The evolution in design ideas regarding shared spaces in multi-unit rental housing: the case of Vancouver 1950-2020

by

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Abstract

This research examines the evolution in design features of common spaces within affordable multi-unit rental housing in the City of Vancouver. It investigates the relations between physical design and attention to sociability. The empirical basis of this project is 26 residential buildings owned and operated by Brightside Community Homes Foundation, 22 of which are inhabited and 4 of which are under redevelopment. Data were collected via sources that included building plans, field observations, scholarly literature, and rezoning applications for projects currently under development. Findings show major changes in design thinking: indoor amenity spaces and courtyards include amenities for multiple uses/activities and there are amenities allocated to the general public. However, a stronger rationale linking proposed designs and positive impacts on sociability would benefit future research on design for sociability. Moreover, the older buildings, although not following leading-edge models, demonstrate creative utilization of common space and potentials for improvements.

Keywords: common spaces; community housing; social interactions; design features; Vancouver

To a brother,

who believed in fighting until the last moment.

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Glossary

accessibility (interchangeably used with ‘ease of access’)	“the quality of being able to be entered or used by everyone, including people who have a disability” (Cambridge Dictionary, n.d.)
activity spaces	outdoor spaces favorable to recreational activities like playing or exercise (Huang, 2006)
affordable housing	housing cost is less than 30 percent of the gross income of a household (Metro Vancouver Regional Housing, 2012)
balcony	“external extension of an upper floor of a building, enclosed up to a height of about three feet (one metre) by a solid or pierced screen, by balusters or by railings” (Britannica, n.d.)
buffer	means of separation between different uses within the same property or on the peripheries of a property and they include spatial arrangements or physical barriers (Auckland Design Manual, n.d.)
Cité	the social life in cities (Sennett, 2018)
co-location	“to locate (two or more things) together or be located together” (Merriam-Webster, n.d.)
communal	“participated in, shared, or used in common by members of a group or community” (Merriam-Webster, n.d.)
courtyard	“a court or enclosure adjacent to a building (such as a house or palace)” (Merriam-Webster, n.d.)
detached housing	“A single dwelling not attached to any other dwelling or structure (except its own garage or shed). A single-detached house has open space on all sides, and has no dwellings either above it or below it,” (Statistics Canada, n.d., classification of residential structures)
direct connection	there are no barriers between adjacent common spaces or there are only doors between such spaces (City of Vancouver, 2020e)
Display Boards	part of the rezoning application document presented by an applicant and containing general and specific information and graphics during an open house to receive feedback and inform the public about the new project (City of Vancouver, 2023)
double-loaded corridors	corridors which contain units on both their sides (Happy Cities, 2022)

external density	Yeung (1977) defines it by number of persons per unit land
flaneur	city dweller who knows and experiences life in cities on a daily basis (Sennett, 2018)
fleeting relations	brief social exchanges between strangers in public spaces (Lofland, 1998)
hard landscaping	physical elements within landscaped areas which are hard rather than soft, including concrete, stones, and pavers (Auckland Design Manual, n.d.)
hierarchy of spaces	delineation between public, semi-public, semi-private, and private spaces in design (City of Vancouver, 2020d)
high-rise building	any building of 10 or more storeys (Energy Star, 2023, Multifamily Housing)
internal density	Yeung (1977) defines it by number of persons per room
low-rise building	any 1-4 storey building (Energy Star, 2023, Multifamily Housing)
mid-rise building	any 5-9 storey building (Energy Star, 2023, Multifamily Housing)
multi-unit	“consisting of several separate apartments, shops, offices, buildings, etc.” (Cambridge Dictionary, n.d.)
nodes	Huang (2006) divides circulation spaces into routes and nodes, where nodes denote more spacious areas that facilitate lingering
outdoor corridors	denote ‘exterior’ corridors; they are located outdoors and usually physically and visually connected to courtyards (Happy Cities, 2022)
patios	“a recreation area that adjoins a dwelling, is often paved, and is adapted especially to outdoor dining” (Merriam-Webster, n.d.)
pedestrian experience	the way passersby perceive the built environment of a building while walking and the enjoyment they may feel through visual attractions etc. (City of Vancouver, 2020a)
porosity (physical and visual)	designs where bulkiness/volume of a building is broken up via provision of open spaces within the site (City of Vancouver, 2020c)
primary relations	social relations between immediate family members (Lofland, 1998)
private outdoor spaces	used also interchangeably with ‘semi-private outdoor spaces’ and denotes balconies or patios for private use of individual residents (City of Vancouver, 2021a)

