THE SUBURBANIZATION OF THE CITY:
ASSESSING THE FAMILY FRIENDLINESS OF DOWNTOWN VANCOUVER’S NEW ROW HOUSES

Bryan Sherrell
School of Community and Regional Planning
University of British Columbia
The Suburbanization of the City: Assessing the Family Friendliness of Downtown Vancouver's New Row Houses

by

BRYAN SHERRELL, B.A.

A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS (PLANNING)

in

THE FACULTY OF GRADUATE STUDIES

School of Community & Regional Planning

UBC

We accept this project as conforming to the required standard

......................................................

......................................................

......................................................

THE UNIVERSITY OF BRITISH COLUMBIA

August 2007

© Bryan Sherrell, 2007
Preface

This report is the second piece of a two-part review into the suitability of downtown Vancouver’s new podium-tower style row housing to satisfy the housing needs of families with children. The first report, The Neighbourhoods of Downtown Vancouver’s Podium Towers: An Evaluation of the Family-Supportiveness of Their Design and Amenities by Joanna Brownell, focused on the design and amenities of the podium tower neighbourhoods. This report examines the private row housing units and associated common building spaces.

Each of these two research projects is the product of an individual graduate project, completed in fulfillment of the UBC School of Community and Regional Planning’s Master’s degree program. While the two projects share a related and complementary focus, as well as a certain amount of jointly conducted research, they are nonetheless two separate research projects, each with its own author. It is highly uncommon in this graduate program for final projects to be undertaken in any sort of joint manner; however, in this case, Larry Beasley, former Co-Director of City Planning for the City of Vancouver, had two related questions which needed answers, and two students had parallel interests in each of the two questions. Given the relationship between the two projects, some redundancy exists when the two reports are taken together.
Acknowledgements

I would like to express my deepest appreciation and gratitude to the following people for their support and contributions to this project.

First and foremost I would like to thank the families who took time from their busy lives to share with me their knowledge and experience of their housing. To them I owe a great debt.

To Professor Michael Larice for your guidance, untiring confidence, patience, and commitment to me and the practice of urban planning you have my deepest gratitude and friendship.

To Larry Beasley, former Co-Director of Planning for the City of Vancouver, I would like to thank you not only for your vision and continuing support of this project, but for the opportunity to experience your expertise and passion for the practice of urban planning.

To Joanna Brownell, fellow graduate student and research partner, I would like to thank you for your collaboration, company and insights along the way.

To City of Vancouver Staff including: Lorna Harvey, Kira Gerwing, Paul Gedye, Joyce Lee and Leonard Jiew thank you for your enthusiastic and timely help along the way.

To Darren Lee for your drafting expertise and perfectionism.

To Molly and Liana, your example, moral support and last minute assistance have made this experience unforgettable and make me proud to be your friend.

And lastly, but very importantly, to my partner Kathy and daughters Alyssa and Grace thank you for your love, inspiration and understanding, without your support I may never have chosen or continued along this path. I look forward to the next chapter in our lives.
# TABLE OF CONTENTS

Marisa and Jacobs Story...........................................................................................................1
Executive Summary.....................................................................................................................2

**SECTION 1 Introduction........................................................................................................5**
Problem Statement....................................................................................................................5
Project Statement........................................................................................................................6
Project Ideology............................................................................................................................7
Defining the Research Area........................................................................................................8
Terminology...................................................................................................................................8

**SECTION 2 Policy, Plans and Guidelines........................................................................9**
Regional Planning (1966 - to current)......................................................................................10
Downtown Vancouver Official Development Plans.................................................................11
CityPlan: Directions for Vancouver (1995)..............................................................................12
High-Density Housing for Families with Children Guidelines (1989).......................................12
Neighbourhood Specific Guidelines.........................................................................................14

**SECTION 3 Towards a Theory of Family-Oriented Row House Design.......................19**
Methodological Approach..........................................................................................................19
Research Methods and Findings...............................................................................................19

**SECTION 4 Principles of Family-Oriented Row House Design....................................29**
Safety .......................................................................................................................................30
Individuality.................................................................................................................................31
Unit Size.....................................................................................................................................32
Flexibility...................................................................................................................................34
Storage......................................................................................................................................36
Playspace...................................................................................................................................37
Private Outdoor Space...............................................................................................................39
Privacy......................................................................................................................................41
Unit Circulation..........................................................................................................................43
Places of Sanctuary in the Home.............................................................................................44
SECTION 5 Design Review Applying the Principles of Family-Oriented Design...47
Study 1: Marinaside Crescent.....................................................................................................48
Study 2: Milross Avenue.............................................................................................................55
Study 3: West Hastings Street....................................................................................................62
Study 4: Beach Avenue...............................................................................................................69
Study 5: Richards Street............................................................................................................76
Design Review Findings.............................................................................................................81
SECTION 6 Conclusions and Recommendations........................................................................84
Conclusions...............................................................................................................................84
future Research Directions and Recommendations.................................................................87
Marisa and Jacobs Story...Continued.........................................................................................91
BIBLIOGRAPHY.........................................................................................................................92
APPENDICES.............................................................................................................................95
A Key Informant Interview Schedule with City Staff.................................................................96
B Key Informant Interview Schedule with VSOCC Staff............................................................98
C Key Informant Interview Schedule with Development Corporation Staff..........................99
D Letter and Survey sent to Row House Residents...................................................................101
E Web-based Resident Survey................................................................................................103
F Resident Survey Community Poster.....................................................................................105
G Survey Poster Distribution Locations..................................................................................106
H Survey Notification (letter sent to Building Managers)........................................................107
I Summary Table of Survey Responses...................................................................................108
J Semi-structured Individual Resident Interview Schedule.....................................................109
K Summary: Principles of Family-Oriented Row House Design..............................................113
TABLE OF FIGURES

SECTION 1 Introduction
Figure 1 Graph: Percentage of households with children...........................................................5
Figure 2 Photo: Podium Tower model of housing.......................................................................5
Figure 3 Photo: Areal photo of research area.............................................................................8

SECTION 2 Policy, Plans and Guidelines
None

SECTION 3 Towards a Theory of Family-Oriented Row House Design
Figure 4 Map: Locating the row houses....................................................................................20
Figure 5 Graph: Level of satisfaction with home design...........................................................20
Figure 6 Graph: Adequacy of storage space ..............................................................................22
Figure 7 Graph: Convenience of resident parking.................................................................23
Figure 8 Graph: Ability to monitor children playing outside.......................................................23
Figure 9 Graph: Is your neighbourhood safe...........................................................................23

SECTION 4 Principles of Family-Oriented Row House Design
Figure 10 Photo: Insecure gates ...............................................................................................30
Figure 11 Photo: Insecure architectural detail .........................................................................31
Figure 12a & b Photos: Differing architectural elements ..........................................................32
Figure 13a & b Drawings: Two storage solutions .....................................................................37
Figure 14 Drawing: Private outdoor space ..............................................................................41
Figure 15 Photo: Outdoor water tap ..........................................................................................41
Figure 16 Schematic: Gradient of privacy ..................................................................................42
Figure 17a & b Photos: Front yard privacy ...............................................................................43
Figure 18 Drawing: Bedrooms with and without sitting area ....................................................45
SECTION 5 Design Review Applying the Principles of Family-Oriented Design

Figure 19 Photo: Marinaside Crescent facade ................................................................. 48
Figure 20 Drawing: Marinaside floor plan ................................................................. 48
Figure 21 Photo: Flamingos ................................................................................... 50
Figure 22 Photo: Milross Avenue facade ................................................................. 55
Figure 23 Drawing: Milross Avenue floor plan ....................................................... 55
Figure 24 Photo: Contrasting facade colour ......................................................... 57
Figure 25 Photo: West Hastings Street facade ....................................................... 62
Figure 26 Drawing: West Hastings floor plan ......................................................... 62
Figure 27 Photo: Insecure gate ............................................................................ 63
Figure 28 Photo: Beach Avenue facade ................................................................. 69
Figure 29 Drawing: Beach Avenue floor plan ......................................................... 69
Figure 30 Photo: Richards Street facade ................................................................. 76
Figure 31 Drawing: Richards Street floor plan ......................................................... 76
Figure 32 Photo: Different facade colour enhances individuality ......................... 82

SECTION 6 Conclusions and Recommendations

None
Marisa and Jacob’s Story…

Marisa woke Saturday as the morning sun warmed her downtown Vancouver bedroom. As the sleep faded from her eyes she realized she was alone. Jacob must have gotten up earlier with their 6-month-old daughter Grace, as the bassinet lay empty at the foot of their bed. Marisa put on her robe and entered the kitchen to find her husband sitting at the table reading the Real Estate Paper and their daughter hungrily digesting her morning bottle in his arm. Grace’s eyes lit-up as her mother came into sight, but Jacob didn’t appear to notice her as he intently searched the latest real estate listings.

Marisa picked-up Grace for her good morning hug and asked Jacob if today’s paper held anything new. Jacob replied with a sigh “I don’t know Mar, we have been looking for three months now and I just don’t think we are going to find an apartment that is going to suit our growing family in the downtown. I know we love the downtown and we both work here, but is this the place that we want to raise Gracie? And what if we go ahead and try for another child, where are we going to find three bedrooms with a suitable den for my home office?” “I don’t know Jacob, but we both love living in the downtown and I know as Gracie gets older she will love it too” replied Marisa.

Jacob grimaced. Marisa was right; he loved living in the downtown. Their apartment was close to the Seawall for his early morning run and the majority of his clients had offices in the downtown. Not to mention Gracie loved going out for walks in her stroller to David Lam Park and Science World. But while Jacob has lived in the downtown for the last eight years, he grew-up in the suburbs in a typical suburban house on a cul-de-sac with a huge rear yard. Jacob was not sure that downtown living could ever replace the experiences he had growing up.

Jacob turned the page of the Real Estate Paper and noticed an advertisement for a new development being constructed in Coal Harbour. “Mar”, Jacob called, “I think I may have found our solution. You know that development being built in Coal Harbour near our favourite restaurant, they are building town homes around the base of the high rise, and they have their own front door to the street, three stories, and a rear yard.” Marisa smiled as Jacob picked-up the phone and dialled the agent for a showing.

Marisa and Jacob are facing a dilemma that many young urbanites face as they begin a family. Is a downtown urban environment the place for a growing family? Living in a downtown apartment suited their lifestyle fine before they had Gracie, but could it satisfy the demands of a busy and active family?
Executive Summary

This research project is a focused evaluation of the family friendliness of Downtown Vancouver’s new podium tower row houses, in terms of their unit and common area design.

When the City of Vancouver initiated the “Living First” strategy over two decades ago, one of the key goals was the attraction of families with children back into the downtown area. As a result the row house became a prevalent component of new residential development establishing the “podium tower” as a new building typology. This research has been initiated at the encouragement of the City of Vancouver’s former Co-Director of Planning, Larry Beasley, as a means to gauge how well the podium row houses have been meeting the needs of households with children.

From the onset this project was designed to facilitate a better understandings of the residential experiences of families with children living in podium row homes, and to apply that knowledge as an assessment of current row house designs. The families that participated in this study identified a number of design ideas they felt were important in the development of family-oriented row houses. These ideas were supported by design literature and worked into a set of ten design principles. The Principles of Family-Oriented Row House Design were used to test the suitability of a sample of five row houses and further validate the interviewees’ self-assessment of their homes.

Although respondents initially indicated satisfaction with their housing, further probing about particular aspects revealed a very different understanding of the family-friendliness of the row houses. Through a series of in-depth interviews with row house residents and an independent design review of a sample of row houses, a number of successes and concerns with the design of the row homes began to emerge. The design review generally supported the resident’s own assessment and further emphasized the need for greater attention to be given to the development of family friendly row housing units if they are to truly satisfy the housing needs of families with children. Most concerning to this researcher was the frequency with which families with young children question the ability of their homes to satisfy their families needs as their child(ren) grow older or if their family expands.

While many of the downtown Vancouver row homes work relatively well for young one-child households, their ability to satisfy the needs of multiple child families is marginal.
In spite of city policies and regulations promoting family friendly housing units and the movement of families into the downtown, the row houses that are sampled in this research raise questions about the extent to which actual row house developments adequately incorporate existing guidelines. Given the findings of this study, there is a need to consider the extent to which the goal of having twenty-five percent of new households in the downtown having children living in them can be achieved.

The Principles of Family-Oriented Row House Design (and their assessment of existing developments) brought a number of liveability issues to the fore. While significant in influencing the everyday satisfaction of residents many of the liveability flaws could have been easily revised at the development proposal stage without significantly impacting the viability of the development. Of the key design principles identified, unit size and flexibility are the most difficult to resolve and tended to manifest themselves into broader design issues.

Major findings from this research, then, are two fold: firstly, unit size and flexibility are key issues in the development of row housing that meets the needs of households with children. While other design issues identified in the course of the research are relatively easy to correct through the application of careful and thoughtful design, unit size and flexibility are the most difficult to change. Without due consideration of these issues downtown row houses may not have the ability to compete with single family dwellings.

Secondly, many of the principles are already incorporated (at least to some extent) within existing guidelines. While the Principles of Family-Oriented Row House Design were developed mainly with consideration of the experiential knowledge of current row house residents, they conformed – at least in part – to the existing guidelines – something, which became even more apparent when considering findings. This questions the degree to which existing policies/guidelines are being adhered to, applied and enforced.

In light of the findings of the current research, there is a need for the City of Vancouver to consider either rethinking their objectives or re-evaluating the performance of their development policies and design guidelines. Although policies and guidelines exist that are intended to facilitate the development of family-friendly housing in the downtown they do not appear to be as successful as the City would hope them to be. There then exists a need to examine why existing policy and guidelines are not working to their full potential and to identify existing barriers or potential incentives that may encourage the development of better quality family friendly housing.
The following recommendations are made:

1. **Practitioner Workshops**: A series of practitioner workshops should be initiated to discuss and pursue solutions to the design issues and findings of this research to facilitate better family-oriented design.

2. **Continued Research**: To further facilitate better design a broader, more representative post occupancy evaluation (POE) of existing and/or future row house development needs to be undertaken. The results of a broad POE research program, utilizing a representative sample, could be used to facilitate an update to the City of Vancouver's High-Density Housing for families with Children Guidelines to provide a more prescriptive set of design objectives and criteria for future development.

3. **Identify Regulatory Barriers**: The possibility exists that current policy and regulations may preclude the development of row houses that would better meet the needs of households with children. To facilitate better design regulatory barriers need to be identified, reviewed and amended to provide broader discretion or outline established equivalencies to promote efficiency of the approval process.

4. **Policy Analysis**: The “Living First” strategy, official development plans, and various guidelines provided policies and regulations to guide the development approval process of housing intended for families with children. Findings of this research project suggest that many of the podium row houses stray significantly from family-oriented liveability guidelines. Review and further refinement of these tools and their application are necessary if the podium tower row house model is to broaden its ability to provide families a viable urban housing option.
SECTION 1: INTRODUCTION

Problem Statement

Over the last fifteen years the development of high-rise condominium complexes has contributed to the success Vancouver, British Columbia, has enjoyed in attracting households back into its downtown core. As a result Vancouver has emerged as having one of the fastest growing downtowns in North America.

The 2001 Census, however, indicated that in spite of overall growth in population in the downtown neighbourhoods, children remain underrepresented in Vancouver’s population profile (Brownell 2006). This observation becomes especially poignant in households with two or more children (Figure 1). As the 2006 Census data begins to be disseminated City of Vancouver Planning staff have anecdotally suggest that the number of children in the downtown area has continued to grow (Beasley 2007).

In the 1990s, the City of Vancouver began to encourage the development community to provide new downtown housing stock that is suitable for households with children, specifically through the construction of attached ground-oriented housing units. Increased social diversity was to be achieved through the provision of housing options that emulate many of the features that families seek in suburban areas. These features include, but are not limited to: street-oriented front doors, access to semi-private outdoor space, an adequate number of bedrooms and in-suite storage. Decades later this call for more ground-oriented housing has manifested itself into the ‘podium tower’ model of housing; which combines one or more high-rise residential towers with low-rise multi-floor row houses at its base (Figure 2). To date, these developments have met with limited success in encouraging families into the downtown district (Beasley 2003). Rather, these new row houses have tended to attract young childless urban professionals or ‘empty nesters’ relocating to take advantage of the urban amenities downtown Vancouver has to offer. While price may be a factor in the decision of families (not) to move into downtown neighbourhoods, this project examines the ability of the design of the units to meet the needs of the intended consumers.

Figure 1: Percentage of Households with Children (2001 Census) drawing direct comparison between Greater Vancouver, the City of Vancouver and downtown podium tower neighbourhoods. Graph reproduced with permission (Brownell, 2006, 47).

Figure 2: An example of the Podium tower model of housing.
Project Statement

A great deal of research has been conducted on the redevelopment of Vancouver’s downtown and its new neighbourhoods. Academics and journalists alike have written volumes of literature focusing upon topics ranging from land economics to urban design and Vancouver’s particular approach to planning. Yet to date there has been a dearth of literature focusing upon the housing units themselves. This project will add to this ongoing discussion by assessing the suitability of Vancouver’s downtown podium tower row houses to meet the needs of households with children. The intention of this research is to align planning policy with architectural practice and residential experience to recognize the unique needs and values of families living in higher density neighbourhoods.

In 2003 Sean Pander, a former UBC graduate student in the faculty of Resource Management and Environmental Studies collaborated with Larry Beasley to conduct research into family housing preferences. Pander’s research on the housing needs of Canadian families with pre-school age children provided the impetus for this two-part project. The culmination of his research resulted in a theory of urban attached housing, which included a set of neighbourhood and unit design features that families desiring an urban lifestyle found appealing. The first part of this current project, conducted by Joanna Brownell, focussed on assessing the family friendliness of Vancouver’s downtown urban environment. By examining urban design features, amenities and services, Brownell (2006) evaluated current conditions and prescribed strategies to better attend to needs of households with children.

The second part of this project, and the purpose of this study, is to build upon the initial work of Pander, by developing a grounded theory of family-oriented row house design. Through the development of design principles derived from residential experience, this research will evaluate recent row house developments in Downtown Vancouver.

The research by Joanna and myself has been conducted concurrently and shares the same population sample. Due to the connected nature of these research projects, and to gain efficiency, a collaborative relationship was established between Joanna and myself that enabled much of the data gathering to be conducted simultaneously. By conducting the row house inventory, resident mail out survey and the interviews together we believe that a decrease in the likelihood of subject ‘burnout’ as well as a benefit from each other’s insight and interpretation during the interview process could be achieved.

This project will satisfy research requirements for the Master of Arts (Planning) at the
University of British Columbia’s School of Community and Regional Planning. Initiated under the direction of Larry Beasley, the City of Vancouver’s former Co-Director of City Planning, this research is part of a larger project that aims to provide a deeper understanding of the housing needs and values of households with children and to suggest family friendly design solutions to the barriers presented by higher-density urban environments.

Project Ideology

Over the past few decades I have watched as Downtown Vancouver has re-developed at a tremendous pace. Large-scale residential development of previously industrial land and urban infill sites has created tens of thousands of new housing units fostering opportunity for urban migration from Vancouver’s surrounding suburbs. The emergence of the podium row house created a new opportunity through their ground-orientation to bridge the gap between the suburban single-family housing model and the high-density apartment typically associated with urban areas. Housing stock with the potential to attract larger households intrigued me and made me question whether these row houses were truly capable of satisfying the housing needs and desires of families with children as they were marketed to be. Families that are attracted to the urban milieu but may have felt relegated to the suburbs for the lack of downtown housing options have found an option in the podium row house. They are provided with an opportunity to live in the urban core with many of the design features found in the suburbs including: street-oriented front doors, rear yards, in-suite storage, secured parking and units with more than two bedrooms.

I am not a trained architect; I am an urban planner, former carpenter and a parent of two children with an intense interest in housing form and liveability. While this project may prescribe design principles and strategies it ultimately is the architect, developer and planner that will have to employ their combined creativity to negotiate and affect successful high-density housing for households with children. While this may in some sense appear to be a critique, it is intended to be a point of evaluation along the continuum of housing development and an opportunity to bring together the groups that affect housing development.

Housing is more than just a roof over your head. It is more than an economic investment or a symbol of status. It is also a home, a place of sanctuary and a space for nurturing a family. Simply stated housing is a complex bundle of goods (Larice 2004). My commitment to urban planning and an understanding of my own family’s
housing needs draws me to investigate this new housing form, to praise its successes, recommend improvement, and ultimately to prescribe strategies to improve high-density living for households with children.

**Defining the Research Area**

This research project will focus its study of ground-oriented row houses located on the downtown peninsula bounded to the east by Main Street, to the north by the Burrard Inlet, to the west by Stanley Park and English Bay, and to the south by False Creek and Terminal Avenue.

**Terminology**

As a point of clarity key terms used in this project will be defined as follows:

Podium Tower development: one or more high-rise towers with low-rise multi-floor row houses at its base.

Row house: a dwelling unit which forms part of a larger structure containing a minimum of three such units, each separated by vertical walls and having individual entrances opening directly to the outdoors.

Families: families and households with children will be used interchangeably to describe related adults and children living together in the same housing unit.

Children: people under 19 years of age.

Empty nesters: a household whose children have grown and left home.

Daylighted: a building facade that has complete access to daylight.
SECTION 2 POLICY, PLANS AND GUIDELINES

This section will review City of Vancouver and region wide plans, policies and guidelines, which promote and effect the development of the podium row house in the downtown Vancouver study area. In so doing, the intent is to provide the reader with an overview of existing plans and guidelines so as to better enable understanding of the context in which row house developments are constructed.

