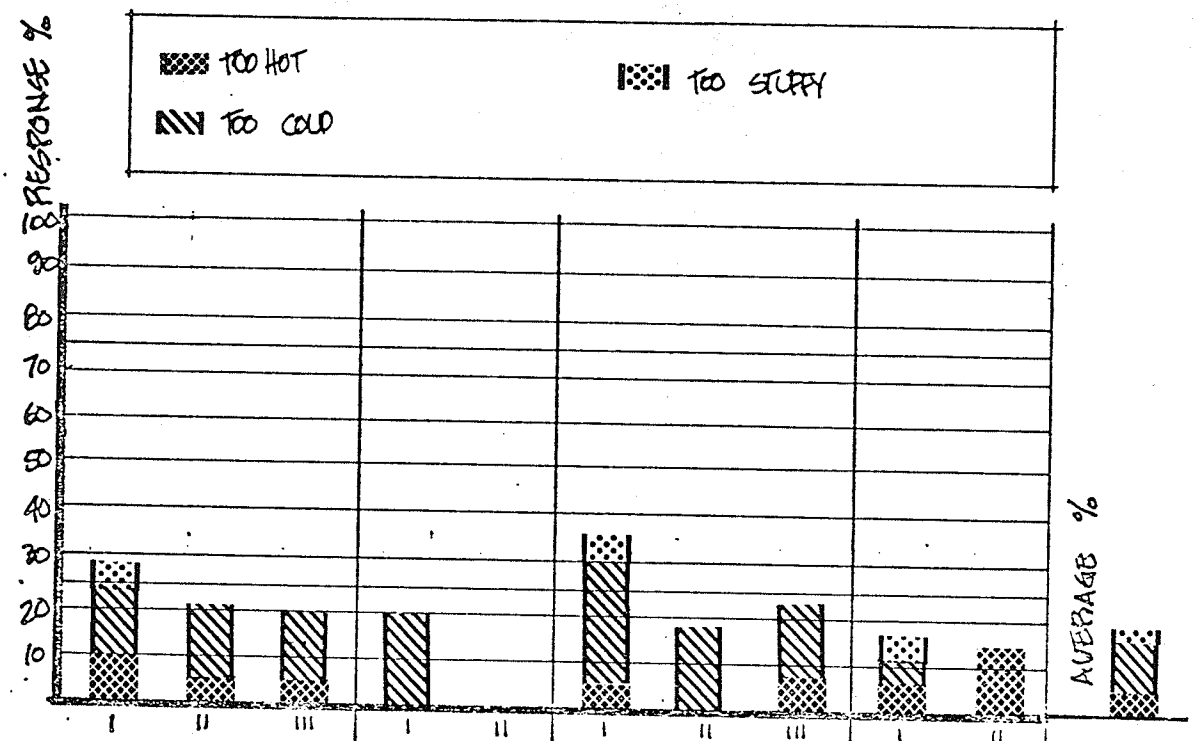

IV-25.B IS THERE ADEQUATE PRIVACY FROM THE NEIGHBORS?



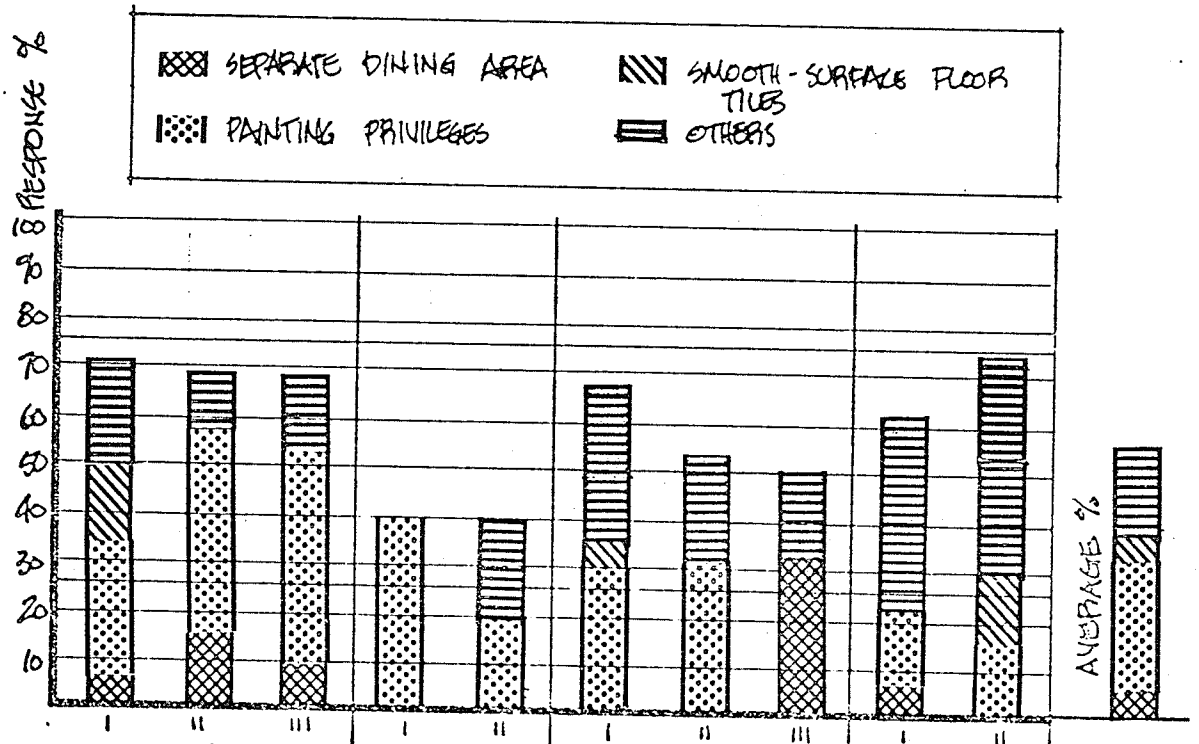

IV-25.C IS THERE ADEQUATE PRIVACY FROM THE REST OF THE FAMILY ?