privatism	an inclination towards individualistic lifestyle and more privacy (Lofland, 1998)
Public Hearings	part of the rezoning application document containing discussions around new projects by the public, city councillors, rezoning planners, and applicant team (City of Vancouver, 2023)
public realm	the physical environment not located on-site, (not within property's boundaries) and accessible to the public such as sidewalks and streets (City of Vancouver, 2020c)
public realm interface	areas on the peripheries of a property where it intersects with the public realm, i.e., street, sidewalk, etc. (City of Vancouver, 2020e)
Referral Reports	part of the rezoning application document containing critical assessment of a project and recommendations by city rezoning planners (City of Vancouver, 2023)
routes	Huang (2006) defines them as paths used by pedestrians within circulation spaces in residential properties
scenic spaces	outdoor spaces which include attractive features like sculptures or plants (Huang, 2006)
semi-private space	areas within residential buildings "for the use of residents only" (City of Vancouver, 2020d, p. 4)
semi-public space	areas within residential buildings "accessible to the public but still on site" (City of Vancouver, 2020d, p. 4)
sense of openness	a concept concerning design which favors open spaces to reduce visual barriers and bulkiness (City of Vancouver, 2021a)
smooth transition	gradual transition of form and context of a building into its surrounding built environment (City of Vancouver, 2020c)
social connectedness	an umbrella word which denotes "a multifactorial construct that includes structural, functional, and qualitative aspects of social relationships, all of which contribute to risk and protection" (Holt-Lunstad et al. 2017)
social corridors	interior/exterior corridors of more width which include design features that enhance social exchange between residents (Hebert et al., 2022)
social exclusion	processes which lead to a lack of participation of specific groups or individuals in societal activities due to their identities and/or abilities (UNDESA, 2009)
socio-spatial	"(sociology) Relating to sociological aspects of (mostly urban) spaces" (YourDictionary, n.d.)

soft landscaping	physical elements within landscaped areas which include plants, trees, or other vegetation features (Auckland Design Manual, n.d.)
storey	“a level of a building” (Cambridge Dictionary, n.d.)
streetscape	“the appearance or the design of the streets in a town or city” (Cambridge Dictionary, n.d.)
territoriality	a concept concerning residents’ defence and control over physical spaces where defensibility of these spaces is effectively facilitated through physical or symbolic barriers marking them as private or public zones (Reynald & Elffers, 2009)
Ville	the built environment, rather than the social life, in cities (Sennett, 2018)

Chapter 1.

Introduction

1.1. Research Question

My research question is:

What are the contemporary favorable design criteria regarding common spaces and amenities in affordable multi-unit rental housing? And how have these criteria evolved during the last seven decades in Brightside buildings, a community housing provider in Vancouver?

Provision of affordable rental housing in the City of Vancouver has been a long-lasting endeavor which has seen noticeable shifts of mission and values. Brightside Community Homes Foundation, for instance, as "one of British Columbia's largest charitable, non-profit housing societies" has changed and expanded its mandate and approach during the last seven decades (Brightside, n.d., Our Approach). Where initially the foundation was focused on "low-cost housing for seniors," it now provides affordable homes to families and people with disabilities in addition to low-income seniors; moreover, there are planning and design considerations which not only aim to increase the affordable housing stock but also strive to build communities and social connections (Brightside, n.d., Our Approach).

In this research, I investigated a total of 26 multi-unit residential affordable rental buildings which are currently owned and managed by Brightside Community Homes Foundation (Brightside) across the city of Vancouver in order to explore and analyze the evolution in design features within building common spaces in the past seven decades of their existence and operation. For the purpose of this research, I studied features within five types of common spaces: lobbies, corridors, courtyards, amenity rooms, and laundry rooms. The age of the housing stock operated by Brightside offers an opportunity to understand the evolution of views about good design of these spaces within the community housing sector.

