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Privacy in Row Houses of Montreal

Mehrdad Rahbar
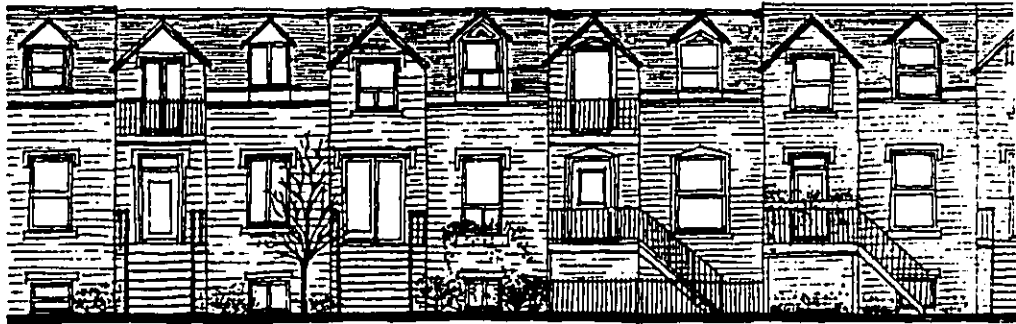
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With love and affection to
Marie-France, Aryan and Darius

Contents

Abstract

The purpose of this thesis is to explore the concepts of privacy and to propose design patterns for providing privacy for individuals and families in the context of Montreal row houses.

The study examines and explores the notion of privacy through a multidisciplinary literature review and links this notion to the row houses. The morphogenesis of row houses, the role of occupants and the built environment in the evolution of privacy issues in this housing type is investigated through a broad historical review and site surveys. The research leads to a series of proposed design patterns which can be used as tools for provision and maintenance of privacy in row houses. Specific consideration is given to present and future housing requirements.

Résumé

Cette thèse à pour objectif d'explorer le concept d'intimité domestique dans le contexte des maisons en rangée unifamiliale montréalaise et de proposer des directives de design tant pour l'individu que pour les familles.

La théorie sur le concept d'intimité est basée sur une recherche multidisciplinaire liée aux cas des maisons en rangée unifamiliales. De plus, la morphogénèse de la maison en rangée, le rôle de l'occupant et l'évolution de ce type d'habitation est analysé par le biais de l'étude sur l'histoire.

Les recherches ont permis à l'auteur de proposer un guide de design qui peut servir d'outil de composition pour assurer l'intimité domestique de la maison en rangée unifamiliale tout en tenant compte des exigences d'intimité dans le contexte présent et futur de la famille.

Acknowledgments

Introduction

Because of social, economic and demographic changes, row housing has become an attractive alternative for present and future housing needs. Row houses are proven to be functional, economical and convenient for a wide range of home-buyers, from families with single or dual earners, to single parents, the elderly, families with two or three children, and non-family residents. This form of housing with its long history in western culture, continues to satisfy the psychological and physical needs of contemporary dwellers.

A present and future description of "home" increasingly includes private domestic activities, child rearing, and accommodating of workspace side by side under the same roof. The organization of indoor and outdoor spaces from the point of view of privacy has to respond to the homebuyers' demand. Older homes have to be rearranged, and present and future designs must incorporate possibilities for considerable changes in the physical organization of houses. Correct sun orientation, segregation and integration of the workplace with private areas of the home as well as privacy concerns have become major issues for designers.

Requirements for privacy vary from culture to culture, from family to family, and from individual to individual. However, privacy has certain common characteristics such as seclusion of certain domestic activities, separation between public and private realms, and control of interaction and flow of information between the private and public domains. Attainment of visual, physiological, and acoustical privacy relieves certain mental and physical constraints, permits freedom in human behavior, and in turn, provides comfort at home.

The western notion of privacy involves intimacy as well as seclusion between family members. Despite a desire for privacy from oversight, intrusion and noise, there is a tolerance for a certain physical transparency which can be controlled and managed by individuals or families. In understanding the western concept of privacy and its contemporary requirements, the study attempts to establish design guidelines for provision and maintenance of privacy in row houses which can also help in solving and eliminating the privacy problems.

Rationale

This study is important because row houses with their urban planning principles continue to be a common housing form in Montreal. Some serious problems, mostly associated with natural light, ventilation, circulation, security, and privacy were rarely looked at rigorously by architects and planners. These problems are particularly serious in row houses because of the limitations of the exposed façade and close vicinity to neighbors.

The contemporary need to accommodate private domestic activities requires a greater visual, physical, and acoustical differentiation of spaces. The external physical characteristics of a neighborhood (streets, sidewalks, and other outdoor spaces) will also have to evolve to provide a better setting for new residential communities in general and row houses in particular.

The study of Montreal row houses indicates that most row house design patterns are profoundly rooted in the city's climate, culture, and socio-economic particularities. The design guidelines presented in this thesis reflect an inherent aspect of city's specific characteristics. Each pattern presents the best possible solution for a given condition which can vary according to municipality, neighborhood, street, site conditions, social, economical, and cultural differences.

The spatial arrangement or organization proposed for the exterior of the dwellings is perceived as an instrument to manage and regulate the level of privacy from outsiders while maintaining appropriate differentiation between the public and private realms. The emphasis on privacy within the dwelling is to provide more options for individual withdrawal from other family members. A domestic environment functions best when a high degree of freedom and options are provided. This freedom can be achieved by the arrangement of spaces and the construction of physical or symbolic elements.

Background

By the end of the medieval period and at the beginning of the Renaissance, a new form of dwelling based on medieval urban house was developed following speculative building activity in Europe (Muthesius, p. 51, 1982). First, in various part of Great Britain, aristocrats built terraces[1] and later row houses[2] for those unable to afford it. Row houses, built in strips of 2 or 3-story high streetscape, gave little consideration to indoor privacy. Traditionally, in Great Britain, row houses were provided with minimal outdoor spaces, similar to the terraced houses, where most units faced a public square, with stables at the rear.

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[1]   Terrace: for the definition see page 26.

[2]   Row house: for the definition see page 5.

In row houses development, the "square-block" arrangement was not feasible since these middle-income houses were built in a denser urban fabric.

In the eighteenth century, the row house and terraced house forms were copied by the Americans. Later, in the nineteenth century, terraces and row houses were introduced in Montreal, in keeping with the "street-oriented" Victorian architecture. Soon afterwards, domestic privacy within the dwellings became an increasingly important concern and the interior layouts provided segregation of spaces for different activities. In Montreal, the Victorian idea of more intimate interiors continued to grow throughout the twentieth century.

Definitions

The thesis examines the concept of privacy in Montreal row houses. In the interest of clarity, it is essential to define *privacy* and *row houses*, the two terms that are used extensively with a specific meaning in the framework of this study. In order to provide a comprehensive understanding of these terms, the dictionary definition is first given, then the author's definition (in the context of the study) is presented.

Privacy: The Oxford English Dictionary (1989) defines privacy as "the state or condition of being alone, undisturbed, or free from public attention, as a matter of choice or right; freedom from interference or intrusion." Merriam-Webster Collegiate Dictionary (1994) defines privacy as "the quality or state of being apart from company or observation, seclusion; freedom from unauthorized intrusion." Irwin Altman (1975) describes privacy as a dialectic and open-ended process that provides options for people to regulate their level of interaction with others. Thus, based on the common definition and social science interpretation of privacy, a more contemporary meaning of *privacy* has been derived for the framework of this thesis, and is described here as *an interpersonal regulation process by which individuals or families regulate interaction with others by*

arrangement of spaces and construction of physical or symbolic mechanisms in a specific context of time and place.

Row house: The Oxford Encyclopedia (1991) defines row house as "a terrace house." Merriam-Webster Collegiate Dictionary (1994) describes a row house as "one of a series of houses connected by common side walls and forming a continuous group." Thus, the term *row house* used in this study describes *a single family dwelling which is joined to other similar dwellings by party walls extending from ground to roof forming a contiguous group of housing. In a strip of row houses each dwelling unit can be individually identified from the exterior.* The word town house is synonymous with row house and it is used in many texts to describe a similar type of housing.

The Outlines

This study is composed of four inter-related chapters. Chapter one presents a detailed examination of the theoretical and empirical issues of the concept of privacy. It attempts to explore the concept of privacy, its meaning for people, and its implications in housing design. The relevant literature on the topic is critically examined to further explore the significance of privacy for people. Some general aspects of domestic privacy are identified and explained, so that its more comprehensive meaning within the framework of this research can be established.

Chapter two studies the morphogenesis and evolution of privacy in row houses from the nineteenth century to the present. The chapter reviews and analyzes the origins of row houses. How were they developed? And how have privacy requirements evolved in Montreal row houses from their origin to the present day?

Chapter three presents the result of research reported in Chapters one and two, and a field investigation of several Montreal row houses typologies.

Six examples of Montreal row houses illustrate and describe psychological, physical, and social aspects of privacy. The study is then further narrowed to testing physical and symbolic design elements. Architectural components and plan layouts of selected row houses are examined with respect to privacy for further development of design patterns in the following chapter.

Finally, Chapter four presents the major contribution of the thesis: the establishment of design guidelines (patterns) for privacy in the design of row houses. Design patterns are developed in accordance with the research and field work described in preceding chapters in order to support the concept of privacy through physical and non-physical (symbolic) means.

Chapter 1

Concept of Privacy

Privacy is desirable. not always easy to achieve. but not lightly to be sacrificed.

B. Allsopp, 1977, p. 55

This chapter raises an argument about the significance of privacy for the basic functioning of a home in general and row houses in particular. The argument is based on a review of theoretical and empirical studies from the social sciences and architecture. The concept of privacy is explored and an inter-disciplinary open-ended definition of domestic privacy adopted. Within the framework of the thesis, three aspects of privacy are identified and defined: visual privacy. physiological privacy, and acoustical privacy. Finally. for the purposes of research, the concept of territoriality and its implication for design are discussed, a concept which plays a key role in the attainment and maintenance of privacy in the built environment.

Meaning of Privacy

The concept of privacy is being discussed increasingly in several disciplines such as anthropology, sociology, psychology, law, urban planning and architecture, as housing densities and neighborhood characteristics have been gradually evolving. It is difficult to formulate a single definition of privacy since each individual and family has its own specific requirements. Because of these requirements, the interpretation of privacy varies from culture to culture as well as from family to family.

The systematic focus of privacy on spatial design of a domestic environment was initiated by Chermayeff and Alexander in 1963 in *Community and Privacy*. Their book illustrates how the public and private domains in a built environment, especially residential areas, can be designed to avoid conflicts between people. Chermayeff and Alexander (1963, p. 143) considered the dwelling as a part of larger urban environment and proposed for their co-existence through "control" mechanisms which could foster privacy and help people to regulate interactions between different realms of the built environment. This scientific initiative by Chermayeff and Alexander marked the beginning of further discussion and propositions amongst social scientists, urban planners, and architects on the subject of privacy in the home environment.

Definition of Domestic Privacy

An examination of the literature on the subject shows that the notion of privacy has been a vital feature of dwellings in almost every society throughout the world. Paul Oliver (1990) documented numerous cultures and their various physical and symbolic mechanisms used for attainment and maintenance of privacy, and protection against the intrusion of outsiders. Throughout the course of human civilization there have been various interpretation and requirements for

privacy from the point of view of individuals, groups, and even states (Lawrence, 1987, p.162).

In legal terms, Alan Westin (1970, p. 7) defined privacy as "... the claim of individuals and institutions to determine for themselves, when, how, and to what extent information about them is communicated to others." He stresses the notion of privacy as a natural right of every individual in a given society. In order to exercise these rights in a physical setting people need physical and psychological mechanisms, in other words, a set of options and devices to prevent unwanted interaction. In a similar framework, Amos Rapoport (1971, pp. 95-97) viewed privacy as the ability to "control interaction." On both the personal and family level the privacy of home offers freedom from surveillance and judgment by others which removes constraints from behavior for emotional and physical activities. In turn, an ideal level of privacy at home is said to be a critical component of the basic function and meaning of a home (Churchman and Herbert, 1978, p. 19).

In 1963 Margaret Willis undertook a challenging sociological research in London, on the notion of privacy amongst different age and income groups in relation to personal, family, and neighborhood levels. The empirical findings on the subject indicated that the definition of privacy varied according to social and age groups. Some low-income families considered privacy as a "privilege" for those who could afford it. When human relationships were studied, Willis views privacy as the establishment of the "right relationship" with people who live in immediate proximity to each other. An overview of Willis' (1963 a, b, c) survey results have shown some variation with the traditional and contemporary dictionaries' definition of privacy (Introduction, p. 4). This empirical study illustrates how evolution and changes in the social concept of privacy are associated with changes in public standards (social classes).

In Australia, Anthony Worsley and Richard Finighan (1977), in an open-ended questionnaire, asked the residents of a Melbourne suburb to define "privacy". The responses suggested that the meaning of domestic privacy among the various social and age groups ranged from territory, possessions, noise, visual and physical intrusions, solitude, freedom, and intimacy. In addition to the variations observed in the different social and age groups, in several samples men and women also had different requirements for aspects of privacy such as overlooking and access.

Rapoport (1971, 1985) argues that concern for privacy comes not only from the interference caused by others, but also from constraints on behavior from a feeling of being observed, overheard, and the fear of disturbing others. He presents a unique viewpoint insofar as the constraints on human behavior relate to privacy, which is rarely looked at by other researchers. The fear of being seen or heard can have a serious negative impact on human behavior and activities. Arza Churchman and Gilbert Herbert (1978) studied the control of privacy in the activity zones of a domestic environment. Their study suggests that three elements are extremely important in establishing freedom and removing mental constraints from human behavior in the built environment: visual screening, physical access, and acoustical devices which can also be viewed as mechanisms for privacy.

Although the above studies tend to support the idea that privacy concerns a variety of factors in the social, economic, and psychological context of the home, privacy can equally be directly related to many aspects of design in the built environment. Physical and symbolic elements in the built environment in most instances either hinder or foster the desired level of privacy.

At a more specific level, Rapoport (1969) observed that people view privacy with different attitudes independently of climatic, psychological, or economic conditions. Various design components can be employed to express these attitudinal differences. For example, transitional zones in a home environment play an important role in separating public and private domains. In this

context, Rapoport (1969, p. 80) discusses the importance and the location of the "threshold" of a house, a crucial area where a symbolic or physical demarcation is drawn to separate public and private realms. This marking sends signals to outsiders that they are not expected to cross the "threshold" unless invited to do so. He further illustrates how the positioning of a "threshold" varies in India, England, and the United States.[3] Moreover, Irwin Altman, who studied psychological and social aspects of privacy, defines *threshold* and *entrance* as reflections of a sense of bounding within a community as well as of connecting and separating family with neighbors (1980, p. 190). He views the function of *threshold* as a symbolic or physical mechanism to regulate and control access in the home environment.

Altman (1975, p. 50) describes *privacy* not solely as a "keep-out" or "let-in" process, but also as having a broader base than the idea of a withdrawal process. He suggests that privacy is a more open-ended and dialectic form, in other words, a changing process which provides the options for individuals or family to regulate the level of interaction with others. Altman's description of privacy allows people to have control over their activities in the built environment. He further discusses the privacy mechanisms that define the limits and boundaries of a person (individual) or a group (family), and argues that when those boundaries are under control, contacts with other persons can be regulated when desired.

Privacy as a Control Mechanism

For the purpose of this study, it is important to consider design mechanisms which control and regulate the level of privacy in the home environment. Robert

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[3]   A. Rapoport observed that in India the location of threshold is at the point of entrance to the enclosed court yard, while in England, the position of threshold is determined by the gated fenced-front yard, and in the United States it appears at the entrance to the house. Amos Rapoport, *House Form and Culture* (Englewood Cliffs: N.J.: Prentice-Hall, 1969), p. 80.

Sommer, through extensive research on human behavior in the built environment in *Personal Space*, shows the ability of humans to construct a mental definition of space and territory within which they feel secure and comfortable. Thus, to him it seems crucial that people construct physical and/or non-physical (mental) mechanisms to obtain the desired level of privacy. Physical mechanisms can be exhibited by markings or by placing physical barriers such as walls, fences, doors and so on; and non-physical mechanisms can be expressed verbally or by bodily behavior in response to intrusion. These mechanisms are instruments that ensure a desired level of privacy for individuals or families in the built environment.

In this framework, Altman (1975) examines privacy as a generic process that occurs in all cultures but that also varies within cultures with respect to physical and non-physical mechanisms. An examination of literature, surveys, and case studies of Montreal row houses has also indicated that privacy as a universal issue also varies in every culture, hence the mechanisms for regulating privacy change accordingly. Altman (1980, Chapter 4) concludes that privacy regulations involve more than solely physical and environmental mechanisms, but concern psychological, social and cultural norms as well. These levels of behavior function together to define privacy for individuals as well as families.

Based on the research reported in the preceding pages, the author believes that the present study should be oriented towards the interpretation of privacy provided by Altman and others. The preceding definitions are the most appropriate in the western context in general and in the case of Montreal in particular. From those arguments, the thesis proposes to develop a definition for residential privacy specifically related to Montreal. Furthermore, the study attempts to understand the mechanisms which define and regulate privacy in the specific context of Montreal by reviewing the historical background of the city's row houses at a specific point in time. An overview of the diverse meanings of privacy enabled the author to adopt an *open-ended* definition of privacy for the

purpose of this research (for the author's definition of privacy see Introduction, p.4). As Altman (1980, p. 75) suggests, privacy functions as a "bridge between personal space, territory and other realms of social behavior."

Aspects of Privacy

In order to establish a desirable level of privacy in the domestic environment, design mechanisms as regulatory process deal with physical aspects of privacy. Based on theoretical and empirical findings, aspects of privacy are classified as: *visual privacy, physiological privacy,* and *acoustical privacy,* each with its *in-door* and *outdoor* structures, and in relationship to individuals and the family within a domestic environment. In order to attain privacy both inside or outside the dwelling unit, the individuals or groups are required to introduce some sort of physical or symbolic barrier. Table 1.1 illustrates three aspects of privacy in the home environment.

Visual privacy concerns the protection of individuals within the dwelling from other family members where different domestic activities may take place such as working, cooking and sleeping; or protection of the family from being overlooked by neighbors or by people in the public domain. This is a desire for enclosure of the home in terms of its visibility from the outside and private spaces within the dwelling.

Physiological privacy deals with privacy of family from non-family members from the outside, or privacy of individual members from other family members within the dwelling. It is a desire to control access from uninvited sources by mean of physical barriers.

Acoustical Privacy is concerned with the protection of individuals from other family members during different activities, and the family from outside noise in the environment surrounding the home, including noise from traffic, people outside, neighbors, and children playing outside. Acoustical privacy concerns not only noise disturbances, but also the freedom from the fear of being overheard, which is a problem that exists both inside of the dwelling unit among family members, and outside.

Aspects of Privacy		
Visual	inside: among family members during different activities	
	outside: being overlooked from outside	
Physiological	inside: among family members	
	outside: physical intrusion	
Acoustical	inside: among family members during different activities	
	outside: unwanted noise from outside	

Table 1.1   The aspects of privacy in the home environment.

States of Privacy

In order to attain and maintain an adequate level of spatial privacy, it is useful to adopt the concept of privacy first formulated by Altman. His analysis of states of privacy for the evaluation and investigation of the degree of privacy has led to two perspectives: *Desired privacy*, an ideal level of interaction or control a person or group desires, and *achieved privacy*, which refers to the actual outcome of desired privacy, and may or may not match expected level of privacy. He developed an axiom stating that if desired privacy equals achieved privacy, then an optimum degree of privacy exists. When achieved privacy is more or less than the desired privacy, then the result is an imbalance in the state of privacy (Altman 1975, pp. 10-31). Although Altman does not mention the role of

physical components as mechanisms to hinder or foster these states of privacy in his analysis, this thesis will consider design mechanisms as important conceptual factors in determining the states of privacy. These design mechanisms can be the major factors in determining the actual level of privacy achieved in a spatial context.

Privacy in the Domestic Environment

Inherent in the design of row houses are features such as proximity to the public realm and to immediate neighbors, which raise the important issue about the three aspects of privacy (visual, physiological, and acoustical) that can affect neighbor relations and level of comfort. The study of Dan Soen (1974) indicates that living in close proximity to others appears to enhance the opportunity for unwanted interaction leading to possible loss of privacy and experience of stress. In a survey of row houses across the United States, Carl Norcross (1973, p. 7) illustrates that where families live in close proximity, such as is the case in row houses, they do not remain in them for long if the degree of privacy is low.

Narrow frontage and limited openings to the outside in row houses make the outdoor spaces (rear and front yards) a favorable and natural extension of the interior living areas. Especially for children, they often become the most pleasant area of the home. This means that sometimes noisy activities may occur where the immediate neighbors are exercising other activities that require peace. In order to enhance the projection of indoor activities to the outdoor, without destroying the privacy of the immediate neighbors, the construction of a physical separation between the outdoor spaces of the dwelling units becomes mandatory.

In order to avoid conflict between family members and non-family members, it is important to clarify boundaries and have a clear distinction between territorial realms within a dwelling. In this respect Alexander et al. (1977, p. 766) point out: "...An outdoor space becomes a special outdoor room when it

is well enclosed with walls of buildings, walls of foliage, columns, trellis, and sky; and when the outdoor room, together with an indoor space, forms a virtually continuous living area."

Oscar Newman, in *Defensible Space* (1972, p. 63), shows how clearly defined territorial realms and improved surveillance reduce the occurrence of crime. In every culture, humans have developed devices and mechanisms to control or define the territory of their dwellings in order to obtain security and privacy.[4] He also argues that the progression of spaces from one zone to another is extremely important; symbolic and physical elements play important roles in defining spaces and boundaries in dwelling units. Definition and personalization of boundaries are regarded as tools for creating symbolic and physical barriers in row houses which send cues to outsiders to limit possible intrusion. Whether for security purposes or personalization, a clearly defined territory helps to attain and maintain privacy and avoid misunderstanding and conflict between dwellers and outsiders (Fig. 1.1).

Figure 1.1   Row houses on rue Coloniale,
Plateau Montreal. Clearly
defined boundaries between
private and public realms,
using front yard walls in
a high-density neighborhood.

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4   For example in the Near and Far East, perimeter walls; in eighteenth-century British row houses, change in level and demarcation between public and private; and in Sudan, stoops symbolically define the entry to a dwelling. Oscar Newman. *Defensible Space* (New York: McMillan Company, 1972), pp. 1-10.

Territoriality

As an approach to the study of human spatial behavior, the concept of territoriality has been used repeatedly in the literature on privacy to draw a comparison between animal and human behavior. Many writers, including Sommer (1969), Hall (1969), and Esser (1971) have found fundamental similarities between human and animal in response to territoriality. Animal territory refers to an area which is maintained, marked and defended. Animals maintain and protect their turf in various ways such as urinating, releasing an unpleasant odor, vocal expressions and bodily gestures, and sometimes with physical aggression.

In human terms, the expression of territory becomes more complex, although it has the same connotations. These expressions may be represented in signs such as "private property," "no trespassing," "keep-out;" and sometimes in the form of judicial boundaries such as "right of way," "line of property" or "servitude." Territory may also be defined by constructing physical components such as walls, fences, gates and doors, and even landscaping in order to assure security and privacy. In studying the defense of privacy in a school library, Sommer (1969, pp. 37-39) observed that students tend to defend their study area by demarcating their space by their personal belongings in the low density situation and by non-physical defense through mental and bodily gestures in the high density situation.

In the framework of the present study, territoriality is considered to involve the definition of boundaries by implementing physical mechanisms to mark or personalize a space in order to attain and maintain privacy at home and avoid misunderstanding or conflict with other people. A good example of the potential for miscommunication and conflict in territories is illustrated in Newman's analysis in *Defensible Space*. In examining urban crime in low-cost housing developments, he observed that the key problem was in the design. In most instances most crimes took place in semi-public areas where the spaces were not personalized, watched and controlled by residents. Of particular interest in the study of territoriality is its relationship to privacy. Literature shows that

many writers have linked the two concepts together. For example, Philip Roos (1970) believes territoriality maximizes control over space to increase privacy, power, and comfort.

Types of Territories

Altman (1975, p. 114) classifies territory into three types: primary, secondary and public territories. He defines primary territory as one owned and operated exclusively by individuals or a families such as a private home, and secondary territory as a less private and exclusive zone which acts as a bridge between private and public domains. Public territory such as sidewalks and roads has a temporary quality, usually without any demarcation, to which anyone has free access and occupancy rights,. For this study, a similar classification of territories will be employed: *private zone* for primary territory, *semi-private and semi-public zones* for secondary territory, and *public zones* for public territory. These definitions will be extensively used in the development of design guidelines in Chapter 4.