The podium tower row house form did not randomly appear in Vancouver’s downtown. This housing form materialized as a response to regional smart growth strategies and a desire to redevelop underutilised downtown industrial and commercial land into a vibrant and active urban core. Since the early 1980s a “Living First” strategy was developed to guide land use and development planning in the City of Vancouver’s downtown. Underlying this strategy is the promotion of complete communities where households are able to live, work and play in their immediate environment.

The 1980s were a point of transition for the downtown area: Vancouver’s City Council took definitive steps in adopting plans that would begin to transform excess industrial and commercial property into residential and mixed-use development. These steps in combination with rapidly increasing immigration, development pressure and a focused planning approval process initiated an intense period of development that facilitated rapid population growth as new residential neighbourhoods emerged to bolster the downtowns residential capacity. To enable all household types the ability to live in the downtown, close to the regions primary employment concentration area, Living First insisted on a rich mix of housing types including “both market and non-market housing, mixed incomes, family and non-family households” (Beasley 2000). The podium row house is one response to meeting the housing needs of families that would otherwise locate in suburban locations.

The podium row house is a typologically unique housing form with a relatively short period of existence. The emergence of this housing form in Vancouver has its roots in a variety of regional and city policy, planning directives and development guidelines. To better assess their form and design this section will briefly outline and explore key policy and plans that established a foundation for creating greater diversity of housing choice in Vancouver’s higher density neighbourhoods. This section will conclude with a review of neighbourhood specific Official Development Plans, the High-density Housing...
Regional Planning (1966 – to current)

Vancouver is the largest member municipality of the Greater Vancouver Regional District (GVRD). As a member the City of Vancouver is governed by the plans and policies of the GVRD to promote smart region-wide development and sustainable growth. Regional planning in the Greater Vancouver region has a strong history of planning intended to help maintain the liveability of the region and protect the environment in the face of growth. The foundation to the growth strategy for the region was exemplified in the management strategy of the 1975 Liveable Region Plan that included key directives to promote a compact urban region to reduce automobile dependency, to establish population growth targets and concentration areas for each municipality, to direct job growth to town centres, and to create and foster the protection of a regional green system.

These directives helped establish long-term growth patterns that would set the tone for development in the GVRD’s member municipalities. The current regional plan, the Livable Region Strategic Plan (LRSP), has been in effect since 1996 and continues to guide growth and development in the region.

The LRSP is premised upon four fundamental strategies:

- Protect the Green Zone
- Build Complete Communities
- Achieve a Compact Metropolitan Region
- Increase Transportation Choice.

While these strategies are not specific to the development of row homes, they do set a policy direction to concentrate growth in prescribed development growth areas and provide greater diversity in housing choices. The provision of ground-oriented housing in higher-density neighbourhoods, for example, is intended to enable a greater variety of households, including families with children, to locate in neighbourhoods close to employment concentration areas. Housing forms like the podium row house have the potential to enable families to live downtown rather than relegate them to lower-density suburbs.

Historic Regional Plans

- The Official Regional Plan (1966)
- The Livable Region 1976/1986 (1975)
- The Plan for the Lower Mainland Of British Columbia (1980)

(For an expanded discussion of regional planning in the Vancouver region see Tomalty, 2002)
Downtown Vancouver Official Development Plans

The City of Vancouver has developed and adopted numerous plans to implement policy that coincide with the objectives of the GVRD and the Living First strategy. Area specific Official Development Plans (ODP’s) were created to guide the development approval process by establishing growth directives, development standards and guidelines to promote high quality buildings and well coordinated development patterns. The following is a brief summary of four of the ODP’s affecting development in the downtown study area: the Downtown Official Development Plan (DODP), the Central Area Plan, the False Creek North Official Development Plan and the Coal Harbour Official Development Plan.

There have been two area wide plans, the Downtown Official Development Plan (DODP) which was adopted in 1975 and the Central Area Plan which was adopted in 1991. The DODP was the first area wide policy to provide a general framework for the preparation of neighbourhood specific development plans (City of Vancouver, 1975) in the downtown area. The plan while simple in form, provided a “workable plan that was easy to understand and easy to amend, its most important feature was that its provisions were purely discretionary with no outright allowances on any site” (Punter, 2003, 62). Through this discretionary policy and subsequent area design guidelines, “well-designed residential uses [were] both permitted and encouraged throughout the Downtown” (City of Vancouver 1975, 7).

While the 1975 DODP did not specifically encourage ground-oriented row housing the plan encouraged creativity and diversity of development form while opening the door to residential mixed-use development and outright rezoning from commercial to residential use in designated areas in the downtown. The DODP was an important policy direction in the promotion of new residential units in the downtown area. The facilitation of the rezoning is particularly important as residential uses were prohibited in these areas prior to the DODP.

The Central Area Plan, adopted in 1991 as an update to the 1975 DODP, outlined more specific land use directions for the central area than its predecessor and presented general development goals to guide development approval. This plan provided specific policy to encourage the development of housing for families with children and promoted active residential streets with “enhanced pedestrian interest and comfort” (City of Vancouver 1991, 3). The Central Area Plan also set an omnibus prohibition on childless buildings, where families with children could no longer be discriminated against (Beasley 2007). This new Central Area Plan began to cast the podium tower...
development form through its requirement for enhanced pedestrian interest and comfort and set in play policy to expand housing options in the downtown for families with children.

Under the area wide policies of the DODP and the Central Area Plan a number of neighbourhood specific ODP’s began to emerge. These neighbourhood specific ODP’s became more prescriptive in their policy directives. Two of these neighbourhood plans, the False Creek North ODP and the Coal Harbour ODP, were adopted by City Council in 1990 as overall guides to development in those neighbourhoods. The intent of these plans was to achieve a high standard of design and development within a number of residential neighbourhoods, parks, public facilities and commercial areas. Both ODP’s carried with them the principle to provide diverse housing for varied household types including the objective “of accommodating families with children” (City of Vancouver, 1990a, 6). Further, the ODP’s specified the allocation of twenty-five percent of the total number of residential units being suitable for families with small children. The inclusion of families with children with specific quotas effectively set the requirement to broaden the diversity of housing and insure that a minimum twenty-five percent of new housing stock was suitable for households with children.

City Plan: Directions for Vancouver (1995)

Prior to 1995 the City of Vancouver did not have an overall development plan to guide development decision-making. In June 1995, Vancouver City Council approved City Plan as a citywide planning policy that provided a framework for decisions on city funding, programs and actions for a twenty-year period. The document includes a wide range of topics as a broad vision for the city to guide policy decisions. Again, while not specific to the development of the downtown podium row house, City Plan prescribes a vibrant downtown central area as a place to work, live and visit. Through the provision of a greater variety of housing choices within walking distance of downtown employment City Plan provides guidance to approve higher density developments designed to provide features normally associated with single-family housing forms to meet the needs of current residents who would otherwise move into suburban communities.

Specific City Plan housing directives include:

• Develop new forms of housing that appeal to people looking for features traditionally only available in single-family housing.
• Build demonstration projects for new types of housing that offer the features of single-family housing at higher densities.
• Establish the demand for various types of housing in the city.
• Look for opportunities to increase the range of housing types in existing multi-family areas for units suitable for families with children.
• Plan housing as part of neighbourhood centres.

Embedded within City Plan and each of the outlined ODP’s are policy directives and guidelines promoting the development of housing for families with children. While some of the plans provide general guidelines, others outline specific provisions requiring twenty-five percent of new units developed to be designed to meet the needs of households with children. These plans set in motion the impetus for the inclusion of housing designed specifically for households with children and development of ground-oriented housing forms to promote active residential streets.

High-Density Housing for Families with Children Guidelines (1989)

To set common standards and guide the development of family-oriented housing the High-Density Housing for Families with Children Guidelines were adopted by City Council in 1989. Through the creation of the guidelines developers were encouraged to consider creative approaches to site selection, building and unit design in respect to residential liveability. While not specific to ground-oriented row houses, the guidelines provide a variety of relevant unit design objectives outlined below.

Hierarchy of Spaces: To ensure that residents and visitors can easily distinguish among the private, semi-private, semi-public, and public realms in and around the development.

Common Open Space: There should be appropriate open space to meet the on-site needs of children and adults.

Outdoor Play Areas for Children: Children of all ages should have easy access to appropriately located, designed and landscaped outdoor play areas suited to their developmental and play needs.

Supervision of Children’s Play: Recognize that small children require supervision while playing in common outdoor and indoor play spaces and facilitate opportunities to achieve that supervision by parents and other caregivers from within individual units or
their private open spaces.

Children’s Safety: Design the whole environment with the safety needs of children in mind.

Resident Parking: Parking should be secure, accessible and adequate for the needs of residents and visitors.

Unit size and Interior Layout: The size and layout of units should be appropriate to meet the needs of families with children.

Privacy: Protect the privacy of family households.

Private Open Space: Ensure that each household has a private outdoor open space adjacent to its unit for its exclusive use.

Storage: Provide sufficient bulk storage within the unit or within easy access of the unit.

The above noted design objectives were supported by a variety of specific design criteria and benchmarks that set broad design standards to support the housing needs of families with children. The development and adoption of family-oriented housing design guidelines provided policy to guide the development approval process and provide the developer with tangible design elements with which they could set the tone of their proposals. These guidelines would be referenced in a number of the study areas neighbourhood CD-1 guidelines and subsequently act as a standard for family-oriented development of downtown towers and their podium row houses.

**Neighbourhood Specific Guidelines**

Council adopted the Downtown South Guidelines in 1991 to be used in conjunction with the DODP to describe design opportunities, provide guidance to developers and provide city staff with a tool to evaluate development proposals. The intent of the guidelines are to assist in the creation of a distinct urban character for Downtown South and ensure high quality building design (City of Vancouver 1991c). In the early 1990s however, the podium row house was as of yet a unproven development form and there was significant skepticism from the development community and City Council that ground-oriented row housing could be a widely marketable housing form (Beasley 2007). This skepticism translated into a deliberate exclusion of any direct reference to ground-oriented row housing from the guidelines. Yet, the guidelines made a
significant impact in all but requiring new residential development to include ground-oriented row housing through the specificity of the design considerations outlined within the document.

As the success of the podium tower row houses began to be realized by developers, future development guidelines and area specific CD-1 guidelines started to become more explicit in prescribing the inclusion of ground-oriented row housing in all new residential development. The following is a summary of a number of the CD-1 guidelines in the study area emphasizing the increased livability requirements for households with children.

Neighbourhood specific CD-1 development guidelines were created to guide the development permit application process and “ensure that individual development design is compatible with the overall design concept and development on adjacent lands” (City of Vancouver 1991b, 3). Building upon these guidelines, development objectives and design standards were established to set a foundation with which developers could formulate comprehensive development proposals.

A number of Guidelines were created for the Downtown Peninsula. These guidelines all included a key organizing principle to provide housing consistent with liveability, environmental, household and income mix objectives, particularly for families with children. Many of the CD-1 guidelines incorporate residential liveability guidelines that provide specific liveability requirements. An excerpt from the Roundhouse Neighbourhood CD-1 Guidelines is provided below as an example of the depth of the guidelines and to emphasise the minimum standards that a development application had to attain in order to receive planning support.

3.6 Residential Livability

3.6.1 Dwelling units designed for families with small children must comply with the Council-adopted “High Density Housing for Families with Children Guidelines” and should be located within six storeys of grade, or higher where the units have access to an appropriate above-grade outdoor play area.

3.6.2 Residential liveability of each development and dwelling unit should be designed with consideration of:

(a) Privacy and Territoriality:

(i) Each unit should have direct access to a private outdoor space or an enclosed balcony having a minimum depth of 2.0 m and a minimum area of 40 m².

(b) Individuality and Identity:

CD-1 Guidelines
- Roundhouse CD-1 (1993)
- International Village CD-1 (1996)
- Beach Neighbourhood CD-1 (1999)
(i) Ground floors of all buildings should be designed to express individual units within a coherent massing; and

(ii) Where landscaping of units occurs in the private zones of those units, it should permit reasonable customization by residents, e.g., planting bed and soft landscaping variations at grade, opportunities to place planters, at balconies, etc.

(c) Choice and Convenience:

(i) Each residential development should provide on-site amenities suitable for the anticipated population.

(d) Safety and Security:

(i) Each residential development and unit should be designed to be safe and secure, yet not fortress-like;

(ii) Buildings should be designed to provide residents with “eyes on the street” and doors on the street;

(iii) Public, semi-public and semi-private spaces should have some degree of overlook from residents’ homes; and

(iv) Landscaping and lighting should enhance security.

(e) Interaction with other people:

(i) Habitable rooms must have access to daylight and where possible, direct sunlight;

(ii) Units should have one unobstructed view of minimum length of 25.0 m and should be oriented to longer views where these exist; and

(iii) Semi-private outdoor spaces should be located so as to receive direct sunlight during most days of the year.

(f) Relationship to Street:

(i) Two-Storey units are encouraged along Drake Street, Marinaside Crescent to prevent walling off the public realm with bedrooms at grade. This will introduce vertical expression into the street base, with many doors on the street and privacy and security for bedrooms and balconies on the second floor.

The residential liveability standards included in area CD-1 neighbourhood guidelines mandated ground-oriented housing forms as a component of Downtown Vancouver’s new emerging neighbourhoods setting both general and specific criteria for housing design. They also set development standards where applications had to adhere to residential liveability standards and the High-Density Housing for Families with Children Guidelines. This level of attention given to the CD-1 guideline policies established a high standard for residential development in the downtown study area.
Summary

The Living First strategy set the stage for development in the downtown core of Vancouver. Through the successive development and adoption of policy, plans, and guidelines the podium tower row house became a required streetscape feature of new residential and mixed-use development. Through this requirement a new downtown housing form was mandated and while not specifically limited as family-oriented housing, the podium row house provides an opportunity to attract households that are drawn to housing features such as ground-orientation, semi-private patios and the potential of larger units.

Under the direction of the GVRD growth strategies and the development and adoption of various area development plans a greater variety of housing choice was promoted in the downtown area. Twenty-five percent of new housing units were required to meet both liveability standards and provide housing suitable for households with children and a variety of neighbourhood CD-1 guideline required designated family units to meet objectives set out in the high-density housing for families with children guidelines. Significant attention was directed to the promotion of policies that would guide the development of housing suitable for families with children in downtown neighbourhoods.

A review of a number of Development Permit Board reports indicated that many of the ground-oriented podium row houses were allocated to meet the twenty-five percent requirement. The following sections of this research will focus specifically on an analysis of the family-friendliness of the podium row house design to determine if the constructed homes met the intent of GVRD and City of Vancouver plans.
SECTION 3 TOWARDS A THEORY OF FAMILY-ORIENTED ROW HOUSE DESIGN

This section will describe the methodological approach and research methods utilised throughout the course of this research project. A number of findings utilised to further develop and focus the methodology will be given throughout this section.

Methodological Approach

From the onset this research project was premised upon seeking the housing expertise of families with children living in downtown row houses, to have them tell their stories of their experiences with the design of their homes. To achieve this end an inductive methodology was sought that could draw out the nuances of their experience. The knowledge gained from their daily interaction with their housing would become the foundation of a set of design principles. These principles would then enable a design critique based upon the real life experiences of families living in the downtown rather than the conjecture and preconception of the researcher.

Grounded theory as prescribed by Glaser and Strauss (1967) is a methodology that “focuses on the interest of the participants in favour of that of the researcher” (Glaser 1998, 45) and “is well-suited to discovering the participants’ problem and then generating a theory accounting for the processing of the problem” (Glaser 1998, 11). Through an inductive process data is gathered and compared until patterns are apparent and hypotheses emerge. Grounded theory simply stated, “is the discovery of what is there and emerges. It is NOT invented” (Glaser 1998, 4) or forced by the researcher. Through a rigorous collection of data, comparison and evaluation a grounded methodology was used to draw out both the positive and negative design qualities of the podium row homes as they relate to families.

Research Methods and Findings

In approaching this research a methodology that includes both qualitative and quantitative methods was adopted. This section of the report discusses the methods that were employed in carrying out the research, and presents a number of the findings that were used to help direct subsequent steps in the methodology.
Phase 1: Locating the Row Houses

Due to the absence of available data that specifically identified the quantity and location of row houses, a visual survey of the downtown neighbourhoods was necessary. Over a one-week period in August 2003 Joanna Brownell and I conducted a systematic visual survey searching street-by-street on foot and by car for row houses in the research area. The result of this survey was a database containing a list of row house street addresses, pictures of a sample unit from each development, and the name of the development (where available) for 584 row house units. Although a number of additional row houses were identified during this survey, they are not included as they were still under construction and therefore without residents to be surveyed or interviewed. Since completion of this survey the City of Vancouver had begun tracking the development of row houses and had shown an addition of over 300 units for a total of approximately 900 row homes in the study area by the fall of 2005.
Phase 2: Resident Survey

The target population for this project included all households living in row houses in Vancouver’s downtown peninsula. The sampling frame included all households living in row houses identified in the visual survey of row houses undertaken in August 2003. My objective was to discern the population of households with children living in row houses in Downtown Vancouver. I began the study aiming for 100% participation from all households receiving the survey.

Utilizing the database of row house units generated from the visual survey a brief residential satisfaction survey (Appendix D) was mailed to all 584 units by the City of Vancouver under the signature of the now former Co-Director of Planning, Larry Beasley. The survey was also posted as an interactive web survey on the City of Vancouver’s web site (Appendix E). The purpose of this survey was to:

- Obtain a general sense of the number of households with children living in row type housing in the study area,
- Gain insight into resident satisfaction with the family friendliness of their housing and,
- Entice households with children to participate further in an in-depth individual interview.

The survey followed a simple format consisting of eleven general questions that were derived from a review of post occupancy survey research (Watson 2003; Marcus and Sarkissian, 1986; Bell 1974) as well as from three key informant interviews with City of Vancouver staff and one with a representative from the Vancouver Society of Children’s Centres (VSOCC). The post occupancy evaluation (POE) literature review and key informant interviews identified potential housing concerns of families living in the study area, including: the adequacy of outdoor play space and the adequacy of storage space. A simple and short survey format was chosen to help promote response rates and the questions were phrased, in part, to invoke interest in further participation in an individual interview (see Appendix D for survey questions). Only four of the eleven questions dealt directly with building and unit design and a fifth question asking about the general safety of the neighbourhood could be utilised to gain a general sense of the security of their home within the context of their neighbourhood. The remaining questions either related to the co-researcher Joanna Brownell’s area of research or confirmed the respondents’ status as a row house resident with children and their willingness to be contacted to participate further in an individual interview.

One hundred of the 511* surveys were returned, producing a response rate of
approximately 20%. Four surveys were subsequently discarded because the respondents identified themselves as living in apartment condominiums rather than row houses leaving a sample of 96 households. Of the 96 responses to the survey, 31 households reported having children living with them.

* The population size was reduced to 511 units from 584 due to a problem later identified in the automated addressing of survey letters.

While this research focuses upon the housing experiences of families with children, the data gathered from row house households without children provided contrasting insight into the success of the podium row house design for residents without children. Results of the Survey are described below.

Phase 2a: Survey Results

Overall, most households surveyed were satisfied with the design of their housing (Figure 5).

However when probed further, survey respondents appeared less satisfied with particular elements of their housing as identified directly in the survey questions (e.g. adequacy of storage space, convenience of parking, and the ability to be able to monitor children playing outdoors). Nearly half of the respondents felt that their homes did not provide them with adequate storage space within their personal unit or within storage spaces within the common building areas (Figure 6). Significantly, the households with children found storage to be less adequate than households without children (45% satisfied vs. 58%). Similarly, households with children were less satisfied with the convenience of their tenant parking (Figure 7) and less satisfied with their ability to visually monitor their children playing in their private patio or common courtyard from within their home (Figure 8).

Approximately thirty percent of all respondents reported feeling that their neighbourhood was not safe (Figure 9). While this question was limited to the safety of the neighbourhood, the response drew attention to the fact that residents of the ground-oriented row houses may also be concerned about the security of their residences and of their children out in the community.

The row house resident satisfaction survey fulfilled its purpose in two important regards: first, the results of the survey provided an overview of overall resident satisfaction with the row house units and secondly, the survey enabled the researchers to confirm the presence of households with children living in row housing within the
study area. Twenty-one respondents identified themselves as willing to participate further in an individual interview. Analysis and comparison of the responses between households with children and households without children facilitated greater understanding of the relevance of particular design issues specific to households with children. With a 20% response rate we also felt confident that housing and neighbourhood design is a relevant issue to downtown row house residents. Most significant, however, was the finding that households with children were generally less satisfied with their row house design. This finding emphasized the necessity for further study of the housing needs of families with children living in higher-density neighbourhoods.

Phase 3: Individual Semi-structured Interview

The next phase of the research was to build upon the knowledge gained from the resident survey to begin the generation of design ideas identified by resident families that address their housing needs through individual interviews. Results from the resident survey, key informant interviews and a review of post occupancy evaluation literature were drawn upon to develop the interview schedule. The decision to conduct semi-structured interviews is intended to access the experiential knowledge of families living in downtown row houses. This style of interview was selected for the ability to gain comparable data, but also to have the ability to follow up on answers and probe further on some questions.