1.2. Brightside Community Homes Foundation

What we know today as “Brightside Community Homes Foundation” was incorporated as “British Columbia Housing Foundation” on June 4, 1952, a provincial non-profit organization with the mandate to design and construct housing for vulnerable communities in Vancouver. While the organization was initially established to provide low-cost housing for seniors, Brightside has expanded its mission to incorporate housing for families and people with disabilities; it owns and operates a total of 26 buildings of affordable rental homes across Vancouver. Thus, the current resident population of Brightside includes low-income seniors and families, and adults with disabilities; some buildings are assigned to seniors only, while some accommodate all three groups. When it comes to the Housing Continuum (**Fig. 1.1**), this private non-profit and charitable housing society is in the middle as “affordable rental housing”; it sits between “social housing” and “market rental housing.”

Figure 1.1. Brightside on the Housing Continuum
Source: Brightside. (2022). *Impact Report 2019-2022*. https://brightsidehomes.ca/wp-content/uploads/2022/08/2019-2022-Impact-Report-WEB-Compressed.pdf

Brightside strives to maintain and increase affordable housing in the city of Vancouver with a vision for “a future where people of all income levels have a home” (Brightside, n.d., Our Approach). In addition, this charitable organization collaborates with different non-profit institutions (such as BCNPHA and CHRA) which hold similar views and mandates within the community housing sector in Vancouver. Brightside’s housing profile contains different rental agreements including apartment buildings which receive government subsidies and buildings which are not subsidized. Some such rental agreements are low-income subsidized housing, rent-geared-to-income housing (e.g., Harwood Manor), and rent-controlled housing (e.g., Florence Manor and Arbutus Court). Besides its emphasis on the development and management of affordable homes for vulnerable communities who cannot afford to live in market housing, Brightside stresses the importance of ‘building communities.’ This can be observed in its website logo (**Fig. 1.2**).

Figure 1.2. Brightside’s Logo
Source: Brightside. (n.d.). https://brightsidehomes.ca/

In fact, Brightside’s “focus on community development that fosters strong social connections and resilience among its residents” is visible in its activation of common spaces (Brightside, n.d., Our Approach). Examples of these efforts appear in social programming and events held within the common spaces of current buildings or purposefully designed amenities within its new projects. So, within the portfolio of existing buildings, social programming aims for “opportunities for greater community engagement” through annual events like “summer barbeques and winter holiday parties”, community gardens, and other “social engagement initiatives” (Brightside, 2022, p. 17). Regarding its new projects, Brightside’s 488 additional rental apartments in four current redevelopment projects to be built over the next five years, include “planned community amenities” which “facilitate social connectedness” (Brightside, 2022, p. 10).

Alongside changes in mission and mandate, the organization has gone through some title changes. Initially called the British Columbia Housing Foundation, it was

renamed HFBC Housing Foundation in 2002 and, finally, was rebranded as Brightside Community Homes Foundation in 2017 (Brightside, n.d., Our History).

Brightside offers a variety of building types to house a variety of residents. The foundation's building profile consists of a range of low-rise wood-frame older apartment buildings (built in the early 1950s) to more recent mid-rise and high-rise concrete buildings. Lion's View building was Brightside's first project in 1953. In terms of resident profile, there is a variety of groups: some live in townhouses (Coleopy Park, First Lutheran Court); there is a building occupied by "younger people with barriers to employment" (Brightside, n.d., Glynn Manor); and there is a building mainly occupied by residents who are "deaf/hard of hearing" (Brightside, n.d., King's Daughters Manor).

Further, while some of the newer developments include shared amenities such as courtyards, amenity rooms, recreation/ game rooms, and elevators, there are some older buildings (built in the 50s and 60s), namely, Arbutus Court, Burrard Manor, Florence Manor, Harwood Manor, Londonderry, and Magnolo Manor that do not afford any common rooms other than their laundry rooms. Located across the City of Vancouver, Brightside Buildings are geographically categorized into four locations: Boundary, Central, Downtown, and West Side (Table 1.1) lists some features of Brightside buildings.