In a home-environment, residents use *symbolic* expressions or *physical* markers to define and defend their territories in various ways such as pathways, landscapes, signs, fences, and architectural elements such as balconies, porches, doorway porticos, which are also considered as mechanisms for dealing with the issues of privacy. These physical and symbolic mechanisms are often related to social, economic, and cultural contexts. According to these contexts the size, materials, and construction techniques of design mechanisms vary constantly (Fig. 1.2).
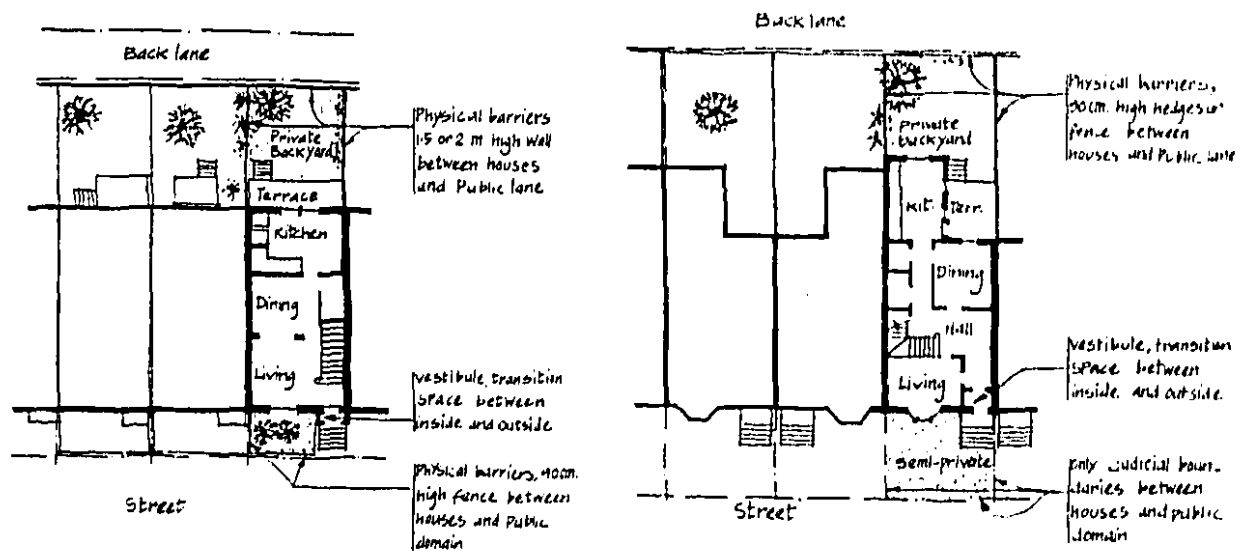
Figure 1.2   Site plans showing two row houses in different neighborhoods of Montreal each with
its social characteristics. The demarcation mechanisms of boundaries vary in size,
material and construction techniques.
Left: Front and back yards in row houses on rue Laval in Plateau Mont-Royal, a
middle-income and high-density neighborhood.
Right: Front and back yards in row houses on Dorchester Boulevard in
Westmount, an upper-income and mid-density neighborhood.

Privacy Inside the Dwellings

On both the personal and family levels, privacy inside the dwelling is crucial for
the comfortable functioning of the home, insofar as the lack of it can seriously
affect people's behavior. In addition to physical design components, the impact
of interior planning and arrangement of spaces has also proven to be fundamental

for provision and maintenance of privacy.[5] In *Community and Privacy*, Chermayeff and Alexander (1963, pp. 202-223) suggest for the purpose of integrity of domestic environment, it is important to design for freedom in interaction between family members while respecting individual or family requirements for privacy. Assurance of domestic integrity can be achieved by allocation of space for individuals, the provision of adequate space for each activity, arrangement of spaces, hierarchy of spaces, appropriate overall home size, and finally the proper orientation of interior and exterior space.

In a study of privacy in housing in London, Willis (1963b, pp. 1137-1141) found more middle-income and lower-income families expressed a desire for higher degree of indoor privacy among family members. She learned that many residents complained about the lack of separate spaces for different activities. This study shows that space arrangement and provision of adequate space for different activities has been recognized as one of the chief factors in a success of a design, insofar as it determines where certain activities take place, how they are connected or separated from other spaces. In this regard, Vaziri-tabar (1990, p. 96) says that unless an appropriate system of spatial organization (separation and connection) is set up, the spaces or rooms may not provide the required privacy. This principle, therefore, has a direct influence on the layout of a house.

Hierarchy of Space

The hierarchy of spaces which constitutes the gradual transition from public through semi-private to private, and from communal into more private realms in a dwelling is a function of design mechanisms and recognized as fundamental for achieving domestic privacy.[6] Chermayeff and Alexander (1963, p. 203) describe

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[5] A. Schorr, 1970, (p. 320); A. Churchman and G. Herbert, 1978, (pp. 19-27); J. Lang, 1978, (p. 80).

[6] S. Chermayeff and C. Alexander, 1966; and C. Madge, 1950 (pp. 187-199).

this concept as a construction of physical components which preserve the integrity and special characteristics of spaces. These physical components provide separation, access and control between different domains. In constructing a hierarchy of spaces, the physical and symbolic devices and spatial layouts can provide an appropriate environment for regulating and managing of privacy in the built environment.

Privacy from Outside

The most complex privacy in row houses is privacy from outside where, because of close proximity to others and the groupings of dwelling units, conflicts and misunderstanding can arise between residents, non-residents and neighbors. Overlooking, trespassing, and noise are considered nuisances and as sources of complaint for most dwellers. As was discussed earlier, the level of satisfaction or dissatisfaction in a dwelling could also depend on cultural, economic and social factors.

The field study and the literature review indicate that properly defined territory and exterior layout of spaces has a definite bearing on the level of outdoor privacy. However, a critical examination of the 32 projects surveyed in Montreal also suggests that both the level of interaction and the relationship between neighbors have played some determining role in the degree of privacy from outside or among neighbors in residential environments.

It was noted earlier that the study by Willis suggests that the type of relationship established with neighbors determines the level of privacy. However, establishment of a "good relationship" between neighbors seemed easier in a homogenous society. It suggests that this generalized finding with respect to housing and planning in most modern cosmopolitan settings may be difficult to adopt. Therefore, in the framework of the present research privacy problems from outside are considered in a more heterogeneous social context. In planning row houses, the physical outdoor environments such as proximity of entrance doors and balconies, arrangement of rear and front

yards, and design of front entry can have a direct bearing on the level of privacy and social relations between residents and non-residents.

Outdoor Transition Spaces

The Montreal field survey indicates that those houses having traditional street frontage and located in the denser urban environment have a clearer demarcation between public and private spaces for privacy or security. These markers include approximately a one-meter high front fence, front garden, and a back wall about 2 meters in height. An over-view of all the models studied suggests, in planning and maintaining of row houses in more dense urban areas such as the Plateau Mont-Royal and Downtown, householders have shown a stronger sense of ownership and personalization of their dwellings. On the other hand, in the newer developments and suburban areas, the lack of a physical demarcation between public and semi-private, or public and private outdoor spaces was notice-able (Fig's. 1.1 & 1.2).

In the case of neighborhoods with a lower density, such as Westmount, NDG and Nuns' Island, an interview with residents indicates that establishing the "right relationship" with neighbors counted highly for the degree of privacy attained between them. Nevertheless, in spite of a "right relationship" with their neighbors, few were criti-cal of openness in private outdoor spaces: they showed it by clearly defining their out-door private spaces with physical marking devices such as high walls and dense land-scapes.

Chapter 2

A Historical Perspective of Montreal Row Houses

The first radical change which was to alter the form of the Medieval house, was the development of a sense of privacy. This meant, in effect, withdrawal at will from common life and common interests of one's fellows.

L. Mumford, 1961, p. 285

The concept of privacy in any society is strongly tied to its social, economic, and historical experiences. Before studying privacy patterns in row houses in the context of Montreal, it is equally important to understand the genesis of this housing form, what it represents, and how it has evolved. It is known that the nineteenth-century was a crucial period in the restructuring of the city and its housing typology. It is also evident that the historical events of the 1800s influenced the development of row housing until the present. The focus of this chapter will be a review of the impact of historical events on the evolution of privacy requirements and its design mechanisms in Montreal row houses in the period between 1850 and 1995.

Morphogenesis of Montreal Row Houses

Terraced houses and row houses emerged in North America in the beginning of the eighteenth century. Montreal adopted its own version about the second half of the nineteenth century when the city was experiencing a construction boom following a rapid industrialization and population growth. The nineteenth century played a key role in the history and development of housing in general, and row houses in particular.

The nineteenth century also saw the massive industrialization of Western Europe and North America. In the early decades of the century, Montreal's economy, based mainly on international trade, began to show phenomenal growth. The building of a major railway system in the 1850s had a significant impact on the rapid commercial growth of the city in the second half of the century. As a consequence of the railroad construction and other economic activities, large industries, mainly factories, and a number of financial institutions were established on the island (Hanna, 1986, p. 2).

As these changes occurred quite rapidly, the city's population increased almost four-fold between 1850 and 1900. An influx of Europeans, mainly of Irish and British descent and the migration of French Canadians from rural areas, brought social and ethnic changes to the city. In Montreal, as in many other industrialized cities, the social classes became more pronounced. Well-established Scottish and English merchants and industrialists were considered well-to-do: skilled workers. clerks, administrators, professionals and government workers were in the middle-income group; and unskilled workers, who were mainly French Canadian and Irish, were classified as the working-class. These divisions were so fundamental that housing had to be adapted according to the new social and economic order.

As the standard of living improved for some, home ownership and housing construction became more prevalent, especially among the middle-income group and the well-to-do. From the mid-nineteenth century onwards,

row houses in particular were built speculatively. According to David Hanna (1986), by the 1870s, house production had already become "a profit-oriented enterprise" controlled mainly by small-scale builders who followed the same standardized planning and construction techniques.[7] By the late nineteenth century, Montreal's urban housing landscape had already taken on a new face. Villas, large terraces, and large row houses accommodated the well-to-do, while modest, smaller row houses were built for lower and middle income families; multiple-family flats, which came to be known as *plexes*,[8] were built to house the majority of the working population of Montreal.

According to the late nineteenth-century social classes and ethnic groupings, the city developed several neighborhoods: French Canadians lived mainly in the north, east and southwest of the Island; English Canadians, who controlled much of Canadian wealth, settled in the central core and towards the west of the Island; poorer Irish Canadians were concentrated in the south and southwest of the Island. Hanna's study (1986) indicates that by the late nineteenth-century, population diversity and its geographic concentration along with city's social economical factors brought new housing typologies to Montreal.

The construction of row houses for mainly well-to-do Scots in Montreal began about 1850. Row houses and terraced houses share the same heritage: both types occupy a long rectangular building lot and are joined laterally to other similar houses. However, in other aspects, such as in the diversity of façade treatments, front yard arrangement, building width and height, row houses show more flexibility.

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[7]   D. Hanna, an urban geographer, classified speculators who built from one to nine house(s) as *small-scale builders* who created about 70% of housing stock in the period between 1866 and 1880. See David Hanna (Ph.D. Thesis, 1986), pp. 154-156.

[8]   Plexes: multiple family dwelling units with individual street addresses were developed from about the 1870s through the turn of the century. This was a tenement housing solution to accommodate the new flood of workers who settled in Montreal in the last quarter of the nineteenth century. The prefix before the word *plex* represents number of dwelling units.

Depending on where in the city the row houses were located, their characteristics changed. In the downtown area, they were erected mostly on larger lots of approximately 7.5 by 28 meters and their façades were of masonry. In Plateau Mont-Royal, beyond the main boundary of the city and mainly a working class neighborhood, they were built on smaller lots, 5.8 to 6.3 meters wide by 20 to 25 meters deep, and were constructed with more economical building materials, such as wood and brick. However, in the town of Westmount, several typologies of the nineteenth-century row house model were developed. Stone and brick houses were built on 8 meter-wide by 30 to 39 meter-deep lots for the well-to-do, and brick-clad houses with wood ornamentation were built on 6 to 7.6 meters wide by 26 to 30 meters deep lots for middle-income families.

The Terraced Houses

A *terrace* signifies a row of attached multiple single-family dwellings spread in two to three-and-half story heights in a rigid and homogeneous group. The façade of terraced houses often retains the impression of a larger building where individual units are hardly distinguishable. In fact, the basic architectural intention of terraces was to bind together a row of houses as tightly as possible to give an impression or an illusion of unity, in order to be conceived as a large palace. Later in the nineteenth century, this principle became the model for the construction of terraces in Montreal.

It was John Wood the elder who initiated the concept of a Georgian Palladian palace style for residential squares in Bath, England, about 1728. By 1736 he and his son had completed Queen's Square in Bath which was the first and most completed concept of a terraced house. Later on, this concept of building houses behind one terraced façade appealed as being more economical

for both architects and estate developers. By the 1830s, terrace architecture was well established in Great Britain, and it had been found to be the best way to build houses saving materials, land, and time (Fig. 2.1).

FRONT ELEVATION

GROUND FLOOR
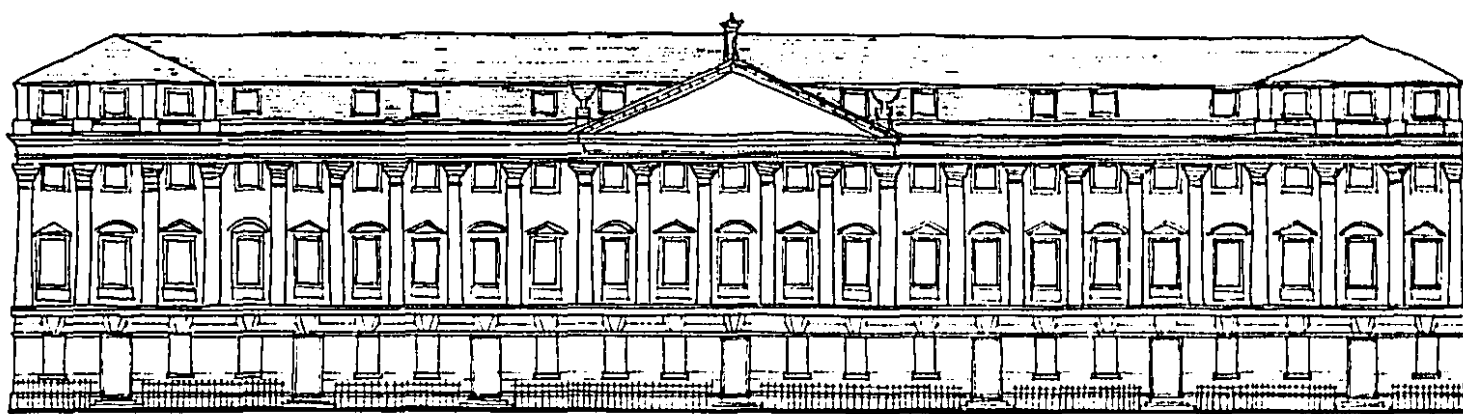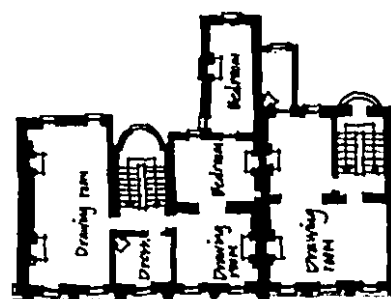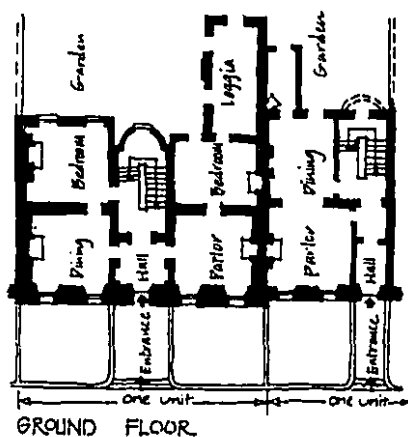
FIRST FLOOR

Figure 2.1   Queen's Square in Bath, England. Architect, John Wood the elder, 1729-36.
(after M. A. Green)

Most of the terraced houses were erected during the period between 1770 and 1860, the beginning of massive urbanization and city expansion in both Great Britain and North America. Terraces were built in Montreal as an alternative for those who could not afford to live in villas, but who still wanted to live in an impressive dwelling.[9] Montreal terraces were more modest with respect to size and architectural detail than those in Queen's Square, Bedford Square or Brunswick Terrace in England. Nonetheless, they followed the same principle of building on a street block and enclosing the two extremities by architectural treatment to create a homogeneous block of housing. One of the most impressive terraces of Montreal was the Prince of Wales Terrace (Fig. 2.2).

The differentiation of functions and allocation of separate rooms for various purposes in Montreal terraces was similar to those in the eighteenth- and nineteenth-century British models (Fig's. 2.1 & 2.2). While in pre-industrial Britain, domestic privacy virtually did not exist, and there was far greater mixture and overlap between people and domestic activities in a house, the modern concept of planning in the eighteenth and nineteenth centuries separated the public from private, family members from servants, and formal from informal activities in the dwelling. The reception and public areas were distributed on the main floor and sometimes on the first floor as well. Bedrooms were isolated on the upper-most floor, and servants were accommodated in the basement, often with a separate access door. The segregation of rooms and allocation of spaces for different activities were the main features of interior privacy in modern terraces. Privacy from outside the dwelling was dealt with by elevating the main living areas above street level. In addition to raising the ground floor of the house, building setbacks and fencing of the front and back yards contributed to the enhancement of physiological privacy from the public street (Fig. 2.2).

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[9]   The first terrace known as Beaver Hall Terrace, was built by John Redpath on Beaver Hall Hill in 1845, and the last terrace known as Newton Place was erected in 1871 on Peel Street. See D. Hanna, M.A. Thesis, 1977 .

FRONT ELEVATION

GROUND FLOOR   1st FLOOR   2nd FLOOR   BASEMENT
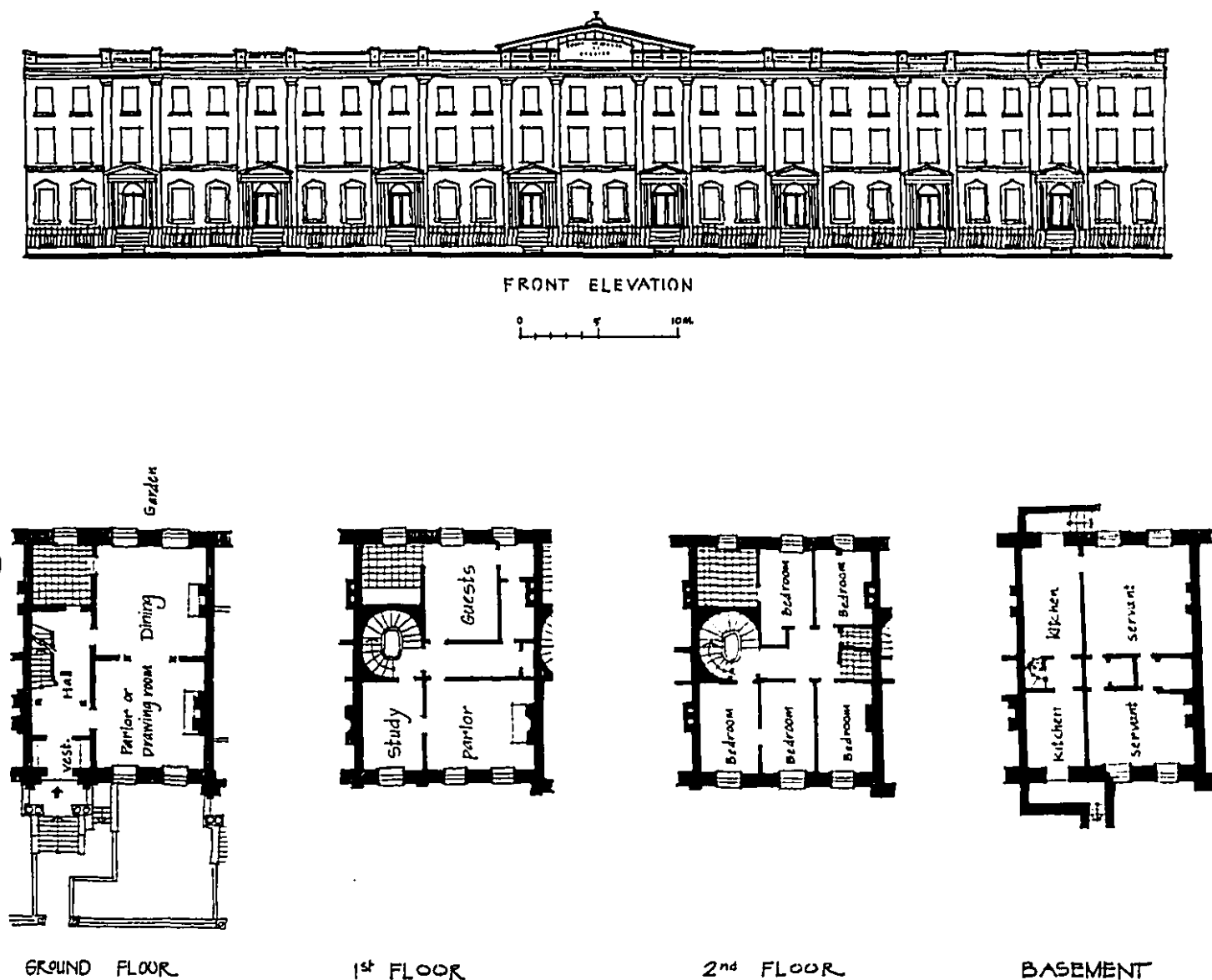
Figure 2.2   Prince of Wales Terrace, completed in 1860 on Sherbrooke Street, between Peel and McTavish Streets. The modern principle of planning in the eighteenth and nineteenth century can be identified in this model. (Sources: elevation is drawn by the author from photograph in the McCord Museum, and plans from the Société du patrimoine urbain de Montréal.)

In the mid-nineteenth century, terraces designed by architects were built exclusively for the city's well-to-do Scottish and English merchants and industrialists. By the 1870s, villas and terraced houses already covered much of Montreal's main residential core, known as the "Square Mile".[10] Unlike their counterparts in Great Britain, however, terraced houses in Montreal did not last long. By the 1890s most of them had been demolished and replaced by multistory commercial buildings. In *Montreal in Evolution*, Jean Claude Marsan (1981) cited the emergence of the nineteenth century's romantic period as a reaction to the symmetry and order of eighteenth-century planning for the disappearance of terraces. In addition to Marsan's architectural analogy, the rapid economic growth of the period and geographical sprawl of Montreal's business district (today known as Old Montreal) in the turn of the century to its northern edges (today known as downtown area), and of course the absence of a nobility, played key roles in the decline of terraced houses.

The Emergence of Row Houses

Montreal's Victorian row houses, with a similar planning principles derived from British models, offered more subtle variations in façade treatments. The façade treatments of row houses blended in with other types of housing in the city, such as villas and plexes, so the personalization of units seemed easier to achieve. The contemporary row house is a descendent of the medieval town house, the seventeenth-century Dutch narrow-front town house, the seventeenth-century Scottish row house, the eighteenth-century English terrace, and the Georgian town house.

In medieval Europe, fortification of cities forced people to build on long and narrow plots of land. in which small building lots accommodated multistory homes with shops on the ground level and very little outdoor space.

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[10] The area bounded by Pine and Cedar Avenues to the north. University Street to the East, Dorchester (later René-Lévesque) Blvd. to the South. and Guy Street and Côte-des-Neiges Road to the West.

Depending on the geographical location and situation, the lot sometimes incorporated an open court yard. In Holland, because of the shortage of land and high density, the typical narrow front house became the most popular and functional urban dwelling form (Fig. 2.3).
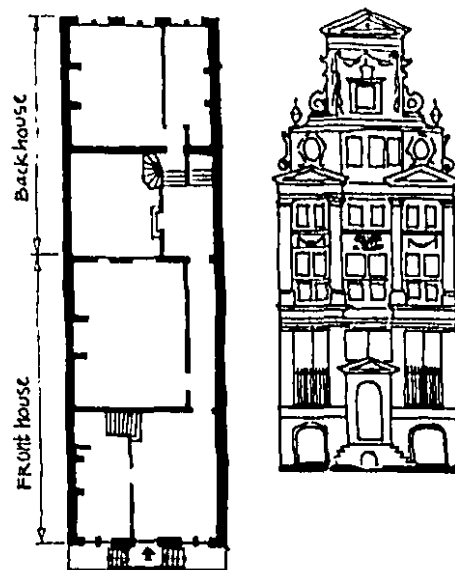
Figure 2.3 Plan and elevation of
a medieval Dutch narrow-front house.
(after W. Kuyper)

In North America, particularly in Montreal, row houses were the successor to terraced houses. By the 1890s, blocks of Victorian row houses filled vacant urban spaces, especially in the main residential core.[11] In Westmount, row houses were built on large lots for more affluent families. In the downtown area sumptuous models were developed, mostly along Sherbrooke, Sainte-Catherine, University, Sainte-Famille, McTavish, Peel, Bishop, Crescent, and McKay Streets; Pine Avenue and Côte-des-Neiges Road. Modest models on small lots were developed in the southern part of Downtown and in the working class district of Little Burgundy. In Plateau Mont-Royal, they were constructed

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[11]   Atlas of the City of Montreal, vol's. 1 & 2, drawn by Charles E. Goads, 1890; and Atlas of the Island and City of Montreal, drawn by Adolf R. Pinsoneault, 1900. (Rare Book Collection, McGill University)

for middle and upper middle income families, adjacent to the sea of plexes, mainly along Laval, Drolet, DeBullion, Saint-André and Coloniale Streets.

As land prices rose, few could afford the luxury of large lots. For the middle class, modest row houses provided an opportunity for families to enjoy the least expensive form of urban living. Many of these row houses still exist on downtown streets, despite the city's commercialization. As was discussed earlier in this chapter, Montreal's housing development in the nineteenth century was mainly the product of speculation by small developers who were rarely occupiers. Thus, the standardization of plans and the building process were two of the chief factors for the existence of row houses in Montreal. By 1901, Montreal had already developed several prototypes of row houses for the Downtown area: on the east side of the mountain, in Plateau Mont-Royal, and on the west slope of the mountain in Westmount.

From the beginning, Victorian principles of planning influenced the interior layout and siting of Montreal row houses. The main rooms faced the street, regardless of sun orientation. In a street block development, prototypes were built on either side of the street and had no differentiation in floor plans or façade treatment.