In total, eighty-three questions (including sub-questions) were created to further explore the experiences of families living in row houses in Downtown Vancouver (Appendix J). These questions were broken down into five categories: demographic and residential history; unit and building design; neighbourhood design; neighbourhood amenities; and other (three general questions that were intended to entice the interviewee to add anything to the interview that they felt influence their residential satisfaction). Of the eighty-three questions, twenty-seven dealt directly with unit and building design and the focus of this report. In addition to direct unit and building design questions, twelve demographic and residential history and two general “catch-all” questions were asked.

The interview sample was self-identified through their response to question #11 of the row house resident satisfaction mail-out survey with a contact name and phone number. Of the thirty-one households with children, twenty-one indicated their willingness to participate in an individual interview. While we initially hoped to interview...
all twenty-one respondents identified in the survey, only twelve interviews were conducted. Further whittling of the sampled occurred owing to failure of respondents to return phone calls and respondents changing their minds. The interviewees were contacted, their residence in ground-orientated row houses and the presence of children in the household was confirmed, the interview process described to the interviewee and a meeting time and place was discussed. Twelve semi-structured interviews were conducted between August 2004 and October 2004.

The interviews were conducted by both Joanna Brownell and myself at a time and place that was convenient to the respondents. Although the interviews were intended to be individual interviews, this was not always possible. In some cases the interviews were conducted with both the primary respondent and another adult (e.g. a spouse or adult child). All but one interview was conducted in the interviewees’ residence, with the majority taking place in the evening.

The interviewing process typically lasted for sixty minutes, however, some interviews ran in excess of 90 minutes due to the breadth of the interviewees’ answers. In some cases the residents would give a tour of the home and/or building amenities following the formal interview. The interview responses were recorded using both audio recording and hand written notes. During the interview sessions Joanna and I both took notes so that we could decrease the amount of interviewer misinterpretation by cross checking with each other’s notes. By combining our interviews in one session we were limited in the number of questions we could each comfortably ask without exhausting the interviewee. Conducting the interviews as a team, however, benefited the research as Joanna and I were able to observe each other’s interviewing and pick-up on missed opportunities through additional prompting.

Interview notes were transcribed into a data matrix and the data was analyzed for common liveability and design themes. Owing to the variety of row house form (e.g. size and style) and the diversity of the residents (household size, age of children, etc.) a vast number of design issues (both positive and negative) emerged during the interview process. These design issues were tabulated and weighted based upon the frequency of occurrence. The design issues that emerged with the greatest frequency were then categorized into themes and a series of design ideas began to emerge from the gathered data. The emergent ideas (in no particular order) are given below with a sample of some common design concerns:

1. Provide adequate and appropriate storage spaces: For many of the row house families a lack of storage was an important issue. Three key concerns identified by the residents were: insufficient space allocated to storage; the storage space...
that existed was poorly located (usually under the stairs) and difficult to access, and that there were missed opportunities for additional storage space in sealed construction voids.

2. Offer a variety unit sizes and configurations: Half (6 out of 12) of the families interviewed felt that the units were too small and did not have enough space for children or enough bedrooms. Many also felt that floor space was poorly utilised and they would have preferred a more open floor plan in the common living areas (living room, kitchen, etc). Fifty-eight percent (7 out of 12) felt that the children’s bedrooms were too small; one interviewee stating that their second bedroom was only 63 square feet.

3. Ensure flexibility: Many families were concerned that their homes may not suit their family as their spatial needs changed over time. Some had already spent considerable time and money renovating their homes to better suit their needs, but felt constrained by the inability to make more substantive changes to their living space.

4. Locate parking a convenient distance from the unit: Many of the residents interviewed lamented over the fact that there was no internal connection between the underground parking and their row house unit. Many stated they would have to exit the parking garage through the main lobby of the high-rise tower portion of their building, exit onto the sidewalk and walk outside to their front door. Many found this access to be poorly thought out.

5. Ensure visual and acoustic privacy: Residents stated that noise from neighbours and street traffic was poorly dealt with in the design of their homes. Many also felt that they always had to keep their window blinds at least partially closed to shield themselves from the view of pedestrians along the sidewalks.

6. Provide adequate circulation routes within the unit: A number of interviewees stated that they could not move a queen size bed up stairs because the stairwell is too narrow and had too many turns.

7. Provide safe, secure, good quality amenity/play spaces for children: Residents want private outdoor space that is large enough to entertain and have dinner with their family, while providing an outdoor space for their children to play with direct sight lines from within their residence. These areas have to be secure and safe for children. Interviewees also felt that the common amenity spaces (indoor and outdoor) needed to be better designed for children, easily accessed, safe and secure.
8. Maintain separation from the street: Some residents stated that their front patios were not deep enough to properly convey the separation of the home from the public street and sidewalk. Some suggested that a larger setback, more intensive landscaping and raising their home higher above the street level could provide a better buffer.

The individual interviews conducted with row house residents yielded invaluable post occupancy feedback into the adequacy of the podium row houses for housing families with children. The design ideas generated from the row house resident interviews provide a solid foundation for the further development of a set of design principles for family-oriented row houses. Further detail of the interview results will be given in Section 4: Principles of Family-Oriented Row House Design.

Phase 4: Developing Principles of Row House Design

To enhance the design ideas gained from the individual interviews a survey of prevalent housing literature was conducted to draw out design lessons to compliment and enrich the design ideas surmised from the resident surveys and interviews. Utilizing literature in combination with the survey and interview data ten design principles were generated and subsequently used to evaluate the family friendliness of a sample of downtown podium row houses. A complete and detailed listing and discussion of the ten principles and key design strategies is provided in Section 4.

Phase 5: Design Review

The fifth and final phase of the research methodology is an evaluation of a sample of downtown row houses. Using the map generated from the row house inventory a sample of developments was selected from neighbourhoods with concentrations of podium row houses. The developments were selected primarily upon the availability and quality of Development Permit Board reports which were used to derive unit floor plans and building layout. An assessment of the family friendliness of the row house designs was then made utilizing the ten design principles. The purpose of this evaluation is not to critique any particular development; rather the intent is to utilise existing buildings developed under current planning, architectural and development practices to draw attention to both positive and negative design outcomes utilizing the newly created design principles.
Summary

Utilizing an inductive grounded approach this research draws upon both quantitative and qualitative methods towards a theory of high-density family oriented row house design. Through both a survey and in depth interviews with residents currently living in downtown row houses a set of row house design ideas were summarized utilizing the residents own experiential housing knowledge. Premised upon these design ideas and in conjunction with a study of prevalent literatures in housing design, key principles were then surmised that inform the design of family-oriented row housing. These principles were then employed to evaluate the family friendliness of a sample of typical row house units currently in the downtown study area.

The following section will present the findings of the resident interviews and the literature in an integrated form with the introduction of the Principles of Family-Oriented Row House Design.
SECTION 4 PRINCIPLES OF FAMILY-ORIENTED ROW HOUSE DESIGN

Drawing upon the results of the survey and individual interviews, as well as building upon existing literature, this section outlines ten design principles for the development of successful family-oriented row homes.

The work of Pander (2003), as introduced in Section 1, set out to create a better understanding of family housing preferences and the potential to attract suburban single-family households to urban attached housing forms. Through a series of interviews conducted with suburban households a theory of attached housing design was developed. The work of Pander made a significant step in documenting and understanding the housing needs and housing design preferences that were important to families with children in the greater Vancouver region. Drawing to the fore a variety of housing needs that attached urban housing would need to satisfy in order to entice a greater number of households with children to occupy higher-density attached housing. The core conclusions of Pander’s research with suburban families are:

1. Families with an urban lifestyle vision are the most likely to perceive urban attached housing as an appealing alternative;
2. Family housing may be more appealing if concentrated on quiet streets close to vibrant community and retail amenities to enable this lifestyle;
3. Satisfying a family’s need for sanctuary through the provision of sufficient and appropriately laid-out interior space is key to increasing the appeal of attached housing alternatives.

In contrast to the findings of Pander this research focuses upon an existing urban attached housing form – the downtown podium row house – seeking the housing experience of families that have already chosen attached housing in an urban setting. Through the focused nature of this research the intent is to develop design principles that utilise a combination of post occupancy design feedback from resident families and prevalent housing literature.

Despite the variety and richness of the design issues brought forward by the interview participants a number of design issues received considerable focus. It is these issues that evolved into the following ten principles of family-oriented design.
1 Safety

Principle:

Households with children must feel their housing is secure.

Discussion:

Perceptions, both real and imagined, of property crime and personal assault exist in most cities. Housing design that is cognisant of external threats and incorporates design approaches that dissuade break and entry and minimize blind corners and unsafe entries might promote feelings of safety and security. Twenty-nine percent (9 out of 31) respondents surveyed did not feel that their neighbourhood is safe. Interviewees shared their fears of personal assault and property crime, often identifying an increase in homeless persons and people with addiction on their street as well as intoxicated patrons leaving night clubs as major factors underlying their fears. Interviewees relayed incidents of patio furniture and even some plants being stolen from their front patios. One interviewee described an unsafe architectural detail at the side of their building that let intruders climb up to the buildings interior courtyard and also onto their units second floor balcony. Others spoke of the lack of security of courtyard play areas, where anyone off the street could enter and be in contact with children (Figure 10).

Jane Jacobs (1961) suggests that resident safety can be promoted by clear demarcations between public and private spaces. A sense of separation can be achieved, for example, by elevating private patios above sidewalks (approximately one metre) or placing a barrier such as fencing, gates and shrubbery at the perimeter. Security is also enhanced where there are concentrations of street-oriented housing with units facing the street without gaps and blank walls (Wilson 2003 and Jacobs 1961). Calthorpe (1993) extends the ideas outlined by Wilson and Jacobs and suggests that private front yard balconies or stoops create an opportunity for neighbour interaction and the promotion of ‘eyes on the street’. Housing designed with opportunities for greater neighbour contact and increased time spent in semi-private street-oriented spaces increase surveillance of both public and private property. Yet as Marcus and Sarkissian (1986) point out design must balance surveillance with privacy.

While increased community interaction and surveillance will improve safety, design details should be sufficiently scrutinized to lessen potential security threats. Architectural elements should be evaluated to ensure that they are not creating unsafe spaces nor, providing access routes to upper-storey windows, balconies and
private courtyards. Stone and brick cladding and decorative trelliswork, for example, if designed improperly can be utilised as a ladder to gain access onto balconies and windows. Entry and exit routes should promote security providing un-obscured sight lines in open and well-lit spaces.

Key Design Strategies:

- Ensure units are street oriented and promote neighbour interaction
- Clearly demarcate public and private spaces
- Balance surveillance with privacy when designing units
- Ensure entries and exits are well lit and have clear sight lines
- Scrutinize architectural details for potential security breaches (Figure 11)

2 Individuality

Principle:

Design unit facades to promote the individuality of the resident.

Discussion:

The development of row type housing has resonated with many households in one key way: the provision of a street-oriented front door. A number of interviewees identified having their own front door as a major factor in their choosing a row house housing form. The street-oriented front door gives residents the sense of individuality, of living in a single-family structure rather than a large multi-family development. Yet, residents reported wanting greater individuality. This individuality could be achieved in a number of ways including a greater variety of colour use to distinguish individual town homes and that utilizing a more organic design rather than a cookie cutter look when designing developments.

Existing literature indicates that people do not want to live in rows of identical houses as they create a sense of monotony and the perception of higher densities (Whitaker 1996, 109; Marcus and Sarkissian 1986, 34). Individuality is a key factor that requires strong consideration in row house design. A house is more than a shelter; it is a reflection of the individuality of its residents (Davis 1995). Facades of multi-family...

Figure 11: Architectural details such as this gate and roof can be easily climbed admitting strangers to the interior courtyard.
housing can be embellished to differentiate the individual dwellings behind them. Exterior differentiation of unit façade can enhance resident identification and pride in their dwelling (Mackintosh 1990) and provide a representation of our selves (Marcus 1990). Articulated building walls, variations in colour and cladding materials, roofline and the positioning of entrances can break down the monotony of row house facades. Through the addition of various design elements the podium row house could achieve a greater sense of individuality to the residents promoting a more intense sense of ownership and enhanced wayfinding.

**Key Design Strategies:**

- Ensure unit entrances (front doors along the street) can be easily identified and differentiated
- Employ varying façade articulation
- Integrate differing architectural elements into each unit including cladding materials and roof styles (Figure 12a & b)
- Utilise a coordinated but varied colour palette
- Promote opportunities for individualistic decoration and use in private outdoor spaces

**3 Unit Size**

**Principle:**

Family-oriented housing requires more than 2 bedrooms and rooms that are relatively larger than those found in housing designed for households without children.

**Discussion:**

Typically land economics influence and potentially constrain the size of housing units in higher density neighbourhoods. Developers build housing that will appeal to the largest segment of the housing market at a price that will not deter potential buyers. The growth of larger households seeking more urban housing locations will entice the market to produce housing that suits the needs and desires of this emerging market segment. However, many of the units produced to date do not appear to satisfy the...
needs of larger households surveyed in this study.

Families with children of diverse ages were interviewed in the course of this research. Three pieces of knowledge were gathered and strongly reinforced from these interviews.

1. Households with teenage children currently living in the downtown typically only had one child. A common complaint that emerged in the interviews was that their child(ren) had no private social space of their own. Because their bedrooms were so small – often with a space that could barely contain a bed – teenagers had trouble finding space to be away from the rest of the household.

2. Households with a young child (or children) were not sure if they would continue to reside in the downtown when their children got older, or if they decided to have another child due to the lack of larger units.

3. High-density housing needs to be designed to maximize efficient use of the unit envelope and promote spaciousness through thoughtful design.

Ample space is an important design consideration for households with children. Not only in the provision of a sufficient number of adequately sized bedrooms, but also in size and layout of common living areas.

Kitchens, dining areas and living rooms need to be designed to accommodate four or more people at one time. In many cases interviewees had removed main floor bathrooms to enlarge kitchen areas to make room for not only more cupboards or pantry space for greater food storage, but also to create more space in kitchens for greater family interaction. Living room space was often criticized for a lack of blank walls to accommodate larger furniture pieces such as couches. Many interviewees’ living rooms could only accommodate a few chairs or maybe a love seat leaving the household with no place to comfortably congregate and spend time together.

In high-density housing space is a premium; consequently, Alexander (1977) suggests that all parts of a house should be designed to promote use. Interviewees in this study cited poor unit layout and misuse of valuable floor space as a key design flaw. Many suggested that too much attention was spent providing large master bedroom en suite bathrooms at the expense of providing adequately size second and third bedrooms for children.

Matesi (2001) suggests that urban family housing needs to be ample and flexible with space to accommodate at least a family of four and flexible enough to enable simple renovation as spatial needs change throughout the life course. While Davis (1995)
suggests unit size is tied to the particular life stage of the household; up-sizing or downsizing through moving is not always a desirable solution for families. Changing schools, finding quality day care and the loss of established local social networks through relocating can be detrimental to the happiness and health of the family.

Key Design Strategies:

- Design housing for families that include 3 bedroom (or more) units
- Ensure bedrooms are large enough to provide both a place to sleep and a social space
- Design common living spaces that are large enough to comfortably accommodate 4 to 6 adults
- Integrate efficient circulation and ample natural lighting to enhance spaciousness
- Enhance connections between private outdoor patios and common living spaces

4 Flexibility

Principle:
Design family housing with flexible space and construction practices.

Discussion:
A household’s spatial needs change throughout a family’s life cycle. Many of the households interviewed expressed a strong desire for housing that was easily adaptable, where a resident could remove a bathroom to make a kitchen larger, add closet space in an open high ceiling stairwell, shrink one bedroom to enlarge another, or enclose an outdoor balcony for a home office. These spatial modifications are typical of many households’ desires to change their home to suit a changing lifestyle; yet, a family’s need for additional space (i.e. additional bedrooms for second or third children) becomes a challenge that may send urban-oriented families seeking housing solutions into single-family suburbs. Families need housing that is designed to efficiently adapt to a household’s changing spatial needs (Alexander 1977; Hayden 1986; Johnson 1995; Poddubiuk 1999).

At neither the level of housing design nor the level of community planning do we accord much importance to the changing needs of young families with children

~Johnson 1995
The key to flexible design is design that permits the modification of and the addition of space without prohibitive cost and effort (Friedman 2001). The inclusion of unfinished space is the simplest way to allow for future expansion (Friedman 2001). By developing housing units with unfinished garages, basements, attics or lofts residents have the ability to add walls to partition-off future bedrooms, bathrooms or potentially individual suites for grown children or elderly parents. Davis (1995) suggests that housing should be built to be easily subdivided so that an individual or young couple that have limited spatial needs can purchase larger housing units that are easily partitioned into secondary suites. As the household requires more space for children the suite could be easily reintegrated into the principle dwelling and later as children leave the home the space can be divided off again as a source of retirement income (Calthorpe 1993).

By designing homes that are flexible, families become geographically more stable and the fabric of communities grow stronger. The Canadian Mortgage and Housing Corporation suggest Canadian families tend to chase ideal housing arrangements throughout a families lifecycle (CMHC 1999). Through flexible home design people are able to live longer in their homes (Parker 2003) and maintain community social networks (Poddubiuk 1999). Flexibility can also allow households to individualize their homes in ways that support opportunities for personalization (Marcus and Sarkissian 1986). The ability to modify ones house permits people not only to add needed space but also to give personal meaning to their homes (Marcus and Sarkissian 1986).

Key Design Strategies:

• Utilise building practices that lend themselves to easy renovation

• Provide unfinished or unpartitioned space such as basements or lofts to permit easy opportunities for growing families to modify there living space

• Provide private garage space (with own garage door) with some flex space for storage or a work shop in underground parking structures

• Design housing units to facilitate division into secondary suites
5 Storage

Principle:

Households with children require large amounts of easily accessible storage space.

Discussion:

The provision of adequate storage is an important factor in housing design. Fifty-five percent (17 out of 31) respondents surveyed did not feel that their unit and/or building had adequate storage for their families needs and seventy-five percent (8 out of 12) interviewees indicated that their units lacked sufficient storage. Senior housing researcher for the Canadian Mortgage and Housing Corporation (CMHC) Johnson (1995) suggests that generous and convenient storage space is an important feature of family housing design.

<table>
<thead>
<tr>
<th>Storage Needs</th>
<th>Design Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyday items such as clothing, linens and</td>
<td>Cupboards in bathrooms and kitchens, closets in bedrooms</td>
</tr>
<tr>
<td>bathroom supplies, food and kitchen ware</td>
<td>and hallways</td>
</tr>
<tr>
<td>Seasonal items such as holiday decorations, winter</td>
<td>Moderate-scale spaces located in small closets or</td>
</tr>
<tr>
<td>clothing or snowboards</td>
<td>construction voids</td>
</tr>
<tr>
<td>Cumbersome items that are used daily or even</td>
<td>Large closets or storage rooms (minimum of 2.3 sq. m.</td>
</tr>
<tr>
<td>weekly such as strollers, bicycles, roller blades</td>
<td>(24 sq. ft.) located near unit entries</td>
</tr>
<tr>
<td>and helmets, board games, or yoga mats</td>
<td></td>
</tr>
</tbody>
</table>

All housing requires space to store a variety of household items. These items can be characterized into three broad categories, which in turn require differing storage solutions: everyday items, seasonal items, and cumbersome items (see table above). Most housing is designed with cupboards in bathrooms and kitchens, and closets in bedrooms and hallways to handle the storage of everyday items. Most homes are also designed with moderate-scale storage spaces located in small closets or construction voids, such as spaces under stairwells that manage to contain seasonal and even some less cumbersome items. But many homes, especially higher-density housing types have little or no space to store cumbersome items that households with children
typically own. In higher density housing space is generally at a premium, however, if we are designing high density housing for families, storage needs for households with children need to be accounted for. For example, Alexander (1977) suggests that space to store cumbersome family items should be located near entrances, especially for large outdoor items. Items such as strollers, tricycles, wagons, sporting equipment, scooters, kites, etc. tend to require a place that is easily accessed by adults and children alike. These spaces should be well lit and utilise construction practices that can support shelving and potentially ceiling hooks to hang some items. Housing for families with children needs to be designed with these storage needs in mind.

Key Design Strategies:

- Provide adequate storage for each category of storage use including; everyday, seasonal and cumbersome items
- Locate storage space for cumbersome items near entries (Figure 13a & b)
- Design storage spaces that can accommodate cumbersome items [e.g. by ensuring spaces are a minimum of 2.3 sq. m. (24 sq. ft.)]
- Ensure storage space is well lit
- Enable storage space to be easily accessed by adults and children
- Provide storage space in private garages in underground parking structures

6 Play Space

Principle:
Housing for families needs to be designed with a child’s need for both indoor and outdoor play spaces.

Discussion:
Play is an important factor in the developmental growth of children. The provision of adequate space to promote active and healthy children is directly related to neighbourhood and housing design. VSOCC staff suggest that children living in downtown neighbourhoods experience slower development of gross motor skills relative to other areas of Vancouver. This startling finding necessitates that developers
The needs of children and the importance of children’s play activities receive little attention in the design of most Canadian housing.

~Johnson 1995.

consider children and their activities in the design of higher density housing. Quality housing responds to a variety of household needs. Play is often forgotten in the design of housing but is of great significance to the nurturing of our children. Children need spaces inside and outside the home that are flexible and promote creativity through play (Marcus 1995). For the purpose of this research and simplicity I will categorize play space into indoor and outdoor spaces. Consideration will be afforded firstly to the dwelling unit and its associated private outdoor space, and secondly to the semi-private indoor and outdoor amenity spaces common to all residents in a building.