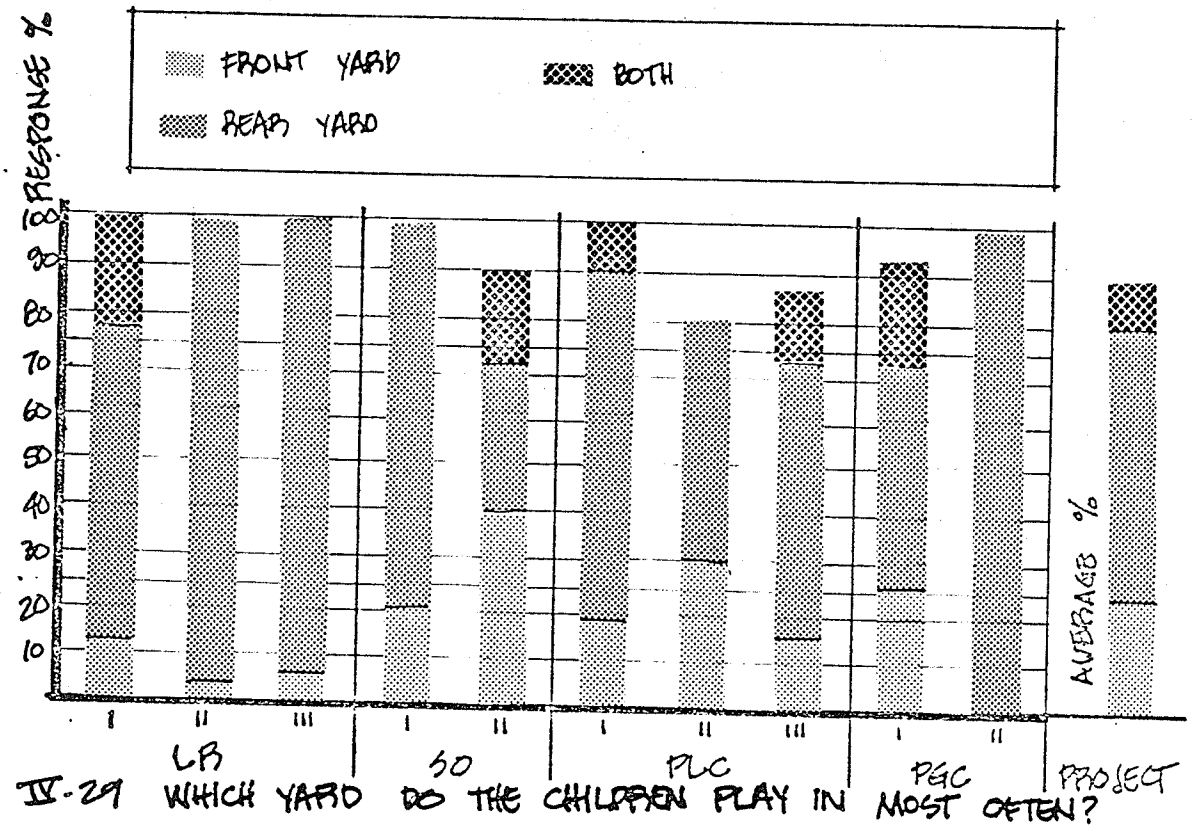

IV-26 PROBLEMS WITH THE WINDOWS



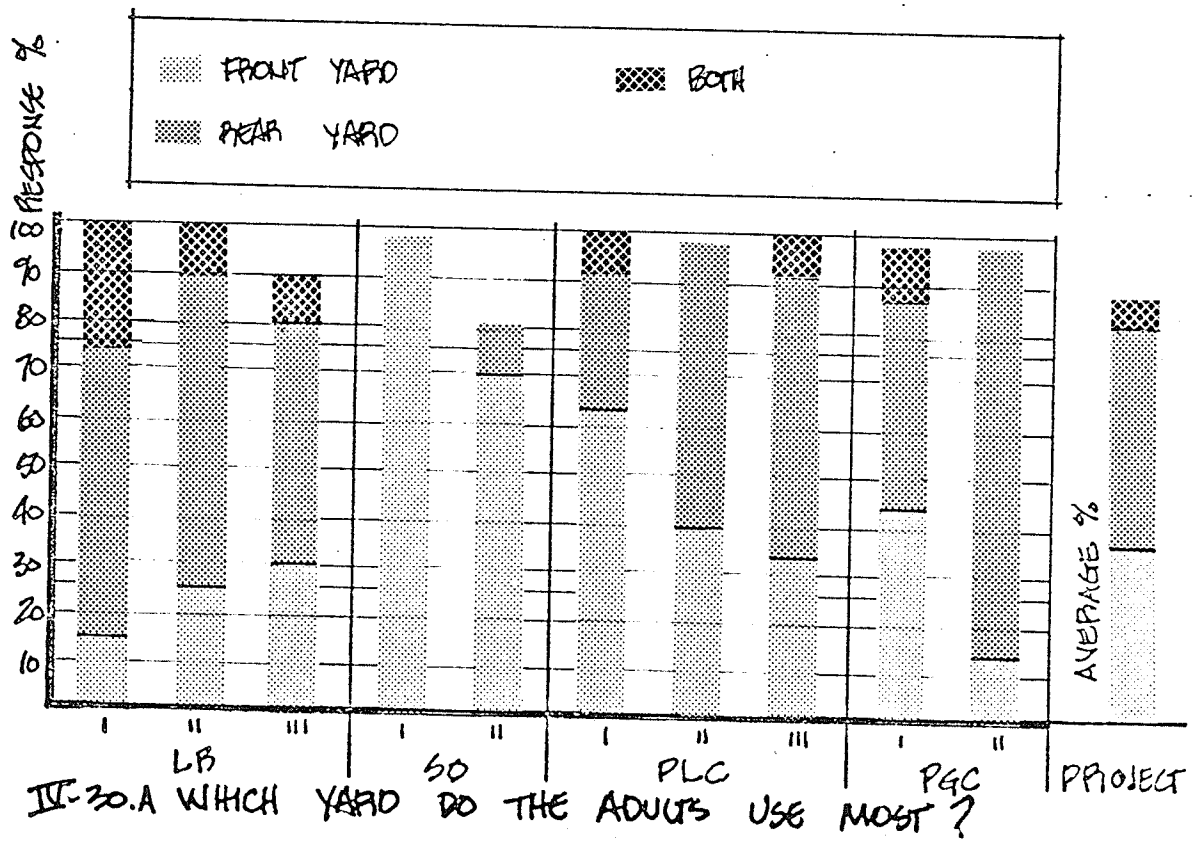

IV-27 ADEQUACY OF HEATING AND VENTILATION SYSTEM



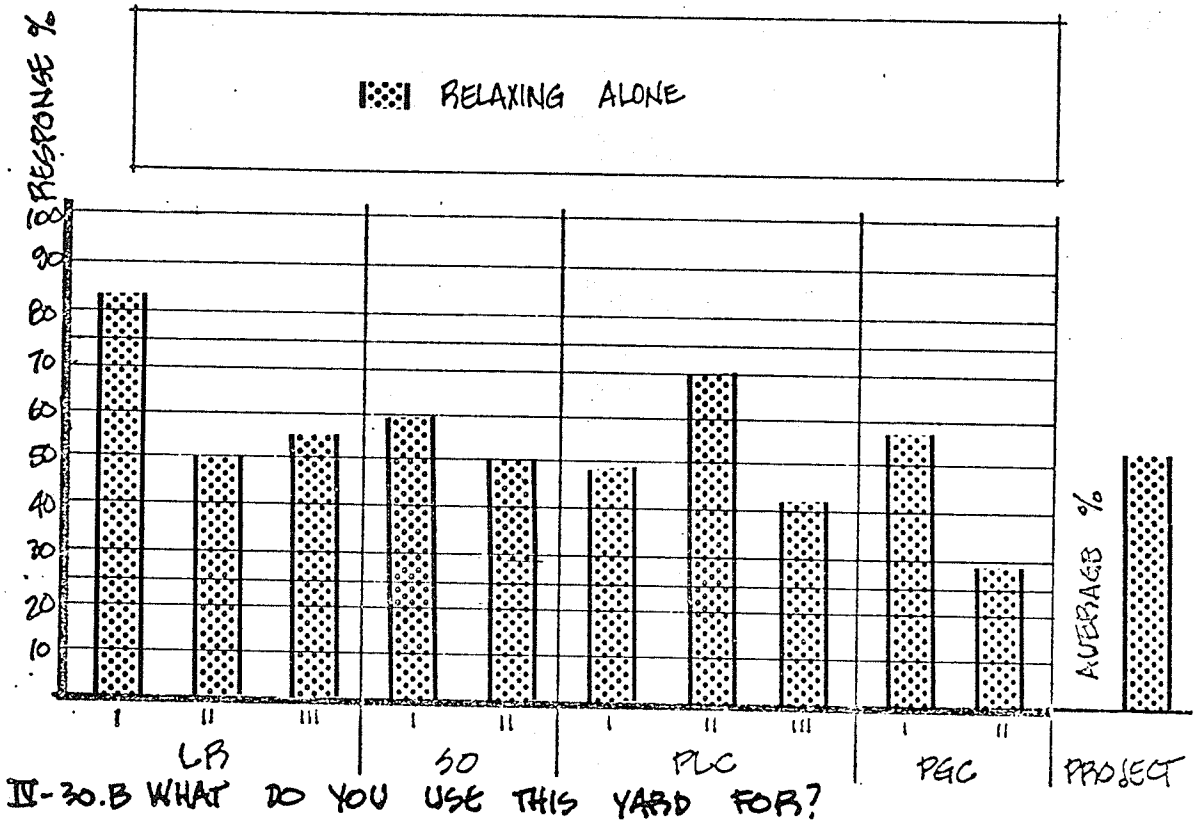

IV-28 BASIC IMPROVEMENTS SUGGESTED FOR UNIT INTERIOR



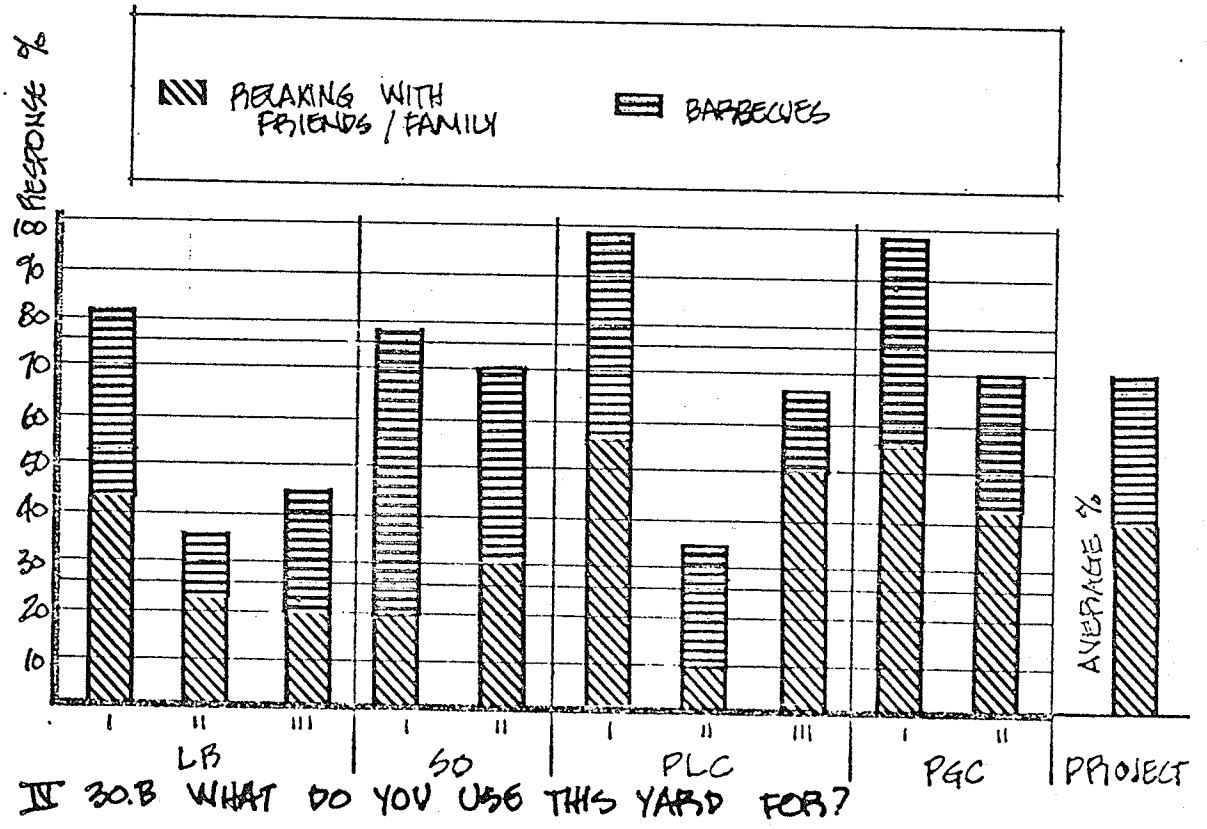

IV-29 WHICH YARD DO THE CHILDREN PLAY IN MOST OFTEN?



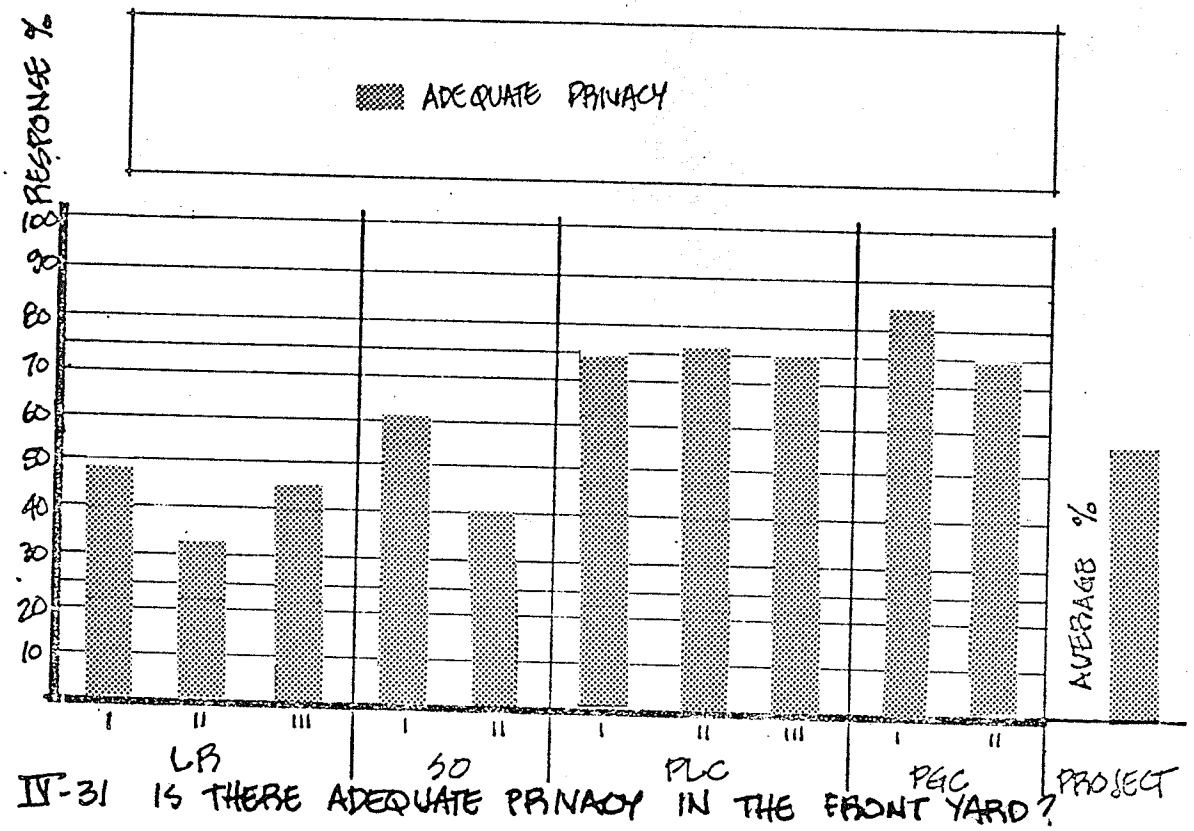

IV-30.A WHICH YARD DO THE ADULTS USE MOST?