The interior plans of Victorian row houses in Montreal were designed to achieve as much privacy as possible. The plans were typically divided into three areas for domestic activities: the parlor and dining room for public and reception, secluded bedrooms for family privacy, and the kitchen for the family's informal activities. Each space was distinct and closed off from the other as it had been in nineteenth-century England to achieve a domestic comfort which greatly depended on privacy (Fig's. 2.2 & 2.4).
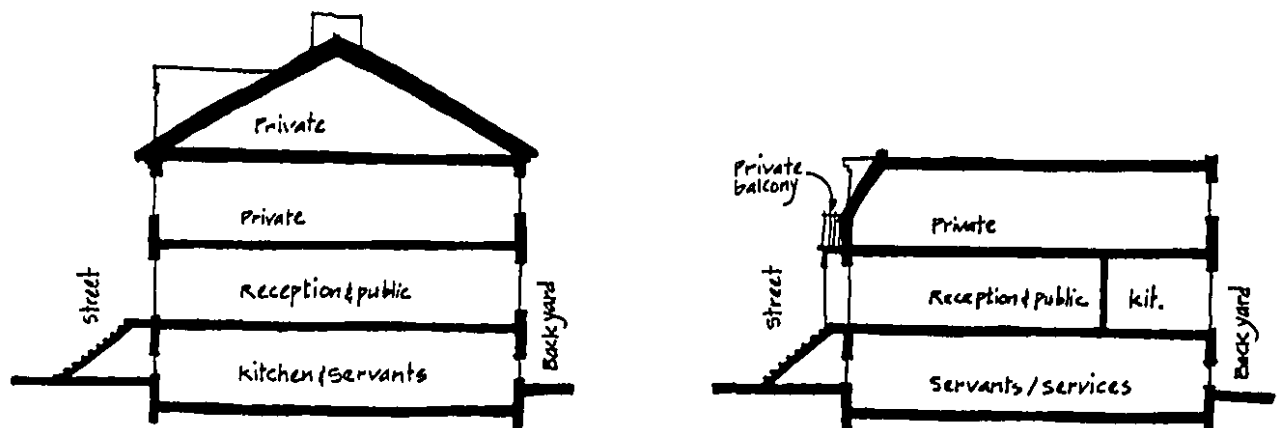
Figure 2.4   A typical cross-section of two small-sized Victorian row houses.
Left: *England,* showing the segregation of spaces for different domestic activities with kitchen located in the basement.
Right: *Montreal,* showing a typical two-story row house with kitchen in the rear.

The Victorian idea of differentiation of room use, separation of every-day domestic activities from the more formal ones and the desire for privacy, which derived from the middle-income and the well-to-do, were eventually adopted for low-income housing. By the nineteenth century, the segregation of interior spaces became a norm in all row houses in order to attain domestic privacy (Olsen, 1974, pp. 265-78). Prior to the nineteenth century, bedrooms served as living rooms and there were fewer bathrooms. The family's desire for privacy and the nineteenth-century sanitary reform resulted in a modern interior arrangement of spaces which eliminated multi-functional rooms completely.

After these reforms in the nineteenth century, isolated and private bedrooms became more common and their number (of which the majority had been two) increased. Row houses on wider lots had four and sometimes five bedrooms. Even in the smaller models, laid on a lot of 5.8 by 20 meters, three bedrooms became the standard (Fig. 2.5).
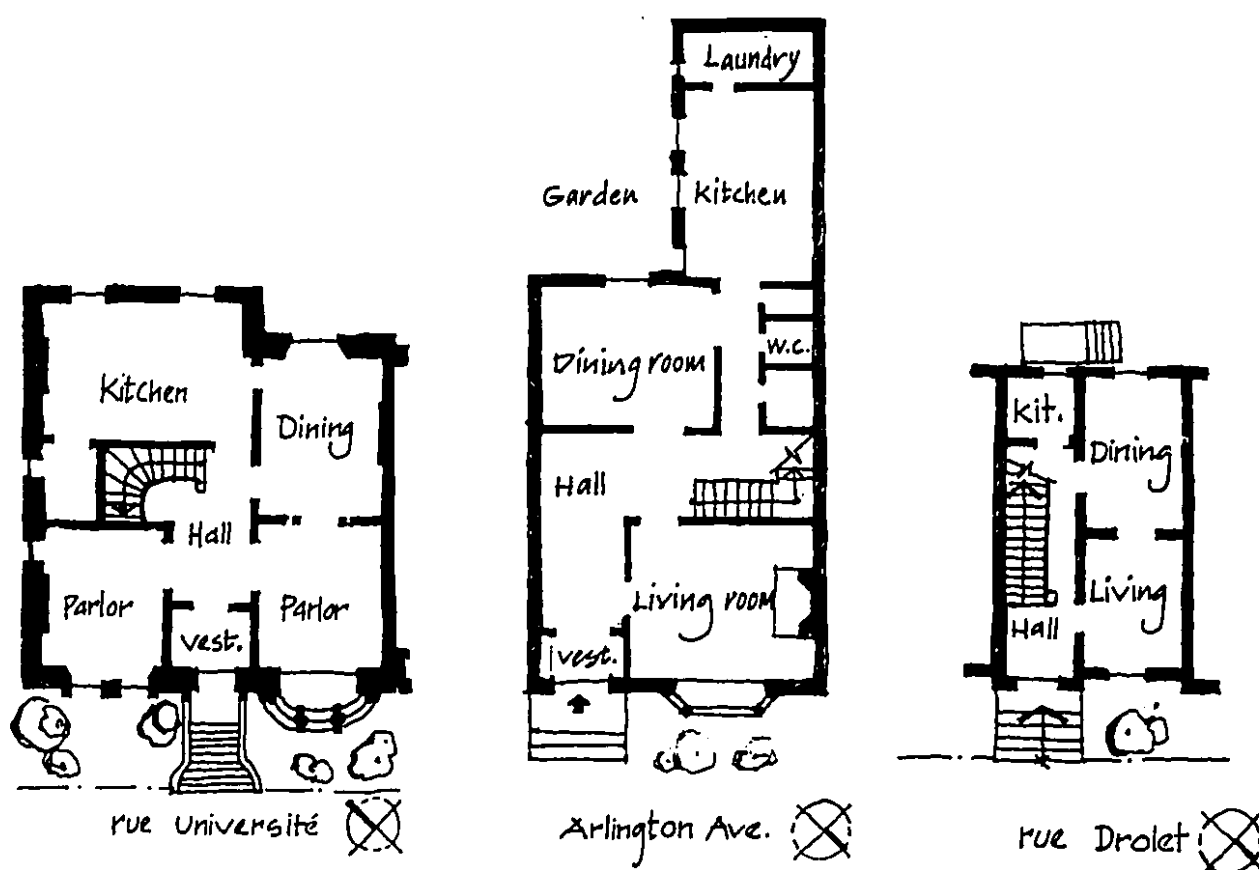
Figure 2.5   Three nineteenth-century row houses in Montreal, showing the most important rooms on the street side and the kitchen in the rear of the house.
Left: plan of a large-sized row house, University Street, Montreal (11 meters wide).
Center: plan of a medium-sized row house, Arlington Avenue, Westmount (8.5 meters wide).
Right: plan of a narrow front Montreal row house, rue Drolet, Plateau Mont-Royal (5.8 meters wide).

In addition to the increase in the number of bedrooms, small niches inside the house, the bay-window, seats by the fireplace, alcoves, porches, study rooms, and private balconies, which were all associated with the provision of privacy in dwellings, began to appear in plans for row houses. Gwendolyn Wright (1980, p. 40) states that these spaces in Victorian houses provided seclusion for individuals living with others. This made it possible to retain harmony in the family while at the same time allowing one or another member to withdraw willingly from the other(s). Wright's observation underlined the flexibility of Victorian interior planning to provide indoor privacy; the same can be said for most nineteenth-century Montreal terraces and row houses. On the exterior of these houses, if the site and municipal by-laws allowed it, various mechanisms such as fencing, landscape and walls were introduced to ensure privacy from the outside for the residents. While in Victorian planning there was an emphasis on openness between the interior and the exterior, between the built environment and nature, such elements as bay-windows, porches, verandahs, balconies, and entrance porticos (usually referred to as transitional spaces) also often served as vital physical elements for privacy between the public outdoor and private indoor spaces (Fig. 2.6).

Figure 2.6   Left: Plan of a late nineteenth-century row house, Arlington Avenue, Westmount.
Right: Plan of an early twentieth-century row house, Draper Avenue, NDG.

Montreal Row Houses in the Twentieth Century

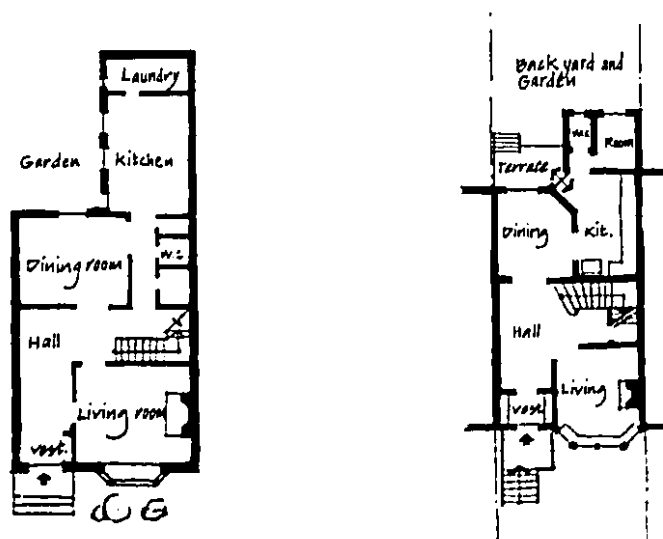Factors such as the economy, construction techniques and architectural style that worked hand-in-hand in the development of Montreal row houses in the nineteenth century continued into the next. In addition to these factors, an international social climate shift towards simpler, smaller, and more modest housing had a great impact on the pattern of design and construction at the turn of the century (Wright, 1980, Chapter 8). As the number of middle-income families grew and land prices increased, speculative row house-building increased correspondingly to meet the new demand. Construction techniques became more complex, more costly and more standardized than ever before, and this became an important criterion in housing design in the twentieth century. Row houses became simpler in layout and decoration, but more functional in terms of family privacy and domestic conveniences. Floor area and building heights were reduced, and a modest, medium-size, model was adopted as a construction pattern in the twentieth century.

Concerns for privacy, domestic conveniences, sanitation, improvement in public transportation, and introduction of building by-laws brought major changes to twentieth-century row house planning. In the beginning of the twentieth century, sizes and layouts in row houses were more standardized, mainly built on lots about 7.5 by 33 meters, with rooms distributed on only two floors, stables and sheds disappeared in the back. The introduction of strict building by-laws regulated building heights, the siting of the house on the lot, and back and front yard fence heights in row houses. Later in the twentieth century, municipal governments imposed a maximum overall length for groupings of row houses in one strip. This change was mainly implemented to provide adequate fire escape for individual units from the back. These standard

regulations vary in different municipalities and also within a municipality, and from one street to another (Fig. 2.7).[12]
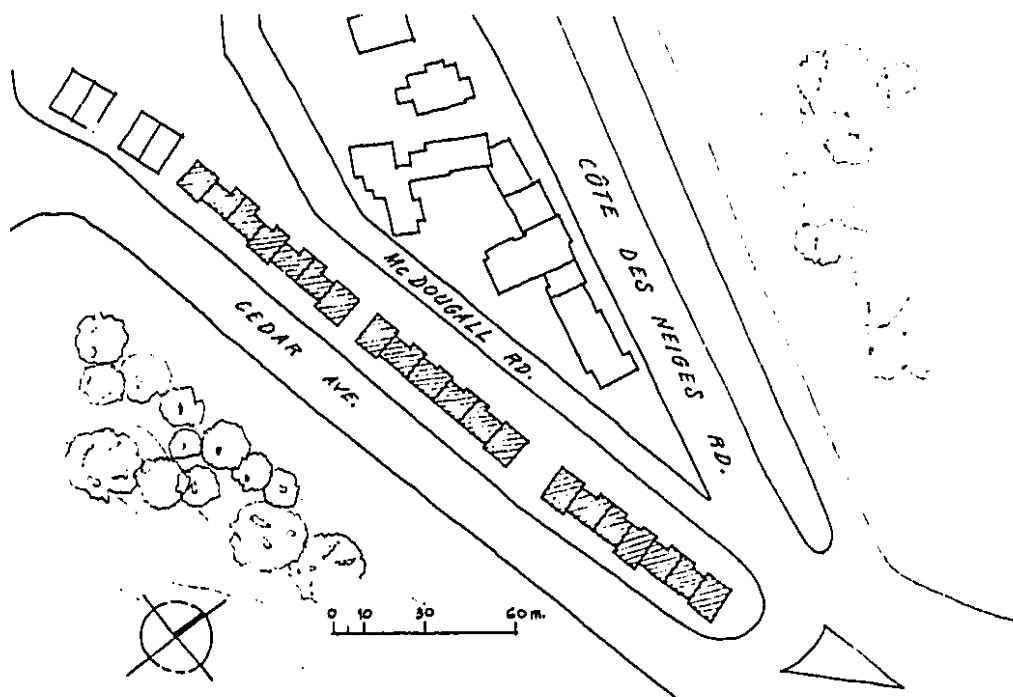
Figure 2.7   Site plan of row houses on Cedar Avenue, Montreal, built around 1926.
The length of each block of row houses is about 70 meters, which represents the
application of new municipal by-laws in the first quarter of the twentieth century.

Most of the two-story twentieth-century row houses were built in the western section of Montreal, in the district of Notre-Dame-de-Grâce (NDG). These were usually built in rows lining an entire block or sharing it with duplexes and semi-detached houses. An examination of plans, construction techniques and materials indicated that these row houses were built at different times and by different developers. In both their exterior and interior layouts, the plans

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[12]   Different municipalities impose their own restrictions on the length of the grouping of row houses. For example in the municipality of St-Laurent the maximum length of a strip is 68 meters, and in the city of Montreal the length varies from one neighborhood to another.
(Sources: 1990-95 municipal by-laws of Montreal, Ville St-Laurent, Westmount, and Verdun.)

are similar and only differ slightly in exterior elements such as stairs, front porches, and balconies. In many cases, later developments copied or borrowed certain architectural elements from earlier ones, which often created a harmonious street block. The existing row houses in the district of NDG were built in the first two decades of the century, a development pattern that occurred in the area as result of the city's expansion.

In the typical two-story medium-sized row house of the 1900s, ornamentation and decoration became less important. In this period open-plan and simpler interior layouts were introduced. Often the living and dining rooms were adjacent, connected with a wide open archway. The kitchen, located on the ground floor, became a functional room in the house, sometimes even the "family hearth." The number of bedrooms was three, with one or two bathrooms. With no need for a stable, private outdoor space was given to the house. Because of an earlier land subdivision, the early twentieth-century row houses were provided with back lanes, used as service corridors. Later in the century, lane-accessed parking garage additions to the rear of the house became common. In the front, balconies, entry porches, and gardens served as decorative elements for the street as well as a privacy component for the house.

During the period between 1920 and 1960, row houses in Montreal which had once been the most common housing form, lost their popularity. Because of their location in the main commercial district, a large number were demolished and replaced by various types of high-rise buildings, and those which survived were often recycled for commercial purposes. In Westmount, however, most row houses survived as residential buildings and came into the hands of well-to-do families--due to the city's particular geographic and demographic situation. In the Plateau Mont-Royal, row houses survived, but were often poorly kept and run down. Back lanes and streets which were once the outside hearth of neighborhoods, for children to play in and for adults to socialize, increasingly lost their popularity. As security and privacy became a major concern for the

residents, the outdoor social activities were limited to the enclosed private back yard.

By the 1970s, in Montreal, as middle and upper-income groups continued to promote suburbanization with single family detached houses, a new group of people began to show interest in town-living, particularly in duplexes, semi-detached and row houses. Single parents, childless families, and young couples with or without children returned to the city. In the 1980s and 1990s, self-employment and inter-communication networks, and the urban location of row houses added to the popularity. The increase in building activity in this period resulted in the construction of more row houses.

The tendency towards greater freedom in design and architectural style may be the characteristics of row house development in the last quarter of the twentieth century. In some cases, architects presented more functional schemes to suit the site and the new homebuyers' market (Fig. 2.8). On the whole, a row house could be as narrow as 4.5 meters or as wide as 6 meters in street frontage.

The most pressing problems appeared to be the accommodation of the automobile and provision of sufficient privacy. In this new electronic age, families have been spending more time at home than ever before. While houses have become smaller and more economical, the activities around the home have become increasingly varied. In addition to housekeeping, child care, children's play, entertainment, and working at home have become common domestic activities in most households in the last quarter of the twentieth century. As a response to this social climatic and demographic shift, in 1993, a design competition for a 140-unit row house project for the suburb of Île Perrôt called for the provision of domestic office space in 50 per cent of the units. (Fig. 2.9).

The recent specific requirements for housing imply a new definition of "home," wherein a workplace must be accommodated. Mitchell (1995) sees the necessity for the separation and architectural differentiation of spaces, if

homes become increasingly loaded with work, education, and entertainment functions. Thus, in the forthcoming decades there will be an even greater need for privacy in the design of new houses in order to accommodate all these activities side-by-side, without overlapping each other.

BASEMENT

1st FLOOR

GROUND FLOOR
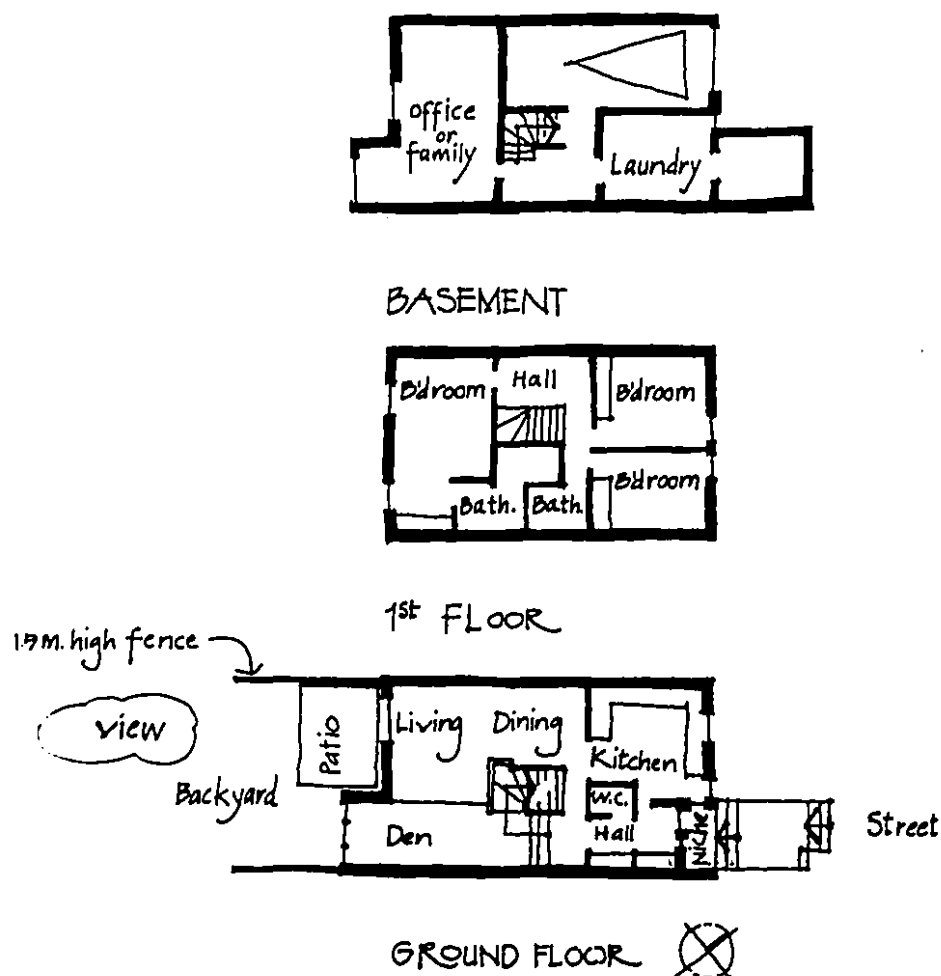
Figure 2.8   Floor plans of a row house on Nuns' Island, 1981. In the interior arrangement of this unit, the kitchen is planned on the street side unlike traditional planning where the most important rooms of the house is given the street orientation. (after D. Hanganu)
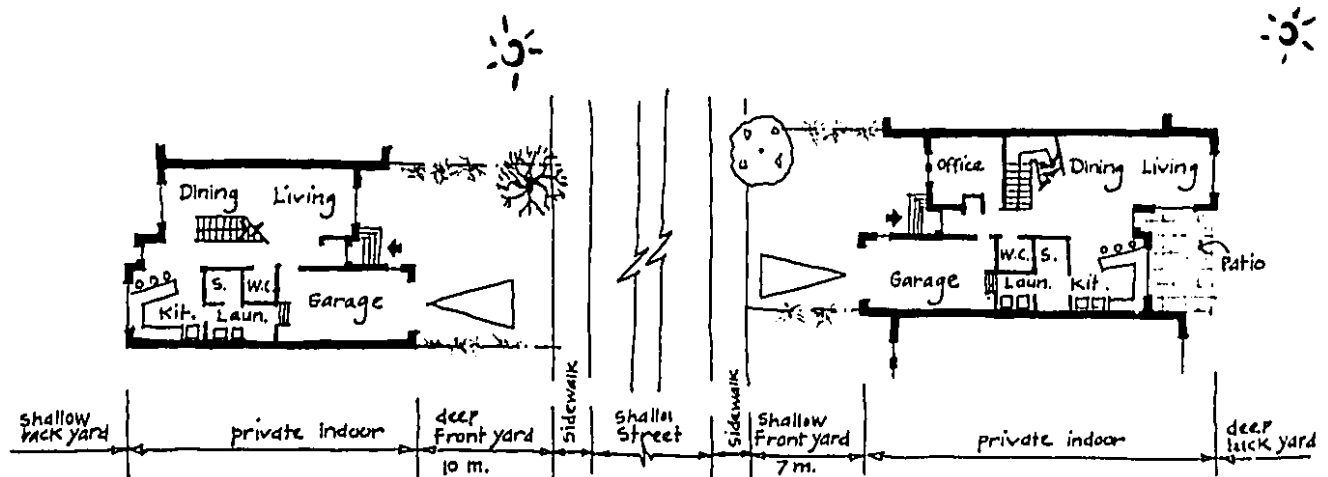
Figure 2.9 Île Perrôt Residential Competition entry scheme, 1993. An illustration of freedom in the planning and design of row houses. The site layout is planned according to the sun's orientation. The most important rooms of the house and large terraces are located to the south, the domestic office is placed to the north and close to the entrance. Building setbacks are deeper on the south side than they are on the north. (after Kozina, Rahbar, Malisani)

Chapter 3

Privacy Study of Montreal Row Houses

*The private rooms are those into which nobody has the right to enter without an invitation. ....
The common are those which any of the people have a perfect right to enter, even without an
invitation.*

Vitruvius, Chapter V of Book VI

This chapter deals with the physical form, typology, and design patterns of various Victorian and contemporary row houses as they relate to privacy. The study looks at row houses in a block, as well as individual units, since the sharing party walls and the proximity of dwelling units are an important subject of this research. The findings are the result of a survey and an analysis of the models according to the availability of data. All the houses presented in the study were built between 1850 and 1995. The study illustrates and analyses the privacy aspects of six types of row houses in different residential neighborhoods of Montreal. In the examination of each model, the general aspects of site, street, sidewalk, outdoor and indoor spatial arrangement, and the design mechanisms are discussed in relation to privacy.

Rue Drolet Row Houses

Figure 3.1   Street elevation of rue Drolet row houses, built around 1870.

Some of the smallest and the most economical row houses developed in nineteenth-century Montreal was the strip of Victorian row houses built in the 1870s on rue Drolet, sharing the street block with row of plexes,[13] in the Plateau Mont-Royal, a high-density inner city neighborhood. The siting was the result of a city subdivision of lots based on the typical Montreal orthogonal grid system. On the east and west sides of the street are row houses of typically 7 meters frontage, bound between a 9-meter street and a 4-meter wide back lane.[14]   Both pedestrian and vehicular traffic are heavy during most parts of

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[13]   Plexes: for the definition see footnote on page 25, Chapter 2.
[14]   The original streets were narrower and side walks were wider. The present measurements of most streets in the neighborhood are the result of street widening in the twentieth century, at which time the most sidewalks became narrower.

the day. The houses have very little front yard space, and are in close proximity to a 2-meters wide sidewalk. The most important rooms in the house are always located on the street side, in keeping with a common Victorian planning practice (Fig's. 3.1 & 3.3).