Table 1.1. Brightside Buildings

Building name and address	Year built	Number of units	Resident profile	Storeys	Amenities
Arbutus Court 2085 W. 5th Ave.	1964	21	Families, PWD, Seniors	3	shared laundry; balconies
Bridgeview Place 238 Davie St.	1993	72	Families, PWD, Seniors	10	shared laundry; balconies; elevators; amenity rooms; courtyard
Burrard Manor 2330 Balsam St.	1967	16	Seniors	2	shared laundry; courtyard
Coleopy Park 5748 & 5788 Rupert St.	1991	58	Families, PWD, Seniors	2	shared laundry; amenity room; backyard
Collingwood Tower 5657 Harold St.	1977	78	Seniors	10	shared laundry; amenity rooms; roof garden
First Lutheran Court 5709 Wales St.	1994	19	Families	Townhouses	shared laundry; amenity room; courtyard
Florence Manor 1325 Burnaby St.	1954	15	Couples, PWD, Seniors	3	shared laundry
Glynn Manor 520 W. 7th Ave.	2001	49	PWD	4	shared laundry; balconies; elevator; amenity room
Gordon Fahrni 1630 Barclay St.	1969	42	Seniors	9	shared laundry; balconies; elevator; amenity room
Harwood Manor 1222 Harwood St.	1960	25	Families, PWD, Seniors	2	shared laundry
King's Daughters Manor 1400 E. 11th Ave.	1972	29	Deaf/Hard of Hearing; Seniors	2	shared laundry; amenity room; patio; games room
Lion's View I 2950 Euclid Ave.	1993	45	PWD; Seniors	4	shared laundry; balconies; elevator; two amenity rooms; courtyard
Lion's View II 2980 Euclid Ave.	1994	47	PWD; Seniors	4	shared laundry; balconies; elevator; amenity room; courtyard
Lion's View III 2975 Horley St.	1995	34	Seniors	4	shared laundry; balconies; elevator; amenity room; courtyard

Building name and address	Year built	Number of units	Resident profile	Storeys	Amenities
Londonderry 5550 Yew St.	1957	22	Families, PWD, Seniors	3	shared laundry
Magnolo Manor 2675 Alder St.	1959	17	Families, PWD, Seniors	4	shared laundry; balconies; elevator
Moreland Kennedy House 2495 W. 3rd Ave.	1974	31	Seniors	6	shared laundry; balconies; elevator; amenity room
Mount Pleasant Lions Manor 325 E. 6th Ave.	1968	36	Seniors	2	shared laundry; balconies; amenity room; backyard
Muir Manor 2588 Nanaimo St.	N/A	34	Families, PWD, Seniors	4	shared laundry; balconies; elevator; amenity room; backyard
Soroptimist Lions Manor 1444 E. 13th Ave.	1971	25	Seniors	2	shared laundry; amenity room/patio
Wallace Wilson 1620 E. 6th Ave	1965	41	Seniors	2	shared laundry; amenity room; community garden
Wilson Heights Manor 1602 E. 41st Ave.	1970s	15	Families; PWD	4	shared laundry; balconies; elevator; amenity room
Sunrise Village 2924 Venables St.	Under Redevelopment	146	Families; Seniors	6	amenity/ laundry room; balconies; elevator; courtyard
Timbre & Harmony 1425 & 1451 E. 12th Ave.	Under Redevelopment	157	Seniors	6	amenity/ laundry room; balconies; elevator; courtyard
The Hawthorn 8725 French St.	Under Redevelopment	100	Families; Seniors	6	amenity/ laundry room; balconies; elevator; courtyard
The Aster 349 E. 6th Ave.	Under Redevelopment	82	Families; Seniors	12	shared laundry; balconies; elevator; amenity room (2); courtyard; roof garden

Note: Brightside website: www.brightsidehomes.ca

According to the annual Community Enhancement Survey conducted in Fall 2021, the resident profile of Brightside consists of 76% senior residents (older than 65); 69% residents who live alone; and 59% female residents. The same document indicates that nearly 70% of the residents have lived in their buildings more than 6 years. As the

chart in **Figure 1.3** illustrates, the resident population is predominantly composed of people of White and Chinese ethnicities. In total, across its portfolio of 26 buildings, the organization manages over 1000 homes located in 11 city of Vancouver neighborhoods (**Fig. 1.4**), where 940 units (in all 26 properties) are specifically allocated to seniors, 99 units (in 9 properties) to families, and 56 units (in 3 properties) to people with disabilities, respectively. It should be noted that the senior population at Brightside includes individuals who are “independent” and “able to live on their own” (Brightside, n.d., Residents). This should apply to PWD as well since (on Brightside’s website) there are no notions of particular features or programs for these groups.