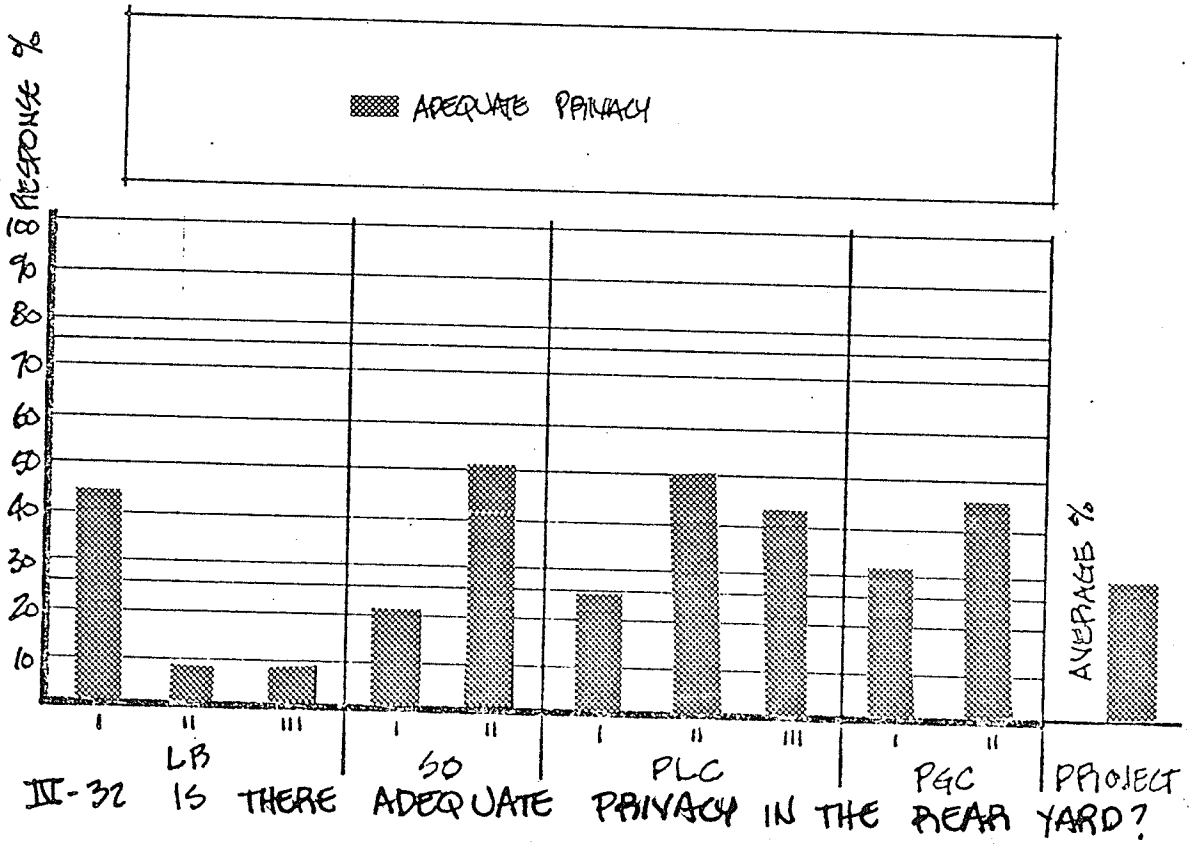

III-30.B WHAT DO YOU USE THIS YARD FOR?



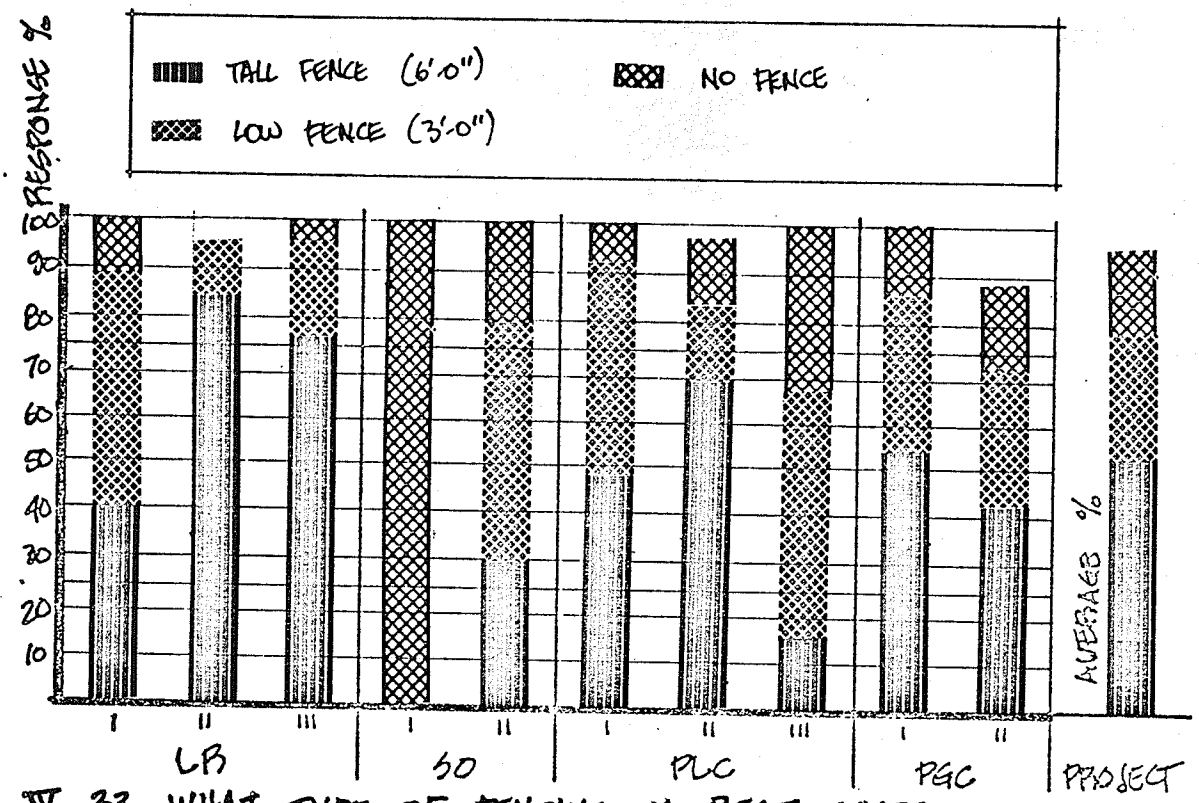

III 30.B WHAT DO YOU USE THIS YARD FOR?



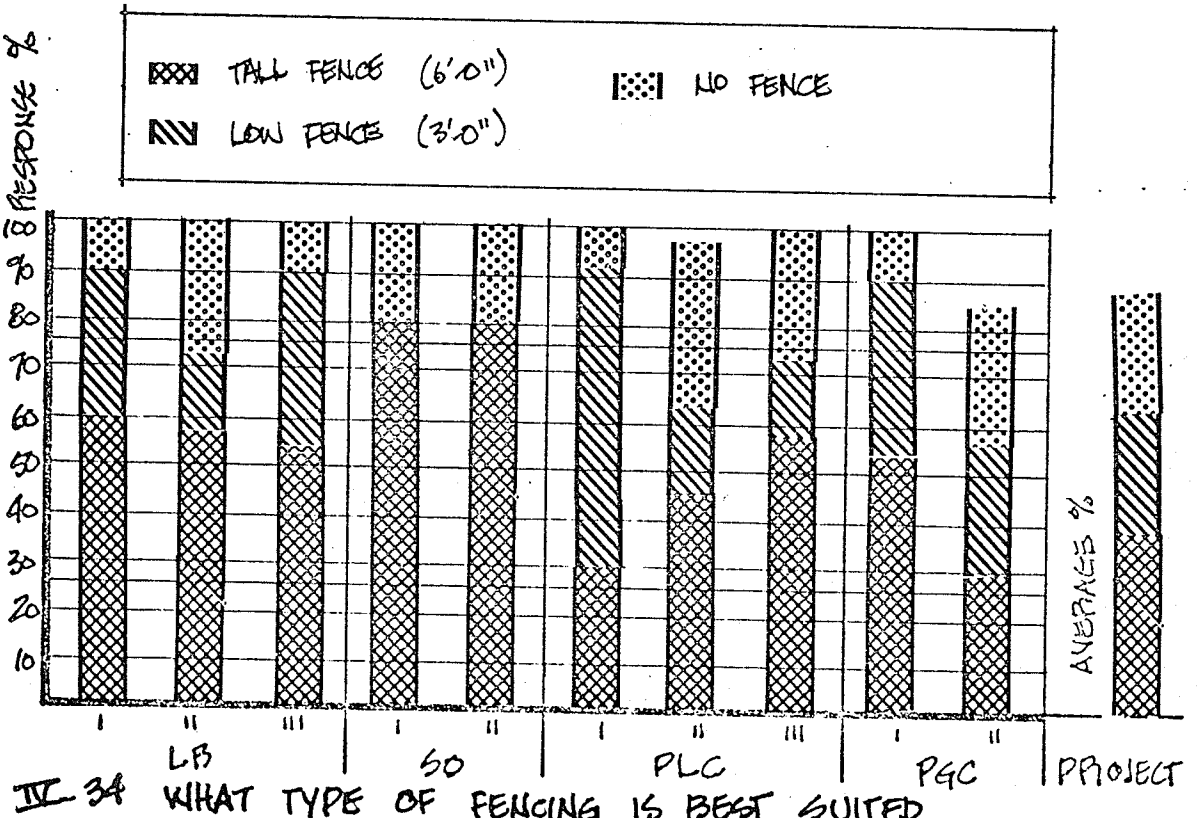

IV-31 IS THERE ADEQUATE PRIVACY IN THE FRONT YARD?