The basic plan of these row houses is simple and functional. The rooms are distributed on two floors: living quarters and kitchen on the ground floor, and bedrooms, usually three, on the upper floor. Because of its functional and economical features, this type of plan was adopted by developers throughout the twentieth century for the design of most row houses. Rue Drolet row houses, while presenting a standard simple Victorian plan, exhibit a specific neighborhood character variation in ornamentation and physical design elements which makes them some of the most picturesque and sensible in Montreal. A significant characteristic of these prototypes is the flexibility and adaptability in their planning that has allowed the changes that have occurred over time: providing more light, more accommodation for the subsequent occupants, better sanitation (increase in number of bathrooms), and more privacy.
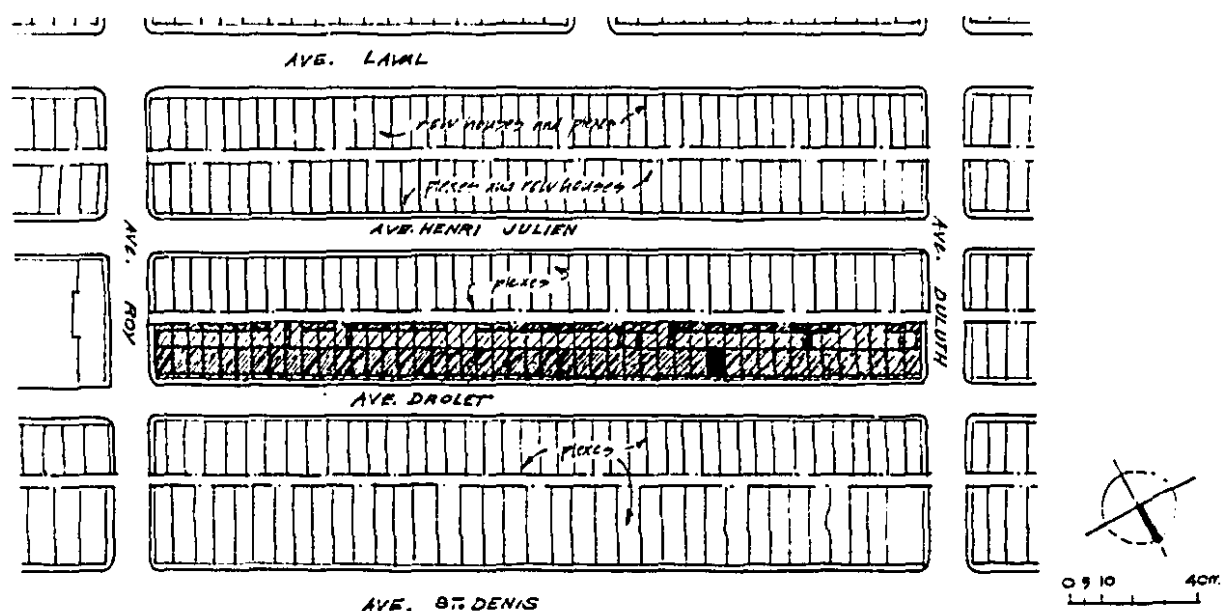

Figure 3.2   Map of Montreal in 1926 showing rue Drolet, Plateau Mont-Royal.
Source: Map of the City of Montreal, vol. 3, 1926, drawn by The Underwriters' Survey Bureau, Ltd. (Bibliothèque Nationale du Québec)

Exterior Arrangement

Rue Drolet row houses are set 2.4 meters back from the sidewalk. Such close proximity does not provide sufficient transitional spaces between public and private realms where there can easily be conflict between them. However, a great majority of the dwellers on the street have found a design solution to the problem of privacy from outside. Among these solutions are an indirect front entry landing, front porches or balconies, fenced front yards, and landscapes which produce a meaningful personalized transition elements.

In order to deal with the problem of visual privacy from being overlooked by pedestrians, the windows are elevated 2.1 meters above street level. For outdoor physiological privacy, each unit has its entrance door set 4 meters away from that of the immediate neighbors. This provides a greater freedom for personalization and use of the front yards, and a more distinguishable territory reduces the possibility of miscommunication between immediate neighbors. Ornamented front entrances, balconies, and personalized front gardens indicate the flexibility and adaptability of this strip of extremely tight row houses (Fig. 3.1). In the 1970s, for a greater control and management of outdoor spaces and because of the increasing desire for domestic privacy, numerous residents in the neighborhood erected high (over 2.5 meters) walls for more seclusion of the private back yard from the public lane.[15]

Even though the houses are very close to the street, the small front garden, front entry landing, and raised windows assure a certain degree of privacy for the residents. A front balcony creates a direct involvement with the street in the form of an extension of indoor spaces to the outdoor, which in turn acts as a physiological and psychological buffer zone between public and private. The analysis of the transition spaces between outside and inside indicates that the importance of these spaces is highly regarded by most residents in the neighborhood.

The original plans of row houses in Plateau Mont-Royal typically showed a small (about 2 by 1.5 meters) interior vestibule. It was observed that those dwellers

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[15]   Before the restriction of city by-laws in the 1980s that allowed the maximum height for a back-wall to be 2 meters, many residents erected walls as high as 2.5 meters.

who did not find the space adequate enclosed the entry porticos in order to extend an outdoor vestibule space to the existing one. In addition to a transition mechanism and an "entry lock," these small indoor or outdoor vestibules provide both thermal control and a buffer zone for possible conflict between public and private domains.

Because of high density of the neighborhood and the heavy pedestrian and vehicular traffic activities on the street, the treatment of outdoor spaces such as fenced front gardens, and landscapes as physical and symbolic barriers, seems crucial for optimizing the level of privacy. Survey interviews and observation indicate that the outdoor areas function best when there are more physical and symbolic elements for differentiation of public and private domains. One keen homeowner, on rue De Bullion, proudly indicated "by fencing the front yard, no one can trespass on my property." Some residents on rue Coloniale went further in resolving the problem of privacy by enclosing the shallow front yard (1.8 meters) by a higher than eye-level wooden fence, converting a semi-private front yard to a private one (Fig. 1.1).

Interior Arrangement

The typical interior layout of row houses is rectangular, laid on 5.8 by 21 meters lots. On the ground floor, the vestibule and staircase are located on one side, and the living and dining areas are positioned on the other. The kitchen and a small toilet are placed in the back of the house. The back yard is accessed through the living quarters. The study of several models indicated that some residents designed symbolic elements to clarify a path for accessing the back. As shown in Figure 3.3, a pair of columns and change in floor finish and ceiling texture were used in this model to create a circulation path.

The living quarters function as formal space adjacent to the informal kitchen, and the informal family activities take place in the basement and kitchen. In some models on rue Drolet and rue Laval, it was observed that some residents accommodated a domestic office in the basement which was accessed directly from the street level. With bedrooms on the first floor and common areas on the ground floor, dwellers are

provided with indoor privacy. In order to deal with acoustical privacy in these small row houses, adjacent rooms on the first floor are often separated by mediating spaces such as closets or bathrooms. In these examples, a great similarity in interior planning can be drawn with the terraces of the nineteenth century, having vertical segregation of different domestic activities (see Fig. 2.2 in Chapter 2).

Back lane

GROUND FLOOR   1st FLOOR
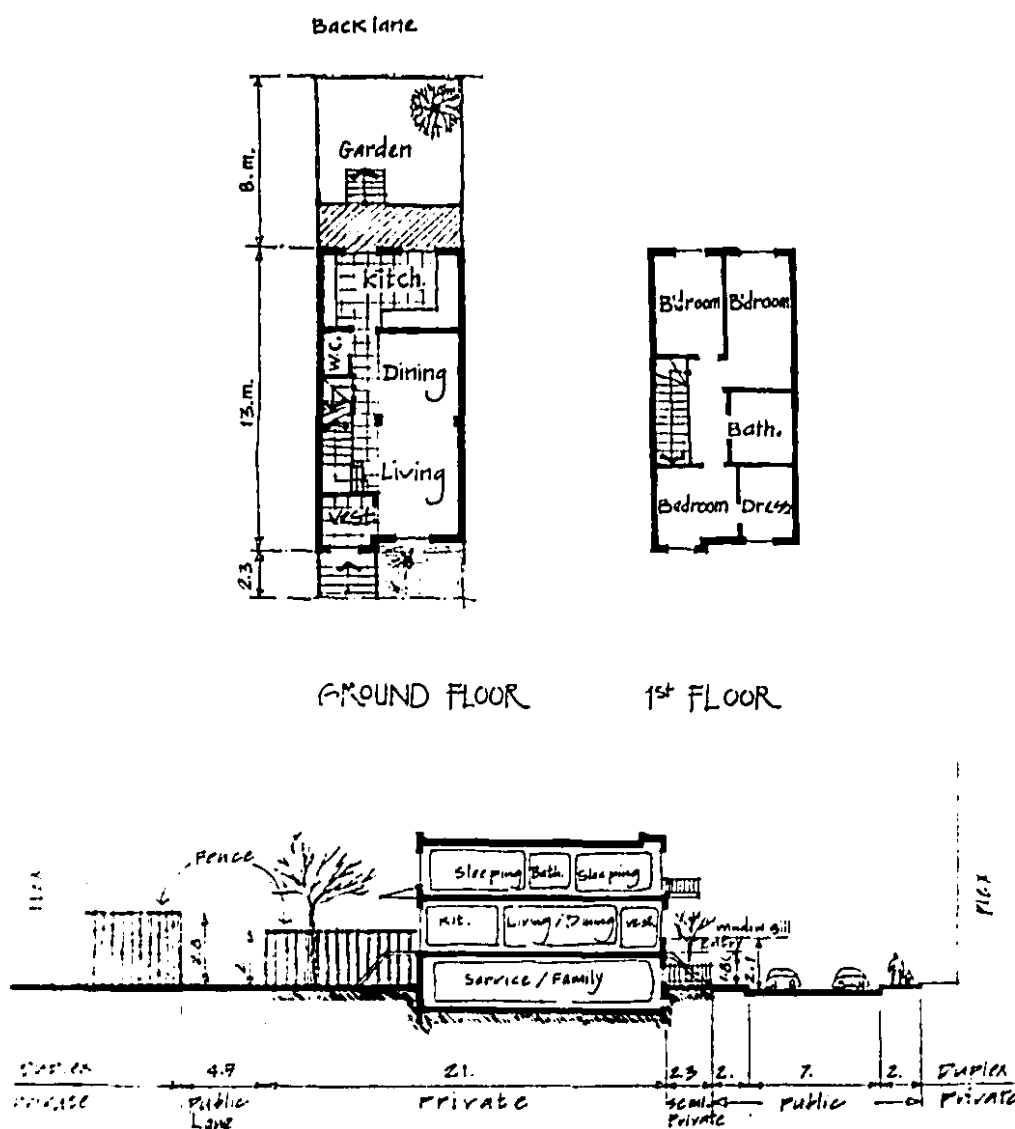
Figure 3.3   Top: Floor plans of a typical 5.8-meter wide row house on rue Drolet. The original model underwent several alterations.
Bottom: A cross section (a street profile) of a typical rue Drolet row house.

Prospect Avenue Row Houses

Figure 3.4   Street elevation of Prospect Avenue row houses, facing south, built around 1880.

The row houses of Prospect Avenue are a good example in which most aspects of privacy, security, identity, and territory are achieved. The ground floor is typically raised about 1.3 meters above street level and a 4.8-meters setback is given from the sidewalk line. The strip of row houses on this street was built in the period between 1880 and 1890 by speculative developers. The site on which the houses are erected is slightly sloped (approximately 10 per cent) which provides a naturally elevated ground floor from the public street. Unlike most traditional models of row houses with repetitive plans and architectural styles, these houses vary slightly in size, style, and plan layout. This study investigates No. 53 Prospect, an 8-meter wide row house which is slightly wider than the others on this strip, and is unique in its exterior and interior layout (Fig. 3.4).
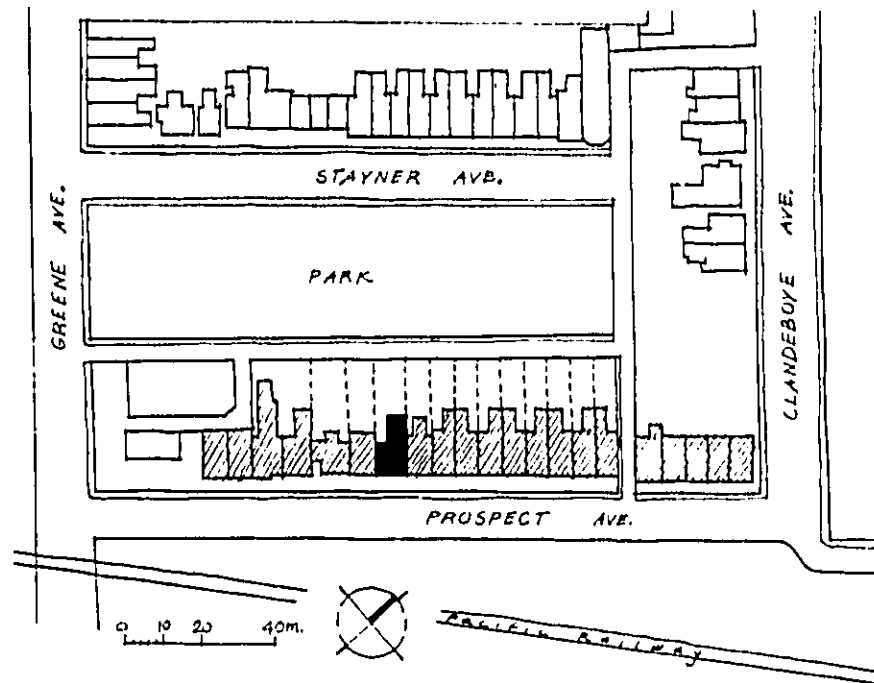
Figure 3.5   Map of Montreal in 1961 showing Prospect Avenue, Westmount.
Source: Map of the City of Montreal, vol. 4, 1961, drawn by The Underwriters' Survey
Bureau, Ltd. (Bibliothèque Nationale du Québec)

Exterior Arrangement

Apart from the general similarity with the other row houses of Prospect Avenue in building setback and elevated ground floor, No. 53 exhibits other important considerations about privacy, security, and territory. On the outside, the concept of clear zoning between public and private is established by two components: first, the front garden and entry, raised 1.3 meters above sidewalk level, which creates no confusion about a semi-private and a personalized territory; and second, the physical sense of privacy created by the entrance niche, closed off by an iron gate. This indeed is a clear definition in the hierarchy of space between the private indoor and public outdoor realms which allows an optimum control of spaces by the residents (Fig. 3.6). In *Community and Privacy*, Chermayeff and Alexander (1963, p. 216) discuss the physical clarity of separation between the public outdoor and the private indoor space through the creation of *"locks."*

The raised front yard, a gated entry niche, and an indirect entry path support the above concept which in turn assures security for the householders. The importance of achieving privacy and security by employing symbolic boundaries and mechanisms is also discussed by Newman (1973, pp. 63-4). The position and overall layout of the front entry is an obstructing physical and psychological barrier for unwanted observation and access from outside into the house. In this model the front entry layout marks a strong statement about privacy and security, referred to by the previous owner of the house as a "spirit wall."[16]
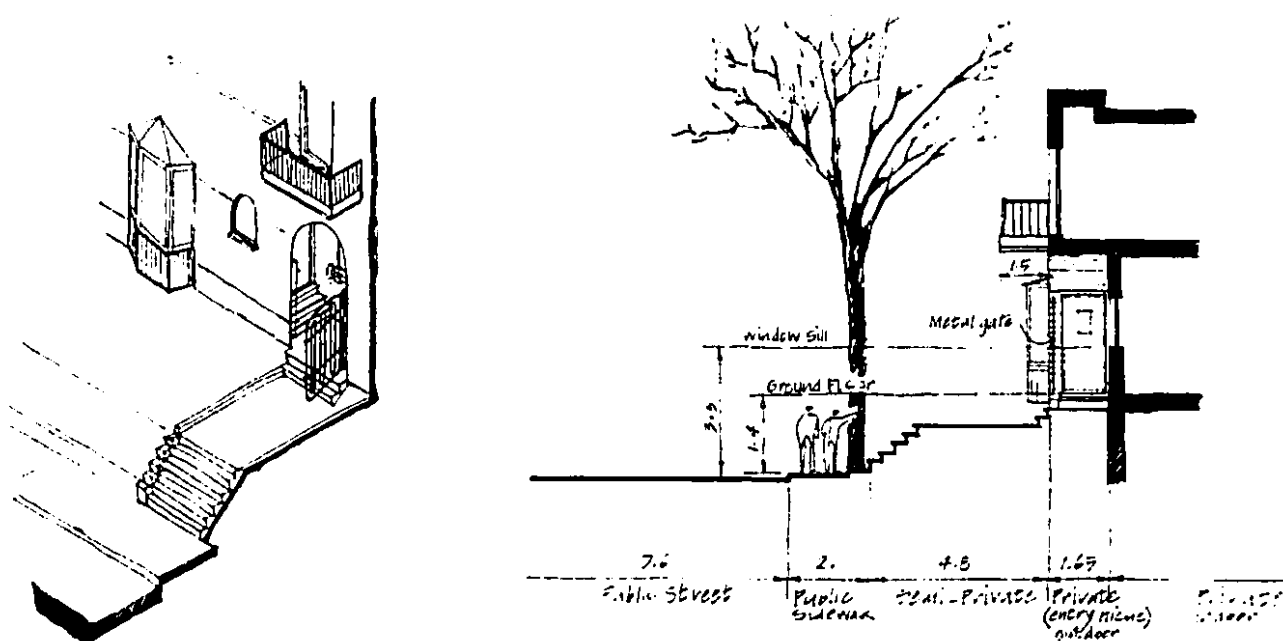
Figure 3.6   Left: Axonometric view of the spatial arrangement of privacy mechanisms at the front. Right: Diagram showing the front outdoor hierarchy of spaces.

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[16]   Norbert Schoenauer is an architect and a professor at McGill University, who owned the house from 1962 to 1976. During his tenure, the house underwent some fundamental renovation in both indoor and outdoor spaces.

In the rear, personal control of privacy in the back yard is achieved by garden walls of various heights, and landscapes elements. However, this treatment is not done in a consistent manner. A low picket fence and a gateway to the parking space in the back yard create an opportunity for intrusion from outside. The rear of the property opens up to a 4-meter wide public lane which leads to a park. This situation reduces back yard security and privacy especially during summer months when pedestrian circulation is more intense. In general, in most dwelling units on Prospect Avenue, the property lines in the rear are not clearly identified, or else they are marked by low fences that can easily be overlooked or entered from outside. Contrary to the front arrangement, the clarity of definition of public and private domains in the rear is poor in terms of privacy and security (Fig. 3.6).

Interior Arrangement

The basic plan is an L-shape, a popular style in nineteenth-century Montreal to bring natural light and ventilation into the house. As was discussed in Chapter 2, the importance of privacy and sanitation brought new features to row houses of the period, which is well illustrated in this house.

The dwelling is divided into three realms: *formal, informal* and *private*. The formal and informal realms are side-by-side on the ground floor and provide an opportunity for the householders to experience and interact in all domestic activities without disturbing one another. The den and kitchen, where a variety of informal activities take place, are separated from the formal living and dining areas. An immediate access from the den and kitchen to the backyard without passing through the formal area optimizes the level of privacy. The private domain is undisputedly segregated on the first floor along with a study which creates a dynamic and active domestic environment with a high level of privacy. As an outdoor extension of the indoor private domain, a 3 by 1.5 meter private balcony on the first floor announces the importance of south view of the house (Fig. 3.7).

1ˢᵗ FLOOR

GROUND FLOOR
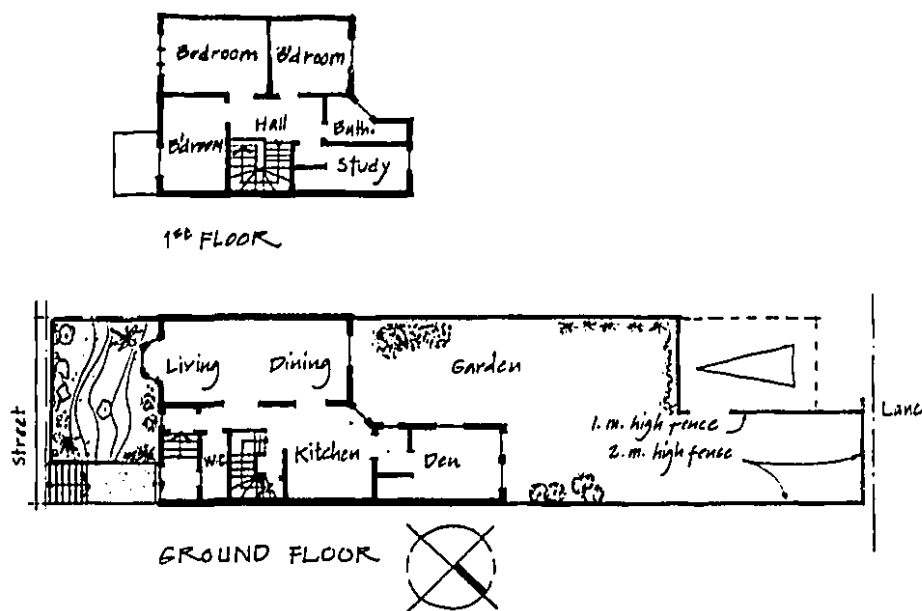
Figure 3.7   Floor plans of No. 53 Prospect Avenue, an 8-meter wide row house. (after N. Schoenaueur)

Melrose Avenue Row Houses

Figure 3.8   Street elevation of Melrose Avenue row houses, built around 1915.

As the city of Montreal continued to grow in the 1900s, the western sector of the city, known as NDG, was the preferred location for expansion. The district, developed for predominantly middle-income families, has kept its social charactei to the present day. NDG's city subdivision followed Montreal's typical orthogonal grid and back lane between every second street. The scattered blocks of row houses in this area were built speculatively between 1910 and 1920 on standardized lots of about 7.5 by 30 meters on the east and west sides of 8 or 9 meter wide streets (Fig. 3.9).

The strip of row houses on Melrose Avenue is similar in planning and interior layout to other models of row houses in NDG. The typology was obviously derived from the traditional Victorian examples of the nineteenth century, yet with more modest and simple ornamental detailing. Like the older row houses of Montreal and Westmount, rear access to the stables and services was provided by a 4-meter wide back

lane. Today, the back lanes mainly serve as access to parking garages and children's play areas.
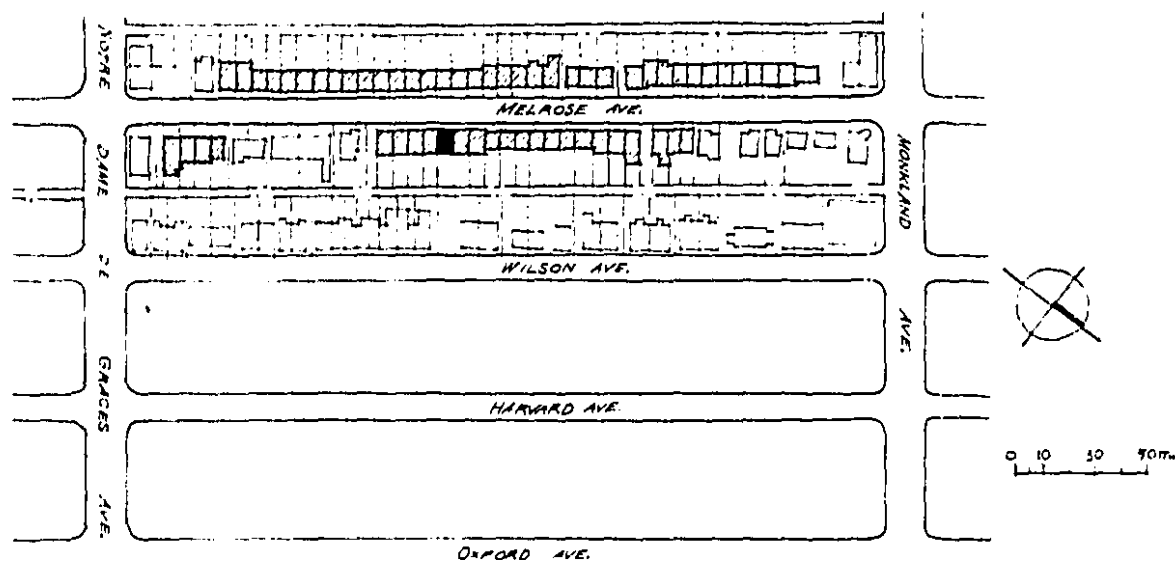
Figure 3.9   Map of Montreal in 1955 showing Melrose Avenue, NDG.
              Source: Map of City of Montreal, vol. 7, 1954, drawn by the Underwriters' Survey
              Bureau, Ltd. (Bibliothèque Nationale du Québec)

Exterior Arrangement

The front balcony or front entry landing as functional and transitional element are the significant features of the Melrose Avenue houses, and undoubtedly derive from a typical working-class model in Montreal. The houses are set at a distance of 7.5 meters from the sidewalk, with a favorable space for front yard personalization and territorial demarcation of the dwelling units. A front entry balcony about 1.2 meters above street level, which can be found in most row houses of this street, is a defensive, entry and transition mechanism for the function of the home. The entrance doors of the units positioned 7 meters apart from one another, encourage a greater use of the outdoor street-oriented space. In some cases, however, the entrances of every two houses are paired, which provides less outdoor privacy between the immediate neighbors that can be denoted as

result of the L-shaped floor plans (Fig. 3.10). During the site survey, it was observed that the personalization and use of the front outdoor spaces seemed more common among those residents with sufficient distance between the immediate neighboring entrance doors and front balconies. In many houses it was observed that in addition to privacy mechanism, front balconies provide a space for temporary storing of household goods, such as bicycles, baby strollers, and roller blades.

The back yards of most houses are enclosed at the rear with 2 to 2.5 meter wooden fences, yet the common walls between neighbors are separated with low screening elements of only 90 cm high. Overall, with the 7.5 meter-deep semi-private front yard and a 16-meter long private back yard, there is ample outdoor space for families with two or three children. The Melrose Avenue row houses give the impression of dwellings that are liked by their inhabitants and have a strong feeling of neighborhood, as was observed by children playing in front yards and back lanes, and adults socializing on front balconies. The site examination and interviews with some residents indicated that the outdoor privacy between neighbors was determined more by the establishment of a "good" neighbor relationships than by means of physical components.