The design of individual dwelling units should be inclusive of areas that promote and accommodate play. Alexander (1977) argues that there needs to be space to play in the home if children and the household are to be happy, while Johnson (1995) suggests that play is adversely affected by small living spaces. Ensuring that homes have adequate floor space to accommodate play is a necessary component of dwelling units designed for households with children. Yet, many of the respondents in this study stated that their children’s ability to play was constrained by small living, bedroom and outdoor areas. While this does not mean that units for families require a dedicated play room, it may include the provision of such design features as larger bedrooms or alcoves attached to living rooms or kitchens. Another option would be to attach a flex room to main living areas that can act as a play room for a household with younger children and can easily be converted into an office or guest bedroom at a later date. Ensuring the provision of adequate social spaces to accommodate play will increase the attractiveness of row houses to families with children.

Private outdoor areas also play a very important role in providing play space for children. Rear patios adjacent to semi-private courtyards or roof-top decks can provide a great opportunity for children’s play. While strongly dictated by size, the adequacy of these areas may be enhanced through the inclusion of a variety of other factors including: access to sunlight, safety and security of the area, connectivity to the interior spaces and to other common play areas that promote the through flow of play and the programming of the space. Programming may include a variety of hard and soft landscape features such as a concrete patio for chalk art, a small sandbox area and/or play structures.

Many interviewees reported that there was very little play space provided in the common areas of their buildings. With the exception of non-market housing developments that specifically catered to families, the majority of amenity spaces provided within the common areas of buildings were designed for adults and restricted use of children. The non-market developments conversely provided child friendly
active spaces that promoted occupation and play. The one shortcoming of all of the respondent developments, however, was the exclusion of covered outdoor space. In a rainy climate like Vancouver the inclusion of covered play area would be a welcome addition to housing.

**Key Design Strategies:**

- Provide adequate floor space for indoor play within the unit
- Ensure children have direct access to private play space, as well as easily supervised outdoor space
- Locate outdoor play space such that it can be directly and conveniently viewed from within the row house unit
- Design private indoor and outdoor play areas for safety and security to promote unsupervised activities as children get older
- Include an area for outdoor undercover play
- Afford access to communal play areas
- Utilise noise mitigation design techniques to lessen the disturbance of neighbours from outdoor play areas
- Provide a wide variety of age appropriate equipment in communal play areas so as to ensure children are entertained and stimulated

**7 Private Outdoor Space**

**Principle:**

Housing for families must incorporate outdoor space that is adequately programmed, sized and oriented to the homes interior.

**Discussion:**

Fifty percent (6 out of 12) respondents interviewed in this study stated that their outdoor space was poorly designed. Access to private outdoor space plays an important role in the health and well being of families. While many of downtown Vancouver row houses are situated around common courtyards and benefit from proximity of local parks and

*In planning play space, children are the experts*

~Marcus and Sarkissian 1986
the seawall, Bell and Constantinescu (1974) suggest common courtyards or nearby public parks are no substitute for private yards. Quality private yards, decks or patios provide a place of leisure and relaxation for the family but also a space of exploration, learning and independence that aids in the healthy development of children. In these yards young children experience a great sense of freedom and expression (Marcus and Sarkissian 1986) that they may not experience under the constant supervision of parents in public parks. Good housing design needs to be inclusive of well-thought out private outdoor space.

Private yards provide a sanctuary where residents can retreat from household pressures (Marcus and Sarkissian 1986), where residents can be outdoors but away from the public gaze, can enjoy a sunny afternoon or a cool evening breeze and where children can play without direct supervision. To be successful though outdoor areas must provide a degree of privacy and be designed to promote use (Alexander 1977; CMHC 1999). Outdoor privacy in higher density residential areas can be achieved through architectural and landscape devices such as changes in grade (placing private areas slightly higher than surrounding public or common areas), visual screening through the use of fencing and trellis works, or landscaping including the planting of bushes and shrubs. Further, the addition of planting may aid in the dampening of noise thereby enhancing acoustic privacy. Private areas may be demarcated and secured with a gate to visually identify the boundary between public (or semi-public) space and the private home, thus limiting access and promoting feelings of security to residents.

Beyond privacy a livable home must have outdoor space with a quality that attracts use. Key to this quality is proper orientation to the sun (Alexander 1977; Public Administration Service 1948; Marcus and Sarkissian 1986), quality of connection with the interior (Alexander 1977; Stungo 1996; Public Administration Service 1948; Marcus and Sarkissian 1986), adequate size of the outdoor area (Alexander 1977; Marcus and Sarkissian 1986; Murray and Fliess 1970) and the ease of child supervision for families with young children (Johnson 1995; Public Administration Service 1948; Marcus and Sarkissian 1986).

Higher-density housing forms should not negate this principle due to the difficulty in the provision of outdoor privacy. Through creativity and quality design outdoor space in high-density areas can make a substantial difference in the development of a truly livable home.
Key Design Strategies:

• Provide outdoor space that affords a degree of privacy and safety
• Orient outdoor areas to receive direct sunlight
• Ensure outdoor areas are large enough to provide a comfortable space for outdoor eating for at least 4 people and additional room for some child activities (Figure 14)
• Design outdoor areas as an extension of interior living space
• Ensure outdoor areas are well connected to the interior of the home for easy access and to provide clear sight lines to aid in the supervision of children
• Ensure private outdoor space is secure, but well connected to a common courtyard to promote play with other children
• Provide an outside water tap with adequate drainage for plant watering and play (Figure 15)

8 Privacy

Principle:
High-density housing should be designed to enhance both visual and acoustic privacy

Discussion:
Living in close proximity to one’s neighbours and in buildings with limited yard setbacks can potentially translate into a low degree of privacy. Seventy-five percent (9 out of 12) of residents interviewed stated that their homes lacked sufficient privacy. While most were satisfied with their visual privacy from the public and their neighbours many were disappointed with the transmission of sound from adjoining units and from passing cars and pedestrians. Marcus and Sarkissian (1986) suggest that in higher-density development privacy is an important design consideration; if left unchecked can detrimentally affect the health of residents (Public Administration Service 1948).

Many researchers have drawn attention to the necessity for visual separation in residential developments. The incorporation of simple architectural devices such as

Figure 14: Ensure private outdoor space provides enough area to accommodate a table, chairs and a space for children to play. This diagram illustrates a patio that is 5.2 metres (17 feet) wide and 6 metres (20 feet) deep with ample room to promote use.

Figure 15: All outdoor spaces should have a water tap to provide an opportunity for gardening and enhance opportunity for play.
elevated front yards or stoops, fencing and planting, for example, can disrupt the line of sight between pedestrian and resident providing separation between the public street and private space of the home (Alexander 1977; Dutton 2000; Duany, Plater-Zyberk and Speck 2000; Whitaker 1996; Wilson 2003; Matesi 2001; Dober 1964; Marcus and Sarkissian 1986). Moreover, exterior party walls, fencing, shrubbery and hedging can aid in separating adjoining units providing a greater sense of separation from neighbours.

Noise can increase the perception of density (Marcus and Sarkissian 1986); as such dampening noise transmission has the potential to greatly enhance the liveability of high-density housing. Utilizing sound dampening construction practices within the unit such as party walls, insulation and lightweight concrete floor topping in wood frame construction aid in decreasing the transmission of noise between units. The most common complaint among interviewees, however, is noise coming from adjacent streets including traffic and pedestrian noise. Two key approaches to limiting the potential for these disturbances are incorporating building design features that dampen acoustic reverberance (Johnson 1995; Dober 1964; Alexander 1977) and ensuring the inclusion of a gradient of privacy in unit layout (Alexander 1977; Moudon 1982; Hayden 1986). Whitaker (1996) states,

The dichotomy between front and back, public and private, frequently extends inside of our buildings. In many American homes, a hallway or entry foyer will connect the front door directly to the more formal and public rooms where we craft our image—the living room and dining room. Behind these areas, at the back of the house, are the family room and the eat-in kitchen where we lead our personal and informal lives (35).

Figure 16: Buildings that employ the gradient of privacy in their floor plan layout will be inherently more private and comfortable.
Key Design Strategies:

- Elevate housing above public streets and sidewalks (Figure 17a & b)
- Provide fencing and landscaping that tastefully screens direct sight lines
- Utilise sound dampening construction practices and technologies
- Ensure floor plans reflect and respect the gradient of privacy (Figure 16)

9 Unit Circulation

Principle:

Quality housing must have thoughtful internal circulation and good connections to parking.

Discussion:

The internal organization of a house is closely related to its lot size and particularly to its width (Moudon 1982). The arrangement of these factors set the organization of a housing units' internal layout and determine the subsequent comfort of the home. Throughout the research process interviewees referred to deficiencies in their homes such as misplaced stairwells, poor room organization and the lack of quality connections to their parking.

Once the layout of rooms is determined by the size of the unit and its access to light and air, circulation routes or hallways are placed to connect the constituent living spaces of the home. The importance of these connections should not be neglected as they are the support core of a home (Moudon 1982). Although the research suggests that circulation routes should project an inherent ease of movement, a number of interviewees stated that their hallways and stairwells were so narrow they were unable to move in some of their furniture pieces. Unit circulation routes should therefore be well located, simple and wide enough to easily navigate with furniture.

Many interviewees also lamented that their resident parking was not better located in relation to their unit, or better yet connected directly to it. Some row house residents who parked their vehicles in the common underground parking structure, for example, were required to exit the building through the lobby of the residential apartment tower.
to the outdoor sidewalk, walk to their front door and then enter their unit. This poor connection presents a significant circulation barrier, particularly to the parents of young children, who may be carrying a child and items such as a car seat and groceries. In some cases, however, resident parking was directly connected to the unit by a private stair from their underground parking into their unit. This direct connection, often from a private garage space in the underground parking structure, was greatly valued by residents and viewed as a major innovation in high-density housing design.

Ease of circulation both within the unit and between the unit and resident parking are strong determinants in the quality and comfort of a home. Close attention to these design foundations will greatly enhance the liveability of housing for families.

Key Design Strategies:

- Ensure circulation routes, such as hallways and stairwells, are wide enough to promote unhindered movement of people and their furniture
- Locate parking such that it is easily accessed by residents; ideally these could be directly connected to row house units

10 Places of Sanctuary in the Home

Principle:

Design family housing such that family members have a private social place of their own.

Discussion:

In high density housing floor space is typically limited and family members are often in constant contact with each other. Many interviewees suggested that their living space was cramped and offered limited privacy from other family members. This issue seemed to be an increasing concern for parents of teenaged children who expressed a need for a place to have friends over that was away from the constant gaze of parents. Marcus (1995) suggests that a space of one’s own is important in maintaining balanced relations within the family. People need to have a place to retreat, a place to recharge and be away from the constant stimulation of family life where one can close a door and be alone – a place where they feel in control (Marcus 1995).
The provision of sanctuaries in the home can range from enlarged bedrooms that include a sitting area to having a separate social space for children like a games room (Alexander, 1977) or even separate living quarters for adolescent children (Johnson, 1995; Marcus, 1990). The provision of private garages can also act as a sanctuary where family members can go and work on crafts at a work bench, fix a bike or wax a car.

Key Design Strategies:

- Ensure all families members have access to a space that affords a high degree of personal privacy
- Enlarge bedrooms to include sitting areas (Figure 18)
- Include a den/sitting room in unit layout design
- Provide a flex space that can be easily transformed into separate living quarters for adolescent children
- Provide private garages large enough to permit a work space or craft room

Summary

The resident interviews provided great insight into both the successful and not so successful elements of the podium tower row house design. A review of housing literature was undertaken to fortify the design ideas generated by the residents into a set of ten family-oriented design principles and their constituent key design strategies. These principles are summarized below:

**Principle 1 Safety**: Households with children must feel their housing is secure.

**Principle 2 Individuality**: Design unit facades to promote the individuality of the resident.

**Principle 3 Unit Size**: Family-oriented housing requires more than 2 bedrooms and rooms that are relatively larger than those found in housing designed for households without children.

**Principle 4 Flexibility**: Design family housing with flexible space and construction practices.
Principle 5 Storage: Households with children require large amounts of easily accessible storage space.

Principle 6 Play Space: Housing for families needs to be designed with a child’s need for both indoor and outdoor play spaces.

Principle 7 Private Outdoor Space: Housing for families must incorporate outdoor space that is adequately programmed, sized and oriented to the homes interior.

Principle 8 Privacy: High-density housing should be designed to enhance both visual and acoustic privacy.

Principle 9 Unit Circulation: Quality housing must have thoughtful internal circulation and good connections to parking.

Principle 10 Places of Sanctuary in the Home: Design family housing such that family members have a private social place of their own.

It is not surprising that many of the principles strongly correlate with the design objectives of the High-Density Housing for Families with Children Guidelines developed and adopted by the City of Vancouver in 1989. The 1989 guidelines are a thoughtful and comprehensive set of housing objectives and criteria for family-oriented housing development. What is significant to note is that many of the above noted principles were derived from design deficiencies identified by resident families currently living in downtown row homes. This finding suggests that a number of the row houses were developed without due consideration of the 1989 guideline objectives.

While the interview data provided a number of design ideas and ultimately design principles the residents are vested in their housing which may affect their perceptions of their living space. The next section will test the principles against a number of approved downtown podium row houses. It must be recognized that these principles are not meant to be an exhaustive set of measures for evaluating the family friendliness of row housing. They are, however, a set of housing principles developed from careful consideration of both post occupancy evaluation of the housing experience of families living in podium tower row houses and existing literature.
SECTION 5 DESIGN REVIEW: APPLYING THE PRINCIPLES OF FAMILY-ORIENTED DESIGN

To complete this research project the principles of family-oriented row house design were applied to a sample of five row house developments selected from the study area. In so doing the intention is to demonstrate their application and to act as an evaluation of a number of approved developments. The ten principles outlined in the previous section form the basis of this analysis. Each study will begin with a basic neighbourhood location and development scale in the form of a unit count, a list of the applicable city bylaws and guidelines applied to the development and a brief description of the row house form and the unit's situation on the development site followed by a discussion of the design directly referencing the ten principles.

It must be noted that the floor plans displayed in this document were adapted from City of Vancouver Development Permit Board reports and may not accurately represent the design ultimately constructed after final issuance of the development permit and building permits. Further, due to the desire to protect the privacy and security of the residents the development name, street and unit address were intentionally omitted.
Study 1: Marinaside Crescent

Location: North False Creek Roundhouse Neighbourhood

Total Number of Units: 223 market units

Ground Oriented Row Houses: 38 units

Applicable Bylaws and Guidelines:
- Roundhouse CD-1 Bylaw
- Roundhouse CD-1 Guidelines
- Housing Families with Children at High Densities Guidelines

Description: The row house type consists of a three-bedroom, two and a half bathroom unit fronting the False Creek seawall and backing onto an interior courtyard green space. This three-storey unit includes an attached private two-car garage in the underground structure and two above-grade storeys completely daylighted on both the False Creek seawall and the courtyard facades.
Analysis

Principle 1: Safety

This unit is part of a row of units fronting the picturesque False Creek seawall, a heavily trafficked walkway utilised year round by pedestrians and cyclists. The unit has two relatively large ground floor patios and two small second floor balconies providing direct surveillance of activities along the seawall and the ability to promote activity and interaction amongst neighbours. The ground floor patios are elevated and surrounded by landscaped planters to clearly demarcate the private space from the public walkway. The front patio adjacent to the seawall also benefits from a small entry gate and a semi-private walkway common to the development that acts as a buffer to the public realm.

The orientation to the seawall and design of the patios and balconies provide ample opportunity for “eyes on the street”. The patios are comfortable enough to attract residents to spend time in these spaces and promote neighbourhood social interaction where neighbours get to know one another and look out for each other and their property.

The courtyard area, however, grants easy access to the public and presents a potential security breach to the ground floor row house units. In addition, a young child left unattended for even a moment could possibly wander away out to the street.

Overall this row house provides a number of thoughtful design features that can aid in the promotion of resident safety. The security of the courtyard and the children’s play area inside is somewhat lacking and could benefit from additional measures such as fencing and gates and overlook from the interior amenity space. A row of treadmills lined up along a window overlooking the playground could help in enhancing the security of the playground.

Principle 2: Individuality

The facades of these units utilise articulation, vertical design elements and a mixture of cladding materials to clearly identify each individual unit as a separate household while minimizing the horizontal transition to the townhouses stacked above so that each row reads as one five-storey unit. The colours of the exterior cladding of this unit, however, lack any differentiation to their neighbours building a certain amount of monotony to the row. This particular row of homes is marginally broken down by a five unit rhythm in
façade design through the variation in the living rooms bay window. The large patios and their planters provide opportunity for individualization through the use of patio furniture, planting and outdoor art. One resident had placed a pair of ornamental flamingos in their front yard (Figure 21) clearly identifying their home to visitors searching for an address.

A minimal amount of individuality was prescribed to this row house design. The individuality of the home does however benefit from the opportunities presented by the large front yard patio.

Principle 3: Unit Size

This three-bedroom row house is approximately 143 square metres (1,540 square feet) with a private garage in the underground structure directly connected to the unit through a private stairwell. The ground floor living area is an open floor plan consisting of the living room, dining room, kitchen, a powder room and laundry closet. The ground floor has two large outdoor patios; one connected to the living room at the front of the home and the second connected to the kitchen at the rear of the unit. The second floor provides space for a relatively large master bedroom with an en suite bathroom and two small balconies overlooking the seawall and at the rear of the home adjacent to the interior courtyard two smaller bedrooms. There is also an additional full bathroom on the second floor.

The size of this unit, while large by downtown Vancouver standards, falls short in providing adequate second and third bedrooms with room for a private social space to place a chair or two in addition to a bed. In higher density housing where houses are not typically designed with a second living room (or recreation room for children) there must be allowances for larger bedrooms to provide semi-private social spaces for adolescent children. This row house could also benefit with the addition of a den to provide a space for a desk and computer station for household bookkeeping and children’s homework.

This design though is quite successful in providing enhanced connections between indoor living spaces and outdoor patios and balconies. These connections can potentially extend spatial boundaries of the already ample sized living room, kitchen and master bedroom areas.
Principle 4: Flexibility
This row house design does not seem to provide any opportunity for easy renovation, expansion or division into secondary suites.

Principle 5: Storage
This design provided a reasonable amount of storage for everyday household items and seasonal items in cupboards, closets and a storage area under the stairs on the ground floor. This row house does also benefit from a storage room provided in the private underground garage and by the garage itself. The storage room in the garage and any extra space in the garage around the vehicle is a great space to store seasonal items, bicycles and large outdoor toys.

While this home could have benefited from an easily accessed storage space on the ground floor for large cumbersome daily items, such as a stroller, the underground garage provides a great space for families to store excess items.

Principle 6: Play Space
This housing design does not provide for any additional play spaces such as an alcove off of a family room or kitchen. In addition the second and third bedrooms are minimal in floor area and afford little space for a play area. The private outdoor spaces, especially the ground floor patios, conversely provide an excellent opportunity for outdoor play that can be directly supervised from within the row house. The outdoor patios are relatively large, with the rear patio measuring approximately 4.5 meters by 5.5 meters (15 feet by 18 feet), and could be utilised for outdoor play. The rear patio is open to the interior courtyard and a children’s play area is adjacent to this particular row house promoting the through flow of play. The common interior courtyard is landscaped with areas that could easily promote creative play. There is however an absence of any security measures, as previously stated above in Principle 1: Safety, to stop intruders from entering the common courtyard or to stop a small toddler from wandering off. This may inhibit the ability of children to play in this area unsupervised.

The children’s play area in the courtyard is somewhat limited in it's programming, providing a small play structure. This area may be appropriate for toddlers but would be insufficient in entertaining any child for more than a small amount of time. This area could benefit from a larger play structure with a swing set and/or monkey bars and the
addition of a sand box would make great strides in better capturing the imagination of children. A flat grassy and a hard surfaced area would also promote more intensive play such as kicking a soccer ball, throwing a baseball or playing basketball. There also appeared to be no outdoor covered play area that would permit outdoor play on a rainy Vancouver day. This development does though benefit from its proximity to a park and the adjacent seawall.

Overall this row house unit provides little indoor play space in the home. Outdoor play, however, is supported with the provision of the private ground floor patios and access to the common internal courtyard containing a playground area for younger children. Expansion of the internal courtyard and playground area to provide a broader range of activities would have made this outdoor space more successful. The private outdoor patios provide an excellent opportunity for outdoor children’s play.

Principle 7: Private Outdoor Space

This row house design provides a number of well-designed semi-private outdoor spaces. There are two large ground floor patios and two small second floor patios. The second floor patios are connected to the master bedroom and the larger – an enclosed balcony - could provide a private sitting (or place of sanctuary) for parents. These two balconies would have a beautiful view overlooking the serenity of False Creek and the activity along the seawall.

The ground floor patios are sized to provide adequate space to place outdoor furniture and possibly a child’s wading pool and outdoor toys. The four outdoor spaces are well connected to the homes living spaces and the ground floor patios provide direct sight lines for parents to monitor young children playing outside while the parents remain in the kitchen or living room. The rear patio also provides adequate connectivity to the interior courtyard that contains a small children’s play area.

In combination the outdoor spaces are well oriented to receive direct sunlight throughout most of the day and planters and foliage providing adequate visual privacy from neighbours and the public significantly surround each ground floor patio.