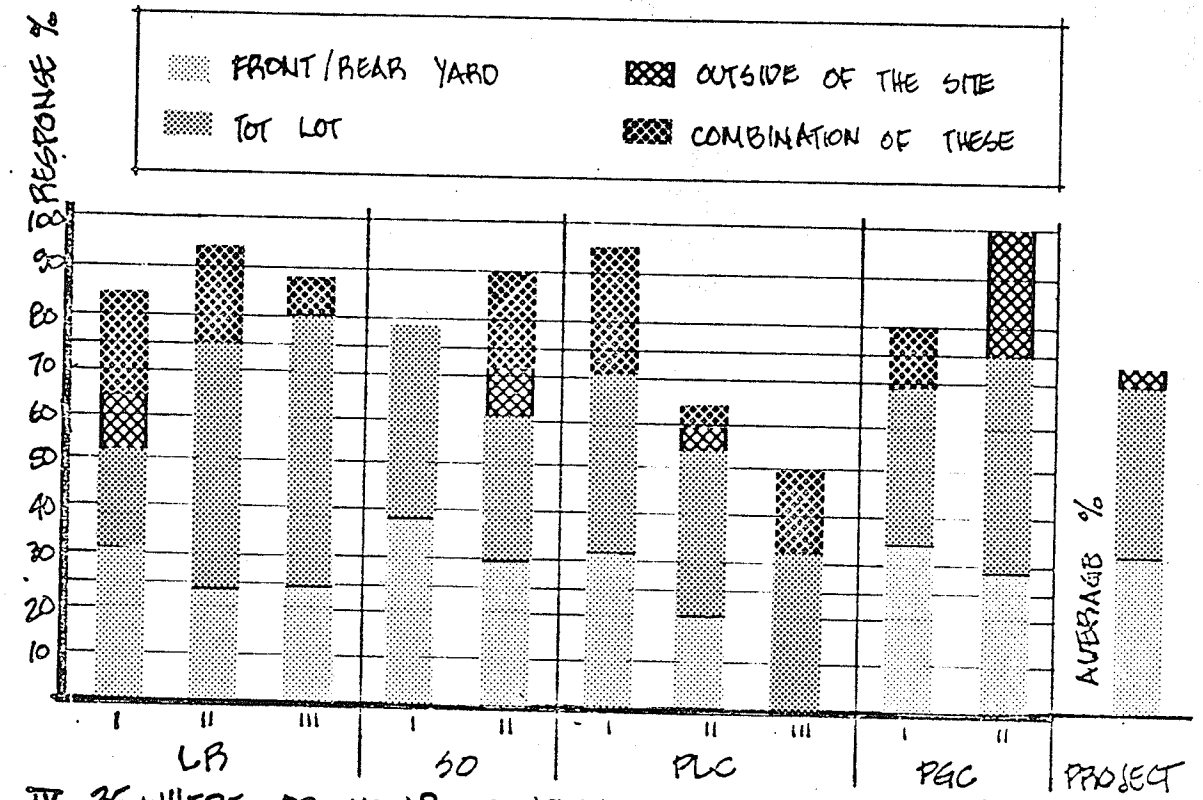

III-32 IS THERE ADEQUATE PRIVACY IN THE REAR YARD?



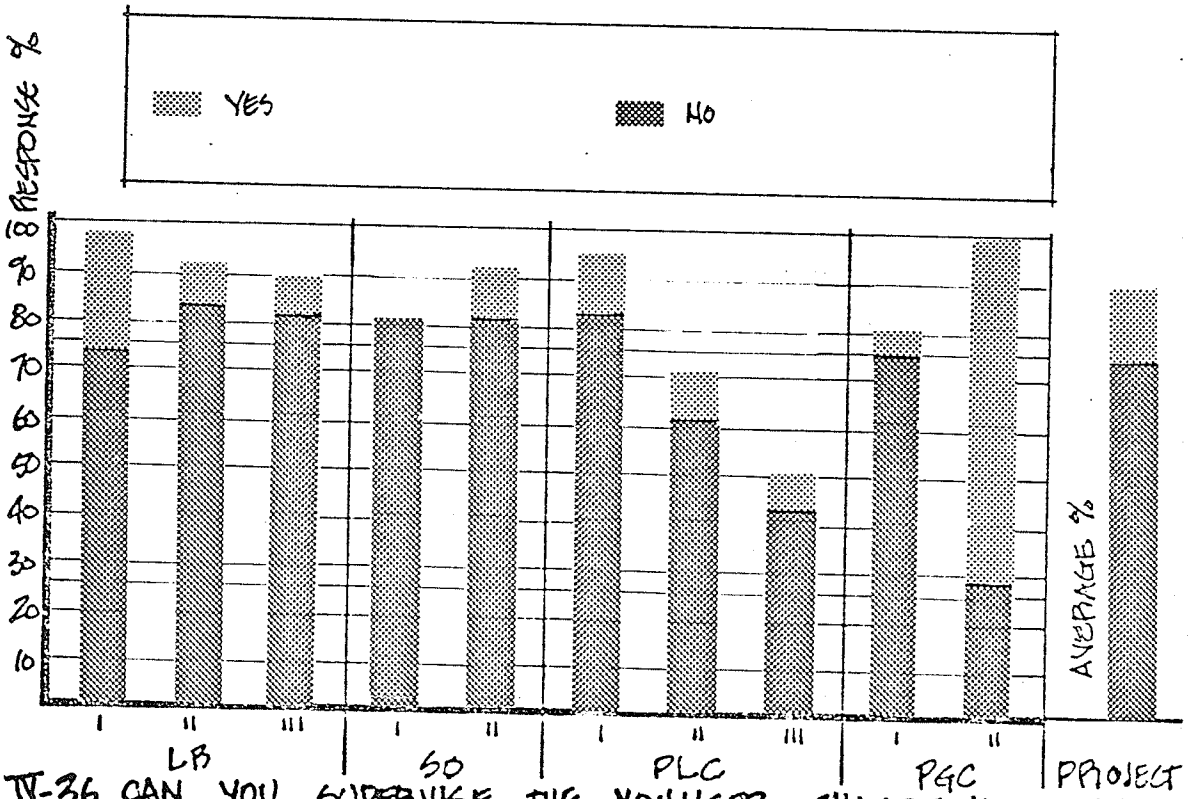

IV-33 WHAT TYPE OF FENCING IS BEST SUITED FOR THE FRONT YARD?



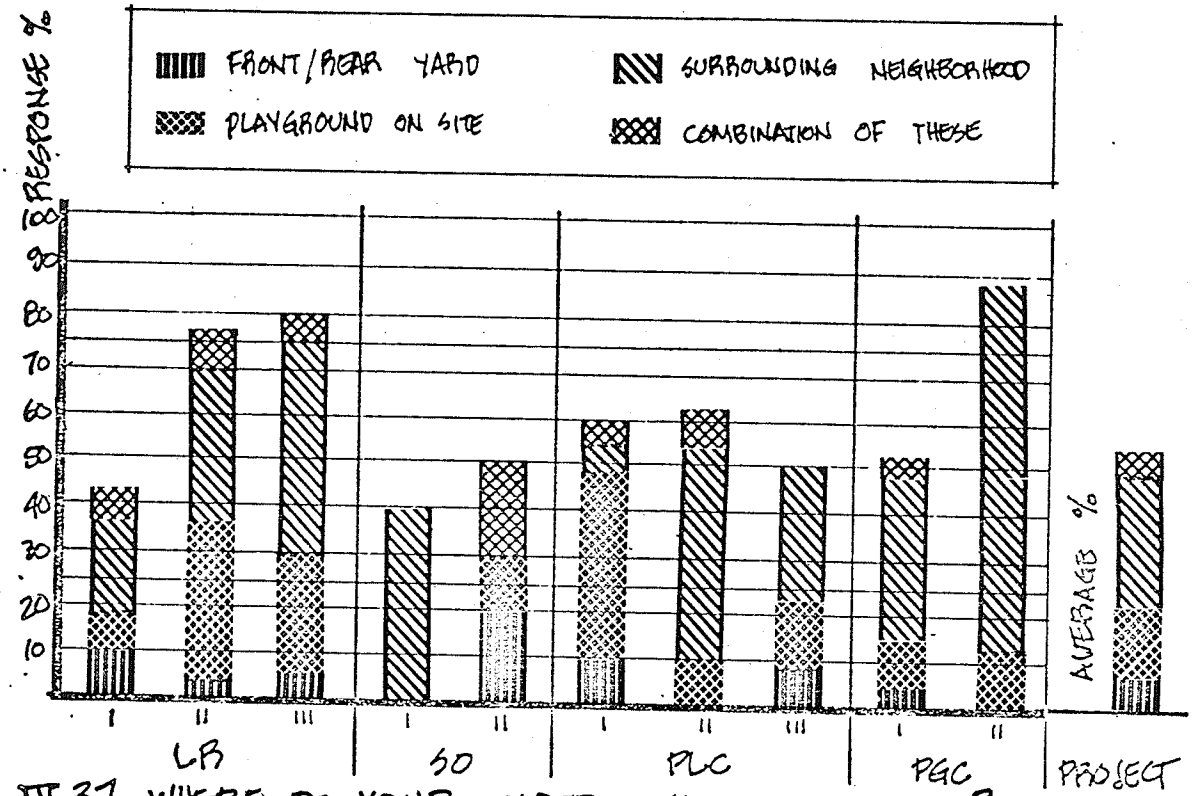

IV-34 WHAT TYPE OF FENCING IS BEST SUITED FOR THE REAR YARD?