One obvious urban design problem is the width of sidewalks, where the street width is appropriate to its site. Along Melrose Avenue, pedestrians have only a 1.2-meter walking path which does not allow for more than two persons to walk side-by-side. The narrow sidewalks often force pedestrians to enter the semi-private zones on their path when passing people walking together (Fig. 3.10).

Interior Arrangement

According to the traditional modest Victorian design pattern adopted in this typology, the units are laid on 7.5 by 33 meters lot. The ground floor is accessed by a small flight of stairs onto the front balcony, which leads to an indoor vestibule. The living and dining rooms are arranged back-to-back on one side, while the kitchen, staircase, and a

small niche[17] are positioned on the opposite side. The rear of the house is accessed through an open corridor and kitchen. Services and a small family room or playroom are in the basement, and four bedrooms are located on the first floor--the fourth bedroom is the result of an extension. The flexibility of this model also allowed some residents to project a private street-oriented balcony on the first floor (Fig. 3.8), which gives the houses a more vibrant and active character (Fig. 3.10).

1st FLOOR

GROUND FLOOR
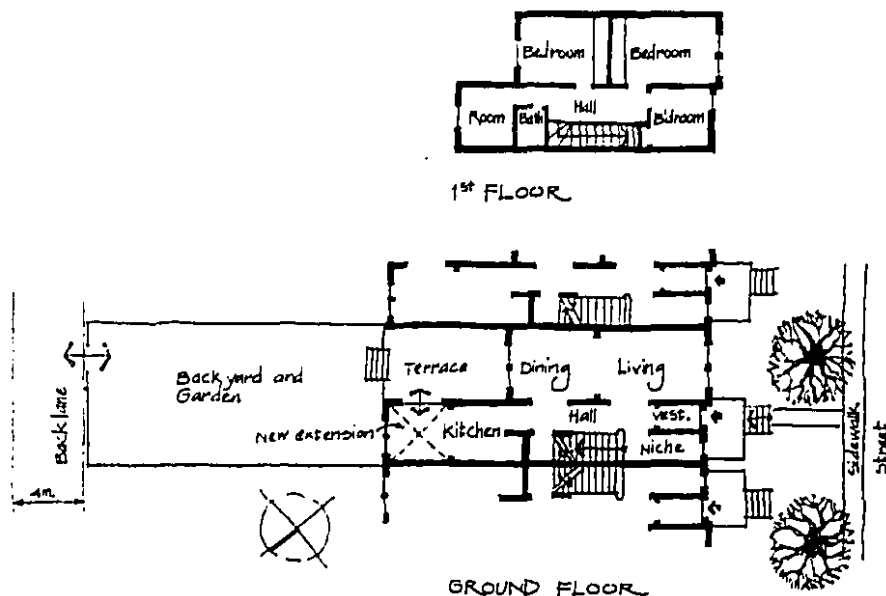
Figure 3.10 Top: Floor plans of No. 4101 Melrose Avenue, a 7.5-meter wide row house.
Right: Diagram showing the front outdoor hierarchy of spaces.
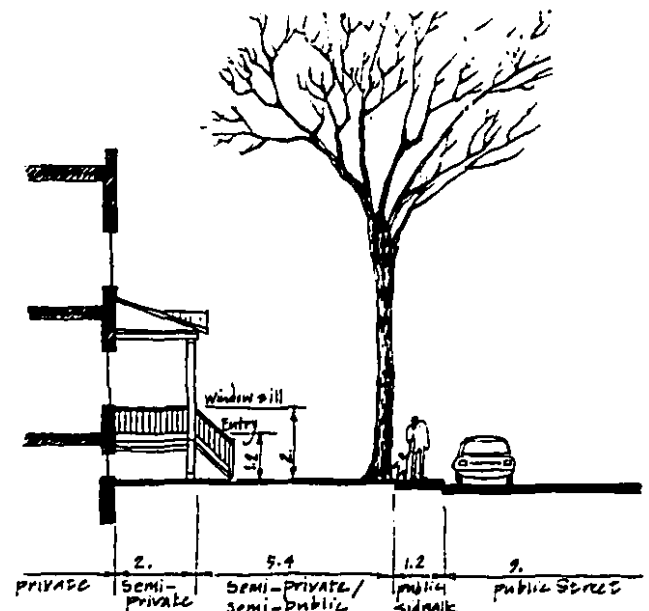
17 The small niche next to the vestibule served as a powder room in the original layout which still exists in some units on Melrose Avenue. The powder room in this house is relocated in the basement.

Cedar Avenue Row Houses

Figure 3.11   Street elevation of Cedar Avenue row houses, facing south, built around 1926.

Some of the most uncommon Montreal row houses were built in 1926 as rental housing on a steep site on Cedar Avenue, west of Cote-des-Neiges Road. These row houses, about 10 meters in width, are among the widest in Montreal. The row is tightly fitted between McDougall Road and Cedar Avenue, two roads with heavy vehicular traffic (Fig's. 3.11 & 3.12).

This strip of row houses differs from others in that the entrances are placed not at one side but in the center, with rooms on either side; and that the high elevation of the houses above street level (about 2.8 meters) provides the units with optimum visual, physiological, and acoustical privacy from the public realm. In the front, the steep slope discourages uninvited visitors from entering into the semi-private or private domain of the house.
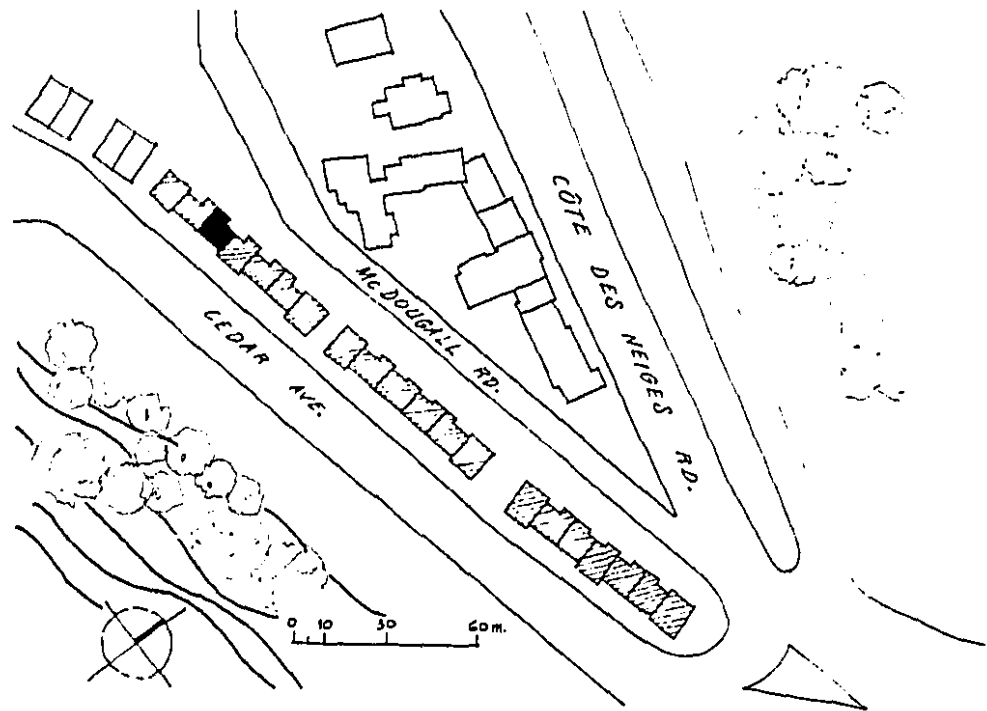
Figure 3.12   Map of Montreal in 1961, showing the strip of row houses on Cedar Avenue, Montreal.
Source: Map of the City of Montreal, vol. 4, 1961, drawn by The Underwriters' Bureau,
Ltd. (Bibliothèque Nationale du Québec)

Exterior Arrangement

An interesting point in the planning of the Cedar Avenue row houses is the position of the front door in relation to the front door of the immediate neighbors. The centered entrance permits more freedom for regulating all aspects of privacy between the neighbors. The back yards are closed-off with 1.5-meter high masonry walls that buffer the houses from the heavy vehicular circulation of McDougall Road. Because of the walls, (about 1.5-meter high) and effective landscaping, it is not easy to see or enter into the back yards from the road.

With respect to privacy and hierarchy of space there are two major attributes. First, the elevated entrance announces a clear physical and symbolic barrier between public and private realms--it is important to note that although the change in level is not a built element, it nevertheless provides a physiological and psychological

definition of boundaries. Second, the deep and high transitional space from the public sidewalk imposes several stages prior to entering the units.

The design is reminiscent of typical Victorian planning principles with respect to street orientation. In this project, however, the advantages of the site, such as high elevation and a magnificent view of Montreal, were simply ignored by not placing any private balconies on the south façade. A private balcony would have allowed for more of an extension of indoor activities to outdoor spaces (except for one unit, see Fig. 3.11). Ironically, all emphasis on outdoor activities is given to the north rear garden which is shady for most of the day (Fig's. 3.11 & 3.13).

Interior Arrangement

The interior layout is typically Victorian in concept. Formal spaces are located on the main floor while the private domain is rigidly secluded on the first and second floors. Originally the second floor bedrooms were given to servants. The living room, as the most important room in the house, is oriented to street and view.

The importance of the hierarchy of spaces can be observed by the positioning of living room with street orientation close to the entrance hall. The dining room is placed in the rear section of the house, facing the garden, and adjacent to the kitchen. Both these formal spaces are separated by partitions and doors from the informal kitchen. Access to the back of the house is through the hall and kitchen. The central hall also plays an important role as an interior transitional space by providing a link and separation between indoor rooms.

In the south street façade, the absence of private balconies is perhaps a major shortcoming in design of these units. Outdoor balconies with the advantage of high elevation providing ample privacy, could have combined indoor-outdoor living and put the residents in direct contact with the pleasing view of trees on the neighboring streets and the city beyond (Fig. 3.13).

2ⁿᵈ FLOOR

1ˢᵗ FLOOR

GROUND FLOOR
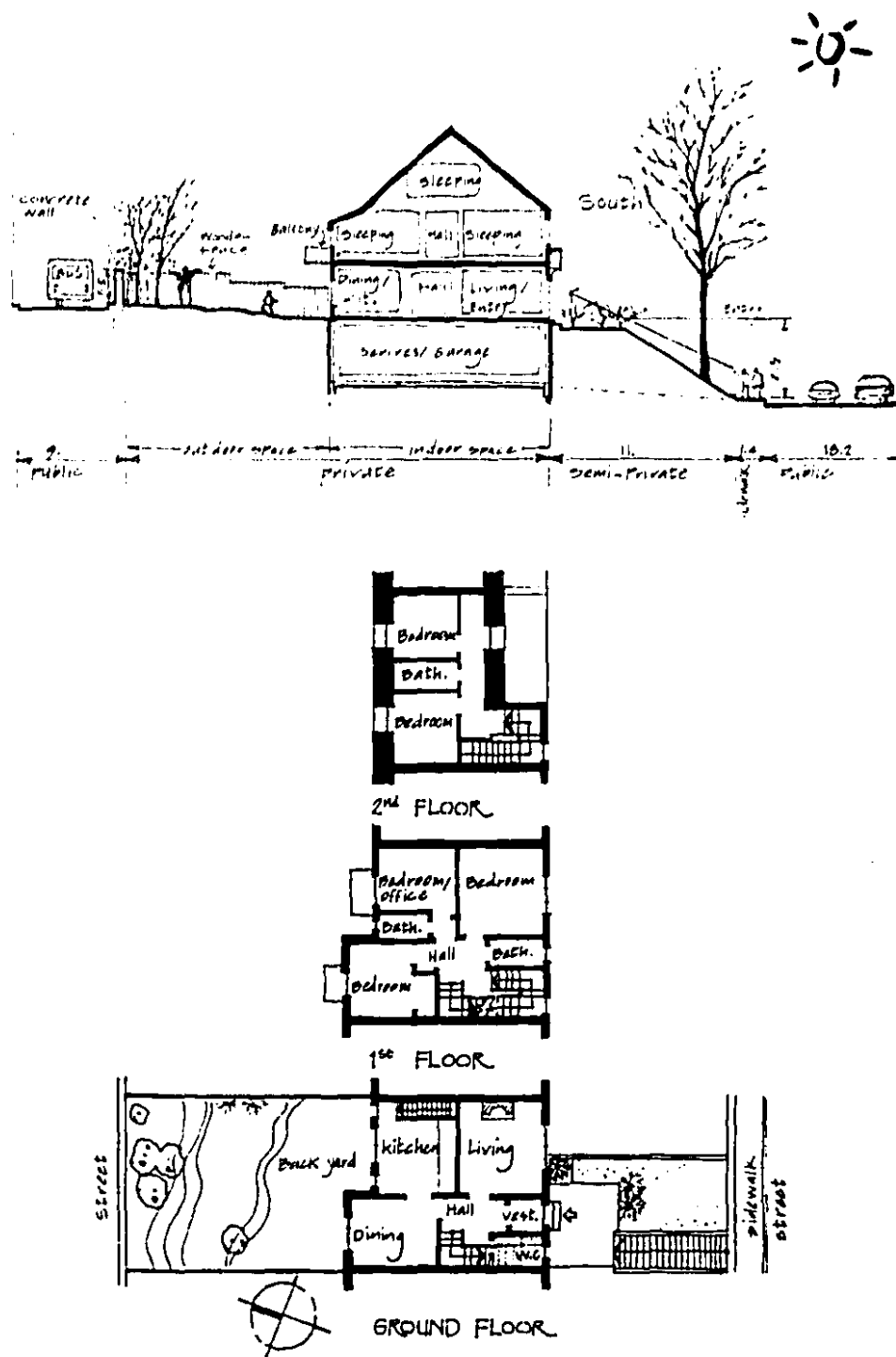
Figure 3.13   Top: A cross-section showing public, semi-public, and private realms between
Cedar Avenue and McDougall Road.
Bottom: Floor plans of a typical unit.

Nuns' Island Row Houses

Figure 3.14   Street elevation of rue De Gaspé row houses, on Nuns' Island, built in 1981.

The row houses of De Gaspé Street on Nuns' Island, a suburb of Montreal were built in 1981. The residential development of the island began in 1959 following the construc-
. .on of the Champlain bridge, connecting the island with the island of Montreal. As in any other suburb, the differentiation between commercial and residential zones in Nuns' Island created a typical dormitory community. The residential zones were divided into several categories of high, medium and low density housing and far away from commercial zones.

The strip of row houses on De Gaspé is a more recent row house development on the island. The planning of the row houses differs greatly from those of nineteenth and early twentieth-century Montreal. The particularities of site, views, and topography rather than the street were the governing factors in the design of the dwelling

units. Unlike traditional street-oriented Victorian row houses, the most important rooms of the house are placed in the back where the residents can enjoy the view of a small wooded area. Freedom in architectural style, unconventional organization of interior and exterior spaces, and liberty in the use of construction materials were the significant attributes of the De Gaspé row houses.
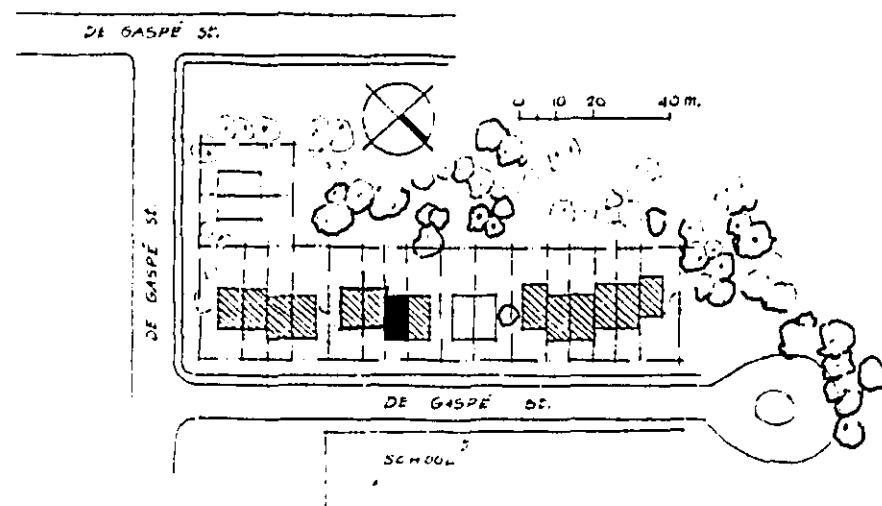
Figure 3.15   Site plan showing De Gaspé Street row houses. (after D. Hanganu)

Exterior Arrangement

Consideration for orientation and views as opposed to the importance of facing the street put the kitchen and garage on the street or northern side, and the living, family, and dining rooms in the rear with a direct view over a wooded area. Such an arrangement of interior and exterior spaces concentrates most domestic activities in the rear of the house away from the street, which is a similar approach to the court-garden houses. Since these units are designed as garden-oriented houses, common sense suggests that design mechanisms are needed to control the level of outdoor privacy in the back since the design does not in itself provide any mechanisms for control and management of outdoor privacy in the rear.

As discussed in Chapter 1 (pp. 18-21), the establishment of privacy control mechanisms is required to define territories, regulate privacy, and avoid miscommunication between people. According to Hall (1969, p. 106), the definition of spaces is not visible until human behavior is observed. Thus, an ill-organized outdoor space creates an opportunity for conflict in human behavior in response to unwanted oversight and physical intrusion. In response to privacy requirements in De Gaspé row houses, some residents erected screening devices to separate the back yards and outdoor patios between neighboring units. In this project, a major concern for outdoor privacy was observed among most dwellers. The absence of physical or symbolic design elements in the back for defining each unit gives the impression of a communal court yard (Fig. 3.15).

In front, the regulation of privacy and the clarity of zoning are accentuated by a 1.8-meter raised entry landing, window sills at 2.3 meters above sidewalk level, and a 7.5-meter building setback. A 1.5 by 2-meter outdoor entry niche establishes a personalized and semi-private zone in the hierarchy of space between public outdoor and private indoor areas. From the sidewalk, the entry to some units are marked by a bend in the entry path and dense planting which seems to be an effective solution for creating a transition between the public and private domains. With respect to privacy between immediate neighbors in the front, the entrance doors of adjoining units are positioned 3 meters apart from one another, which helps to personalize territories and minimize the possibility of any conflict between neighbors (Fig. 3.14).

Interior Arrangement

The arrangement of interior spaces in these row houses is a good example of how the importance of views, light, and privacy are achieved. The transition from the public outdoor area to private indoor area is extended by outdoor and indoor entry niches. The location of the kitchen in the front, and living and family rooms in the rear represents the importance of site condition--importance of view as opposed to street. A change in level from the entrance hall to other interior spaces provides residents with a physical and symbolic

definition of spaces that regulates privacy for various domestic activities. In each unit, a centrally located staircase, lit by a skylight, gives the residents a vertical openness and enhances intercommunication between formal, informal and private zones within the dwelling (Fig. 3.17).

The small interior niches, steps, changes in level, an upper floor hallway, and a domestic office space in the basement give more choices and freedom to the family members for performing various activities inside (Fig. 3.16). As discussed in Chapter 1, allocation of adequate space for each activity in a row house reduces the possibility for interpersonal conflict and increases the level of comfort with respect to privacy among occupants. In the interior planning of the ground floor, a 60-cm change in level helps create a separation between the informal den and the formal living room while they co-exist on the same level in an open plan arrangement.

The greatest achievement of this project is the quality of transparency between the public realm of "nature," and the private realm of the dwelling unit. Privacy is experienced in the interior while at the same time there is an invitation to view and feel what is beyond the walls. This transparency is achieved through large window openings, skylights, and organization of interior spaces.

BASEMENT

1ST FLOOR

GROUND FLOOR
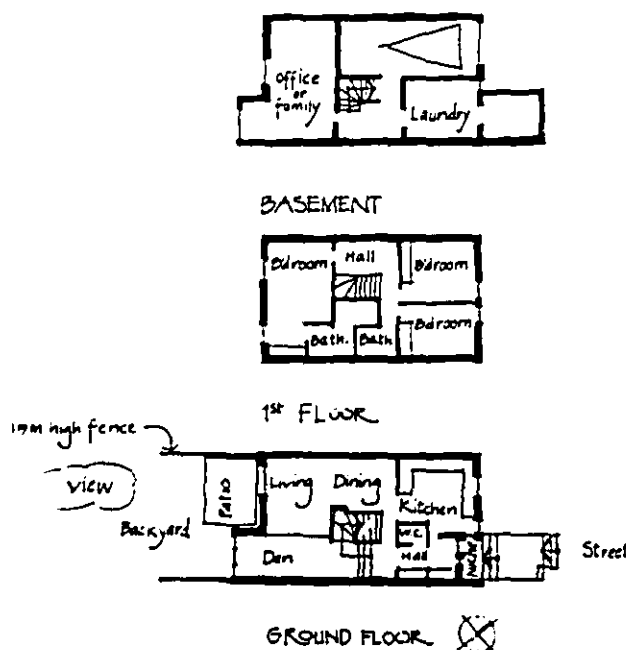
Figure 3.16   Floor plans of a typical 7.5-meter row house on rue De Gaspé.
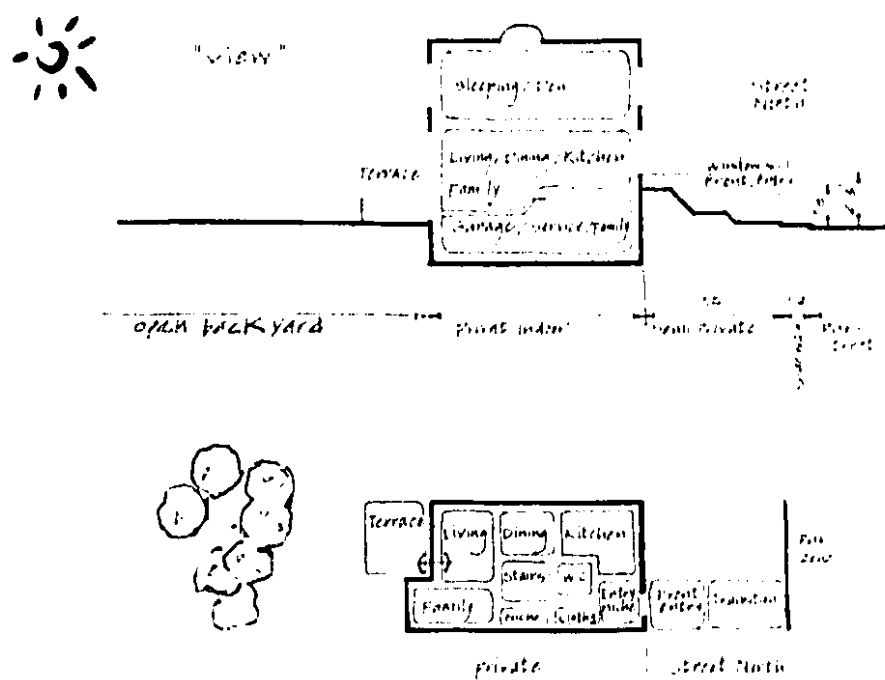
Figure 3.17   Diagrams (section and plan) showing the hierarchy of spaces between public
               and private realms.

Bois Franc Row Houses
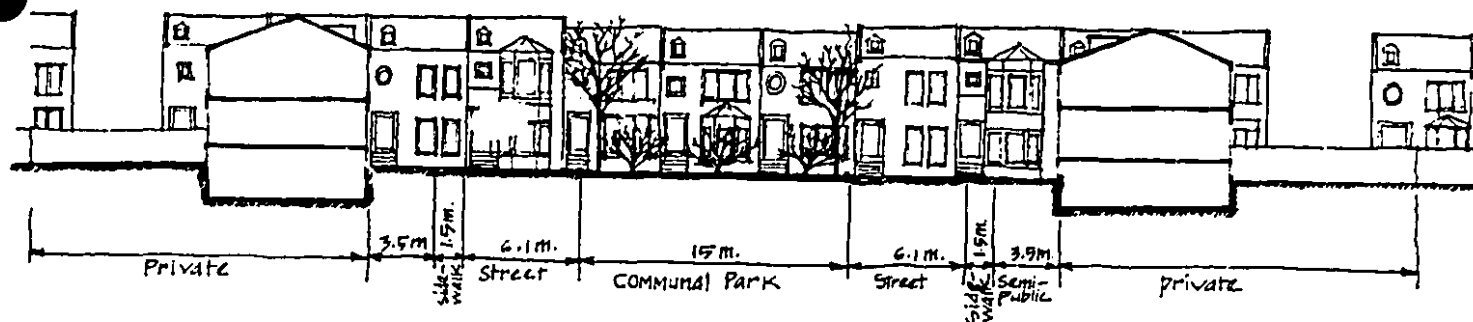
Figure 3.18   Top: A street view of Bois Franc row houses, built in 1995. The urban design is a reminiscent of typical eighteenth-century English square-block arrangement.
Bottom: Street cross-section showing the elevation of the 5.5-meter wide row houses on rue Robert-Peary.

The Bois Franc residential development began in the early 1990s in the western section of the suburb of Ville St-Laurent. Most issues, ranging from street layout and construction details to individual units, have been approached from Victorian planning principles. The project has two types of dwellings: mid-rise apartment buildings and single

family row houses. A man-made pond, a bike path, and in some streets, a public square are the most important components of the neighborhood. The communal squares which are surrounded by blocks of row houses are indeed a reminder of eighteenth-century English square-block developments (Fig. 3.17).