Overall, private outdoor living spaces were well thought out and designed for this row house unit. They, however, could have been improved through the promotion of greater privacy measures.
Principle 8: Privacy

This home utilizes a number of design elements to enhance the resident’s privacy. This row house benefits from its separation from the street and associated vehicular street noise but has the potential to be greatly impacted by its frontage along the False Creek seawall. The seawall can be an extremely busy pedestrian walkway potentially generating both noise and visual intrusion.

This row house design utilises a number of architectural devices such as an elevated front patio and ground floor, ample depth to the ground floor patio and patio landscape planters and a gate to help buffer the homes private spaces. A semi-private walkway along the property edge of the development also helps distance the home from the seawall. These simple devices help obscure sight lines, dampen sound and signal the beginning of the homes gradient of privacy. The depth of the patio and landscaping (flowers, shrubs and trees) also provide an acoustic buffer between the public walkway and the private home.

Once you enter the home the gradient of privacy extends throughout the first and second floor. The first floor begins, after entering the front door with the semi-private living room where visitors are welcomed. Beyond the living room the rest of the ground floor is elevated up a few stairs visually separating the more private dining area, kitchen and breakfast nook from the homes entry and living room. This simple change in grade helps signal the transition of the homes semi-private entry and living room spaces to the more private eating and cooking areas. The change in grade between the living room and the dining room and kitchen in combination with the elevated outdoor patio act well together to further obscure sight lines from the outdoor public seawall into the home through the living room window. The level of privacy in the home increases as visitors and residents travel further upstairs into the sleeping and bathroom areas.

Acoustic privacy between family members on the second floor is enhanced by the room layout. Specifically, by placing the stairwell and bathroom between the master and the second and third bedrooms the privacy between parents and children is enhanced.

Overall, this row house utilises thoughtful design to promote the privacy of its residents. This design could have been further enhanced by more intensive landscaping design.

Note: Due to the limitation of the minimal detail of Development Permit drawings it is impossible to assess the quality of the sound dampening construction practices and technologies.
Principle 9: Unit Circulation

Circulation routes in this home are well designed providing easy and simple access between all interior spaces and the outdoor patio, courtyard and seawall. The change in direction in the stairwell between the ground floor and the second floor, however, can present a barrier to moving larger furniture items such as a queen size bed mattress upstairs.

The private stairwell directly connecting the units’ living space to their private underground garage is a great benefit to high-density family housing.

Overall, the internal connection between the unit and their parking is good, but the winding nature of the stairwell between the ground and second floor can directly inhibit circulation and the movement of furniture between these two floors.

Principle 10: Places of Sanctuary in the Home

Supposing a two-child household this row house design provides family members a room of their own to retreat – their bedrooms. Little space, however, is provided in each bedroom for a sitting area and this row house design does not include a den or sitting room that is separate from the common living areas of the home. The master bedroom does have an enclosed balcony that could act as a sitting area for parents though this home could benefit from enlarged second and third bedrooms and a flex room that could be utilised as a den, sitting room, children's play room or guest bedroom.

Study 1 Summary

Overall, the Marinaside Crescent row house design satisfies many of the key design strategies prescribed by the Principles of Family-Oriented Row House Design but fell short of satisfying the majority of key design strategies. This design though should be noted for its’ provision of a number of key positive design features such as quality private outdoor spaces which helped enhance privacy, safety, spaciousness and outdoor play. The innovation of the attached garage in the underground structures should also be viewed as a resounding success for families.
Study 2: Milross Avenue

Location: East False Creek Neighbourhood
Total Number of Units: 164 market Units
Ground Oriented Row Houses: 17 Units
Applicable Bylaws and Guidelines:
   CD-1 (432) Bylaw
   Housing Families with Children at High Densities Guidelines

Description: The row house type consists of a two-bedroom, two and a half bathroom plus den unit fronting a residential street and backing onto an interior courtyard green space. This three-storey unit includes an attached private two-car garage in the underground structure and two above-grade storeys completely daylighted on both the street and courtyard facades.
Analysis

Principle 1: Safety

This unit is part of a row of units fronting a neighbourhood collector street developed principally for the use of this residential development. The row house has two ground floor patios, one adjacent to the street at the front of the unit and the second at the rear of the unit adjacent to the interior courtyard. These private outdoor spaces provide direct surveillance of both the street and interior courtyard. The street front patio, however, lacks sufficient depth to attract prolonged activity and residential “eyes on the street”. Further, the interior layout places a powder room and den, two low activity spaces, adjacent to the front of the unit which decreases the potential for street surveillance. The ground floor patio along the street is elevated approximately 1.5 metres (4.9 feet) with a gate and stairwell to demarcate the private residential space from the public walkway.

The rear patio adjacent to the interior courtyard green space is surrounded by landscape planters with a walkway providing access from the common courtyard to the units’ back door. The interior courtyard is relatively secured being elevated and completely gated restricting access to only residents. This security measure means that children can play relatively unattended in the courtyard or at the private playground. The rear patio and second floor balcony are comfortable enough to attract residents to spend time in these spaces and promote neighbourhood social interaction where neighbours get to know one another and look out for each other and their property.

Overall, this row house provides a number of design features that can aid in the promotion of resident safety. It is, however, concerning that there is little opportunity for resident activity and surveillance along the street facade. The courtyard and children’s play area appear secure from non-resident threats. The playground is directly adjacent to the interior amenity space where residents inside have direct overlook onto the playground providing the potential of community surveillance from the interior amenity space.

Principle 2: Individuality

The façade of this row of units utilises little articulation or strong vertical design elements to enhance the individuality of each unit. The exterior of this particular unit and its neighbour are strongly differentiated from the rest of the row through colour.
Section 5: Design Review: Applying the Principles of Family-Oriented Row House Design

The two end units in this row are a rich red in contrast to the cool cream colours of the adjoining units (Figure 24). This colour change adds an element of surprise and breaks down the monotony to the row. This particular row of homes also benefits from a variation in front façade design through the addition of a bay window on six of the eight units in this row. The front yard patio, however, provides little opportunity for individualization through the use of patio furniture, planting and outdoor art owing to its minimal depth.

Although this unit benefits from a contrasting cladding colour which helps create a sense of individuality, it could have further benefited from greater unit articulation and architectural interest to the front and rear facade and a larger front patio. The individuality of the home does however benefit from the opportunities presented by the large rear yard patio.

Principle 3: Unit Size

This two-bedroom row house is approximately 122 square metres (1,310 square feet) with a private garage in the underground structure directly connected to the unit through a private stairwell. The ground floor living area is a moderately closed floor plan consisting of a combined living/dining room, kitchen, a powder room, den and closet space. The ground floor has two outdoor patios: one connected to the living room and kitchen at the rear of the home and the second connected to the front entry, powder room and den at the front of the unit. The second floor provides space for a relatively large master bedroom with an en suite bathroom and a balcony overlooking the courtyard and a second smaller bedroom with an en suite bathroom at the front of the home adjacent to the street. Laundry facilities are located in a small closet on the second floor.

The size of this unit falls short in providing a minimum of three bedrooms. Further, the bedrooms do not provide any opportunity for a private social space to place a chair or two in addition to the bed. In higher density housing where houses are not typically designed with a second living room (or recreation room for children) there must be allowances for larger bedrooms to provide semi-private social spaces for adolescent children. This row house design, however, does benefit from the provision of a den which can provide a space for a desk and computer station for household bookkeeping and children's homework or provide a flex-space that can be utilised as a children’s play space or guest bedroom.

This design though is quite successful in providing a connection between indoor living...
spaces (kitchen and living room) and the rear outdoor patio and balcony. These connections can potentially extend spatial boundaries of the living room, kitchen and master bedroom areas.

Overall, this row house design lacks sufficient floor space and would benefit from larger rooms to better accommodate adequate furniture and should include at least three bedrooms with room for a private social space in each bedroom.

**Principle 4: Flexibility**

This row house design does not seem to provide any opportunity for easy renovation, expansion or division into secondary suites.

**Principle 5: Storage**

This design provided a reasonable amount of storage for everyday household items and seasonal items in cupboards and closets. This row house does also benefit from a storage room provided in the private underground garage and by the garage itself. The storage room in the garage and any extra space in the garage around the vehicle is a great space to store seasonal items such as bicycles and large outdoor toys.

While this home could have benefited from an easily accessed storage space on the ground floor for large daily items, such as a stroller, the underground garage provides a good space for families to store excess items.

**Principle 6: Play Space**

This housing design does not provide for any additional play spaces such as an alcove off of a family room or kitchen. Further, the second bedroom is minimal in floor area and affords little additional space for a play area. The private outdoor patio at the rear of the unit, however, provides an excellent opportunity for outdoor play that can be directly supervised from within the home. The outdoor patio is, approximately 6 metres by 2.4 metres (20 feet by 8 feet), and could be utilised for outdoor play. The rear patio is open to the interior courtyard and a children’s play area is located relatively close to the unit; these connections succeed in promoting through flow of play.

The children’s play area in the courtyard is somewhat limited in its programming, providing a small play structure. Although, this area may be appropriate for toddlers,
it would be insufficient in entertaining any child for more than a small amount of time. This area could benefit from a larger play structure with a swing set and/or monkey bars and the addition of a sand box would make great strides in better capturing the imagination of children. A flat grassy and a hard surfaced area would also promote more intensive play such as kicking a soccer ball, throwing a baseball or playing basketball. There also appeared to be no outdoor covered play area that would permit outdoor play on a rainy Vancouver day. This development benefits from its proximity to a park and the adjacent seawall.

Overall this row house unit provides little indoor play space in the home. Outdoor play, however, is supported with the provision of the private ground floor patio at the rear of the unit and access to the common internal courtyard containing a playground area for younger children. Expansion of the playground area to provide a broader range of activities would have made this outdoor space more successful.

Principle 7: Private Outdoor Space

This row house design provides a number of private outdoor spaces. There are two ground floor patios and a second floor balcony. The second floor balcony at the rear of the home could provide a private sitting (or place of sanctuary) for parents. The balcony also provides an excellent opportunity to monitor children playing in the courtyard.

The ground floor patio at the rear of the unit is sized to provide a moderately good space to place outdoor furniture and possibly a child's wading pool and outdoor toys; the front yard patio is undersized and affords little opportunity for use. The two outdoor spaces at the rear of the unit are well connected to the home's living spaces; the ground floor patio provides direct sight lines for parents to monitor young children playing outside while the parents remain in the kitchen or living room. The rear patio also provides adequate connectivity to the interior courtyard that contains a small children's play area.

The rear outdoor spaces are well oriented to receive direct sunlight throughout most of the day and planters and foliage on the rear ground floor patio provides adequate visual privacy from neighbours.

Overall, the private outdoor living space could have benefitted from an expansion to the depth of the front patio to provide for increased opportunity for activity.
Principle 8: Privacy

This row house design utilises a number of architectural devices such as an elevated front patio and ground floor [approximately 1.5 metres (4.9 feet] above street level) and a gate to help buffer the homes private spaces from the pedestrian realm at the front of the home. These simple devices help obscure sight lines and signal the beginning of the homes gradient of privacy. The front entry of this unit provides only marginal opportunities for landscaping (flowers, shrubs and trees) that could otherwise enhance both the visual and acoustic buffer between the public street and the private home.

Once you enter the home the gradient of privacy should extend throughout the first and second floor beginning with semi-private social space such as a sitting or living room where a resident would meet visitors and invite them into the home. This units design does not follow that mantra beginning, after entering the front door, in an entry hallway which gives immediate access to the powder room and the stairwell leading directly upstairs to the private bedrooms and bathrooms. Beyond this initial point of entry and directly down the hallway the kitchen and living room are located at the rear of the unit. The ground floor layout provides a direct sight line from the front door, down the hallway to the kitchen. The kitchen is a major service area and often untidy that should only be viewed by visitors if they are invited into the home and permitted to enter into the more private living areas. The level of privacy within the main floor of this home is minimal due to the inattention to the gradient of privacy in the organization of the layout of the first floor rooms and stairwell.

The second floor sleeping and bathroom areas achieve a much better result by providing private en suite bathrooms to each bedroom and through creative room layout. Acoustic privacy between family members on the second floor is enhanced, specifically, by placing a bathroom and closet wall between the master and the second bedroom.

Overall, this row house utilises poor design to promote the privacy of its residents. This design could have been further enhanced by more intensive landscaping, more depth to the front patio, complete redesign and orientation of the ground floor living areas and re-orientation of the stairwell access to the second floor away from the front door entry.

Footnote: Due to the limitation of the minimal detail of Development Permit drawings it is impossible to assess the quality of the sound dampening construction practices and technologies.
Principle 9: Unit Circulation

Circulation routes in this home are well designed providing easy and simple access between the garage, first and second floors. The connection between rooms on the first floor though is somewhat constrained due to closed floor plan design. For example, if a resident was working in the den and the door bell rang they would have to travel through the living/dining room, kitchen, down the hallway to the front door.

The kitchen and living room spaces are, however, well connected to the rear outdoor patio and courtyard. The private stairwell directly connecting the units’ living space to their private underground garage is a great benefit to high-density family housing.

Overall, the circulation routes in this row house design provide adequate movement and connection to the rear outdoor patio and the internal connection between the unit and their parking is excellent.

Principle 10: Places of Sanctuary in the Home

Supposing a one child household this row house design provides family members a room of their own to retreat – their bedrooms. Little space, however, is provided in each bedroom for a sitting area. This row house design does include a den that is separate from the common living areas of the home that could be utilised as a play area for younger children and as children get older as a private sitting room. The master bedroom does have a balcony that could act as a sitting area for parents though this home could benefit from enlarged master and second bedrooms.

Study 2 Summary

The Milross Avenue row house design satisfied fewer key design strategies than the Marinaside row house. The deficiencies in this units design include the lack of a third bedroom and the provision of adequate interior play space. This unit did, however, enjoy a private garage in the underground parking structure. This development also utilised a contrasting exterior colour scheme that better individualized this particular unit.
Study 3: West Hastings Street

Location: Coal Harbour Harbour Green Neighbourhood
Total Number of Units: 253 Units (171 market and 82 non-market family units)
Ground Oriented Row Houses: 31 Units

Applicable Bylaws and Guidelines:
- CD-1 (No.364) Zoning Bylaw No.7681
- Harbour Green Neighbourhood CD-1 Guidelines
- Housing Families with Children at High Densities Guidelines

Description: The row house type consists of a four-bedroom, two bathroom unit fronting a neighbourhood street and backing onto an interior courtyard green space with an extensive play area. This unit consists of three above grade storeys completely daylighted on both the street and courtyard facades.
Analysis

Principle 1: Safety

This unit is part of a row of units fronting a neighbourhood collector street. The unit has two ground floor patios, one adjacent to the street at the front of the unit and the second at the rear of the unit adjacent to the interior courtyard. These private outdoor spaces provide direct surveillance of activities along the street and in the interior courtyard. The street front patio, however, lacks sufficient depth to attract prolonged activity and “eyes on the street”. The placement of the living room adjacent to the patio at the front of the unit does increase the potential for “eyes on the street” from within the unit. The ground floor patio along the street is elevated approximately 1 metre (3.3 feet) with a stairwell and landscape planter to demarcate the private residential space from the public walkway.

The rear patio adjacent to the interior courtyard green space is surrounded by landscape planters with a walkway providing access from the common courtyard to the units’ back door. The rear patio is comfortable enough to attract residents to spend time in these spaces and promote neighbourhood social interaction where neighbours get to know one another and look out for each other and their property. The interior courtyard, however, is poorly secured with ineffective gates (Figure 27). The poor gate system could mean that children cannot play unattended in the courtyard at the private playgrounds.

Overall, this row house provides a number of design features that can aid in the promotion of resident safety. It is, however, concerning that there is minimal opportunity for resident activity and surveillance along the street facade. The courtyard and children’s play area are gated but the gates are insecure and easily accessed by non-residents. The interior amenity space though is directly adjacent to portions of the private playground where residents inside have direct overlook onto the playground providing the potential of community surveillance from the interior amenity space.

Principle 2: Individuality

The façade of this row of units utilise sufficient articulation and vertical design elements to enhance the individuality of each unit. The colours of the exterior cladding of this unit lack any differentiation to their neighbours building a certain amount of monotony to the row. This particular row of units provide no variation in front façade design to help identify the individual homes. The front yard patio provides some limited
opportunity, due to its minimal depth, for individualization through the use of patio furniture, planting and outdoor art.

A minimal amount of individuality was prescribed to this row house design.

Principle 3: Unit Size

This four-bedroom row house has a floor area of approximately 176 square metres (1,890 square feet). The ground floor living area utilizes an open floor plan to promote spaciousness consisting of a living room, dining room, kitchen and closet space. The ground floor has two outdoor patios: one connected to the living room at the front of the unit and the second connected to the kitchen at the rear of the unit. The second floor provides space for two small bedrooms, a full bathroom and a large laundry room. The third floor provides for a larger possibly master bedroom, another small bedroom and a powder room.

This unit is large and provides four bedrooms which is rare in the downtown area. The living areas on the ground floor, however, are small for a four bedroom household. The bedrooms are also small and do not provide any opportunity for a private social space to place a chair or two in addition to the beds. In higher density housing where houses are not typically designed with a second recreation room for children there must be allowances for larger bedrooms to provide semi-private social spaces for adolescent children. This row house could also benefit with the addition of a den to provide a space for a desk and computer station for household bookkeeping and children’s homework.

This design though is quite successful in providing a connection between indoor living spaces and the rear outdoor patio and interior courtyard. These connections can potentially extend spatial boundaries of the small living areas.

While relatively large, this row house design lacks sufficient floor space and would benefit from larger rooms to better accommodate adequate furniture for a four bedroom household of approximately five residents and should include bedrooms with room for a private social space and a flex room that could be used as a den, play room and/or spare bedroom.

Principle 4: Flexibility

This row house design does not seem to provide any opportunity for easy renovation,
expansion or division into secondary suites.

Principle 5: Storage

This design provided a reasonable amount of storage for everyday household items in cupboards, closets and a storage space under the ground floor stairs. This row house has small closets and minimal storage for seasonal items such as Christmas decorations. This unit also lacks any easily accessible storage space for large cumbersome items such as strollers or other items including large toys or sports equipment.

The design of this home could have benefited from a large easily accessed storage space on the ground floor for large items in addition to larger and more abundant closets.

Principle 6: Play Space

This housing design does not provide for any additional play spaces such as an alcove off of a family room or kitchen, the second, third and fourth bedrooms are minimal in floor area and afford little additional space for a play area. The unit does not have sufficient private outdoor space for outdoor play that can be directly supervised from the kitchen. The rear of the unit is open to the interior courtyard a short distance from two large children’s play areas promoting the through flow of play. The common interior courtyard is well designed for children’s play.

The children’s play area in the courtyard is well programmed, providing an adequate play structure. This area is appropriate for a variety of different aged children. A flat grassy and some hard surfaced areas are included which could promote more intensive play such as kicking a soccer ball or throwing a baseball. This development does benefit as well from its proximity to a park and the adjacent seawall. There, however, is no outdoor covered play area that would permit outdoor play on a rainy day.

Overall this row house unit provides little indoor play space in the home. Outdoor play, however, is supported with access to the common internal courtyard containing a playground area.
Principle 7: Private Outdoor Space

This row house design provides one small patio. The front yard patio is relatively small, but affords some opportunity for use, such as a small table and chair. The patio is well connected to the home’s living space and provides direct sight lines for parents to monitor young children playing outside while the parents remain in the living room.

The front outdoor space will only receive direct sunlight for a portion of the day due to the units’ east-west orientation and its location in relation to the high-rise building potential shadow cast on the site.

Overall, the private outdoor living space could have benefitted from an expansion to the depth of the front patio for increased opportunity for activity and enhanced landscaping to clearly demarcate the private patios from the public street. There also was a missed opportunity to provide a roof top deck space on the units’ vacant flat roof.

Principle 8: Privacy

This row house design utilises a number of architectural devices such as an elevated front patio and ground floor [approximately 1 metre (3.3 feet)] above street level, a short stair and landscape planter help buffer the homes private spaces from the pedestrian realm at the front of the home. These devices help disrupt sight lines and signal the beginning of the homes’ gradient of privacy. The front entry of this unit provides only marginal opportunities for landscaping (shrubs and trees) that could otherwise enhance both the visual and acoustic buffer between the public street and the private home.

Once you enter the home the gradient of privacy should extend throughout the first and second floor beginning with semi-private social space such as a sitting or living room where a resident would meet visitors and invite them into the home. This units design does follow that principle: beginning, after entering the front door, in the living room where visitors can be welcomed. Beyond the living room area the dining area and kitchen are located to the rear of the home away from the public gaze. The level of privacy in the home increases as visitors and residents travel upstairs into the sleeping and bathroom areas.

The second and third floor room layout thoughtfully enhances the privacy between family members by separating bedrooms with service areas like bathrooms and the laundry area. Acoustic privacy between family members can greatly enhance the liveability of a home.
Overall, this row house was adequately designed to promote the privacy of its residents. This design could have been further enhanced by more intensive landscaping design and greater depth to the front patio.

Note: Due to the limitation of the minimal detail of Development Permit drawings it is impossible to assess the quality of the sound dampening construction practices and technologies.

Principle 9: Unit Circulation

Circulation routes in this home are well designed providing easy and simple access between the first, second and third floors. The kitchen and living room are well connected to the front outdoor patio and courtyard. This unit is not well connected to its parking in the underground structure. Residents parking in the underground structure have to exit the parking structure through a stairwell into the courtyard or through the elevator in the residential tower, go outside and then either enter their unit from their rear or front door. This can be a rather arduous task with a small child(ren) and groceries.