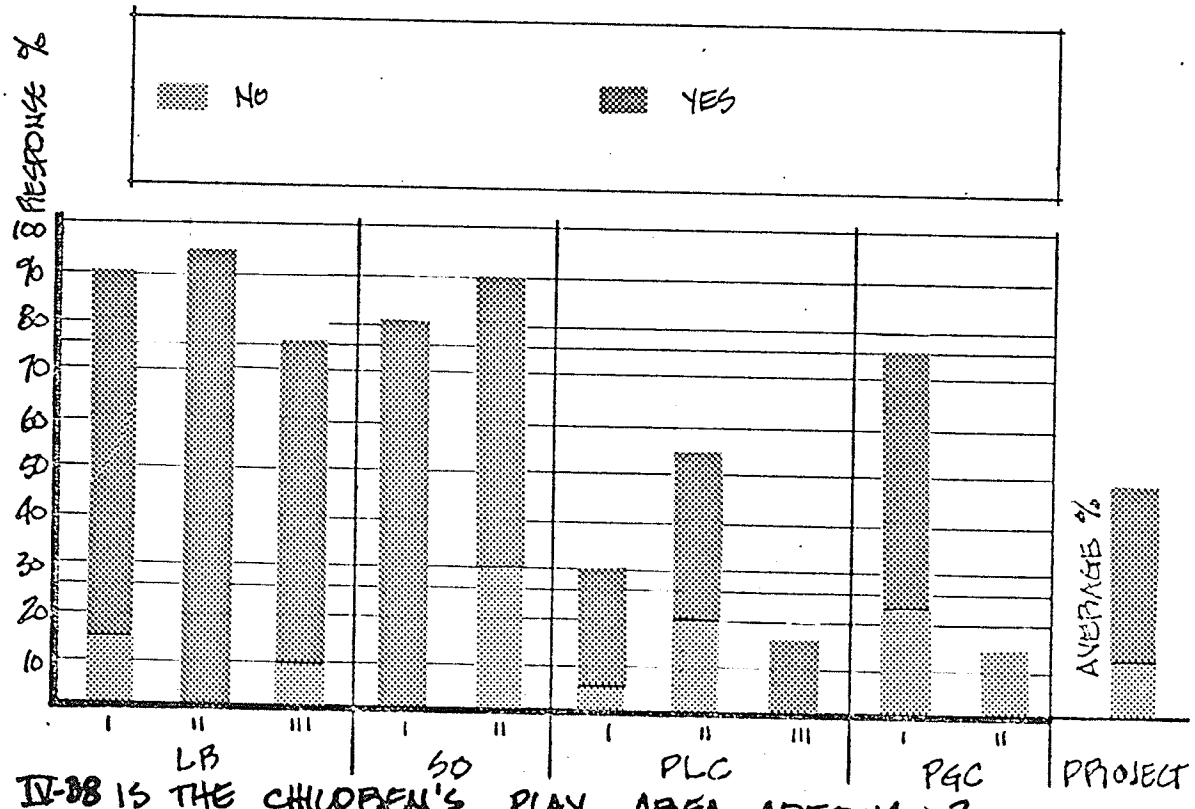

IV-35 WHERE DO YOUR YOUNGER CHILDREN PLAY?



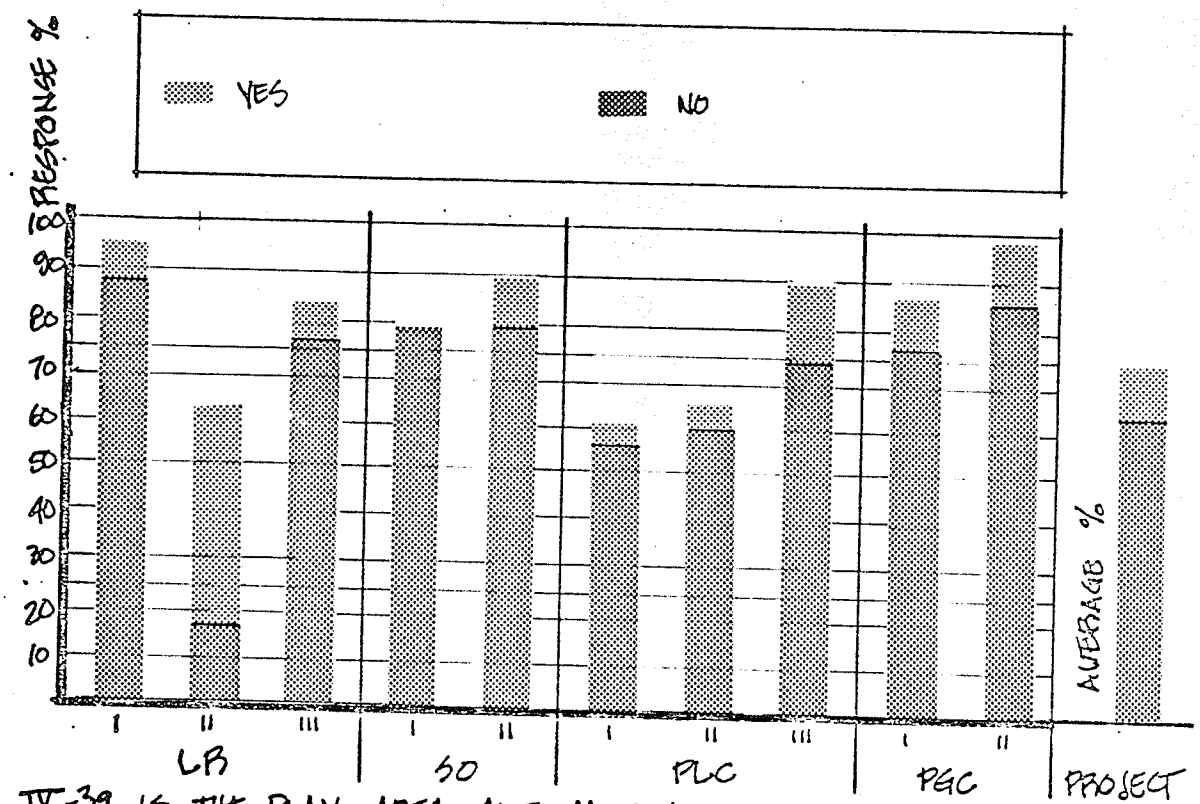

IV-36 CAN YOU SUPERVISE THE YOUNGER CHILDREN'S PLAY FROM THE HOUSE?



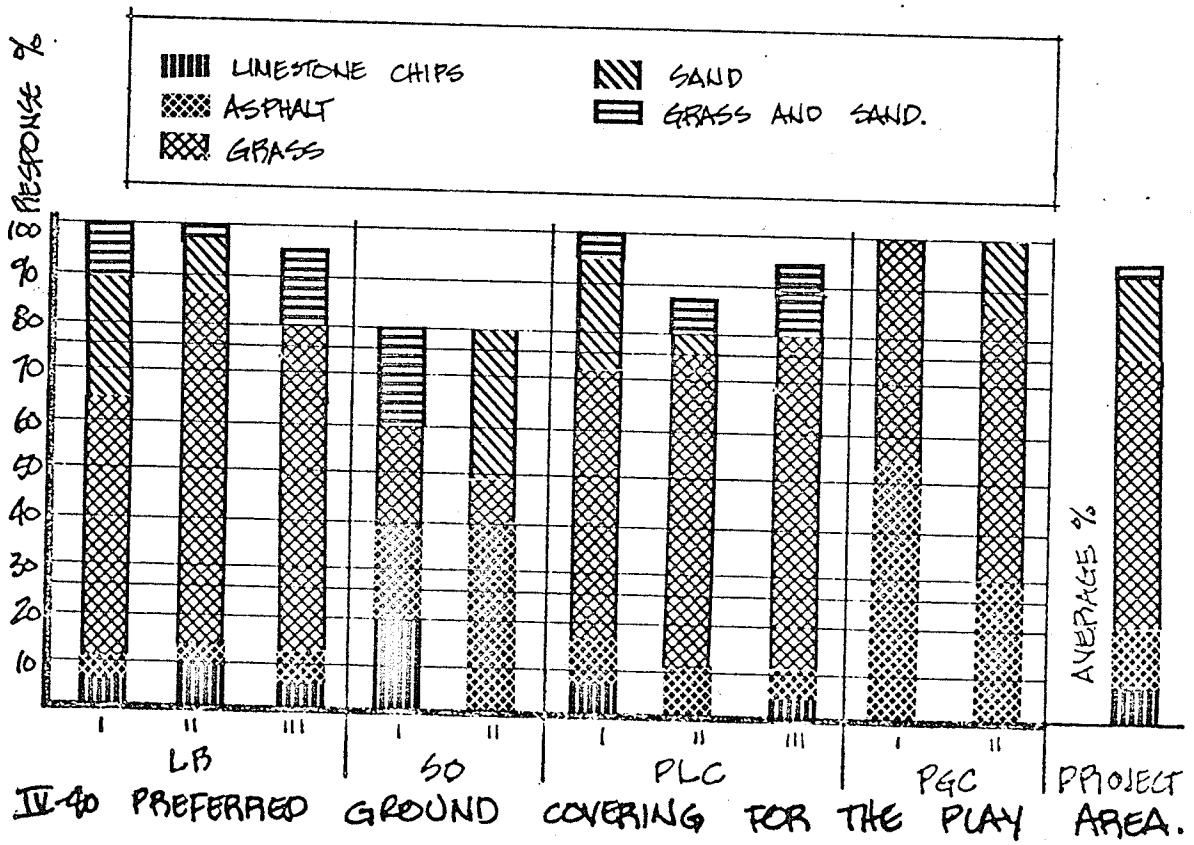

IV-37 WHERE DO YOUR OLDER CHILDREN PLAY?



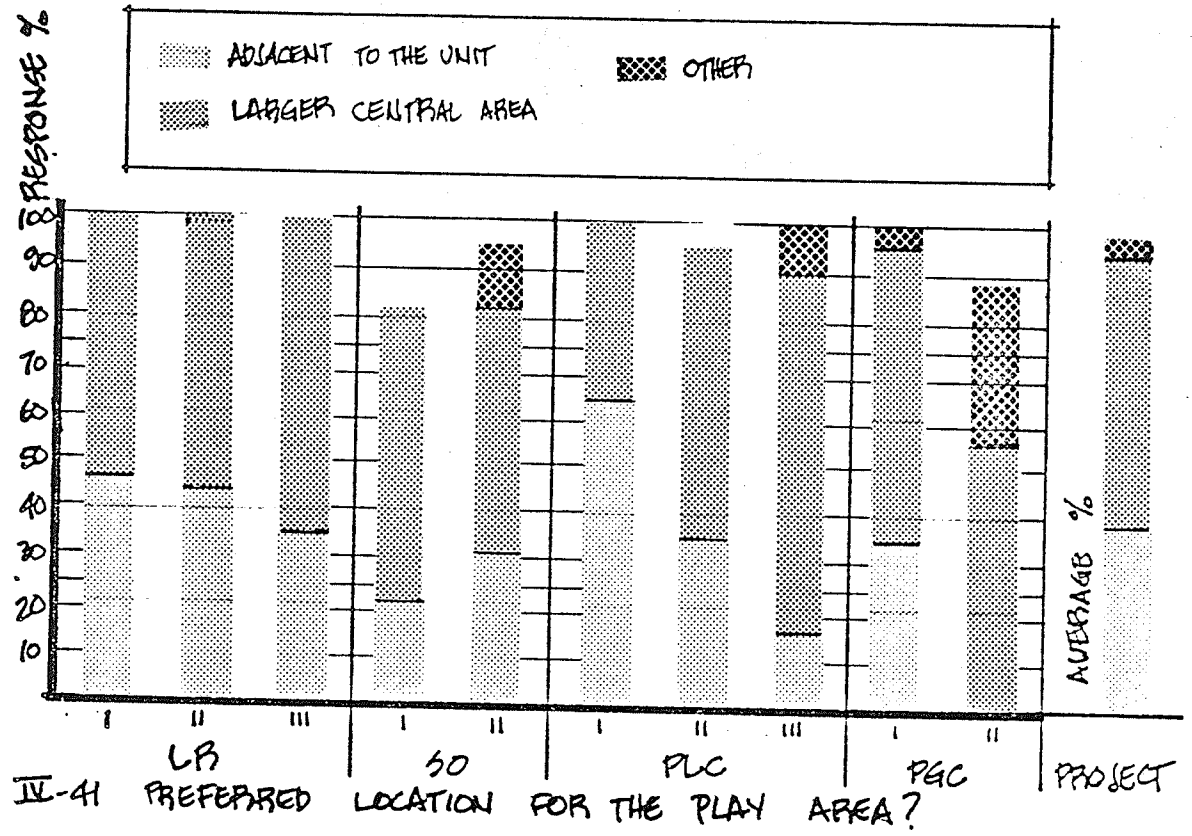

IV-38 IS THE CHILDREN'S PLAY AREA ADEQUATE?