The Bois Franc row houses are typical two-story, 5.5 and 6.3 meters wide buildings, similar to the nineteenth and twentieth-century Victorian row houses of Montreal. The interior layouts of the units are identical, only the widths of some of the dwellings differ. Exterior elements, such as building setbacks, street oriented living rooms, bay-windows, and the design of front entry porches in all houses are borrowed from the traditional row houses to create a harmonious residential street block.
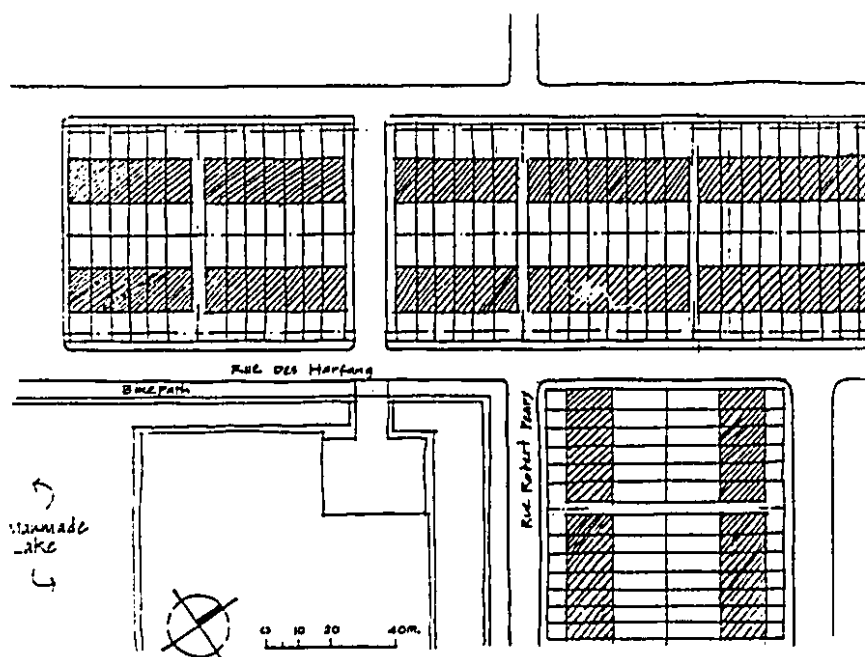
Figure 3.19   Site plan showing the regular and orthogonal subdivision of building lots.

Exterior Arrangement

An examination of Bois Franc residential project indicated that the urban planning guidelines--imposed by the municipality and developed by the builders--place restrictions

on the personalization of individual units. The imposed municipal policies do not permit the residents to alter or extend any part of the house on the street side. As opposed to the traditional Victorian planning principles in Montreal, this project did not allow for openness to outdoor and participation with public domain. This function of openness in the traditional street-oriented Montreal row houses is achieved by constructing various design mechanisms such as balconies, porches, and front entry balconies (Fig. 3.1). The experience of Montreal streets shows that the importance of interaction and participation of residents with outsiders is profoundly rooted in the culture of the city.

The Bois Franc development, while copying some superficial elements of Montreal Victorian row houses, neglected the fundamental consideration of interaction and association of the private and public realms through physical elements such as private balconies, entry porches, and personalized front yards. As discussed in Chapter 1 (pp. 18-22), these design components not only enhance the level of privacy and security in row houses, but also provide a better transition and interaction between the public and private realms (see Fig's. 3.1 & 3.20 for comparison of privacy design mechanisms in street-oriented row houses).

Figure 3.20   Street elevation of 6.3 meters wide row houses on rue Des Harfangs. The exteriors of the units are uniform and lack any personalized elements.

Interior Arrangement

The interior arrangements of Bois Franc row houses are inspired by traditional modest Montreal row houses. The living and dining rooms are designed back-to-back, and in most models are linked by a large opening, often without any physical differentiation between the two spaces. The kitchen and a dinette are separated by a wall and an opening which is intended to separate the formal and informal areas on the ground floor. On the first floor, three bedrooms and one or two bathroom(s) are organized as the private domain.

The parking garage, a great contemporary concern, is accommodated in the basement. Access to garages is through a common garage-door (for each strip of row houses) which leads to an underground driveway. This concept puts parked automobiles away from the front of the row houses and creates a more urban neighborhood image. As a result, more front yard spaces are provided for the individual units.

Visual privacy from outside is achieved by elevating the house 1.5 meters above sidewalk level. However, the interior open-plan arrangement of spaces on the ground floor does not allow for any visual or physical privacy inside the house. The back yard is accessed through the living and dining rooms. This arrangement does not adequately differentiate between the interior spaces where indoor physiological privacy becomes a serious problem.

With respect to the acoustical privacy between neighbors, a technical examination of houses indicated that the quality of sound insulation of party walls is perhaps the major contribution to privacy in this project. Layers of sound and rigid insulation in either side of a 20-cm. concrete block increases the level of acoustical privacy between the neighboring houses; the developers use this as a major marketability instrument to promote the project (Fig. 3.21).

TYPICAL PARTY WALL SECTION

a Drywall (12.5 mm)
a stud with insulation (90mm)
a sound insulation (80mm.)
a concrete block (200mm)
a sound insulation (50mm)
a stud with insulation (90mm)
a Drywall (12.5 mm)

Figure 3.21   A typical party wall section in
Bois Franc development showing
the technical improvement of
acoustical privacy between adjacent
row houses.
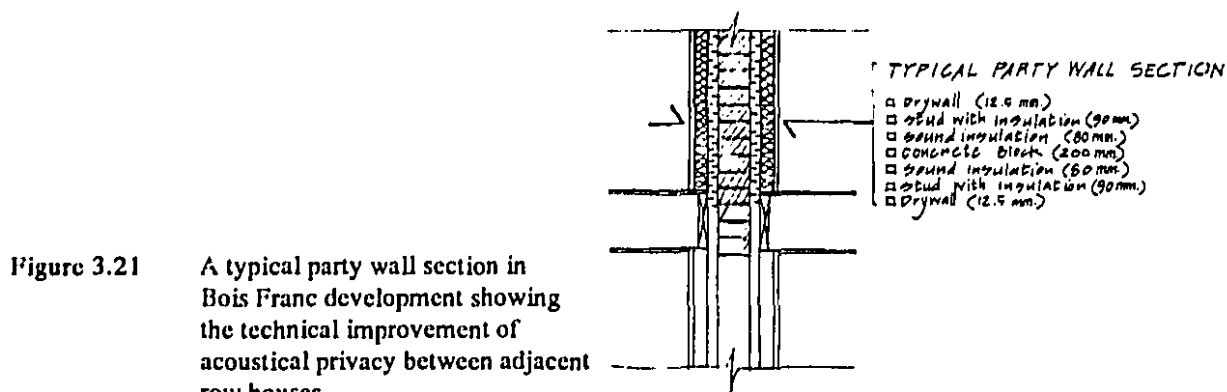
With respect to the hierarchy of space and privacy, entrance to the units is

through a small (about 1.5 meters by 60 cm.) outdoor entry landing to a vestibule which

leads directly to the living room area (Fig. 3.23). This arrangement does not establish "a

sufficient number of stages" for entering into the private indoor area from the public out-

door area, which can make the arrival or departure of guests little awkward (Fig. 3.22).

The absence of street-oriented private balconies is another shortcoming in the design.

The extension of indoor domestic activities to the outdoors could have given a more dy-

namic feature to these row houses (Fig's. 3.20 & 3.23).
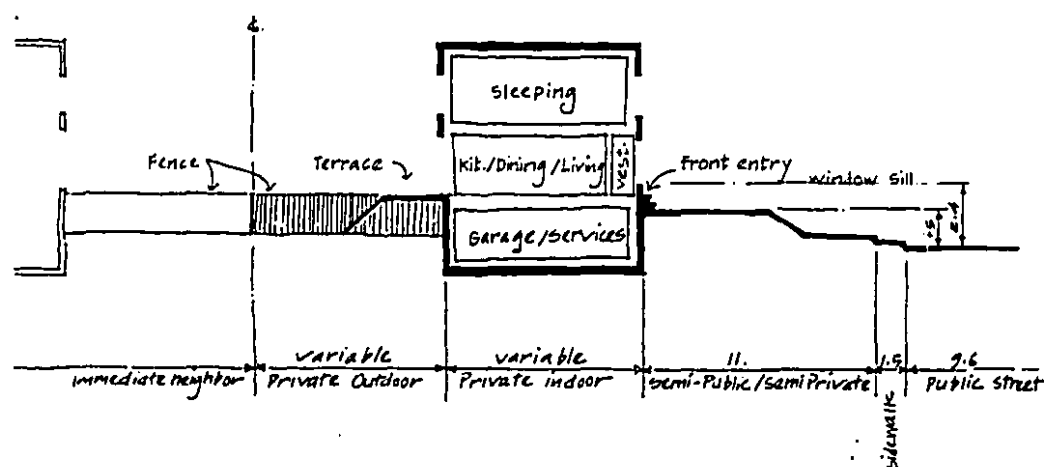
Figure 3.22   Diagram showing the hierarchy of spaces between public and private realms.
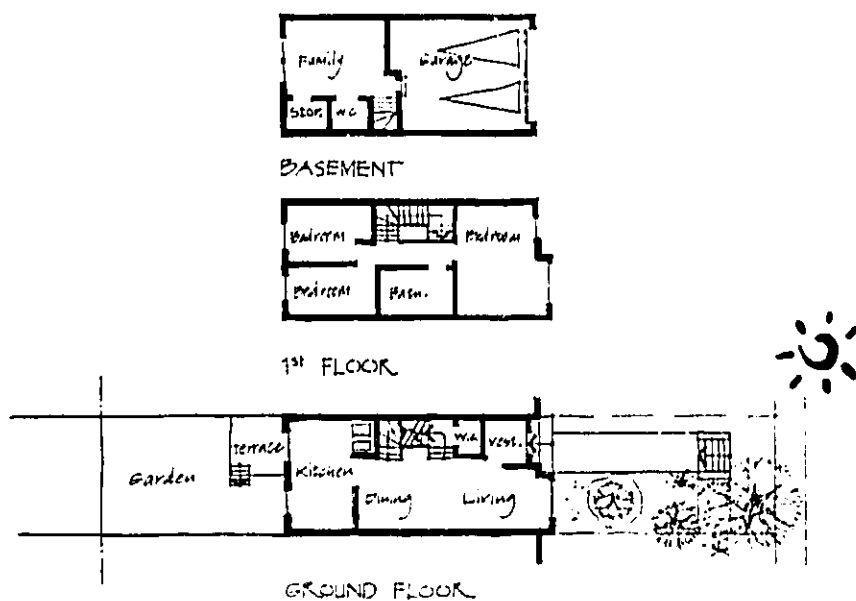
Figure 3.23   Floor plans of a typical 6.3-meter wide row house in the Bois Franc Project.

Chapter 4

Design Patterns for Privacy

A good house supports both kinds of experience: the intimacy of private haven and our partici-
pation with a public world.

C. Alexander et al. 1977, p. 665

The present chapter proposes design patterns for privacy in row houses which are formulated from observation and evaluation of existing models. The essence of privacy as applied in this study is the *management* and *regulation* of interaction and the flow of information. Based on the study documented in Chapter 1, each proposed pattern deals with social and/or psychological problems related to issue of privacy. The patterns serve as tools that can be applied through the design process for planning of new projects as well as evaluating and modifying the existing models. In this chapter, the design patterns are presented in the three major hierarchical realms: *public. semi-public and semi-private*, and *private* with each realm divided into several privacy elements.[18] Several of the proposed patterns in this study may be in conflict with local municipal ordonnances or by-laws but are presented as hypotheses, especially for new housing developments. For the purpose of clarity, each pattern is presented in three stages: first, a definition and description of the pattern; then, a brief presentation of the problems related to the pattern; and finally, the formulation and illustration of solutions.

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[18] For the definitions of public. semi-public. semi-private, and private see Chapter 1, Types of Territories, p.18.

Public Realm

The two most basic functions of a dwelling are to provide shelter and intimacy. Shelter is provided by the physical building components themselves, while intimacy comes from proper planning, siting, and design. Physical urban attributes such as roads, sidewalks and the outdoor arrangement of spaces play a fundamental role in the definition of shelter and the realization of an intimate living environment. It is not possible to have privacy and comfort in a domestic environment without consideration of its immediate public surroundings. To distinguish public and private elements in a city, Jane Jacobs (1992, p. 35) suggests the necessity for a clear demarcation between public and private realms.

The elements of the public realm, including *roads, sidewalks,* and *transitional outdoor spaces* are considered crucial for the integration of privacy in any housing development. In this regard, Roderick Lawrence (1987, p.172) suggests that the spaces between different domains be properly clarified in order to avoid the opportunity for creating "ambiguous zones" with respect to privacy. The public realm can foster as much as hinder the quality of life in a community. Thus, with respect to the hierarchy of realms, it is important to begin the study of design patterns from public to private.

In the framework of this study, three street network systems are classified based on the commonly used dimensions for planning, with certain adaptations to Montreal's street pattern.[19] 1) *Primary roads* are between 14.6 and 22 meters wide and busy in vehicular and pedestrian circulation, containing public and high density residential buildings. 2) *Secondary roads* are those between 11 and 19 meters wide, lighter in vehicular and pedestrian traffic, usually serving commercial and various types of residential buildings. 3) *Local roads* are between 7 and 11 meters wide, and do not promote heavy vehicular traffic, having mainly low and mid-density residential buildings, with looped, cul-de-sac, and

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[19]   F. A. Schwilling 1974, (Table 11, p. 86). In most government publications the street design standards and classification systems serve only to accommodate the movement of vehicles.

through traffic street networks that do not promote heavy vehicular circulation. It is important to bear in mind that the road network must conform to certain local municipal standards. Montreal row houses are found in all three categories of road network.

Streets

Streets are functional elements in the city providing access to properties and serving as an easement for municipal services and utilities. In addition to the physical functions, they are also important social features that make a city memorable. As Smithson and Smithson (1967, p. 15) state, "...the street is not only a means of access but also an area for social expression." The historical analysis of Rudofski (1969 p. 124-151) also suggests the importance of streets throughout human civilization, from the ancient Greek era to the present day. Traditionally, streets have served as places for social interaction of the city's inhabitants for ceremonies, festivals, and other common social activities.

An important contemporary critic of city planning, Jane Jacobs defines streets as elements that are not only a place for vehicles or traffic: "streets and their sidewalks, the main public places of a city, are its most vital organs." (Jacobs, 1992, p. 29) She also views the breakdown of law and order in cities partly as a consequence of "bad" city planning by modern planners. This point has also been discussed in great depth by Newman in *Defensible Space.* There may, indeed, be a direct relationship between the physical and psychological properties of streets.

It is assumed that in the next few decades, the use of private vehicles will continue to be an important means of transport in most modern cities. Nevertheless, the spatial planning of streets must insure the maintenance of the social and physical integrity of the public domain in any residential neighborhood. It is crucial to plan row houses in streets not wider than 11 meters in order to safeguard the residents from the disturbance of through traffic. Row houses on

the secondary and local road system seem to work better in terms of more outside interaction among residents and attainment of privacy. More specifically, as proposed by Alexander et al. (1970, pp. 64-65), residential streets should be designed in a looped system to discourage through traffic. In several more recent developments, such as Little Burgundy, Bois Franc and Nuns' Island, more children were seen playing in the street where looped road system was used.

The ideal public street width in a residential neighborhood, a local road network, should provide adequate space for parked cars on one side and the maneuvering of large municipal maintenance and emergency vehicles. A local road measuring between 7 and 9 meters wide can respond sufficiently to these traffic requirements and improve the livability of the neighborhood. It is particularly important to discourage through traffic in a local road by planning looped road systems (Fig. 4.3).
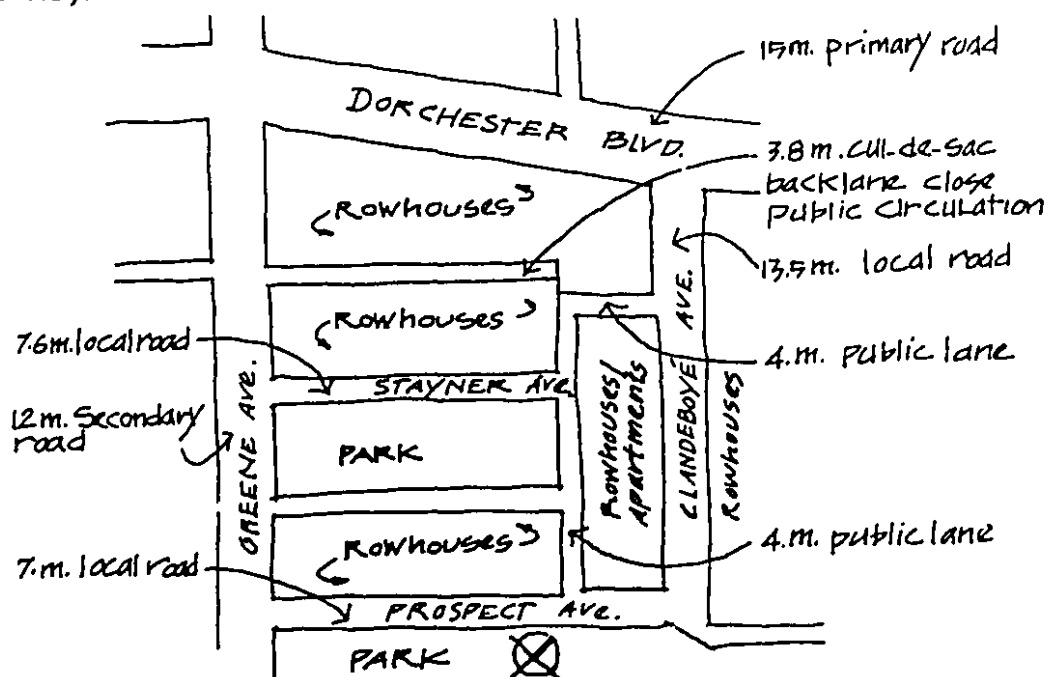

Figure 4.1   A street network in a mid-density urban neighborhood, Westmount.
Stayner Avenue, a local road, is linked to Dorchester Boulevard, a primary road, through Greene Avenue, a secondary road; its back lane is closed to through traffic.

Sidewalks

Cities work best when their streets and sidewalks complement one another. A city with a poor sidewalk network can be overwhelmed by the presence of vehicles, and as a result residents can find themselves without reasonable pedestrian circulation. Streets and sidewalks must work together to provide a good circulation system in the neighborhood. Jacobs (1992, p. 29) sees streets and sidewalks in a city as serving more than vehicle and pedestrian circulation. She notes that it is the social function of both that make neighborhoods safe and pleasant to use. She goes on to specify:

> "... the sidewalk must have users on it fairly continuously, both to add to the number of effective eyes on the street and to induce the people in buildings along the street to watch the sidewalks in sufficient number. Nobody enjoys sitting on a stoop or looking out a window at an empty street. Almost nobody does such a thing." (Jacobs, 1992, p. 35)

With respect to neighborhood relations and the convenience of city sidewalks, Jacobs' assertion supports the crucial physical role of sidewalks in the social and physical well-being of cities. "In Europe, urban growth and access of motorized traffic have not so far resulted in completely subverting the pleasure of walking," writes Rudofsky (1969, p. 106). He further mentions the physical characteristics of the streets of Paris that allow such a memorable public activity.

It should be noted that sidewalks and streets must also conform to municipal standards and by-laws regarding rights-of-way and property lines. The rights-of-way play an important role in the siting of houses, traditionally serving as an easement for municipal underground services, snow clearing, and planting of trees.[20] In most cases, these publicly owned areas are not so obvious.

The analysis of Montreal's sidewalks showed that their physical properties play an important role in the maintenance and protection of public and

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[20]   For example the municipality of St-Laurent imposed a 90-cm right-of-way between property lines and the sidewalk paving for the Bois Franc development. (source: 1990 municipal by-law of Ville St-Laurent)

private domains in residential areas. A field observation and several experiments indicated that a dynamic and functional sidewalk in a local or secondary street must provide a minimum space for two adults walking side-by-side in comfort and enough clearance for a third person walking in the opposite direction. In primary roads within a high-density urban fabric, this width must at least be doubled. The ideal sidewalk example was on rue Laval, a local street, measuring 2.4 meters, where pedestrian circulation seemed comfortable and more frequent than on the adjacent streets with narrower sidewalks (Fig. 4.2).

At least a 2-meter wide sidewalk with an 80-cm strip of right-of-way on local and secondary streets is needed for the sidewalk to be functional and comfortable. This width (2.8 meters) provides a sufficient and comfortable space for pedestrians without intruding on the private or semi-private zones along their path or endangering their lives by obliging them to enter the street (Fig. 4.3).

Figure 4.2   Rue Laval, a local street in a high-density urban neighborhood has a 2.4-meter wide sidewalk that allows for a more comfortable pedestrian circulation in a public realm.

Back Lanes

In the nineteenth century, back lanes provided service access for Victorian row houses. In this century, they are viewed as a safe children's play area, access to rear parking garages, and a fire escape for individual units. In most areas where nineteenth-century and early twentieth-century row houses are located, lanes are frequently used for pedestrian and local vehicular traffic as well. Since recent municipal by-laws impose a limitation in the overall length of a grouping of row houses in a street block and the maintenance cost, back lanes are no longer planned and therefore, impractical in new developments, and hence it is not necessary to elaborate design guidelines for them. However the maintenance of privacy and security in existing back lanes is a concern for those who have them.

Existing back lanes must be protected and made safe from frequent non-resident vehicular and pedestrian circulation. Widths must be narrowed to a maximum of 3 or 3.5 meters. Speed bumps and adequate illumination should be provided and if there is no accommodation in the back for parking, then the lanes must be closed to motorized traffic. Furthermore, a 2-meter high back walls, gateways, and dense planting can contribute to the enhancement of privacy in row houses with back lanes (Fig. 4.3).
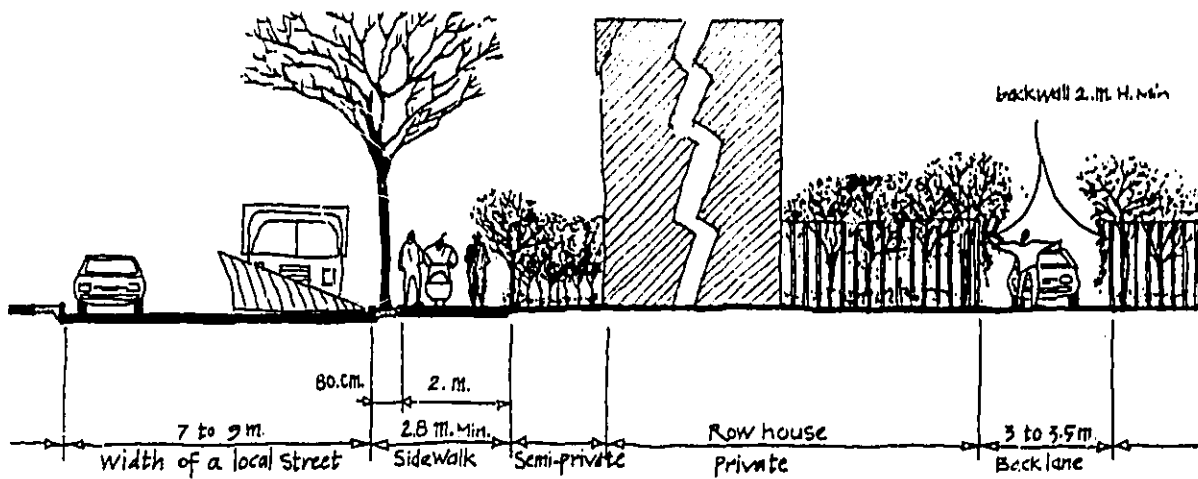
Figure 4.3   A street cross-section showing the design of the public realm.

Street: A local street between 7 and 9 meters wide, car parking on one side only.
Side walk: A 2-meter wide sidewalk plus an 80-cm. strip of right-of-way provides
sufficient space for two adults walking side-by-side, being passed by another person.
Back lane: Vehicular through traffic must be discouraged, dense landscaping, and 2
meter high back wall for a greater privacy.

Semi-Private and Semi-Public Realm

Outdoor spaces can be public, semi-public, semi-private, or private.[21] An optimal spatial arrangement and treatment of exterior spaces can provide privacy and security when needed, and encourage social interaction with people outside when desired. As discussed in Chapter 1, intrusion into one's personal space can generate tension, anxiety and stress. As a result, discomfort for individuals or families and conflict between residents and outsiders may be experienced. In order to overcome the problem of physical intrusion, it is suggested that there be a clear definition of outdoor spaces to minimize possibility of any misunderstanding and

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21   For the definitions see Chapter 1, Types of Territories, p. 18.

conflict between dwellers and outsiders which in turn should enhance the livability of row houses. For defending, regulating and inter-relating, Lawrence (1987, p. 172) suggests the elimination of any ambiguous zones through the application of physical or symbolic elements. Failure to treat ambiguous areas between the public and private domains can create discomfort and dissatisfaction among row house residents (Fig. 4.4).
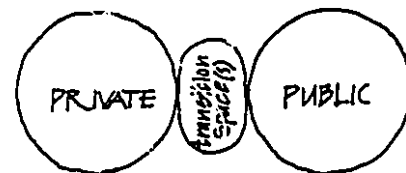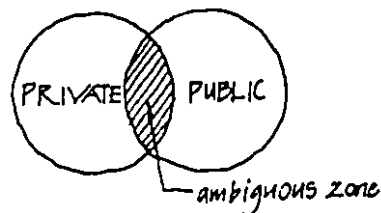

Figure 4.4   *Clear* and *ambiguous* outdoor zones in two examples.
Left: Rue Baile row houses with no transition space resulting in an *ambiguous zone.*
Right: Rue Coloniale row houses with strong gesture of territorial definition
resulting in a *clear zone* between public and private domains.