Overall, this design provides good internal circulation, but connecting the units' living space to their parking in the underground parking structure could have been a great benefit to this family.

Principle 10: Places of Sanctuary in the Home

Supposing a three child household this row house design provides family members a room of their own to retreat – their bedrooms. Little space, however, is provided in each bedroom for a sitting area. This row house design does not include a flex-space such as a den that is separate from the common living areas of the home that could be utilised as a play area for younger children and as children get older as a private sitting room.

Study 3 Summary

The West Hastings Street row house design is somewhat unique in the downtown through its provision of four bedrooms and a courtyard that is well designed for children’s play. This design, however, suffers from limited floor space which translates
into limited space in the home for children’s play or places of sanctuary for the family. The interior courtyard/playground was well designed for child’s play but insecure where any stranger could bypass the poorly designed gate system.
Study 4: Beach Avenue

Location: Downtown South Granville Slopes
Total Number of Units: 253 Units
Ground Oriented Row Houses: 26 Units
Applicable Bylaws and Guidelines:

CD-1 Bylaw

Description: The row house type consists of a three-bedroom, two and a half bathroom unit fronting a pedestrian walkway and backing onto an interior courtyard green space. This unit consists of two above grade storeys completely daylighted on both the walkway and courtyard facades.

Figure 28: Beach Avenue front facade

Figure 29: Beach Avenue floor plan
Analysis

Principle 1: Safety

This unit is part of a row of units fronting a portion of the False Creek seawall set back from the waters edge. This heavily trafficked walkway is utilised year round by pedestrians and cyclists. The unit has two ground floor patios and a roof top deck providing direct surveillance of activities along the walkway and into the interior courtyard. The rear patio also could provide the ability to promote activity and interaction amongst neighbours. The ground floor patio at the front of the unit, along the walkway, is elevated and surrounded by landscaped planters to clearly demarcate the private space from the public walkway.

The rear patio and roof top deck are ample in size to attract residents to spend time in these spaces and promote neighbourhood social interaction where neighbours get to know one another and look out for each other and their property. The minimal depth of the front patio [approximately 1 metre (3.3 feet)] and busy nature of the walkway conversely would attract little resident activity, though the living room bay windows would enable opportunity for surveillance of the walkway and the busy walkway itself would deter criminal activities. The courtyard area is secure and only provides access to residents.

Overall this row house provides a number of thoughtful design features that can aid in the promotion of resident safety. The front patio could have been increased in depth and perhaps elevated slightly more to enhance the safety of the home.

Principle 2: Individuality

The facades of these units utilise little articulation, but employ vertical design elements and a mixture of cladding materials to clearly identify each individual unit as a separate household. The colours of the exterior cladding of this unit, however, lack any differentiation to their neighbour units and a certain amount of monotony is created in the row. The small front patio and their planters provide minimal opportunity for individualization through the use of patio furniture, planting and outdoor art.

A minimal amount of individuality was prescribed to the exterior of this row house design.
Principle 3: Unit Size

This three-bedroom row house has a floor area of approximately 148 square metres (1,590 square feet). The ground floor living area is an open floor plan concept consisting of the living room, dining area, kitchen, a powder room and small family room adjacent to the kitchen. The ground floor has two outdoor patios and there is also a roof top deck. The second floor provides space for a large master bedroom with an en suite bathroom and at the rear of the home adjacent to the interior courtyard two smaller bedrooms. There is also a second full bathroom on the second floor.

The size of this unit, while large by downtown Vancouver standards, falls short in providing adequately sized second and third bedrooms with room for a private social space to place a chair or two in addition to a bed. This row house could also benefit with the addition of a den to provide a space for a desk and computer station for household bookkeeping and children’s homework.

This design though provides a good connection between the kitchen/family room areas and the rear patio. This connection can potentially extend spatial boundaries of the kitchen and family room.

Principle 4: Flexibility

This row house design does not seem to provide any opportunity for easy renovation, expansion or division into secondary suites.

Principle 5: Storage

This design provided a reasonable amount of storage for everyday household items in cupboards and closets. This row house has minimal storage for seasonal items such as Christmas decorations. This unit also lacks any storage for large cumbersome items such as strollers or other items like large toys or sports equipment.

The design of this home could have benefited from a large easily accessed storage space on the ground floor for large items.
Principle 6: Play Space

This housing design does provide a small family room off of the kitchen that could be utilised as a play space, but the second and third bedrooms are minimal in floor area and afford little space for a play area. The private outdoor spaces, especially the ground floor patio adjacent to the courtyard provide an opportunity for outdoor play that can be directly supervised from within the row house. The outdoor patio is relatively large, 3 meters by 6.5 meters (10 feet by 21 feet), and would permit some play activities. The roof top deck while large could be dangerous for unsupervised play. The rear patio is open to the interior courtyard but there is no children’s play area at this development. The common interior courtyard is ornately landscaped with a large pond, but there is a large flat grassed area that could easily promote play. The potential for a small child to fall in the pond and drown could inhibit unsupervised play in this area.

The courtyard area is very limited in its child friendly programming; as such, the area would be inappropriate for younger children to play unattended. This area could benefit from a child friendly play area with a play structure, swing set, monkey bars and the addition of a sand box would make great strides in better capturing the imagination of children. A hard surfaced area could also promote more intensive play such as street hockey or playing basketball. There also appear to be no outdoor covered play area that would permit outdoor play on a rainy day. This development benefits from its proximity to a park and the adjacent seawall.

Overall this row house unit provides a marginal amount of indoor play space in the home. Outdoor play does not appear to be promoted in the common areas of this development. Better child friendly programming of the internal courtyard and the addition of a playground area would make this outdoor space more successful for families. The private outdoor patio and roof deck, however, provide opportunity for outdoor children’s play.

Principle 7: Private Outdoor Space

This row house design provides three private outdoor spaces; the small front patio, the larger rear patio and a large roof top deck. The rear patio and roof top deck afford good opportunities to attract activity and use. The rear patio, however, on the north side of the row house would receive little if any direct sunlight. Although the roof top deck has good access to sunlight and a view overlooking False Creek and the activity along the public walkway, it is somewhat disconnected from the other living spaces of the
The ground floor rear patio and roof top deck are sized to provide adequate space to place outdoor furniture, and a child’s outdoor toys or possibly a wading pool on the roof top deck. The ground floor rear patio provides direct sight lines for parents to monitor young children playing outside while the parents remain in the kitchen or family room. The rear patio also provides adequate connectivity to the interior courtyard.

Overall, private outdoor living spaces are inadequate due to a mixture of small size, lack of direct sunlight and poor connectivity. While many of the concepts utilised in designing this unit's outdoor space were sound, in practice they did not suit the unit’s orientation to sunlight.

Principle 8: Privacy

This home utilises a number of design elements to enhance the resident's privacy. This row house benefits from its separation from the street and associated vehicular street noise but has the potential to be greatly impacted by its frontage along the public walkway. The walkway can be an extremely busy pedestrian path potentially generating both noise and visual intrusion.

This row house design utilises a number of architectural devices such as an elevated front patio and ground floor and patio landscape planters to help buffer the homes private spaces. These simple devices can help obscure sight lines, dampen sound and signal the beginning of the homes gradient of privacy. The depth of the front patio and intensity of landscaping (flowers, shrubs and trees) could have been expanded to better enhance the buffer between the public walkway and the private home.

Once you enter the home the gradient of privacy extends throughout the first and second floor. The first floor begins, after entering the front door with the semi-private living room where visitors are welcomed. Beyond the living room the rest of the ground floor is elevated up a few stairs visually separating the more private dining area, kitchen and family room from the homes' entry and living room. This simple change in grade helps signal the transition of the semi-private entry and living room spaces to the more private family, eating and cooking areas. The change in grade between the living room and the dining area and kitchen in combination with the elevated outdoor patio act well together to further obscure sight lines from the public walkway. The level of privacy in the home increases as visitors and residents move upstairs into the sleeping and bathroom areas.
Acoustic privacy between family members on the second floor is enhanced by the room layout. Specifically, by placing the stairwell and bathroom between the master and the second and third bedrooms the privacy between parents and children is enhanced.

Overall, this row house utilizes thoughtful design to promote the privacy of its residents. This design could have been further enhanced by more intensive landscaping design and increased depth to the front patio.

*Note: Due to the limitation of the minimal detail of Development Permit drawings it is impossible to assess the quality of the sound dampening construction practices and technologies.*

Principle 9: Unit Circulation

Circulation routes in this home are well designed providing easy and simple access between all interior spaces and the outdoor patio, courtyard and seawall. The change in direction in the stairwell between the ground floor and the second floor, however, can present a barrier to moving larger furniture items such as a queen size mattress upstairs.

Overall, this design provides adequate circulation though the winding nature of the stairwell between the ground and second floor can directly inhibit circulation and the movement of furniture between these two floors. Connecting the units' living space to their parking in the underground parking structure could also have been a great benefit to this family.

Principle 10: Places of Sanctuary in the Home

Supposing a two child household this row house design provides family members a room of their own to retreat – their bedrooms. Little space, however, is provided in the second and third bedroom for a sitting area and this row house design does not include a den or sitting room that is separate from the common living areas of the home. The master bedroom does provide space for a sitting area in the bay window area for parents though this home could benefit from enlarged second and third bedrooms and a flex room that could be utilised as a den, children's play room or guest bedroom.
Study 4 Summary

The Beach Avenue row house design provides an adequate number of bedrooms and satisfies a number of key design strategies. The large master bedroom provides a sitting area in a bay window which could be used as a place of sanctuary for parents. The second and third bedrooms are limited in size and provide little opportunity for children to have private social space of their own. This design utilises a sunken living room concept that provides a degree of separation and enhances the gradient of privacy within the home and between the home and pedestrians outside.
Study 5: Richards Street

Location: Downtown South
Total Number of Units: 98 Units
Ground Oriented Row Houses: 10 Units
Applicable Bylaws and Guidelines:
  - Downtown Official Development Plan (DODP)
  - Downtown South Design Guidelines
  - Housing Families with Children at High Densities Guidelines

Description: This row house is currently under construction and consists of a two-bedroom, two and a half bathroom unit fronting a busy city street and backing onto the internal access corridor for units to the rear of the site. This unit consists of two above grade storey’s daylighted only on the street facade.
Analysis

Principle 1: Safety

This unit is part of a row of units fronting a busy arterial street. The row house has one ground floor patio fronting the street. The private outdoor patio provides direct surveillance of activities along the street and the patio has sufficient depth to attract a moderate amount of activity and resident “eyes on the street”. Further, the interior layout places the living room adjacent to the front of the unit which increases the potential for surveillance. The patio is elevated [approximately 1 metre (3.3 feet)] above street level with a stairwell to demarcate the private residential space from the public sidewalk and street. The patio is moderately comfortable and may attract residents to spend time in these spaces and promote neighbourhood social interaction where neighbours get to know one another and look out for each other and their property.

Overall, this row house provides some design features that can aid in the promotion of resident safety. The common outdoor space and children’s play area appear secure from non-resident threats due to their location on the sixth floor of the podium. The playground though is not in close proximity to the row house unit and would require parental supervision of children.

Principle 2: Individuality

The façade of this row of units provides minimal articulation and moderate vertical design elements to enhance the individuality of each unit building a certain amount of monotony to the row. This particular row of homes is marginally broken down by the shortness of the five unit row of units. The front yard patio provides some opportunity for individualization through the use of patio furniture, planting and outdoor art owing to its moderate depth.

A minimal amount of individuality was prescribed to this row house design.

Principle 3: Unit Size

This two-bedroom row house is approximately 111 square metres (1,200 square feet). The ground floor living area utilises an open plan consisting of a combined living/dining room, kitchen, a powder room and closet space. The ground floor has one outdoor patio connected to the living room and front entry. The second floor provides space...
for a master bedroom with an en suite bathroom and walk-in closet, a second small bedroom, a full bathroom and a storage closet. Laundry facilities are located in a small closet on the second floor.

The size of this unit falls short in providing a minimum of three bedrooms. The bedrooms also do not provide any opportunity for a private social space to place a chair or two in addition to the beds. In higher density housing where houses are not typically designed with a second living room (or recreation room for children) there must be allowances for larger bedrooms to provide semi-private social spaces for adolescent children. This row house design could have benefited from the provision of a den which could provide a space for a desk and computer station for household bookkeeping and children’s homework or provide a flex-space that can be utilised as a children’s play space.

This design provides little opportunity, other than the front patio, to promote connectivity between indoor living spaces and the outdoors. A strengthening of these connections could potentially extend spatial boundaries of the small living spaces.

Overall, this row house design lacks sufficient floor space and would benefit from larger rooms to better accommodate adequate furniture and should include at least three bedrooms with room for a private social space in each bedroom.

Principle 4: Flexibility

This row house design does not seem to provide any opportunity for easy renovation, expansion or division into secondary suites.

Principle 5: Storage

This design provided a reasonable amount of storage for everyday household items and seasonal items in cupboards, closets and the second floor storage area. This home would have benefited from an easily accessed storage space on the ground floor for large cumbersome items, such as a stroller or large children’s toys and sports equipment.

Principle 6: Play Space

This housing design does not provide for any additional play spaces such as an
alcove off of a family room or kitchen, the second bedroom is very small and affords no additional space for a play area. The front patio is moderately sized [approximately 2.4 meters by 4.8 meters (8 feet by 10 feet)] and lacks privacy and security for outdoor play. Younger children would have to be directly supervised. There is no direct connection to the outdoor amenity space and common play area completely restricting through flow of play.

The children’s play area on top of the sixth floor podium is small and limited in it’s programming, providing a small play structure. This area may be appropriate for toddlers but would be insufficient in entertaining any child for more than a small amount of time. This area could benefit from a larger play structure with a swing set and/or monkey bars and the addition of a sand box would make great strides in better capturing the imagination of children. Due to the location on the sixth floor intensive play such as playing soccer, baseball or basketball would not be safe or appropriate. There also appeared to be no outdoor covered play area that would permit outdoor play on a rainy day.

Overall this row house unit provides no indoor play space in the home. Outdoor play is limited in scale, connectivity and location.

Principle 7: Private Outdoor Space

This row house design provides only one private outdoor space – the front patio. The patio is large enough to place a small table and maybe two chairs but too small to provide adequate space for a child. This street-front patio affords a minimal degree of privacy and safety to the residents. The space is well connected to the homes living room. The patio would receive relatively little direct sunlight throughout most of the day and planters and foliage provide inadequate visual privacy from neighbours.

This row house provides insufficient private outdoor living space to its residents and would not suit a families housing needs. This design would have benefitted from an expansion to the depth of the front patio to provide for increased opportunity for activity, the addition of a private roof top deck and/or a rear patio to provide the household with adequate access to private outdoor space.

Principle 8: Privacy

This row house design utilises a limited number of architectural devices such as
an elevated front patio and ground floor [approximately 1 metre (3.3 feet)] above street level and landscape planters to help buffer the homes private spaces from the pedestrian realm at the front of the home. These devices help obscure sight lines and signal the beginning of the homes gradient of privacy. The front entry of this unit provides only marginal opportunities for landscaping (flowers, shrubs and trees) that could otherwise enhance both the visual and acoustic buffer between the public street and the private home.

Once you enter the home the gradient of privacy extends throughout the first and second floor. The first floor begins, after entering the front door with the semi-private living room where visitors are welcomed. Beyond the living room are the dining area, kitchen and powder room. The level of privacy in the home increases as visitors and residents move upstairs into the sleeping and bathroom areas.

Acoustic privacy between family members on the second floor is minimal as the second bedroom is directly adjacent to the master bedroom.

This row house design employs the gradient of privacy in the internal layout of rooms, but does not employ a wide enough variety of design practice to enhance visual and acoustic privacy from the public and between family members. This design could have been enhanced by more intensive landscaping design and increased depth to the front patio and the physical separation of the bed rooms.

*Note: Due to the limitation of the minimal detail of Development Permit drawings it is impossible to assess the quality of the sound dampening construction practices and technologies.*

Principle 9: Unit Circulation

Circulation routes in this home are adequate providing easy and simple access between the first and second floors. Resident parking though is poorly connected to the unit, where a resident would have to park in the underground parking structure, exit through the residential tower lobby out to the public sidewalk and enter their home from the street. This arrangement can translate into a great deal of inconvenience for parents having to carry young children.

Principle 10: Places of Sanctuary in the Home

Supposing a one child household this row house design provides family members a
room of their own to retreat – their bedrooms. Little space, however, is provided in each bedroom for a sitting area. This row house design would benefit from larger bedrooms, and a flex space that can be utilised as a den or sitting room.

Study 5 Summary

The Richards Street row house is poorly designed as a residence for families with children. The unit does not meet many of the key design strategies including adequate unit size, provision of secure outdoor space, connectivity to common courtyards, provision of adequate indoor play space, and the provision of conveniently located storage space for cumbersome items to name a few.

Design Review Findings

The evolution of the row house typology into the base of Vancouver’s podium tower model is innovative for its accomplishment of a number of urban design objectives and for creating the potential to house families with children. This study tested the suitability of the row houses for families based on an evaluation using the Principles of Family-Oriented Row House Design established in Section 4 and provides positive feedback on their design in order to improve housing design. Of the five sample row houses reviewed, the results suggest a need for continued refinement of this housing form.

While many of the row houses had design characteristics that worked very well at satisfying some of the design principles, none could be categorized as an outright success. Some of the successes identified through the design review include:

- Elevated front patios (Principle 1: Safety)
- Opportunities for storage in private garages (Principle 5: Storage)
- Quality connectivity of the outdoor patios to the units interior and to the common courtyard (Principle 6: Play Space)
- Large private outdoor rear patios (Principle 7: Private Outdoor Space)
- Recognition of the gradient of privacy in room layout (Principle 8: Privacy)
Some of the more prevalent flaws found in the design review include:

- Undersized units and in particular small second and third bedrooms (Principle 3: Unit Size)
- Lack of places of sanctuary for parents or children (Principle 10: Places of Sanctuary in the Home)
- Undersized depth of the front façade patios (Principle 7: Private Outdoor Space)
- Minimal individualization to the unit façade (Principle 2: Individuality)
- Insecure interior courtyards (Principle 1: Safety)
- Poorly designed interior courtyards and playgrounds (Principle 6: Play Space)
- Poor unit circulation (Principle 9: Unit Circulation)
- Lack of flex-space and flexible building practices (Principle 4: Flexibility)
- Lack of easily accessed and conveniently located bulk storage space (Principle 5: Storage)

Many of the flaws drawn out through the design review could have been rectified through relatively simple design revisions. For example, greater individualization could have been given to the units with a more varied use of cladding material and colour or the addition of distinct architectural elements (Figure 32), security of the courtyard could have been improved with more restrictive entries and better gate systems, interior courtyards could have been designed with enriched programming to promote and sustain play for varied age groups, and the use of more open, wide and straight stairwells to promote better connection and circulation between the living and bedroom floors.

Other design flaws are related to a singular fundamental problem – the overall limited floor space of the row houses. The design review confirmed what many interviewees with young children lamented about: living space is cramped in the row houses surveyed. Although some had resigned themselves to small accommodations and stated that “limited living space was the trade-off they had to make for living downtown” (Interview 209), many others wondered if they would be able to remain living in the
downtown as their children grew and required greater amounts of living space, such as a private social space of their own. The limited amount of living space also strongly relates to the limited provision of storage, undersized front patios and in part to the lack of flexible design. If families with two or more children are to be enticed to stay living in the new row homes, housing must be provided that supports the needs of older children or many of the households who are attracted to the row house form will be forced out of the downtown.
SECTION 6 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

A key element of the “Living First” strategy is the promotion of the podium row house as “an attractive surrogate for the single-family dwelling in the single-family suburb ... Many families with children, for the first time, see the practical chance to move back downtown because of this option” (Beasley 2000, 5). Through the integration of such design features as individual front doors opening onto the street and (semi) private yards row houses decrease the perception of density, making them more desirable for those households with children who may otherwise be drawn to lower-density neighbourhoods. To facilitate this opportunity a number of City plans, policies and guidelines were enacted to urge the development of housing for families with children. The 1989 High-Density Housing for Families with Children guidelines, for example, establishes housing objectives and criteria to accommodate the diverse needs of households with children. Anecdotal evidence from City planners suggests that the downtown is experiencing constant growth in the child population. Yet, the findings of this research suggest that the podium tower row houses are not meeting the needs of multiple child households which may be a factor in the under representation of two and three child households reported by the 2001 Census. As more data is released from the 2006 Census this possibility may become increasingly clear.

From the onset this project was designed to facilitate better understandings of the residential experiences of families with children living in the new podium row homes, and to assess current row house designs. The research identified and outlined ten Principles of Family-Oriented Row House Design using ideas directly identified by a sample of twelve households living in row houses in Vancouver, B.C. [See Appendix K for a full listing of the Principles and the associated design strategies]. The families that participated in this study identified a number of design ideas they felt were important in the development of family-oriented row house design. These ideas were supported by design literature and were worked into a set of design principles. The Principles of Family-Oriented Row House Design were used to test the suitability of a sample of five row houses and further validate the interviewees’ self-assessment of their homes. While many of the Principles of Family-Oriented Row House Design mirrored those outlined in the High-Density Housing for Families with Children
guidelines, the principles were derived through a post occupancy review of downtown podium row houses.