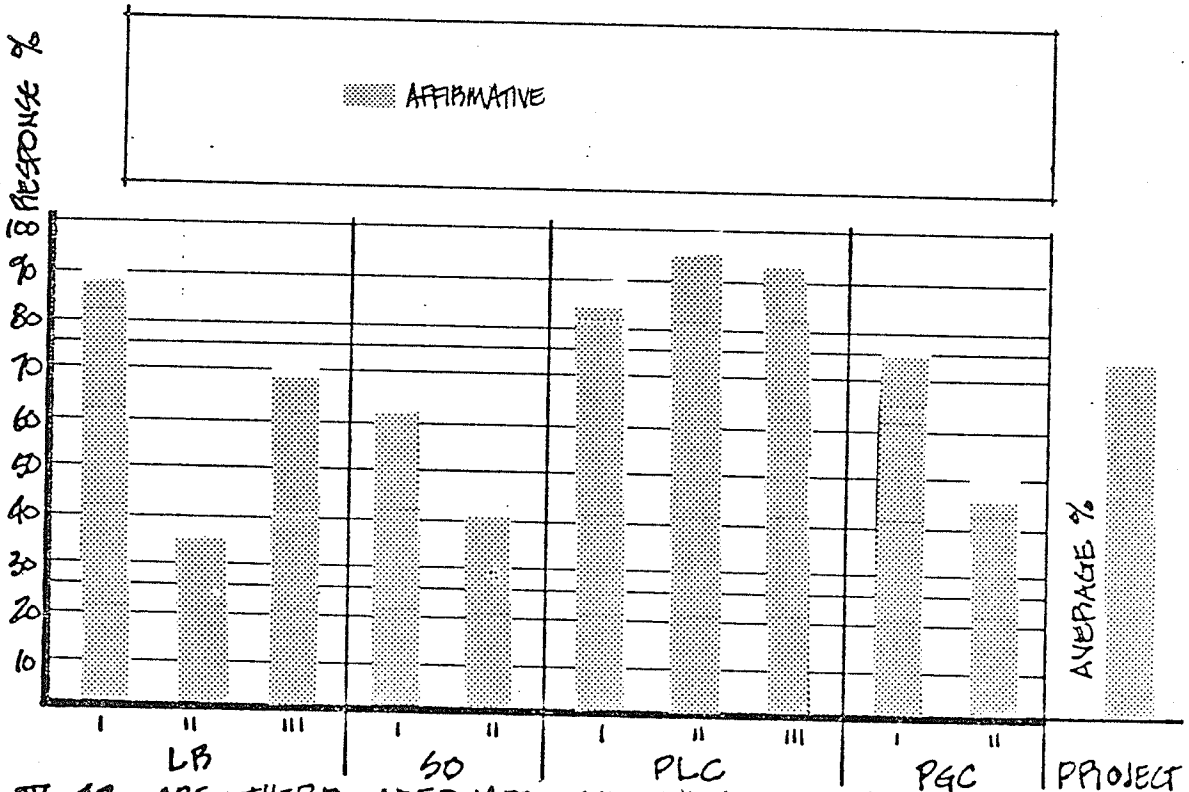

IV-39 IS THE PLAY AREA ADEQUATELY SEPARATED FROM STREET TRAFFIC?



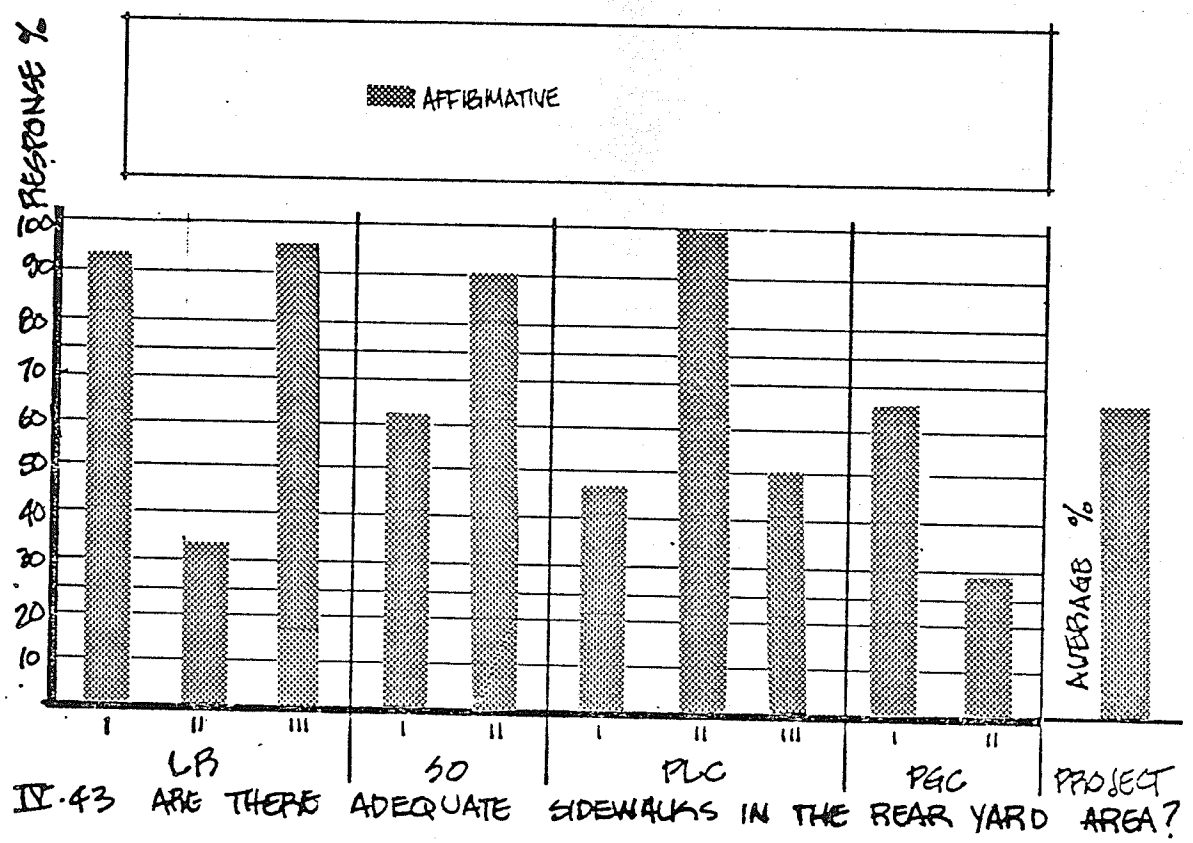

IV-40 PREFERRED GROUND COVERING FOR THE PLAY AREA.



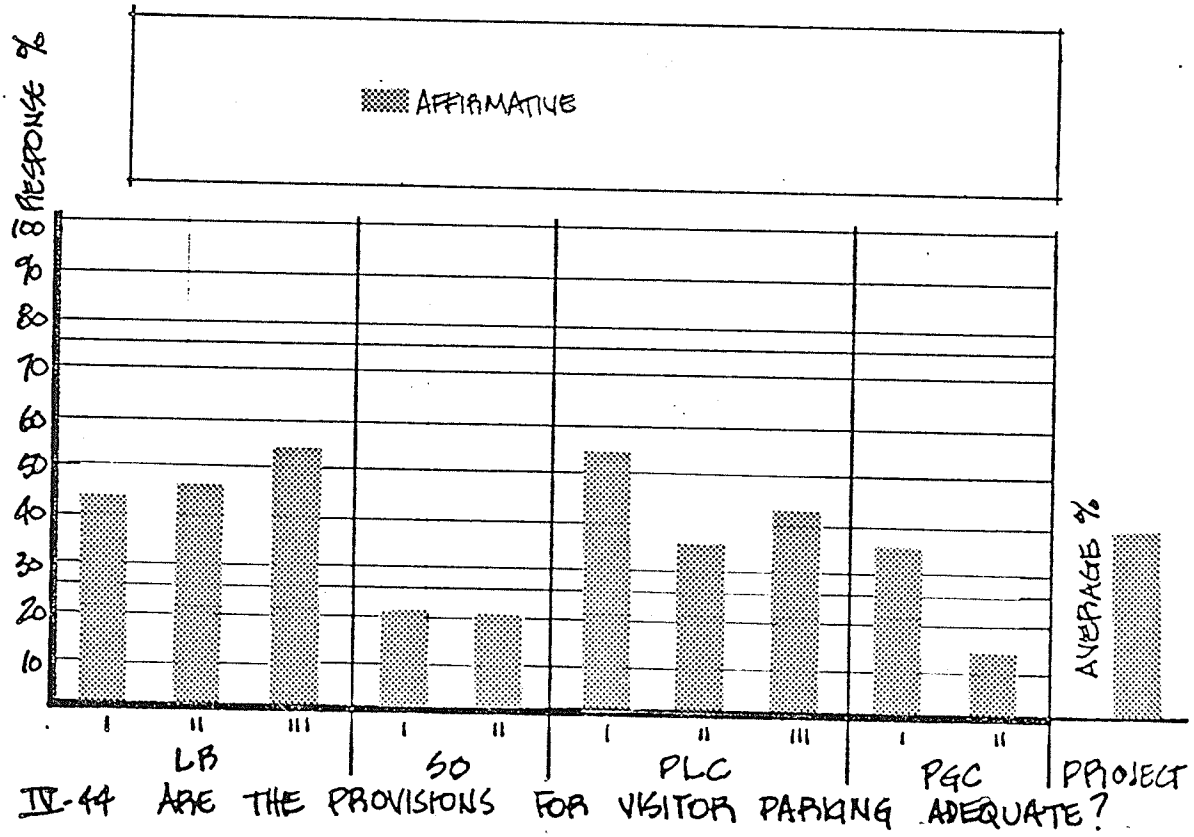

IV-41 PREFERRED LOCATION FOR THE PLAY AREA?