Transition Spaces

The intercommunication between public and private domains is achieved by the presence of transition spaces. Theoretical and empirical study of privacy shows that the transition spaces in any house, and particularly in row houses, are fundamental elements in the functioning of the home. Transition spaces with effective physical or symbolic design mechanisms act as a bridge between public and private domains for a better co-existence. Therefore, in the planning of domestic spaces it is essential to separate the public from the private realm while maintaining social and physical cohesion between them.

The analysis of outdoor and indoor spaces in row houses indicates that the transition spaces influence social and physical well-being in the domestic environment. The absence of transition zones not only creates a dull and static street situation, but also adversely affects residents' involvement in street life and relations with their neighbors. Lawrence (1987, p. 170) views transition areas as important settings in which the residents establish better contacts with the larger community. In the absence of transition zones, ambiguous areas are created where there is an increased opportunity for misunderstanding and possible conflict between occupants and outsiders. Figure 4.4 illustrates two examples with different treatments of front outdoor transition spaces, both in the dense urban fabric of Montreal with relatively similar social characteristics.

As a general hypothesis, it is appropriate to consider that the more stages are set prior to the entry to a house, the more satisfying is level of privacy achieved. An analysis of both shallow and deep front yards among Montreal row houses indicates that those with functional transition space provide a more usable outdoor space for the householders and eliminate the ambiguous zones. As has already been illustrated by the case studies in Chapter 2 various techniques are used to deal with the transitional spaces.

A number of studies suggest that as a solution to control privacy from outside, design mechanisms can also function as excellent visual and acoustical barrier. With respect to acoustical privacy in dense housing projects, a study conducted by the Danish Building Research Institute (1988, p. 40) indicates that using various methods such as increasing building setback, landscaping and other physical screening devices can reduce the noise transmission level (dB) by as much as half. Dense landscaping can even be effective in row houses with shallow front yards in a dense urban fabric.

Depending on the site, depth can be used to establish a number of effective stages of transition prior to the entry to a house by marking the territories between public and private domains, planning a usable front yard space, setting a semi-private outdoor entry (entry landing or balcony, or entry niche), and a private indoor entrance hall(Fig's. 4.5 & 4.6).

Front Yard

The front yard functions as an essential outdoor space for row houses. A properly arranged yard serves as a transition space, an outdoor area for family activities, and a place for the family's association with the public outdoor. Depending on the degree of privacy involved, front yards are referred as *semi-public* or *semi-private* spaces in this study (for the definitions see Chapter 1, p. 18, *Types of Territories*). According to Langston (1978) a well-defined private outdoor space enhances the feeling of privacy and territorial control. In addition to the function of front yards as a privacy control design mechanism, Newman (1972, 1980) extensively discusses the importance of these spaces as mechanisms for maintaining security in residential areas.

A well-defined front yard in row houses can become a natural out-door extension of indoor spaces, but if it is not well defined, it can become a *lost space*. Alexander et al. (1977, pp. 518-519) define outdoor spaces as: "negative" and "positive". Negative outdoor space is described as shapeless and undefined, positive outdoor space is a distinct and clearly defined space. Further on Alexander and his colleagues put forward the following hypothesis: "people feel comfortable in spaces which are *positive* and use these spaces; people feel relatively uncomfortable in spaces which are *negative* and such spaces tend to remain un-used." Figure 4.6 illustrates how a "lost front yard" space can turn into a usable area.

In a domestic environment families need to have contact with the street and to feel free to use the front yard at any time without constraint (Fig's. 4.5 & 4.8). In row houses clarity and demarcation of territory is essential for the optimal use of space and to avoid unwanted contact and flow of information to outsiders. When a territory is clearly demarcated, the possibility of conflict be-tween residents and outsiders can be minimized or eliminated. Figure 4.6 illus-trates front yards of row houses in a mid-density inner-city neighborhood in Montreal, and the physical devices as an option to enhance the level of outdoor privacy which in turn encourages more frequent use of the front yards by the residents. The proposed solution in Figure 4.6 was adopted from the example presented in Figure 4.4 which shows how some row house dwellers marked and personalized their immediate outdoor environment to eliminate the possibility of conflict and miscommunication with outsiders. Of course, municipal regulations play a decisive role in the planning of such mechanisms.

Front yards become even more vital for a home when the back yard is facing north or east. If there is no privacy in the sunny front yard, then the residents are forced to use the shady back yard or even feel trapped inside the house. Hence, it means that in the site layout, it is important to orient one of the yards of a house towards the sun with adequate privacy mechanisms in mind. It means that, without sacrificing the street elevations (Fig. 4.6), a deeper front

yard and shallower back yard on houses having a street façade facing south, and a deeper back yard and shallower front yard should exist for those houses having a street façade facing north (Fig. 4.7).
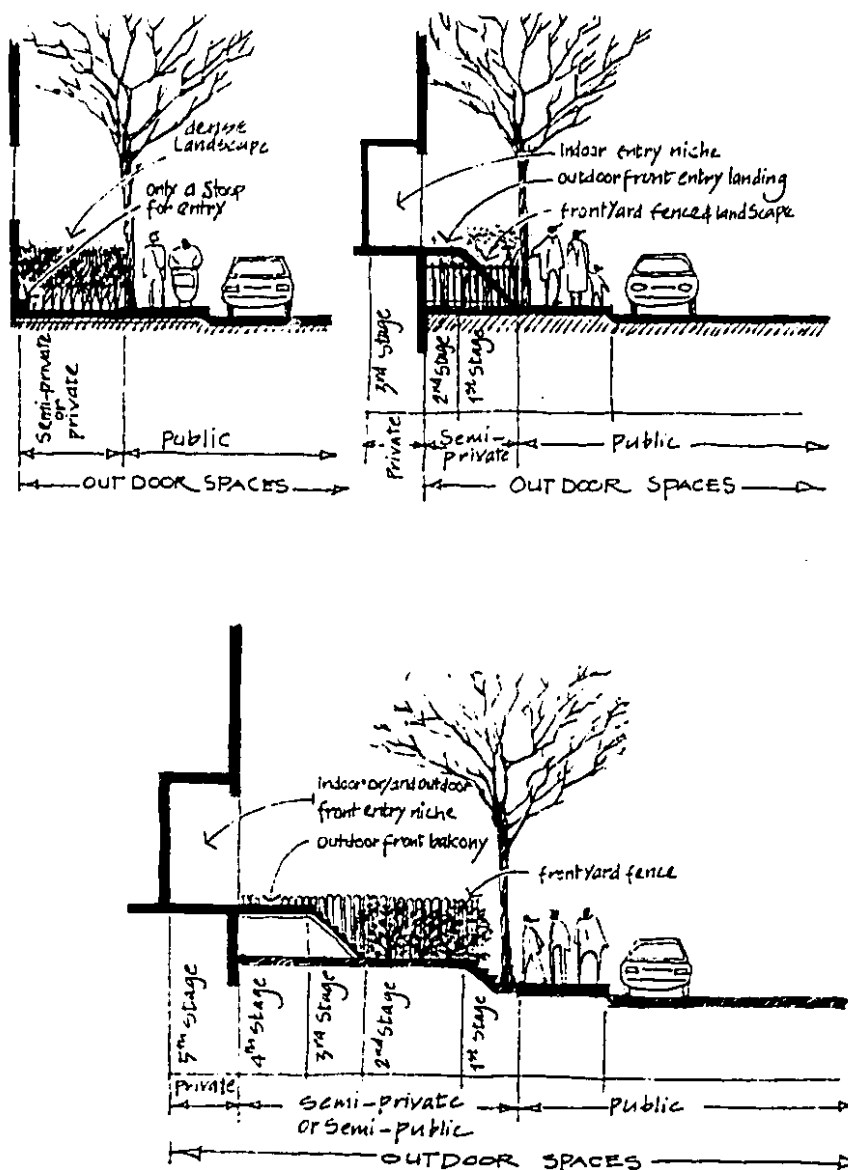
Figure 4.5   Different spatial arrangements in front yards for the setting of transitional stages prior to the entering a house under different site situations.
Top: Transitional stages for a shallow building setback, dense landscape of hedges and/or 90-cm-high fence, and an entry niche.
Bottom: Transitional stages for a deep building setback, changes in level, front fence, front entry landing or front balcony, landscape, and an outdoor entry niche.
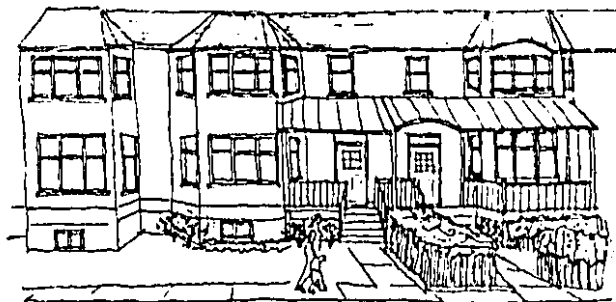
Figure 4.6   Top: South-west street façade of row houses on Draper Avenue, NDG. The 8-meter
deep front yards are not used for private family activities because of lack of privacy.
Center: A 1.5-meter high tight fence as a privacy regulatory mechanism.
Bottom: Front yards can be enclosed by an aesthetically pleasing fence which
converts them into usable private outdoor spaces.

Entry to a house should be set in stages by using transition spaces and privacy regulatory mechanisms. For a shallow or a deep front yard hedges and/or fence, a change in level, a change in surface, a bend in the entrance path, a front entry landing or front balcony, and an outdoor entrance niche can be designed (Fig. 4.5).
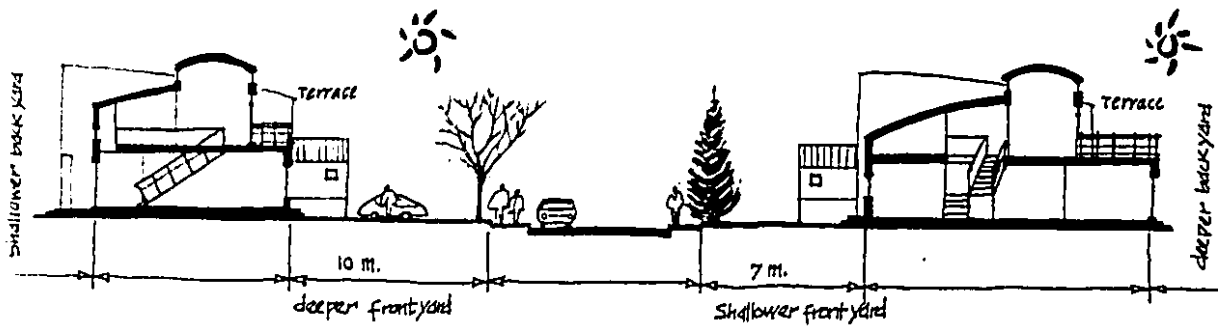
Figure 4.7   A street cross section showing row houses with different depths of front yards according to the sun's orientation. Houses on both sides of the street are given important street façades but different front yard depths. (after Kozina, Rahbar, Malisani)
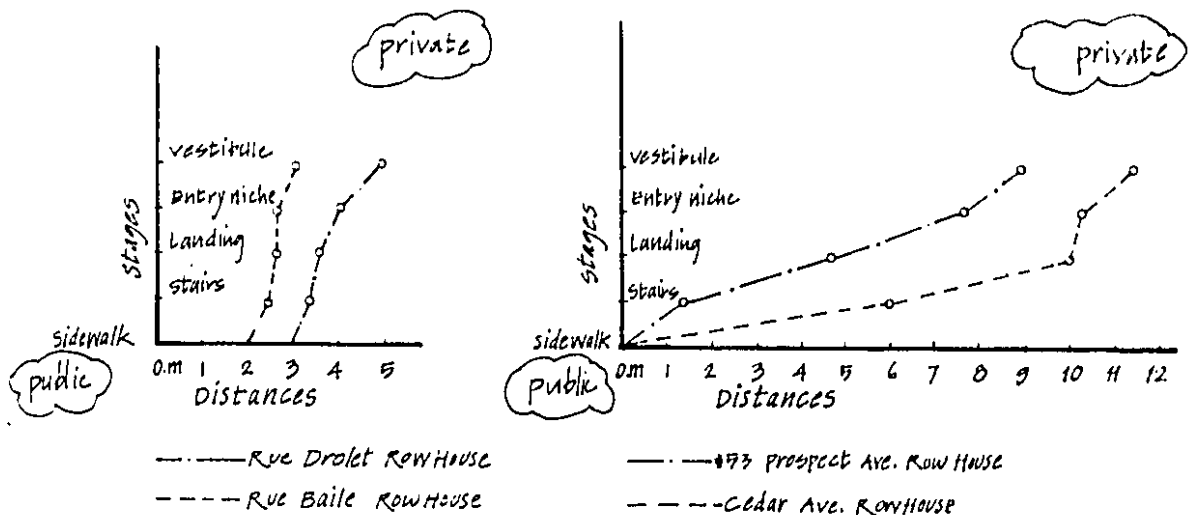
Figure 4.8   Diagrams representing a comparison between different models of row houses showing transitional stages between public and private realms. The gradual progression from the public to the private domain results in a more *linear* and horizontal graph, which represents a more satisfying result.
Left: 2 houses with shallow front yard.
Right: 2 houses with deep front yard.

Front Entry

The front entry functions as a transition area from the public exterior to the private interior. It is a space to receive unexpected visitors, guests, and to set the stage for residents to enter the public domain from the inside. In addition to the function of transition, the front entry also contributes to the identity of the dwelling, which in turn establishes a sense of individuality for the residents. In row houses, physical and symbolic mechanisms not only provide identity and privacy, but also contribute to the enhancement of security which is a basic consideration in contemporary planning and design.

As opposed to a well-defined and a well-planned entry, an unde-fined entrance may contribute to the loss of indoor privacy and comfort. Most residents do not appreciate being observed by uninvited visitors or people at the entrance door while they are inside. The field survey shows that if a front entry is not well arranged, the residents turn their back to the street life and domestic activities are concentrated only in the interior or back of the house. Figure 4.4 illustrates the example of Baile Street row houses, wherein, as a result of an un-defined front yard and front entry, an *ambiguous zone* is created and the front yard is unused.

The survey indicated that entries with the most satisfactory privacy mechanism are those which are 1 to 1.4 meters above sidewalk level and/or those recessed from the main building mass to create an entry niche. The entry landing works best when there is a balcony to accommodate residents and visitors with adequate outdoor space, which also buffers the house from the public outdoors. In several examples, it can be seen that this outdoor space also functions as a social gathering area for families. Larger front balconies (about 1.8 meters) tend to promote other activities such as sitting, socializing, and temporarily storing of household goods such as bicycles and baby strollers, all of which reinforces a sense of security and identity in addition to privacy (Fig. 3.10 in Chapter 3 and Fig. 4.9).

A front entry needs to be clearly defined and personalized with design mechanisms such as front balconies or entry landings, set at least 1 meter above sidewalk level; and an entry niche. The front balcony should provide a sufficient area for receiving people from the outside, as well as a space for sitting. The front entry balcony should be at least 1.8 meters deep for placing chairs and benches, particularly if this space is facing south which implies a greater tendency for people to spend time outdoors (Fig. 4.9).

Private balcony

Semi-private or
private front entry
balcony

Entry path
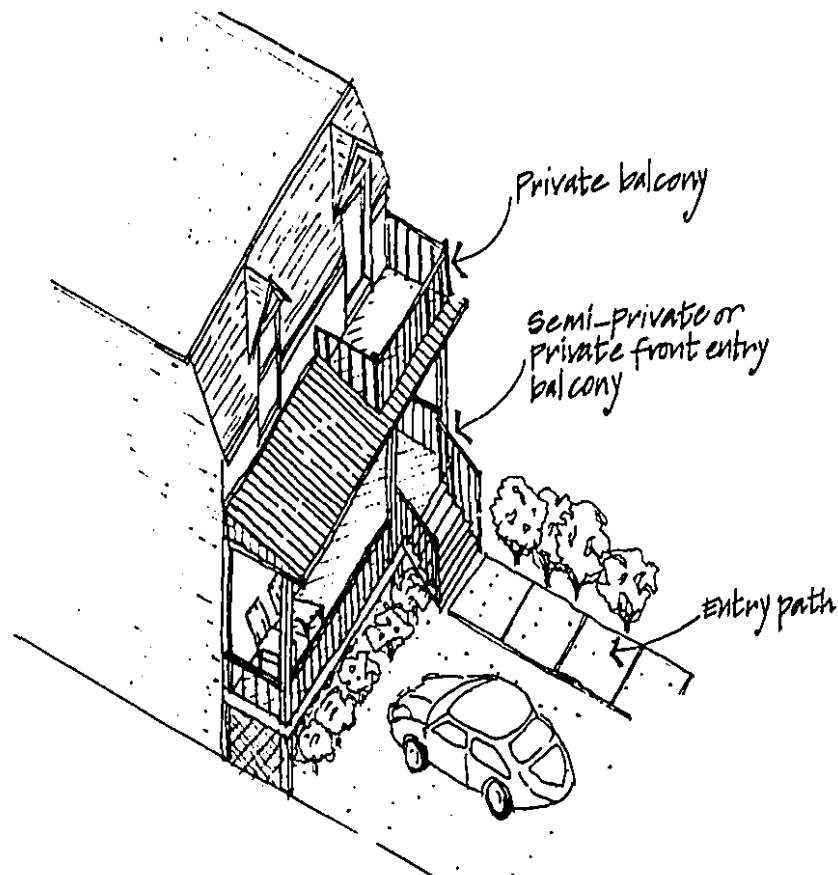
Figure 4.9   Example of a row house with a 1.3-deep front entry balcony, a space for receiving
              visitors, social and family gathering, and street watching. (Adopted from row houses
              on Victoria Avenue, Westmount.)

Private Realm

Interior spaces in a house are arranged according to the needs and requirements
of the occupants with respect to their culture, social status, and the degree of pri-
vacy needed. For example, in the speculative housing market, the clientele must
be identified as a guide for planning. A properly arranged interior can assure a
more functional, dynamic, and intimate home environment; and an indifferent
interior could result in the opposite. The establishment of the desired degree of
interior privacy should allow the residents to control and regulate the extent of
their interactions inside and outside the house.

It was observed, from the examination of some 32 different Montreal row houses, that people modified their houses according to their domestic needs. In general, residents demonstrated a great tendency toward interior personalization and modification of dwellings. Front porticos were enclosed to function as vestibules, interior vestibules were added, informal family rooms were annexed to the kitchen, and formal rooms were partitioned from less formal ones. Often these modifications and alterations continued as the family evolved.[22]

Both the study of the concept of privacy and the history of row houses indicate how important interior intimacy is: individuals in families need rooms and spaces for voluntarily withdrawal and seclusion from crowding. The interiors of most nineteenth-century Victorian row houses of Montreal have been altered to provide a comfortable, intimate and functional domestic environment. Newer designs have tried to provide contemporary solutions to these problems by setting spaces in sequence for individual, family and common gatherings (see floor plans of *Nuns' Island* row houses and the interior modification to No. *53 Prospect*, in Chapter 3). Allocation of different spaces for different domestic activities can eliminate the sense of awkwardness and discomfort between family members and visitors. This is a necessity for the arrangement of interior spaces with respect to privacy. As Alexander et al. (1977, p. 610) state:

> "Unless the spaces in a building are arranged in a sequence which corresponds to their degrees of privateness, the visits made by strangers, friends, guests, clients, family, will always be a little awkward."

This statement has an important implication for the interior layout of row houses. If the interior spaces are well defined, the individuals and family members can position themselves and use a given space for a particular activity.

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[22]   One family on Melrose Avenue added an extra room on the first floor for children as they grew older and needed more privacy, and another on Draper Avenue extended a bedroom in order to provide a study for their growing children. In both examples the interior privacy requirement constantly changed as children grew, and modifications were undertaken where flexibility allowed.

If the rooms in a house are not clearly defined, then it can create constant confusion for family members, which often results in loss of privacy.

Private Outdoor Spaces

Figure 4.10   Typical neighboring balconies in Westmount row houses that are not sufficiently separated. This arrangement of balconies does not allow for frequent use because of the low degree of privacy.

Private outdoor space is the space that carries a particular meaning for row house occupants because it is an outdoor space part of the indoor private domain. As a general planning strategy, there should be a contact between the indoors and outdoors through transitional private spaces. Exposure to the outdoors and being in contact with "nature" or public domain can increase the livability of row houses. Engstrom and Putman (1979), in a post-occupancy study, observed that row house dwellers tend to spend more time outdoors if the space provided is well buffered against unwanted oversight, intrusion, and noise. Depending on where the row houses are located, in either a quiet or a dense neighborhood, the mechanism or type of physical buffering can differ. For these outdoor spaces to be private and comfortable, residents must feel free and shielded from undesirable oversight, intrusion, and noise.

Private outdoor spaces should be adequately designed to provide a comfortable space for sitting, eating, and receiving visitors. In this respect, Alexander et al. (1977, p. 781) propose a set of requirements and dimensions such as a 1.82-meter (6 feet) minimum depth for any balcony to be functional. Private balcony of a bedroom, however, need not to be too large. It should be designed to allow the extension of private bedroom to outside with adequate privacy mechanism. Balconies, porches and terraces cannot be used frequently if the degree of privacy is low. In addition to an adequate size, they must be positioned away from the immediate neighbors' private outdoor spaces, doors, and windows; and be screened or controlled by physical or symbolic components, in order to make the management of spaces easier (Fig. 4.11). The example shown in Figure 4.10 illustrates an awkward arrangement of neighboring balconies that does not encourage their outdoor use. In a study of row houses across the United States, Norcross (1972) observed that only 11 per cent of row house residents preferred unscreened patios or balconies. The survey of Montreal row houses also indicates that balconies or terraces which lacked privacy design mechanism were less likely to be used by the residents.

There can be no doubt that private outdoor spaces should have mechanisms to regulate and control privacy when they are being used. In row houses, because of high density, the proximity of outdoor private spaces becomes an extremely crucial factor on whether or not they are frequently used. As Alexander et al. (1977, p. 764) state, if the outdoor spaces are treated well, then they are virtually "outdoor rooms" of any house.

Balconies, porches, and terraces should be designed not less than 1.8 meters in depth to accommodate residents for sitting, gathering, and eating. And balconies projecting from bedrooms need not to be more than 1.3 meters in depth. These outdoor spaces should be positioned away from immediate neighbors' private spaces, and be

treated with physical or symbolic elements, such as walls, fixed or non-fixed screens, and plants to reinforce a sense of intimacy and privacy.
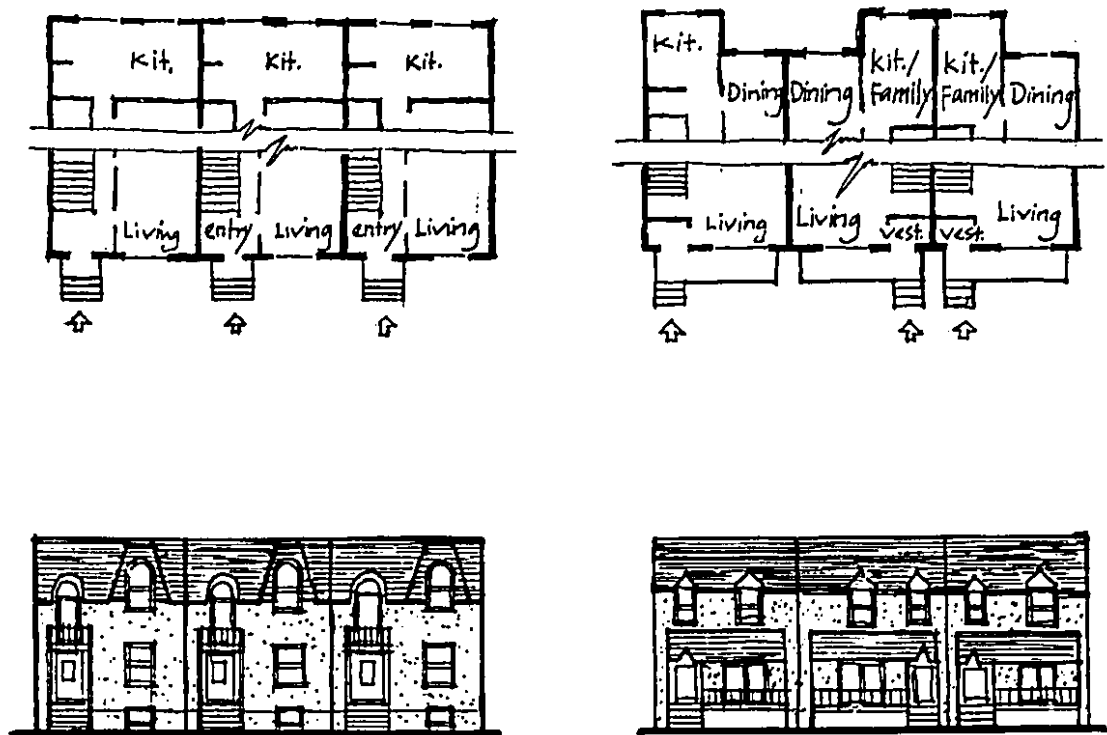

Figure 4.11   Showing two common arrangements of outdoor private spaces with respect to building layouts.
Left: In L-shaped plans balconies of units are paired up in order to respond to the interior layouts.
Right: In rectangular plans, there is more freedom in organizing outdoor balconies to be positioned away from the neighboring balcony.
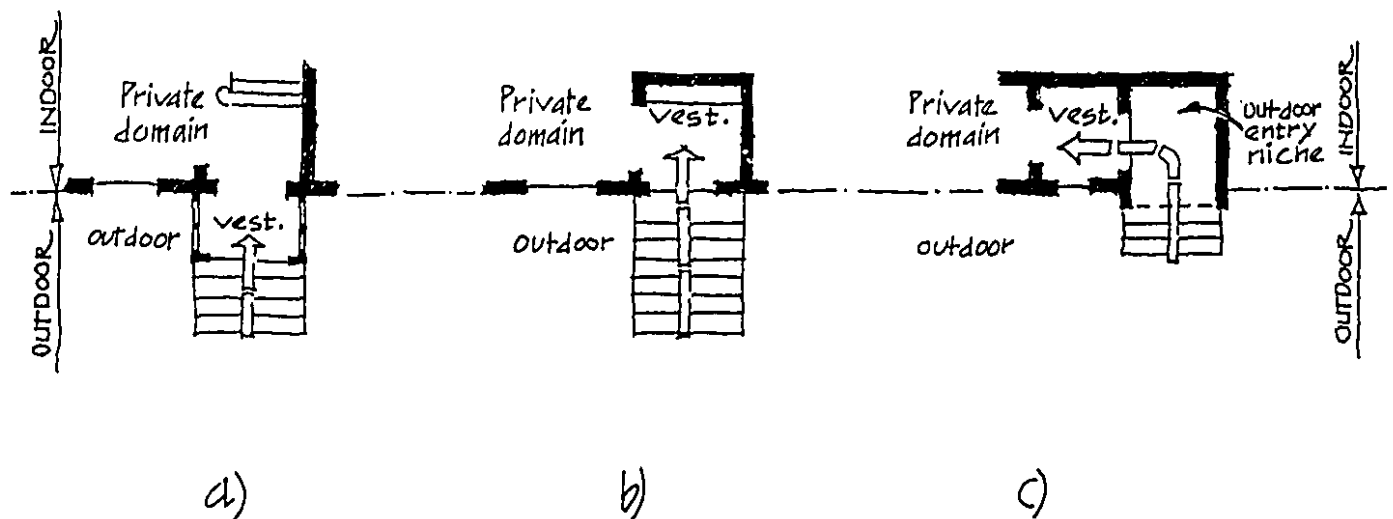
Entrance Hall or Vestibule

Figure 4.12   A typical transformation of an entry portico of a nineteenth-century row house into an exterior vestibule. Plateau Mont-Royal.