Although respondents initially indicated satisfaction with their housing, further probing about particular aspects (such as parking or adequacy of room size) revealed a very different understanding of the family-friendliness of the row houses. Through a series of in-depth interviews with row house residents and an independent design review of a sample of row houses, a number of successes and concerns with the design of the row homes began to emerge. The design review generally supported the resident’s own assessment and further emphasized the need for greater attention to be given to the development of family friendly row housing units if they are to truly satisfy the housing needs of families with children.

Most concerning to this researcher was the frequency with which families with young children question the ability of their homes to satisfy their families needs as their child(ren) grow older or if their family expands. Six of the twelve families, for example, expressed concern at their ability to remain living in the downtown over the long term owing to the lack of housing that adequately recognized the needs of growing families. Households with two or more children were more likely to express concern about the relatively small size of the row house units. The lack of sufficient floor space and small size of second and third bedrooms were identified by respondents as being a significant liveability factor for households with children. Due to the larger household sizes of families with children there is a need for larger living spaces both with respect to overall floor space of particular rooms (e.g. kitchens, living rooms and bedrooms) as well as in the number of bedrooms. Respondents spoke of living rooms that were too small to accommodate all members of their family, as well as bedrooms that could barely contain a bed. While small [5.6 square metre (63 square foot)] bedrooms may meet the needs of infants and toddlers, for example, they are insufficient to accommodate the space and furniture requirements of older children and young adults. As such, some respondents felt they would eventually have to move out of the downtown into a larger suburban housing form. The limited availability of larger units may be a strong contributor to the under-representation of two and three children households in the downtown area.

The Principles of Family-Oriented Row House Design (and their assessment of existing developments) brought a number of liveability issues to the fore, including poor room layout and the lack of opportunity for personalization. While significant in influencing the everyday satisfaction of residents many of the liveability flaws could have been easily revised at the development proposal stage without significantly impacting the
viability of the development. Through the proper application of the gradient of privacy, for example, the organization of room layout could have been improved making the units more private and desirable for families with children. Of the key design principles identified, unit size and flexibility are the most difficult to resolve and tended to manifest themselves into broader design issues.

A families' spatial needs fluctuate over time as children are born, grow-up and eventually move out of the family home. During these periods a home should be able to adapt to satisfy those needs. Neither the row houses reviewed in this research, nor the units occupied by interview respondents were designed to provide flexibility, yet flexibility is the key way to accommodate families. If row homes are designed to be inflexible families will have to continually relocate to satisfy their changing household needs. Consideration of the changing life cycle is a necessary component of designing homes that are capable of satisfying the needs of families with children and typically will result in the provision of larger, more flexible units. Further, the ability for families to respond to changing needs of their family ‘in place’ reduces the likelihood they will be forced to move elsewhere resulting in more stable communities and the potential to facilitate and maintain strong social relations.

While the current designs of many row houses in downtown Vancouver work relatively well for young one-child households, their ability to satisfy the needs of multiple child families is marginal. In spite of the 1989 guidelines, as well as other policies and regulations promoting family friendly housing units and the movement of families into the downtown, the row houses that are sampled in this research raise questions about the extent to which actual row house developments adequately incorporate existing policies and guidelines. Given the findings of this study, there is a need to consider the extent to which the goal of having twenty-five percent of new households in the downtown having children living in them can be achieved. While the sample interviewed in this study is by no means representative, it does raise the possibility that the same finding could be true on a larger scale.

Vancouver has a choice to make then. On the one hand the stated objective of the City of Vancouver is to increase the number of families living in the downtown to meet regional growth strategies, fulfill their “Living First” strategy, and to generally increase social diversity. On the other hand, this goal is not necessarily being achieved at least with respect to multiple child households - something underscored by both census data and the findings of this report. The question arises then of why are multiple child families not living in the downtown in the numbers desired by the City of Vancouver? Although this research cannot definitively answer the foregoing question, the issues
raised by respondents point to design factors (both large and small), which negatively impact the satisfaction levels expressed by current residents. Reasons for the relative failure of developers to build larger, more flexible units may include the cost of building larger units, inadequate incentives for developers, and/or a lack of full understanding by the development community about the needs of households with children in high-density neighbourhoods. Building bigger units increases the costs and potentially reduces the marketability of the unit to a broader audience (e.g. a couple with no children do not necessarily want, nor desire a four bedroom row house). Further, the possibility exists that unintended consequences from existing policies and regulations may preclude the development of units that would more fully meet the needs of households with multiple children. At a 2004 workshop meeting of the Urban Development Institute, for example, a developer reported that in spite of their willingness to develop and market adjacent apartment units that could be consolidated and then divided later as a family’s spatial need arose, existing regulations governing balcony space prohibited this possibility. As such, barriers may exist that directly hinder the ability of developers to create flexible spaces that can be adapted to changing life cycle.

Major findings from this research, then, are two fold: firstly, unit size and flexibility are key issues in the development of row housing that meets the needs of households with children. While other design issues identified in the course of the research are relatively easy to correct through the application of careful and thoughtful design, unit size and flexibility are the most difficult to change. Without due consideration of these issues downtown row houses may not have the ability to compete with single family dwellings.

Secondly, many of the principles are already incorporated (at least to some extent) within existing guidelines. While the Principles of Family-Oriented Row House Design were developed mainly with consideration of the experiential knowledge of current row house residents, they conformed – at least in part – to the existing guidelines – something, which became even more apparent when considering findings. This questions the degree to which existing policies/guidelines are being adhered to, applied and enforced.

**Future Research Directions and Recommendations**

In light of the findings of the current research, there is a need for the City of Vancouver to consider either rethinking their objectives or re-evaluating the performance of their development policies and design guidelines. Although policies and guidelines exist that
are intended to facilitate the development of family-friendly housing in the downtown they do not appear to be as successful as the City would hope them to be. There then exists a need to examine why existing policy and guidelines are not working to their full potential and to identify existing barriers or potential incentives that may encourage the development of better quality family friendly housing.

Recommendation 1: Practitioner Workshops

As stated at the onset of this project little post occupancy evaluative research has been conducted to provide substantive design feedback to practitioners engaged in the podium tower development process. This research is intended to be a first step in aiding a better alignment of City policy, architectural practice and development objectives with the residential experience of podium row house families with children. If these groups are truly interested in creating high-density housing suitable for households with children a series of practitioner workshops should be initiated to pursue solutions to the design issues and findings of this research to facilitate better family-oriented design.

Recommendation 2: Continued Research

The stated goals of the City of Vancouver are admirable, but as always the ways in which polices and guidelines are put into practice – whether by City officials, developers or architects – may preclude full realization of the possibilities. To further facilitate better design a broader, more representative post occupancy evaluation (POE) of existing and/or future row house development needs to be undertaken to ascertain the extent to which housing meets the needs of consumers (both those with and without children). The results of a broad POE research program, utilizing a representative sample, could be used to facilitate an update to the 1989 High-Density Housing for Families with Children Guidelines to provide a more prescriptive set of design objectives and criteria.

Recommendation 3: Identify Regulatory Barriers

The possibility exists that current policy and regulations may preclude the development of row houses that would better meet the needs of households with children. Development approval processes are administered by various city departments
through the application of a wide range of City bylaws and provincial codes. Government policy and regulation are created and enforced to promote the safety and well being of citizens, but can potentially stifle innovation and design creativity. The case previously discussed where balcony regulations prohibited the possibility of consolidating and later dividing adjacent apartment units to promote flexibility is one example of an existing regulatory barrier to flexible building design. To facilitate better design regulatory barriers need to be identified, reviewed and amended to provide broader discretion or outline established equivalencies to promote efficiency of the approval process.

Recommendation 4: Policy Analysis

As planners we guide development through negotiation and the application of regulations and policies in order to achieve the best outcomes for the citizens we serve. Development planning is often a tricky balance between a variety of competing wants, needs and desires of neighbours, property owners, developers, future residents and society as a whole. The “Living First” strategy, official development plans, and various guidelines provided policies and regulations to guide the development approval process of housing intended for families with children. Yet, the findings of this research project suggest that many of the podium row houses stray significantly from family-oriented liveability guidelines such as, the High-Density Housing for Families with Children Guidelines. Review and further refinement of these tools and their application are necessary if the podium tower row house model is to broaden its ability to provide families a viable urban housing option rather than relegate them to the suburbs.
“Damn”, Jacob grumbles to himself as he poured over the sports pages of the morning newspaper, “the Canucks lost another one”. His attention is taken away by the sound of children playing nearby and he wonders for a second as he looks over the top of his paper if it is Grace. After confirming that it is, Jacob goes back to reading the paper and enjoying the warmth of the sunlight on the back patio. All of a sudden he jumps as Grace startles him from behind. “Dad, I am going to play at the playground with Alyssa and Keiko, see you in a bit”. “Ok, Hun but don’t leave the courtyard”. “Ok, dad”.

Jacob thinks to himself, wow, it has been five years now since they bought the row house and moved from that small apartment in the West End. Grace is now five and really loves the freedom of being able to play with the other children in the courtyard playground. Jacob wasn’t sure that the downtown was the right place to raise a child, but the row house seemed to satisfy most of their needs for now, at least while Grace is still young. Actually the row house, Jacob thought to himself, had a lot of the characteristics of the suburbs he grew up in with the incredible amenity of a downtown location. He laughs to himself, the suburbanization of the city who would have imagined!

Jacob turns as he hears Marisa come out on to the patio. “Hey Mar, did you remember to pick up the Merlot for tonight’s dinner, oh yeah, and how was your doctors appointment?” “It was fine Jacob. And yes I picked up the wine, but I also picked up a bottle of non-alcoholic sparkling juice.” “Did you get that for the kids?” “No Jacob, I got it for me – the doctor says I am pregnant.” Jacob stops and thinks to himself, how are we going to stay living in the downtown now?

~Their story continues…
BIBLIOGRAPHY


American Public Health Association Committee on the hygiene of housing (1948) Planning the neighborhood. Public Administration Service: Chicago.


Larice, M.A. (2004) Lecture by Professor Larice. School of Community and Regional Planning: UBC.


APPENDICES

A  Key Informant Interview Schedule with City Staff
B  Key Informant Interview Schedule with VSOCC Staff
C  Key Informant Interview Schedule with Development Corporation Staff
D  Letter and Survey sent to Row House Residents
E  Web-based Resident Survey
F  Resident Survey Community Poster
G  Survey Poster Distribution Locations
H  Survey Notification (letter sent to Building Managers)
I  Summary Table of Survey Responses
J  Semi-structured Individual Resident Interview Schedule
K  Summary Table: The Principles of Family-Oriented Row House Design and associated Key Design Strategies

Note – Some wording in the key informant interview schedules (appendices A – C) have been modified slightly to protect the identity of interviewees’.
Appendix A – Key Informant Interview Schedule with City Staff

Study overview:

- Analysis of the townhouse/row house developments which have been built in the Downtown over the last few decades, and how successful these homes and their neighbourhoods have been at meeting the needs of families with children.
  - Bryan is examining the physical design of the actual housing units (and their shared building spaces)
  - Johanna is looking at the community facilities found in the surrounding neighbourhoods, as well as the physical design of those neighbourhoods

Questions:

1. What has been your own specific role, or involvement, in the development of Downtown row housing?
2. Based on your direct or anecdotal knowledge, please tell us what you believe is working or not working for families, or could be improved on, in terms of;
   A. Internal row house unit design; specifically:
      i. Floor area
      ii. Layout of rooms (one storey or multi-storey units)
      iii. Flexible (‘flex’) space provisions
      iv. Storage
      v. Access to outdoor space, and ability to watch children outside
   B. Shared/common building space – provision and design; specifically:
      i. Storage
      ii. Parking (and ability to access unit)
      iii. Play areas, or other common areas
      iv. Landscaping
   C. Neighbourhood design; specifically:
      i. Street form and character, including:
         a. Street width
         b. Sidewalk width and curb height
         c. Traffic and intersections (comfort, safety)
      ii. Definition of the street “room”, including:
         a. Building height and massing
         b. Building setbacks (from the street and from other buildings)
         c. Pedestrian-level interest and surveillance (eyes on the street)
         d. Public spaces – parks, seawall, and other hard surfaced public areas
   D. Neighbourhood facilities; specifically:
      i. Community centre
      ii. Day cares
iii. Parks or other play areas (both for good and bad weather)
iv. Schools (both elementary and high school)
v. Libraries
vi. Recreation centres
vii. Any other facilities supportive of families

E. Neighbourhood amenities; specifically:
   i. Basic daily shops and services, including
      a. Corner stores, and larger grocery stores
      b. Restaurants that families can frequent
      c. Retail shops

3. Are there any home or neighbourhood design features which we have not discussed above but which you feel are important to families living in Downtown Vancouver’s row houses?
4. The questions which we will be posing to row house family residents (during our interview) will be similar to the questions we have just asked you. Are there any other specific questions, which you would recommend that we ask during out interviews?
5. Thinking of either the unit or building design, or else the neighbourhood facilities or design,
   A. If possible, please name examples of actual row house developments in Downtown Vancouver which you fell are suitably designed for families with children, and why.
   B. If possible, please name examples of actual row house development sin Downtown Vancouver which you feel are definitely no of a design suitable for families with children, and why not.
6. How would you, in a nutshell, tell the “story” of the development of row housing in Downtown Vancouver over the last 20 years, particularly in terms of its relevance for families? (Include if possible your views regarding how much effort the development community has actually put into designing their row house units to meet the unique needs of families).
Appendix B – Key Informant Interview Schedule with VSOCC Staff

1. Please tell us about your own background working with families, including:
   A. A brief description of the VSOCC’s structure, mandate and scope
   B. Your personal role within VSOCC
   C. Any other personal/work experience outside of the VSOCC that you’d care to discuss, as relevant to your study

2. Study overview: analysis of the townhouse/row house developments which have been built in the Downtown over the last few decades, and how successful these homes and their neighbourhoods have been at meeting the needs of families with children.
   - Bryan is examining the physical design of the actual housing units (and their shared building spaces)
   - Johanna is looking at the community facilities found in the surrounding neighbourhoods, as well as the physical design of those neighbourhoods

3. Based on your experience and knowledge (direct or anecdotal, though we would appreciate if you could specify as much as possible), we would like to hear your thoughts on each of these study components – essentially, what are the issues, problems, potential solutions in each of the following cases…i.e. what is working, what isn’t working, what could be done to make things work better?
   (NOTE: if interviewee is unable to provide comment specific to the Downtown row house form, then we would be happy to hear whatever comments that person is able to provide on multi-family housing form and/or Downtown living; however, we would ask her to clarify that in each case)
   A. Internal row house unit design
   B. Shared/common building space (provision and design)
   C. Neighbourhood/community facilities and amenities
   D. The physical design of Downtown row house neighbourhoods (streets and other public spaces; where relevant, private spaces)

4. Thinking of either unit/building design and/or neighbourhood facilities and design,
   A. If possible, please name examples of actual row house developments in Downtown Vancouver which you feel are suitably designed for families with children, and why.
   B. If possible, please name examples of actual row house developments in downtown Vancouver which you feel are definitely no of a design suitable for families with children, and why not.

5. Are there any other housing or neighbourhood related issues which we have not yet discussed, but which you feel are relevant for families living in the Downtown? (can be as broad as would like)
Appendix C – Key Informant Interview Schedule with Development Corporation Staff

General Questions:
1. Please describe your position and role within the development corporation, and how long have held that position.
2. How would you describe the marketing target audience (i.e. demographic) for the townhouses built on the corporation’s lands? If this target audience has changed over time (i.e. since the corporation was established), please describe how.
3. Please describe how the townhouse (row house) units on the corporation’s lands have been designed to respond to this target audience.
4. Please describe how the common spaces (indoor and outdoor) in the corporations’ buildings have been designed to respond to the target audience.
5. Please describe how the neighbourhoods and public spaces (ex. Streets, sidewalks, parks, landscape) on the corporation’s lands have been physically/spatially designed to respond to this target audience.
6. Can you give a general indication (percentage or otherwise) of how many families with children are living in townhouses (owned or rented) on the corporation’s lands? How does this compare with the number of families which the corporation planned for, when the townhouses were originally built and marketed? If it is significantly different, has the corporation altered their marketing plays for the townhouse units to respond to this difference?

Unit/Building Design:
1. Based on feedback you have received from existing or prospective residents of the corporation’s townhouse, and/or from other sources (in which case, please identify as much as possible), how well does it seem the design of the townhouse units has met the needs of families with children (in general)?
2. Unit Design: What specific aspects of the design of the townhouse units appear to be working well for families? What specific aspects appear NOT to be working well for families? Has this knowledge had any impact on the way in which the corporation has continued to design townhouse units, and if so, how?
3. Common Spaces Design: What specific aspects of the design of the buildings common spaces appear to be working well for families? What specific aspects appeal NOT to be working well for families? Has this knowledge had any impact on the way in which the corporation has continued to design building common spaces, and if so, how?
4. Please comment (if haven’t done so already at this point) on the following building/townhouse issues in relation to families living with children on the corporation’s lands:
   A. Storage
   B. Unit layout
   C. Common play spaces
   D. Parking
   E. Entry from street and/or building

Neighbourhood Design and Amenities:
1. Based again on feedback you have received from existing or prospective townhouse residents, and/or from other sources (in which
case, please identify as much as possible), how well does it seem the physical design of the neighbourhoods has met the needs of families with children (in general)?

2. **Streets:** What specific aspects of the design of neighbourhood streets (including sidewalks) appear to be working well for families? What specific aspects appear NOT to be working well for families? Has this knowledge had any impact on the way in which the corporation has continued to work with the City of Vancouver on streetscape design, and if so, how?

3. **Parks/Public Space:** What specific aspects of the design of neighbourhood parks and other public spaces appear to be working well for families? What specific aspects appear NOT to be working well for families? Has this knowledge had any impact on the way in which the corporation has continued to work with the City of Vancouver on parks and public space design, and if so, how?

4. **Landscaping:** What specific aspects of neighbourhood landscaping appear to be working well for families? What specific aspects appear NOT to be working well for families? Has this knowledge had any impact on the way in which the corporation has continued to work with the City of Vancouver on neighbourhood landscaping, and if so, how?

5. **Street furniture/public art:** What specific aspects of neighbourhood street furniture and/or public art appear to be working well for families? What specific aspects appear NOT to be working well for families? Has this knowledge had any impact on the way in which the corporation has continued to work with the City of Vancouver on neighbourhood street furniture/public art, and if so, how?

6. How well does it seem the neighbourhood shops, services and community facilities of the corporation’s lands have met the needs of families with children (in general)?

7. Please comment (if haven’t done so already at this point) on the following shops/services/community facility issues in relation to families living with children on the corporation’s lands:
   
   A. ‘Large purchase’ grocery stores
   B. ‘Convenience’ corner stores
   C. Personal/household services
   D. Restaurants
   E. Community centre/facilities
   F. Recreation centre/facilities

Overall:

1. In your professional opinion, how well do you feel the townhouse developments throughout ALL of the Downtown peninsula work to meet the needs of families with children? Feel free to focus as much as you wish on specific neighbourhoods and/or building developments. Please comment on unit and building design, as well as neighbourhood design and amenities.
Appendix D – Cover Letter and Survey sent to Row House Residents

CITY OF VANCOUVER
COMMUNITY SERVICES GROUP
Current Planning

May XX, 2004

Dear Resident,

The City of Vancouver Planning Department in partnership with members of the UBC School of Community and Regional Planning is currently conducting research into the family-friendliness of townhouse developments in downtown Vancouver.

Since the early 1990’s the City of Vancouver has worked to bring about an increase in the number of ground-oriented housing units, specifically townhouses, in the downtown. The intention of this initiative has been to encourage the development industry to design a form of housing in the City’s urban core which is believed to appeal to families with children.

This research project aims to assess how successful these townhouse developments have actually been at meeting the lifestyle needs of families. To do this, interviews will be conducted with individual households to ask them how well the design of their townhouse units and surrounding neighbourhoods has satisfied their family needs and values.

If you are a household with children up to 19 years of age and would be interested in participating in such an interview (or finding out more about it), please contact Paul Gedye at 604-873-7716 or by email at paul.gedye@city.vancouver.bc.ca. Study participants will be entered into a draw for an annual family membership to Vancouver Aquarium, a prize which not only entitles the winning household to one year unlimited family admission, but also special Aquarium discounts and VIP privileges.

The goal of the study is the ongoing improvement of the downtown environment as a place for families to live, and the input of all residents is valuable in this regard. Therefore, in order to help us meet this goal, we very much hope that all recipients of this letter (even if you do not live in a townhouse or are not interested in participating in an interview) will take a moment to answer the short list of questions attached. Your answers can be sent to us by mail using the enclosed postage paid envelope, or you can respond instead via the internet at the following web page: www.city.vancouver.bc.ca/families. Again, please feel free to contact Paul Gedye if you have any questions, or if you are a household with children interested in participating in an interview. Please note that the identities of all questionnaire and interview respondents will of course be held in the strictest confidence.

We very much appreciate your time and thank you for your participation.

Sincerely,

Larry Beasley
Director of Current Planning
Please mark the box ☐ with your responses.