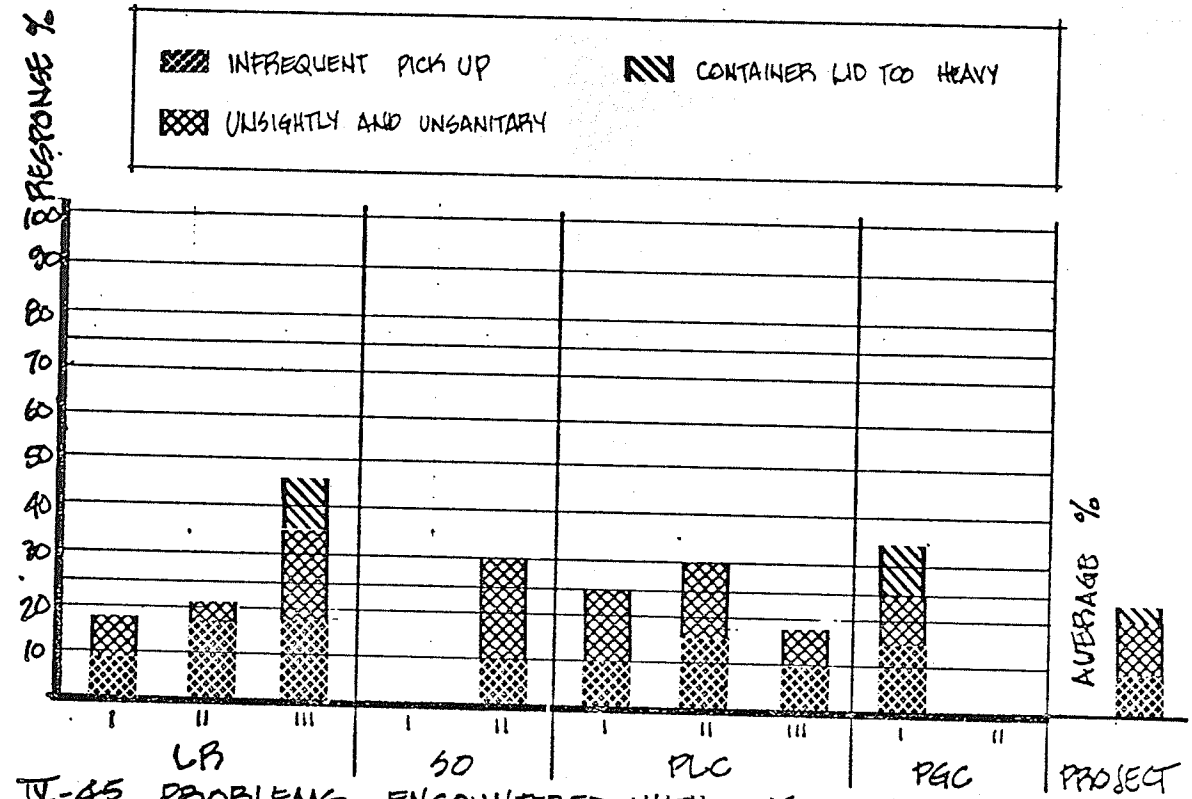

IV-42 ARE THERE ADEQUATE SIDEWALKS IN THE FRONT YARD AREA?



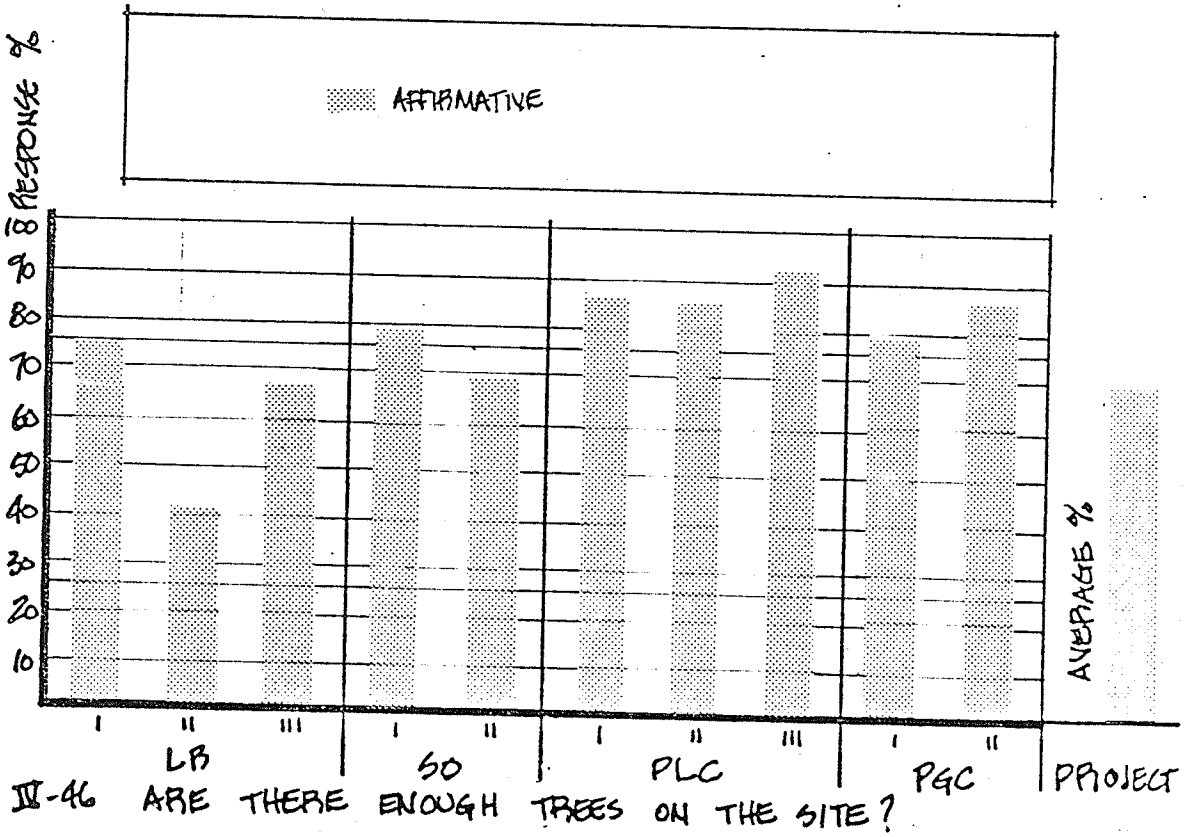

IV-43 ARE THERE ADEQUATE SIDEWALKS IN THE REAR YARD AREA?



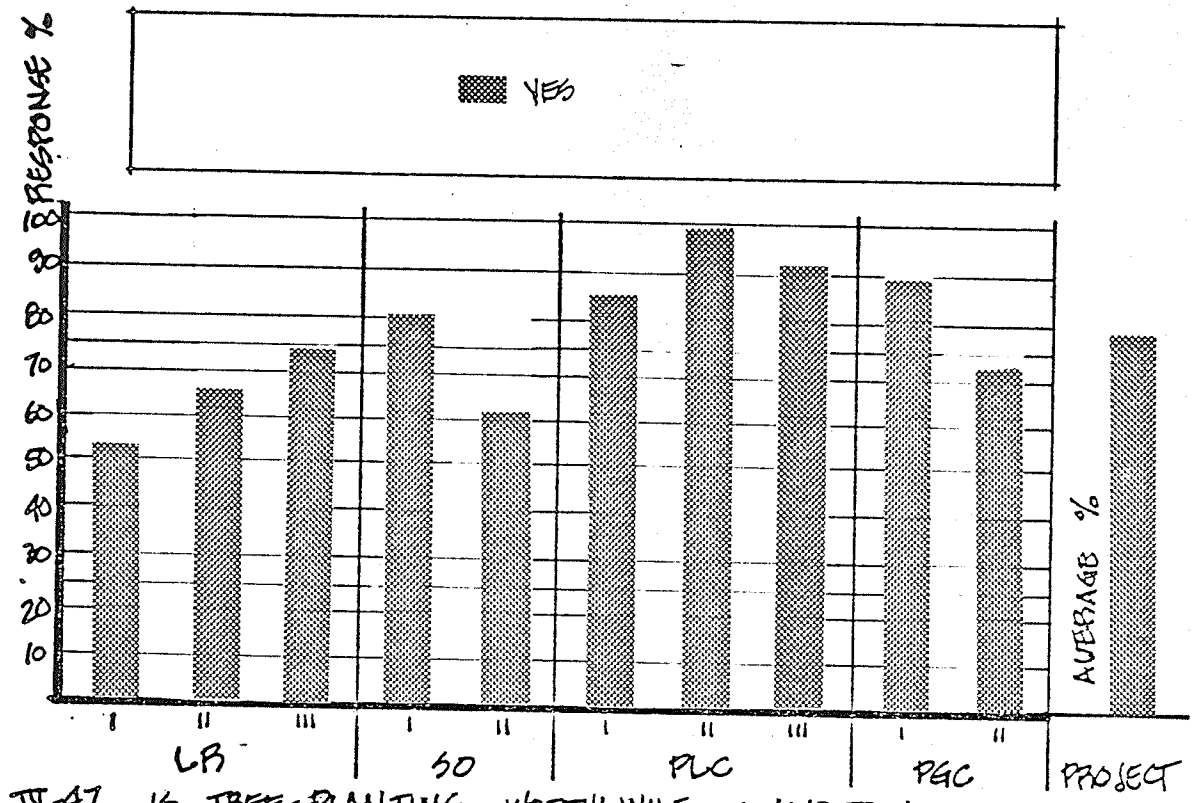

IV-44 ARE THE PROVISIONS FOR VISITOR PARKING ADEQUATE?