Figure 1.3. Brightside Resident Profile: Ethnicity
Source: Brightside. (2022). *Impact Report 2019-2022*. https://brightsidehomes.ca/wp-content/uploads/2022/08/2019-2022-Impact-Report-WEB-Compressed.pdf

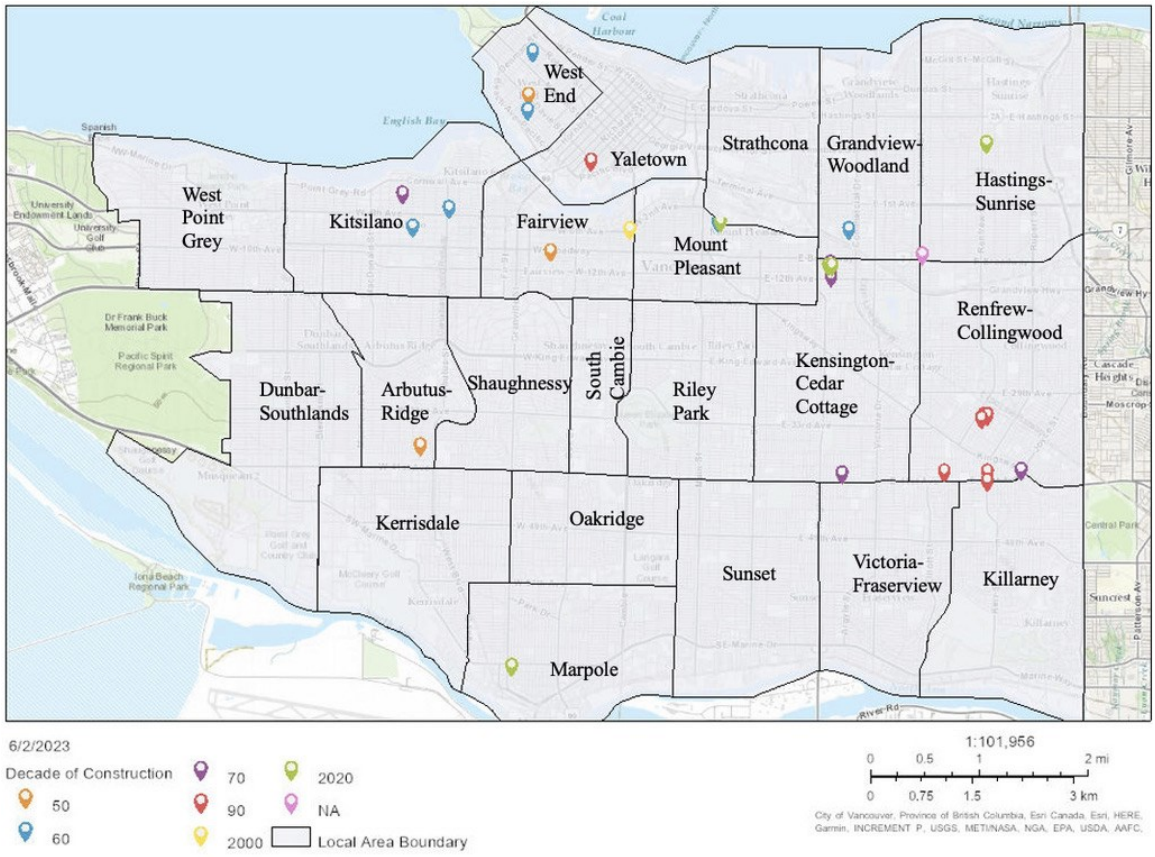

Figure 1.4. Brightside building locations in Vancouver
Source: developed by Ahad Kamranzadeh through ArcGIS online

Generally, the non-profit organization provides and manages affordable rentals for independent living by vulnerable households in Vancouver. Brightside stresses this mission by denoting these households as the most in need, yet they may include households at different income levels and stages in life (i.e., low-income seniors or younger populations struggling with employment). In keeping with its social impact goals, Brightside stives to create properties that facilitate aging in place in “vibrant and healthy” communities (Brightside, n.d., Our Approach).