1. Are you a household with children up to 19 years of age?
   ☐ Yes  ☐ No  ☐ Does not apply to my household

2. Is your home a townhouse? (a townhouse being a unit with a door that opens at or a few steps above
ground-level, with another such unit on one or both sides of it)
   ☐ Yes  ☐ No

3. How would you rate the design of your home (i.e. housing unit and building amenities) in terms of
   satisfying your family needs?
   ☐ Very Satisfied  ☐ Satisfied  ☐ Unsatisfied

4. Do you feel that your unit and/or building have adequate storage space for your family?
   ☐ Yes  ☐ No

5. Is your tenant parking conveniently located for your household needs?
   ☐ Yes  ☐ No

6. If you have a private patio or common courtyard, are you able to remain indoors and still visually monitor
   your children playing?
   ☐ Yes  ☐ No  ☐ Does not apply to my household

7. Do you feel that your neighbourhood has sufficient amenities (parks, community centers, schools, etc.) to
   meet your family’s needs?
   ☐ Yes  ☐ No

8. Are there all, or many, of the necessary personal and retail services your family needs within walking
distance to your home?
   ☐ Yes  ☐ No

9. Is there a place nearby where children can safely play (i.e. ride bicycles, roller blade, or skateboard)?
   ☐ Yes  ☐ No

10. Do you feel that your neighbourhood is safe?
    ☐ Yes  ☐ No

11. In order for us to connect your replies with your location, please provide your street address:
    __________________________________________________________

If these questions are important to you and your family, would you consider participating further in a
short individual interview at a time of your convenience?
☐ YES, I am interested and would like to be contacted.

*Please provide interview contact information below. (Any personal information will be held in strict
confidentiality)

Contact Name: ____________________________
Phone Number: ____________________________

☐ NO, I would not like to participate further.

Please find enclosed a return postage envelope.
Appendix E – Web-based Resident Survey

Families Living in Downtown Vancouver Townhouses:
Are the Houses and Neighbourhoods Meeting Family Needs?

The Research Project

The City of Vancouver Planning Department in partnership with members of the UBC School of Community and Regional Planning is currently conducting research into the family-friendliness of townhouse developments in downtown Vancouver.

Since the early 1990’s the City of Vancouver has worked to bring about an increase in the number of ground-oriented housing units, specifically townhouses, in the downtown. The intention of this initiative has been to encourage the development industry to design a form of housing in the City’s urban core which is believed to appeal to families with children.

This research project aims to assess how successful these developments have actually been at meeting the lifestyle needs of families. To do this, interviews will be conducted with individual households to ask them how well the design of their unit and surrounding neighbourhood has satisfied their family’s needs and values.

Brief Questionnaire

We are asking any families who live downtown with children up to 19 years of age (whether you live in a townhouse or not) to answer a short list of “yes/no” questions related to your home and neighbourhood. The goal of the study is the improvement of the downtown environment as a place for families to live, and the input of all families is valuable in this regard. This questionnaire can be found below and takes approximately 3 minutes to fill out and submit.

Individual Household Interviews

We will also be conducting more in-depth interviews with individual families to find out what they like about their home and neighbourhood, what they don’t like, what they would change, and how they would change it. If you are interested in participating in such an interview, simply fill out your contact information at the end of the questionnaire below, and someone will be in touch with you with further details.

If you do not wish to fill out the below questionnaire but you are interested in participating in an interview (or just finding out more about it), please feel free to contact Paul Gedye at 604.873.7716 or by email at paul.gedye@city.vancouver.bc.ca. Study participants will be entered into a draw for an annual family membership to Vancouver Aquarium, a prize which not only entitles the winning household to one year unlimited family admission, but also special Aquarium discounts and VIP privileges.

We very much appreciate your time and thank you for your participation. Your input into this research project gives your family a very direct voice into improving the downtown as a place to live and raise children.
**QUESTIONNAIRE**

1. Are you a household with children up to 19 years of age?
   - [ ] Yes
   - [ ] No

2. Is your home a townhouse? (i.e., a townhouse being a unit with a door that opens at or a few steps above ground-level, with another such unit on one or both sides of it)
   - [ ] Yes
   - [ ] No

3. How would you rate the design of your home (i.e., housing unit and building amenities) in terms of satisfying your family needs?
   - [ ] Very Satisfied
   - [ ] Satisfied
   - [ ] Unsatisfied

4. Do you feel that your unit and/or building have adequate storage space for your family?
   - [ ] Yes
   - [ ] No
   - [ ] Somewhat

5. Is your tenant parking conveniently located for your household needs?
   - [ ] Yes
   - [ ] No
   - [ ] Somewhat

6. If you have a private patio or common courtyard, are you able to remain indoors and still visually monitor your children playing?
   - [ ] Yes
   - [ ] No
   - [ ] Does not apply to my household

7. Do you feel that your neighbourhood has sufficient amenities (parks, community centers, schools, etc.) to meet your family's needs?
   - [ ] Yes
   - [ ] No
   - [ ] Somewhat

8. Are there all, or many, of the necessary personal and retail services your family needs within walking distance to your home?
   - [ ] Yes
   - [ ] No
   - [ ] Somewhat

9. Is there a place nearby where children can safely play (i.e., ride bicycles, roller blade, or skateboard)?
   - [ ] Yes
   - [ ] No
   - [ ] Somewhat

10. Do you feel that your neighbourhood is safe?
    - [ ] Yes
    - [ ] No
    - [ ] Somewhat

11. In order for us to connect your replies with your location, please provide your street address:
Do you and your children live downtown?

Do you have suggestions on how your home or neighbourhood could be made more family-friendly?

The City of Vancouver Planning Department in partnership with members of the UBC School of Community and Regional Planning is currently conducting research into the family-friendliness of townhouse developments in downtown Vancouver.

Since the early 1990’s, the City has worked to bring about an increase in the number of ground-oriented housing units, specifically townhouses, in the downtown. This current research project aims to assess how successful these townhouse developments and their surrounding neighbourhoods have been at meeting the lifestyle needs of resident families, and how they might be improved.

If you do live downtown with your children and would be interested in contributing your views to the City (whether you live in a townhouse or not), please visit our on-line questionnaire, or phone or email us and let us know the best way to reach you:

WEB: www.city.vancouver.bc.ca/families
EMAIL: paul.gedye@city.vancouver.bc.ca
PHONE: 604-873-7088

SPEAK OUT & MAKE A DIFFERENCE!
Participants entered into draw for one year family membership to Vancouver Aquarium
## Appendix G – Survey Poster Distribution Locations

### Community Centres
- **West End**: 870 Denman Street
- **Coal Harbour**: 480 Broughton Street
- **Roundhouse**: 181 Roundhouse Mews
- **Carnegie Centre**: 401 Main Street

### Schools
- **Lord Roberts Elementary**: 110 Bidwell Street
- **Lord Roberts Annex**: 1150 Nelson Street

### Daycares
- **Dorthy Lam Daycares Centre**: 188 Drake Street
- **Library Square Children's Centre**: 401-345 Robson Street
- **Little Rae Kid's Club**: 1155 Thurlow Street
- **Quayside Children's Centre**: 1011 Marinaside Crescent
- **YWCA Leslie Diamond Child Care Centre**: 535 Hornby Street
- **First Friends**: 969 Burrard Street
- **Little Sprout Preschool**: 870 Denman Street
- **Lord Roberts YMCA Kids Club**: 110 Bidwell Street
- **Mole Hill YMCA Child Care**: 1164 Comox Street
- **Pooh Corner Day Care Centre**: 975 Lagoon Drive
- **Gordon Neighbourhood house**: 1019 Broughton Street

### Pools
- **Vancouver Aquatic Centre**: 1050 Beach Avenue

### Ice Rinks
- **East End Rink**: 870 Denman Street

### Grocery Stores
- **Urban Fare**: 177 Davies Street
- **Choices**: 1202 Richards Street
May XX, 2004

To the Building Manager,

As the attached notices explain, the City of Vancouver Planning Department in partnership with members of the UBC School of Community and Regional Planning is currently conducting research into the family-friendliness of townhouse developments in downtown Vancouver.

In order to make contact with the families we hope to research, letters regarding this study have been mailed directly to those units identified as ground-oriented townhouses in the downtown.

However, as it often proves extremely difficult to reach a target audience through one piece of mail alone, we would like to ask your assistance in helping us reach more people more effectively. It would be greatly appreciated if, given your knowledge of your building’s residents, you could provide a copy of the attached notice to any family (i.e. household with children up to 19 years of age) whom you know to be living in a ground-oriented townhouse unit in your building. If there is also a communal notice board of some kind for your building, we would very much appreciate your posting the notice there too.

Please also feel free to distribute copies of this notice to any families you are acquainted with who are living in townhouse units in any other building in downtown Vancouver.

Our intent is to apply the findings of this research project to help make downtown Vancouver’s residential buildings and neighbourhoods an even better place for families, an improvement we believe will benefit all residents of the downtown area. Once complete, we would be happy to share these project findings with you to assist you in serving the needs of families with children living in your own building. (Please note that the identities of any research respondents will be held in the strictest confidence.)

Thank you for your support, and please feel free to contact Paul Gedye at 604-873-7716 or paul.gedye@city.vancouver.bc.ca if you have any questions, or would like to speak to somebody further regarding this project.

Sincerely,

Larry Beasley
Director of Current Planning
# Appendix I - Summary Table of Survey Responses

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you a household with children up to 19 years of age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>31</td>
<td>32%</td>
</tr>
<tr>
<td>No</td>
<td>65</td>
<td>68%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>2. Is your home a townhouse?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>96</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>3. How would you rate the design of your home?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Satisfied</td>
<td>39</td>
<td>41%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>50</td>
<td>52%</td>
</tr>
<tr>
<td>No Answer</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Unsatisfied</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>4. Do you feel that your unit and/or building have adequate storage space for your family?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52</td>
<td>54%</td>
</tr>
<tr>
<td>No</td>
<td>43</td>
<td>45%</td>
</tr>
<tr>
<td>No Answer</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>5. Is your tenant parking conveniently located for your household needs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>79</td>
<td>82%</td>
</tr>
<tr>
<td>No</td>
<td>17</td>
<td>18%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>6. If you have a private patio or common courtyard, are you able to remain indoors and still visually monitor you children playing?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47</td>
<td>49%</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>Does Not Apply</td>
<td>38</td>
<td>40%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>7. Do you feel that you neighbourhood has sufficient amenities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>77</td>
<td>80%</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>19%</td>
</tr>
<tr>
<td>Both Yes and No</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>8. Are there all, or many, of the necessary personal and retail services your family needs within walking distance to your home?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68</td>
<td>71%</td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>28%</td>
</tr>
<tr>
<td>Both Yes and No</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>9. Is there a place nearby where children can safely play?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>78</td>
<td>81%</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>17%</td>
</tr>
<tr>
<td>Both Yes and No</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>10. Do you feel your neighbourhood is safe?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>66</td>
<td>69%</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>30%</td>
</tr>
<tr>
<td>Both Yes and No</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>11. Willing to be contacted for an individual interview?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>43%</td>
</tr>
<tr>
<td>No</td>
<td>55</td>
<td>57%</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td></td>
</tr>
</tbody>
</table>
Appendix J – Semi-structured Individual Resident Interview Schedule

Study overview (this information provided to interview subjects):

- Analysis of the townhouse (also known as row house) development which have been built in the Downtown over the last few decades, and how successful these homes and their neighbourhoods have been at meeting the needs of families with children.
  - Bryan is examining the physical design of the actual housing units, as well as their shared building spaces
  - Joanna is looking at the community facilities found in the surrounding neighbourhoods, as well as the physical design of these neighbourhoods.

Questions to pose to resident family members:

1. Demographic and Residential History:
   A. What is your home address, and the name of your building, if it has one?
   B. Please confirm whether you live in a row house – a row house being a unit with a door that opens at or a few steps above ground-level, with another such unit on one or both sides of it.
   C. How many children do you have, and what are their ages? Do they (OR: Does he/she) live with you?
   D. How long has your family lived at your current location?
   E. Where did you live before? Please describe the location and type of housing form, i.e. apartment, townhouse, single family dwelling, etc.
   F. Why did you choose to move from your previous home to your current location?
   G. (If not answered above) Why did you specifically choose to move into a townhouse in Downtown Vancouver?
   H. Do you plan to stay living Downtown as your kids continue to grow up, or do you foresee your family moving out of the Downtown at some point, and if so, why and where would you move?

2. Unit and Building Design:
   A. In general, is the inside of your home large enough to meet your family’s needs?
   B. In general, does the interior physical layout of your home meet the needs of your family?
   C. Which feature of the interior layout of your home best meets the needs of your family?
   D. Which feature of the interior layout of your home would you most like to change, to better meet the needs of your family?
   E. Is there sufficient storage space in your townhouse unit or in the building’s other storage spaces to meet your family’s needs? Please explain.
   F. Does the physical design of your home promote family interaction?
   G. Does the physical design of your home provide enough privacy for you family?
   H. Do you have a private or semi-private yard or patio?
      i. If so, are you able to supervise your child (or children) from the inside of your unit?
      ii. If not, would you like to have a small yard or patio?
I. Does your home have enough storage space?
   i. Is your storage located conveniently (within your unit or in the building)?
J. In general, does the common strata property beyond your household unit (ex. Shared indoor and outdoor spaces) meet the needs of your family?
   i. Do you feel that these play spaces are safe?
   ii. Do the play spaces have appropriate things for your children to play with (ex. Swings, climbing structures, outdoor toys, etc.)?
K. Which features of the shared common spaces (indoor or outdoor) best meets the needs of your family?
L. Which features of the shared common spaces (indoor or outdoor) would you most like to change, to better meet the needs of your family?
M. Do you feel that the portion of your home which fronts onto the street (or in not a street, than a walkway) is sufficiently ‘separated’ form the sidewalk or feel like your private property?
N. Do you find your building attractive?
O. Do you have a car?
P. Is your parking conveniently located to the entrance of your home?
Q. If you could ask the architect or builder of your home to change anything what would it be?

3. Neighbourhood Design:
   A. In terms of walking or playing on your building’s immediate neighbourhood, do you feel that the physical design of your neighbourhood is safe and inviting for you and your children? If ‘no’, please explain which specific elements of your neighbourhood feel unsafe and why. Of if ‘yes’, please try to identify physical features of the neighbourhood that most contribute to your sense of comfort and safety.
   B. Again in terms of whether your neighbourhood feels safe and inviting for you and your children, please comment on the following specific elements:
      i. The length of the crosswalks (both physical length and crossing time lengths)
      ii. The width of the sidewalks
      iii. The height of the sidewalk curbs
      iv. The traffic volumes and speeds
      v. The presence of parked or else moving cars alongside the sidewalks
      vi. The presence of other people (either on the street or behind street-level windows)
      vii. Sidewalk widths, traffic volumes, buildings setbacks, curb heights, etc.)
      viii. Street trees and other landscaping
      ix. Street lighting
      x. Street furniture such as benches or other seating areas
   C. Do you feel that the physical design of your neighbourhood is generally speaking as safe as/more safe than/or less safe than the design of the typical suburban neighbourhood?
      i. If you feel it is either more or less safe, please identify which physical features you feel make it so.
   D. Do you feel that the physical design of your is generally speaking as inviting/more inviting/less inviting for childhood play
than the design of the typical suburban neighbourhood?
   i. If you feel it is either more or less inviting, please identify which physical features you feel make it so.
E. Do you feel that the physical design of your neighbourhood is generally speaking as inviting/more inviting/less inviting for the “hanging out” of teenagers that the design of the typical suburban neighbourhood?
F. Thinking of the lifestyle needs of you and your children, which physical feature of your immediate neighbourhood do you most appreciate?
G. Thinking of the lifestyle needs of your and your children, which physical feature of your immediate neighbourhood would you most like to change?

4. Neighbourhood Amenities:
   A. Do you feel that the community facilities in your neighbourhood (e.g. parks, community centres, schools, etc.) sufficiently meet the needs of your family?
   B. More specifically, do you feel that the following community facilities are sufficiently provided in your neighbourhood?
      i. Community centres
      ii. Daycares
      iii. Parks (could be landscaped or hard surface; both for good and bad weather)
      iv. Schools (both elementary and high school)
      v. Libraries
      vi. Recreation centres
   C. Do you feel that the shops and services in your neighbourhood sufficiently meet the needs of your family, both in terms of daily and leisurely needs?
   D. More specifically, do you feel that the following community amenities are sufficiently provided in your neighbourhood?
      i. Corner stores
      ii. Larger grocery stores
      iii. Drug stores
      iv. Liquor stores
      v. Hardware stores
      vi. Restaurants
      vii. Retail shops and services

5. Other:
   A. Do you feel that the neighbourhoods of the Downtown are generally a good environment for raising young children, approximately up to the age of 6?
   B. Do you feel that the neighbourhoods of the Downtown are generally a good environment for raising middle age children, approximately 6 to 11 years of age?
   C. Do you feel that the neighbourhoods of the Downtown are generally a good environment for raising older children, approximately 12 years of age and older?
   D. Are there any home or neighbourhood design features which we have not discussed but which you feel need to be better
addressed for families living in Downtown Vancouver’s row houses?
E. Are there any non-design issues which you feel need to be better addressed for families living in Downtown Vancouver’s row houses?
Appendix K – Summary Table: The Principles of Family-Oriented Row House Design and associated Key Design Strategies

1 Safety
Principle: Households with children must feel their housing is secure.
Key Design Strategies:
1. Ensure units are street oriented and promote neighbour interaction
2. Clearly demarcate public and private spaces
3. Balance surveillance with privacy when designing units
4. Ensure entries and exits are well lit and have clear sight lines
5. Scrutinize architectural details for potential security breaches

2 Individuality
Principle: Design unit facades to promote the individuality of the resident.
Key Design Strategies:
1. Ensure unit entrances (front doors along the street) can be easily identified and differentiated
2. Employ varying façade articulation
3. Integrate differing architectural elements into each unit including cladding materials and roof styles
4. Utilise a coordinated but varied colour palette
5. Promote opportunities for individualistic decoration and use in private outdoor spaces

3 Unit Size
Principle: Family-oriented housing requires more than 2 bedrooms and rooms that are relatively larger than those found in housing designed for households without children.
Key Design Strategies:
1. Design housing for families that include 3 bedroom (or more) units
2. Ensure bedrooms are large enough to provide both a place to sleep and a social space
3. Design common living spaces that are large enough to comfortably accommodate 4 to 6 adults
4. Integrate efficient circulation and ample natural lighting to enhance spaciousness
5. Enhance connections between private outdoor patios and common living spaces

4 Flexibility
Principle: Design family housing with flexible space and construction practices.
Key Design Strategies:
1. Utilise building practices that lend themselves to easy renovation
2. Provide unfinished or unpartitioned space such as basements or lofts to permit easy opportunities for growing families to modify there living space
3. Design housing units to facilitate division into secondary suites

5 Storage
Principle: Households with children require large amounts of easily accessible storage space.
Key Design Strategies:
1. Provide adequate storage for each category of storage use including; everyday, seasonal and cumbersome items
2. Locate storage space for cumbersome items near entries
3. Design storage spaces that can accommodate cumbersome items [e.g. by ensuring spaces are a minimum of 2.3 sq. m. (24 sq. ft.)]
4. Ensure storage space is well lit
5. Enable storage space to be easily accessed by adults and children

6 Play Space
Principle: Housing for families needs to be designed with a child’s need for both indoor and outdoor play spaces.
Key Design Strategies:
1. Provide adequate floor space for indoor play within the unit
2. Ensure children have direct access to private play space, as well as easily supervised outdoor space
3. Locate outdoor play space such that it can be directly and conveniently viewable from within the row house unit
4. Design private indoor and outdoor play areas for safety and security to promote unsupervised activities as children get older
5. Include an area for outdoor undercover play
6. Afford access to communal play areas
7. Utilise noise mitigation design techniques to lessen the disturbance of neighbours from outdoor play areas
8. Provide a wide variety of age appropriate equipment in communal play areas so as to ensure children are entertained and stimulated

7 Private Outdoor Space

Principle: Housing for families must incorporate outdoor space that is adequately programmed, sized and oriented to the homes interior.

Key Design Strategies:
1. Provide outdoor space that affords a degree of privacy and safety
2. Orient outdoor areas to receive direct sunlight
3. Ensure outdoor areas are large enough to provide a comfortable space for outdoor eating for at least 4 people and additional room for some child activities
4. Design outdoor areas as an extension of interior living space
5. Ensure outdoor areas are well connected to the interior of the home for easy access and to provide clear sight lines to aid in the supervision of children
6. Ensure private outdoor space is secure, but well connected to a common courtyard to promote play with other children
7. Provide an outside water tap with adequate drainage for plant watering and play

8 Privacy

Principle: High-density housing should be designed to enhance both visual and acoustic privacy

Key Design Strategies:
1. Elevate housing above public streets and sidewalks
2. Provide fencing and landscaping that tastefully screens direct sight lines
3. Utilise sound dampening construction practices and technologies
4. Ensure floor plans reflect and respect the gradient of privacy

9 Unit Circulation
Principle: Quality housing must have thoughtful internal circulation and good connections to parking.
Key Design Strategies:
1. Ensure circulation routes, such as hallways and stairwells, are wide enough to promote unhindered movement of people and their furniture
2. Locate parking such that it is easily accessed by residents; ideally these could be directly connected to row house units

10 Places of Sanctuary in the Home
Principle: Design family housing such that family members have a private social place of their own.
Key Design Strategies:
1. Ensure all families members have access to a space that affords a high degree of personal privacy
2. Enlarge bedrooms to include sitting areas
3. Include a den/sitting room in unit layout design
4. Provide a flex space that can be easily transformed into separate living quarters for adolescent children