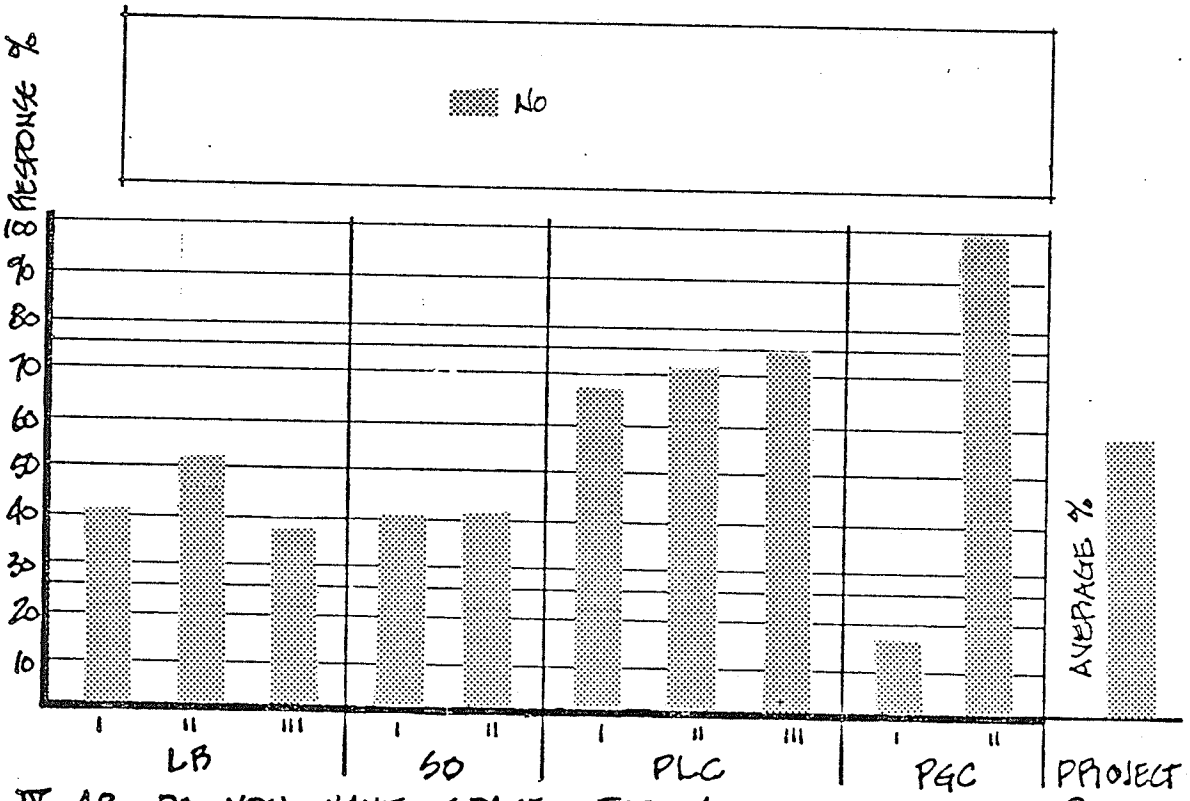

IV-45 PROBLEMS ENCOUNTERED WITH THE GARBAGE COLLECTION FACILITIES



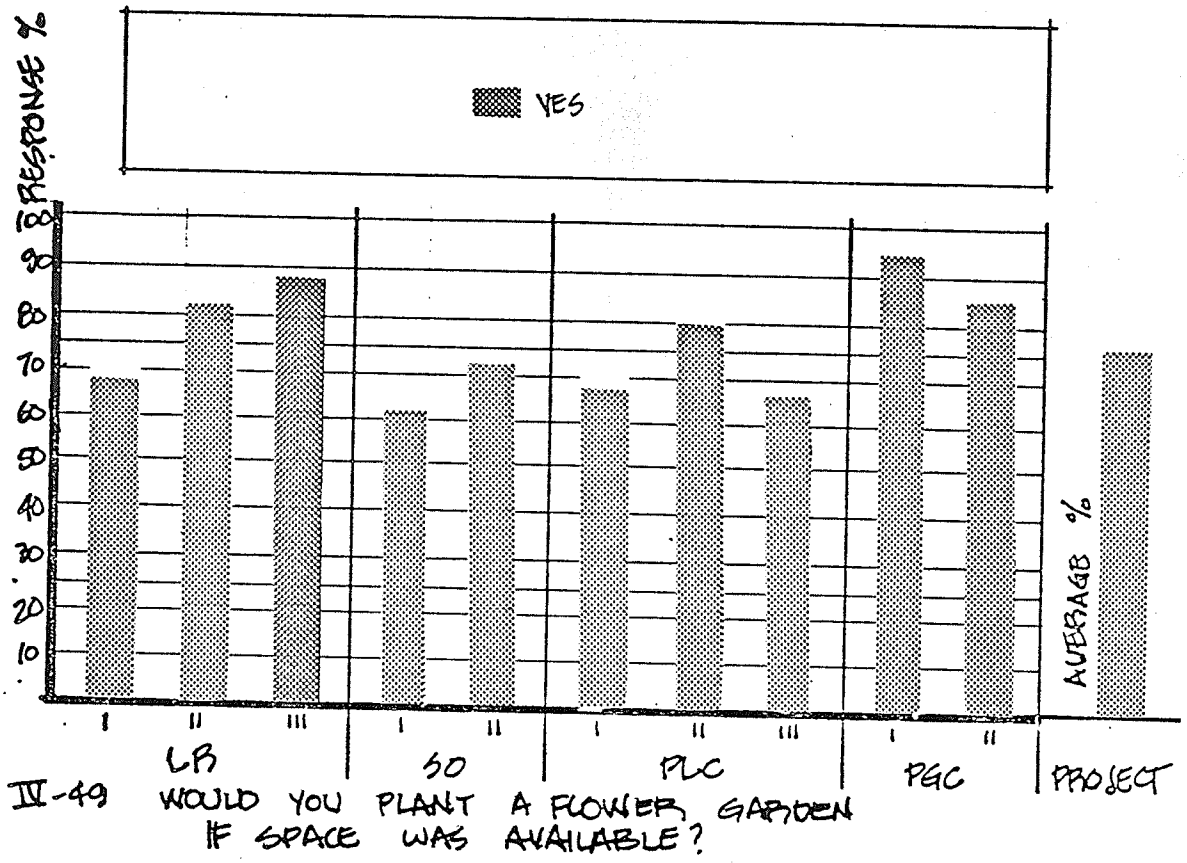

IV-46 ARE THERE ENOUGH TREES ON THE SITE?




III-47 IS TREE-PLANTING WORTHWHILE CONSIDERING THE DAMAGES DONE TO THE TREES?




III-48 DO YOU HAVE SPACE FOR A FLOWER GARDEN?




II-49 WOULD YOU PLANT A FLOWER GARDEN IF SPACE WAS AVAILABLE?

# SELECTED BIBLIOGRAPHY

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Abernethy, W. D. Playgrounds. London: The National Playing Fields Association, 1968.

Alexander, Christopher. "A City is not a Tree," Architectural Forum. Vol. 122, No. 1, pp. 58-62; and No. 2, pp. 58-61.

_____. "The City as a Mechanism for Sustaining Human Contact," People and Buildings.

_____. "The Environmental Pattern Language," Ekistics. Vol. 25, No. 150.

_____. Houses Generated by Patterns. Berkeley: Center for Environmental Structure, 1970.

_____. "Major Changes in Environmental Form Required by Social and Psychological Demands," Ekistics. Vol. 28, No. 164, (1969).

Associate Committee on the National Building Code. Canadian Code for Residential Construction. Ottawa: National Research Council, Canada, 1970.

_____. National Building Code of Canada 1970. Ottawa: National Research Council, Canada, 1970.

Bengtsson, Arvid. Environmental Planning for Children's Play. London: Crosby Lockwood and Sons, Ltd., 1970.

BRI Spring Conference. "The Effects of Buildings on Human Behavior," Ekistics. Vol. 25, No. 51, (1968).

Brolin, Brent C., and Zeisel, John. "Mass Housing: Social Research and Design," Architectural Forum. (July/August 1968).

Central Mortgage and Housing Corporation. Site Planning Handbook. Ottawa: 1968.

CBS. "All in the Family".

CIB Commission W45 Symposium. The Social Environment and its Effect on the Design of the Dwelling and its Immediate Surroundings. Stockholm: The National Swedish Institute for Building Research, 1968.

Dubos, Rene. Man Adapting. London: Yale University Press, 1965.

Flynn, John T. Identification and Individuality. New York: The Beckman Press, 1970.

Government of Manitoba. "The Housing and Renewal Corporation Act," The Manitoba Statutes. Chap. H160.

Hall, Edward, T. "Human Adaptibility to High Density," Ekistics. Vol. 20 (October 1965).

_____. The Hidden Dimension. Garden City, N.Y.: Doubleday & Company, 1966.

_____. The Silent Language. New York: Doubleday & Company, Inc., 1959.

Holme, Anthea and Massie, Peter. Children's Play: A Study of Needs and Opportunities. London: Michael Joseph Ltd., 1970.

Lang, Jon. "Architecture for Human Behavior: The Nature of the Problem," In Architecture For Human Behavior, Collected papers from a mini-conference. Philadelphia: Philadelphia Chapter, American Institute of Architects, 1971.

Legget, R. F. and Baker, M. C. Directory of Standards in Building. Ottawa: National Research Council, Division of Building Research, 1968.

Lipman, Alan. "Territoriality: a useful architectural concept?" RIBA Journal. (February 1970).

McCue, George. "$57,000,000 Later," Architectural Forum. Vol. 138, No. 4.

"MHRC Construction Specifications," The Manitoba Housing and Renewal Corporation. Winnipeg: 1973.

"MHRC Proposal Call Documents," The Manitoba Housing and Renewal Corporation. Winnipeg: 1971.

Miller, G. A. "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," In Readings in Perception, edited by Beardslee, D. and Westheimer, M. Princeton, N.J.: D. Van Nostrand Co., Inc., 1958, pp. 90-114.

Montgomery, Roger. "Comment on 'Fear and House-As-Haven in the Lower Class'," AIP Journal. (January 1966).

_____. "Pattern Language," Architectural Forum. (January/February 1970).

The National Commission on Urban Problems. More Than Shelter. Washington, D.C.: U.S. Government Printing Office, 1968.

Newman, Oscar. Defensible Space. New York: The MacMillan Company, 1972.

Perin, Constance. With Man in Mind. Cambridge: The MIT Press, 1970.

Preiser, W. F. E. (ed.) Environmental Design Research, volume one. Stroudesburg, Penn.: Douden Hutchinson & Ross, Inc., 1973.

Pynos, J., Schafer, R., and Hatman, C. (ed's.) Housing Urban America. Chicago: Aldine Pub. Co., 1973.

Rabineck, A., Sheppard, D. and Town, P. "Housing Flexibility," Architectural Design. Vol. 43, No. 11, (December 1973).

Rapoport, Amos. House Form and Culture. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1969.

Reimer and Demareth. "The Role of Social Research in Housing Design," Land Economics. Vol. 28, No. 3, (1952).

Rosenburg, R. "High Population Densities in Relation to Social Behavior," Ekistics. Vol. 25, No. 51, (1968).

"Slum Surgery in St. Louis," Architectural Forum. Vol. 94, No. 4.

Sommer, Robert. Design Awareness. Corte Modeva, California: Rinehart Press, 1972.

_____. Personal Space: The behavioral basis of design. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969.

Taylor, Nicholas. "The Failure of Housing," Architectural Review. Vol. 142.

Turabian, K. L. A Manual For Writers of Term Papers, Theses, and Dissortations. Chicago: The University of Chicago Press, 1966.

Van der Ryn, Sym and Silverstein, Murray. "The Room, A Student's Personal Environment," Dorms at Berkeley. Berkeley: University of California, C.P.D., 1968.

Wilner, Wakley, Pinkerton, and Tayback. The Housing Environment and Family Life. Baltimore: John Hopkins Press, 1962.