The study of transitional spaces between public and private realms in row houses indicates that an adequate space to link and separate outdoor spaces and indoor spaces seems essential for the well-functioning of the unit. The study conducted by Lawrence (1984. p. 269) suggests that the entrance hall has a special order and purpose in regulating access between public and private realms. He believes this regulatory space is intended to control the visibility. access, and noise between inside and outside. The entrance hall or vestibule also functions as thermal break, reception area for visitors, and a place for storing objects. Lawrence (1987, p. 169) defines entrance halls as a "...transitional zone between private household activities and the public realm, and is used for storing coats and accessories." An analysis of Montreal row houses and interviews with the residents showed that a vestibule or entrance hall is viewed to be extremely important. It was observed that in the case of some nineteenth-century Victorian row houses of Plateau Mont-Royal, which did not have adequate entrance halls or vestibule, residents enclosed the exterior front entry portico in order to obtain an exterior vestibule (Fig. 4.12). A house without a vestibule or entrance hall seems incomplete, with the entrance abrupt and sudden.

Entrance halls or vestibules should be designed large enough to accommodate receiving visitors, and storing coats, boots, and other accessories. In addition to its size, this space should be designed in such a way as to buffer the interior of the house from direct viewing and physical access from the exterior to the interior and the reverse (Fig. 4.13).

a)

b)

c)

Figure 4.13   3 typical arrangements of entrance halls or vestibules as a transition between public and private domains.
a) A portico enclosed to function as an exterior vestibule.
b) An interior entrance hall or vestibule and change in direction prior to entering the private realm.
c) A combination of an exterior entry niche and an interior entrance hall or vestibule.

Domestic Office

The recent popularity of telecommunication and other features of self-employment obliges residential developers and architects to consider a work space in the design of most contemporary housing projects. Mitchell (1995) sees the integration of work and living environments as an undeniable fact of the future as the electronic era takes hold. With the accommodation of a domestic office, privacy becomes that an even greater consideration in design of dwellings. During the site survey it was observed that even in the older Victorian row houses of Montreal, some residents had accommodated a domestic office where such space had not been originally planned. For example, in several houses on rue Laval, office spaces were added in a semi-basement where access by a separate door from the street was possible. In most examples, the domestic office was planned far away from the private areas of the house, often with an independent entrance.

Row houses, with their exposed façade limitations and narrow widths, require special attention in planning a workplace. In presenting the design guidelines for a domestic office in a row house, the size of the room is not as critical as its positioning and orientation. It is crucial to provide adequate acoustical privacy between the private family domain and the workplace by improving the quality of wall insulation and zoning of interior spaces (Fig. 4.14).

For planning a domestic office, it is crucial to position it close to entrance hall so that it may be accessed directly from the vestibule by a separate door to help keep the public office away from the domestic private areas. The domestic office can be given the north or east orientation since the amount of sunlight is not a great concern. It is also important to place a powder room close to the office to prevent visitors from entering the residents' private domain (Fig. 4.19).

d) PLAN

b) SECTION

Figure 4.14

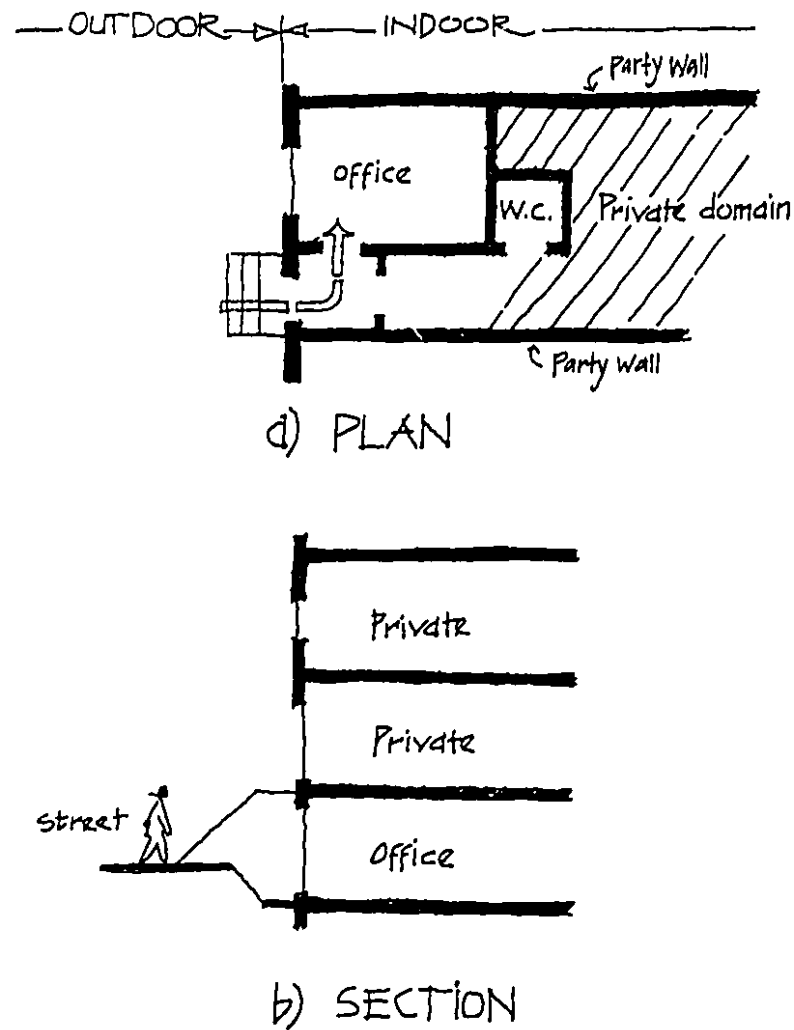a) Plan: the domestic office is adjacent to the private areas on one floor; entrance to the office is from the vestibule.

b) Section: domestic office and the private areas separated on two different floors, each with separate entrance.

Formal Spaces

The formal spaces in any modern home function chiefly as entertainment and reception areas. Living room and dining room are the two most common formal

spaces in contemporary houses. In most interior arrangements, these formal spaces are easily interconnected and are often separated through physical or symbolic design elements from the less formal areas.

The dining room in most contemporary row houses is an extension of the living room for a better physical functioning of the interior. In smaller row houses, they are arranged in an open-plan, and only separated by symbolic element while in larger row houses, formal rooms are defined and separated by physical components. The study of row houses and interviews indicated that most residents favor some kind of separation or distinction between the formal spaces as well as between formal and informal areas for control of privacy.

As a hierarchy of space, living room flowing directly into the dining room, or the reverse, allows a practical interconnection between the two zones with each having a distinct and defined character. The connection between the formal dining area and the informal kitchen functions best when there is a proper linkage and separation to provide a better access and control over the spaces. Most residents prefer a clear physical separation between the dining room and kitchen with the consideration of controllable devices to assure visual and physical connection between these areas which in turn enhances the level of privacy.

Formal spaces should be separated and distinct from other less formal areas by physical design components such as walls, partial screening, doors, and a change in level; and by symbolic design components such as, furniture, columns, decorative devices, changes in ceiling and floor textures, changes in wall or floor covering, and change in ceiling heights. The formal spaces should be generous enough to accommodate large furniture. Planning of corners, bay-windows, and seats by the fireplace and windows in formal spaces would also provide more options to regulate the degree of privacy in formal spaces (Fig. 4.15).

Informal Spaces

Informal rooms have become the most personalized areas in any modern domestic setting. These rooms provide family members with intimacy, relaxation, and comfort. In short, without these most social areas, the quality of homeliness can be lost.

The family room, den, kitchen, and playroom are informal spaces and are usually highly personalized and frequently used by the dwellers. Informal rooms in most houses are spaces most subject to alteration or expansion; in most houses they are located in the rear and isolated from the formal areas of the house. The size and interior organization of informal spaces vary from family to family, but the proper positioning of these spaces is crucial for the well-functioning of the home. The kitchen is best arranged adjacent to the family room where a variety of domestic activities are generated. In the study of Montreal row houses, the physical and visual linkage between the kitchen and family room (Fig. 3.7), and the kitchen and dining room (Fig. 3.13) was shown to be an important concern of most householders.

The family room, where most personalized family activities take place, must provide the occupants with options for voluntary personal withdrawal while also assuring adequate family togetherness at other times. With respect to the social aspect of informal rooms, Alexander et al. (1977, p. 830) suggest that the family room be surrounded by small alcoves in order to assure either togetherness or seclusion when is needed. The feeling of togetherness for certain activities has been also observed by Churchman and Herbert (1978) in several human behavioral studies. They underscore the fact that young children prefer to play within sight of their parents, and the parents desire to supervise the children when they play. It is clear then, that informal areas in any home require special attention in providing sufficient space, access, and assurance for communal as well as personal activities.

Informal spaces known as highly personalized rooms in a house should provide residents with corners, alcoves, a variety of seating areas, and easy access to outdoor spaces. For better control and management of privacy between the informal spaces and other areas in the house, various design mechanisms should be considered such as, partial or complete walls, doors, changes in level, changes in ceiling heights, and interior spatial zoning. Informal spaces should be designed flexible and open to any future alteration and modification as family size, characteristic, and needs change over time(Fig. 4.15).

a)

b)

c)
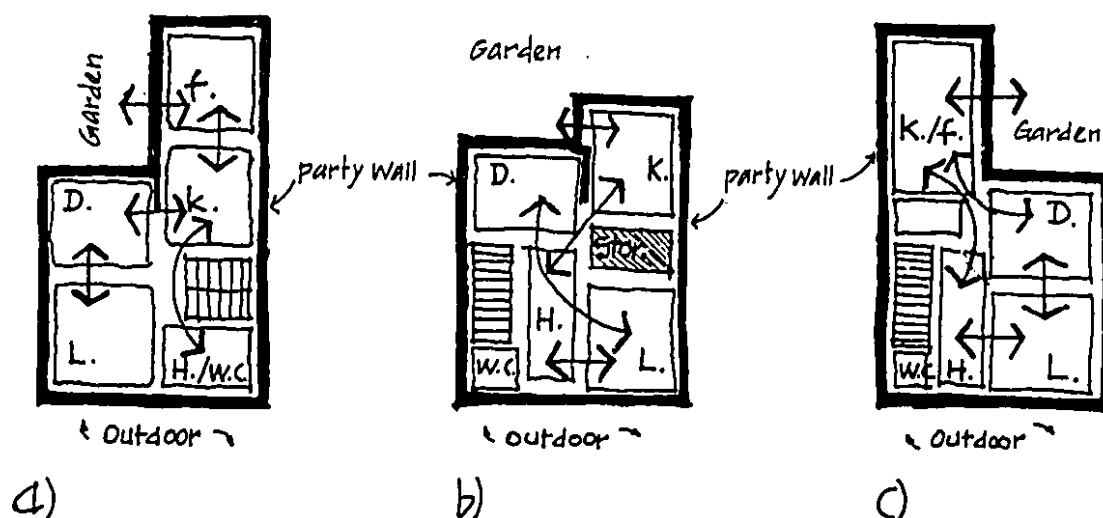
Figure 4.15   3 different arrangements of formal and informal spaces
a) Dining room and living room are adjacent and positioned away from the informal kitchen by zoning.
b) Dining room and living room are not adjacent but linked through a central hallway. Dining room is separated from the kitchen by a wall and linked through a doorway. The living room and the kitchen are completely separated by a mediating space.
c) Dining room and living room are adjacent. The kitchen and family room are separated from the formal areas by zoning.

Private Rooms

For a home to function well, it is essential that it provides a balance between the private and the communal domains. As discussed in Chapter 1, according to territorial needs of humans, individuals require a private domain of their own. In that regard, Alexander et al. (1977, p. 379) suggest the provision of physical settings for voluntary separation of each family member or couple within the private realm. The study of Willis (1961, c) showed how the level of stress increases among family members when privacy for individuals or couples does not exist within the private domain.

Private rooms are established to assure personal privacy from communal spaces. Therefore, the physical layout in private rooms should provide householders with proper separation for different personal activities. It is important to design the private areas in a house in such a way that family members can be together, but also, where and when desired, be alone in comfort. For example, while parents want to be close to their children, they also need to be alone and away from them. An awareness that there is no privacy at home can make the domestic environment uncomfortable and family relationships awkward.

Physical settings and a proper zoning of spaces can provide the freedom for individuals to maintain privacy and carry on personal activities without the interference of other family members. Alexander et al. (1977, p. 387) believe in the establishment of two sub-realms within a private realm: one "intimate," the other "entirely private." They also see that the provision of privacy for individuals and couples can create a better ground for greater intimacy and togetherness among family members in a private realm. In the survey of row houses, it was observed that the provision of a study area or alcoves in a bedroom which children shared and small corners, alcoves and private balconies in the master bedroom were considered extremely satisfactory by the residents (Fig. 4.16). The need for seclusion and togetherness occur in almost every household.

Private rooms should be distinct from the communal areas by interior zoning of spaces. Busy areas should be oriented towards the street, and quiet rooms located in back of the row house. Provision of insulated walls and mediating spaces--bathrooms, closets, storage, corridors between parents' and children's rooms, and between communal and private areas--enhance the quality of indoor privacy and intimate spaces. In planning private rooms, it is important to provide niches, corners, or a private balcony, even though they may be tiny. These spaces within private rooms give opportunity for some personal privacy (Fig. 4.16).
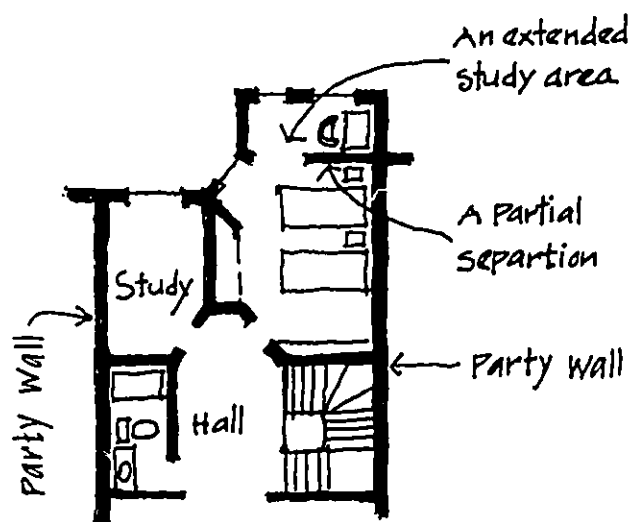

Figure 4.16   Partial plan of the first floor of the 3859 Draper Avenue, NDG. A study space has been added to the existing children's bedroom for more privacy of personal activities of children.

Service Spaces

Laundry room, storage spaces, and bathrooms are considered as service rooms in most dwelling units. Because of the spatial characteristics of row houses, these spaces become very important for the provision of comfort and the marketability of the house. Langston (1978) believes that adequate indoor and outdoor storage, closets, attics, basement, additional shelving, adequate cupboards, number of bathrooms, location of laundry rooms are not only complementary features to housing design, but their spatial relationships and efficient use of space can be a decisive marketability factor for homebuyers. The study of Montreal row houses indicated that if adequate service spaces did not exist in the original layouts, then residents added these spaces to the house.

In planning interior spaces in row houses, the arrangement of closets, storage spaces, and bathrooms in the interior design can be used as a substantial sound barrier between neighbors, between private and communal spaces and between parents' and children's bedrooms. Location of laundry and other noise generating facilities can be planned in a more isolated area of the interior such as in the basements or on the first or second floors. According to Alexander et al. (1977, p. 914), the appropriate planning of storage in the interior of a house can be a contributing factor to its general layout. Hence, he and his colleagues think that the planning of such spaces should not be an afterthought in the design stage. A proper planning of service areas can greatly contribute to the overall layout and function of row houses in terms of privacy and comfort.

Service spaces in addition to their primary function, can provide a secondary quality as sound barriers and transitional spaces. A proper planning of service spaces during the design stage can result in better separation between neighboring row houses, between communal and private areas, as well as between the bedrooms for a greater privacy and comfort (Fig. 4.17).
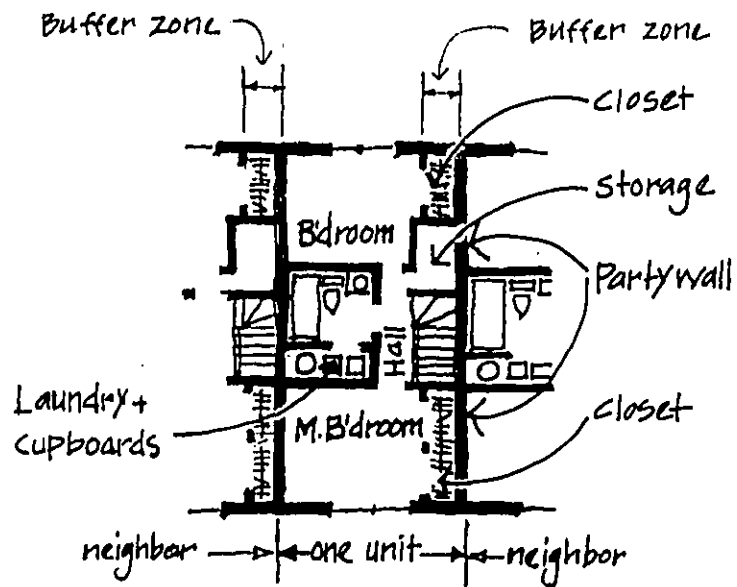
Figure 4.17   Arrangement of service spaces as sound barriers and separation between neighboring units and between private domains in a townhouse-condominium project on Décarie Boulevard, NDG.

Conclusion

The present rapid changes in the demographic, social, and economical landscapes generate demands for greater privacy in the domestic environment. In row houses in particular, because of the proximity of neighbors and the limited exposed façade of the units, privacy is a vital element that becomes an ever-growing concern among residents. While row house residents have a desire for separation and distinction between public and private domains, they also want a certain degree of association and involvement with the neighborhood. In the interior of the units, while family members want to be together and have contacts with one another, they also sometimes need to work or play apart from each other.

A number of studies (including this thesis) suggest that the sophisticated lifestyle of a society needs to be integrated into the privacy planning of housing in general and row houses in particular.[23] Similarly, the differentiation between public and private domains, communal and private zones, day time and night time activities, and noisy and quiet areas have to be highly considered without any loss of intimacy in the organization of internal and external spaces. The desire for the regulation and management of

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[23] As a general reference for studying privacy in diverse societies see S. Vaziritabar (1990) and R. Lawrence (1987).

privacy, particularly in row houses, remains *constant* in determining the level of contacts between people.

One of the major findings in this research suggests that residents, architects, planners, and builders have dealt with issues of privacy in the specific context of time and place. It is apparent that planning of row houses and the privacy design mechanisms relate to sets of factors that can change according to the specific context of time and place. These factors can be considered as climatic, geographic, socio-economic, customs and cultural variables.

In the framework of the study, it is important to outline the mechanisms which are used to regulate and manage levels of privacy in terms of 1) verbal and physical behavior; 2) physical demarcation of territories; 3) social and cultural customs which lead to the design of the built environment. Therefore, the regulation and management of privacy involves more than a process of physical design mechanisms, but includes cultural practices, social, economic, geographic, and climatic factors as *relative determinants.*

Constant Determinants

It was pointed out in Chapter 1 (pp. 8-13) that although the concept of privacy is complex and may vary from culture to culture, from family to family and from person to person, the desire for both seclusion and togetherness remains constant. Several studies including Willis (1963 a, b, c), and Rapoport (1969), indicate that with these variables design mechanisms also change and in most cases determine the appropriate level of privacy desired. The study of privacy in Montreal has also shown a similar phenomenon. Despite the differences in the definition of privacy and its requirements in row houses, the achieved level of privacy demonstrates that the need for it exists in three levels, each with its constant requirements: *privacy from outsiders, between neighbors, and among family members.*

As a general indicator, the importance of these three levels of privacy is achieved through various design mechanisms such as creation of semi-public and semi-

private areas, physical and symbolic barriers, enclosed yards, balconies, zoning of interior and exterior spaces, and improvement of construction techniques. The analysis of privacy issues in Montreal row houses indicates that residents have a high desire for physical control of privacy at both individual and family levels. The examination of physical design elements leads to an understanding that these components can be used to regulate domestic privacy in both individual and family levels as well.

The historical review of privacy issues (in Chapter 2) shows that despite of changes in lifestyle, family composition, economic well-being and moment in time, the desire for privacy remains constant or even grows as domestic environment increasingly includes activities such as work, education, and entertainment. In most instances, through various expressions, whether by constructing physical elements or behavioral patterns, most residents find a way to deal with privacy issues in order to withdraw from, or associate with others, when desired.

The findings in this thesis show that lack or absence of control over privacy often leads to isolation, alienation, and negative verbal or physical behavior towards outsiders, neighbors, and family members. In many cases, people may not recognize or express their need for privacy but manifest it through behavioral patterns. Thus regulation of privacy in the domestic environment provides a psychological, physical, and social climate within which people can establish self-identity through their relationships with family and non-family members.

An important feature of privacy is that most people seek it through establishment of design elements in order to create an environment to regulate and control view, access, and noise by reflecting a sense of individuality/community, for example, by positioning a "threshold" in the outside; and also expressing a condition of accessibility/inaccessibility by demarcation of territories. In each case visitors, outsiders and family members are expected not to cross the barriers unless invited to do so. Of course the design mechanisms play an important role in defining and distinguishing between public and semi-public, private and semi-private, and communal and private zones in the home. Thus, it can be said here that the design mechanisms can also define and determine the degree of human contact.

Relative Determinants

Based upon the belief that built environment has a role to play in the provision and maintenance of privacy. It is equally important to recognize that design solutions are one category of means for achieving privacy at home. In addition to the application of design mechanisms, privacy also relates to the specificity context in matters such as *time* and *place*, and *values* which include cultural, social, and psychological variables. These variables (time, place, and values) existing between residents and their domestic environment, determine the needs for privacy.

A desire to control view, access, and noise is achieved when the context of time and place is studied prior to designing mechanisms for privacy. With respect to territoriality, this study suggests that the level of ambiguity is minimized in row houses with a strong and clear demarcation between public and private realms, and between different interior activity zones (as presented in Chapter 1, pages 15-19; case of No. 53 Prospect Avenue, pages 48-52; and the comparison of two examples of row houses on page 80). The study found that there were fewer social conflicts when the external territories are well defined and personalized according to the particularity of the site (example of most row houses of Plateau Mont-Royal in which the design mechanisms changed over time) and when the internal spaces are allocated to each individuals or specific domestic activities.

It must be stressed here that privacy is not only a desire for separation and escape from intrusion, but also the freedom to regulate the level of interaction to avoid miscommunication and misunderstanding between people. Although, in most cases, design patterns alone cannot provide absolute solutions for privacy issues, design mechanisms, such as the siting of the buildings, the extent of the setbacks, the sidewalk widths, the use of balconies and entry landings, zoning of interior and exterior spaces, and extension of rooms can provide residents with more options in the arrangement and modification of spaces.

Finally, This study concludes that the application of design patterns should always relate to a specific context of time and place, and the governing cultural.

social and psychological factors. It is evident that these variables play an important role in determining the degree of privacy required. Privacy design patterns are essential planning tools to enhance and facilitate the regulation and management of privacy in the home. With respect to urban design, the patterns can be used for testing municipal by-laws and zoning regulations for optimal planning of neighborhoods. Hence, the complex relationship between a house and its immediate surroundings in external planning, and the nature of domestic activity and family composition in internal design are crucial for the establishment and type of privacy design mechanisms.

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the social sciences, architecture, urban planning, official publications, city maps, local
by-laws, historical photographs, unpublished theses, students' unpublished papers, site
surveys and site interviews.

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