1.3. Brightside’s New Projects

Four new projects under development by Brightside (the four last rows in Table 1.1) will add to the stock of affordable rental housing in Vancouver and provide opportunities for current and future residents to age in place. Brightside asserts that the main reason for these redevelopment projects is that the replaced buildings are “aging” and do not provide “accessibility features” such as elevators (Brightside, n.d., New

Projects). Based on the application documents, the replacement projects, in addition to offering greater accessibility, will also offer more amenity spaces and accommodate families and people with disabilities as well as seniors, in accordance with the organization's contemporary vision of community housing need.

Before introducing the study as a whole, the following section provides an overview of some general and specific design aspects of these new projects.

2924 Venables Street

This project, named Sunrise Village: East and West, consists of two adjacent six-storey buildings where a central south-facing courtyard offers a landscaped outdoor amenity space in the middle (Brightside, n.d., New Projects). The old property at the same location, Alice Saunders House, is an aging three-storey Brightside property with no elevators; it was constructed in 1977 in the Hastings Sunrise neighborhood. 2924 Venables Street (**Fig. 1.5**) will replace the 64 homes (accommodating only seniors) with 146 homes accommodating both seniors and families.

Figure 1.5. 2924 Venables St.
Source: Brightside. (2020) *Applicant Boards*. https://brightsidehomes.ca/wp-content/uploads/2022/10/2924-venables-st-rezoning-applicant-boards-SML.pdf

The new central courtyard is designed so that East and West buildings can access the open shared space via connected walkways where the same space is physically and visually connected to indoor amenity areas of both buildings (Brightside, 2020a, Sunrise Village: East & West [display boards]). The courtyard features spaces for urban agriculture, community gardens, a playground, and seating areas.

1425 & 1451 East 12th Avenue

These new buildings (two six-storey buildings) are located in the Grandview-Woodland neighborhood; they replace Edward Byers House and Loyal Orange Manor, built in 1962 and 1971, respectively. Together these buildings contain 57 dwelling units. Neither older building has an elevator. The pair of new buildings (**Figure 1.6**), Timbre and Harmony, will contain 157 apartments in East and West buildings, bisected in the middle by a public Right of Way (ROW) path and featuring two outdoor amenity spaces. The front amenity area includes community gardens, harvest tables and BBQ equipment and is adjacent to the East building's amenity room; the back amenity area includes "social seating", "games tables," and a "bird habitat feature" and is located on the north-west corner of the property (City of Vancouver, 2020e, p. 19).

Figure 1.6. 1425 & 1451 E 12th Ave.
Source: City of Vancouver. (2020) *Applicant Open House Boards*. https://wayback.archive-it.org/8849/20211022001704/https://rezoning.vancouver.ca/applications/1425and1451e12thave/documents/1425and1451E12thAve-RezoningApplication-ApplicantOHBoards.pdf

8725 French Street

This project replaces MacLeod Manor in the Marpole neighborhood. Built in 1964, MacLeod Manor is a three-storey building of 46 units, housing seniors, families, and people with disabilities; however, it is aging and does not provide accessible amenities for people with mobility issues (City of Vancouver, 2021b). The new project (**Figure 1.7**) features 100 apartment units with improved design features for older populations that "accommodate mobility aids" within communal and private areas (City of Vancouver, 2021b, p. 9); for instance, shared amenities such as laundry and kitchens are accessible and the building entry offers an "accessible ramp and bike racks" (City of Vancouver, 2021b, p. 21).

Figure 1.7. 8725 French St.
Source: City of Vancouver. (2021) *Open House Boards*. https://council.vancouver.ca/20210615/documents/phea2OHboards_revised.pdf

349 East 6th Avenue

The old Lions Manor at 345 E 6th Ave in Mount Pleasant currently accommodates residents in 36 units, adjacent to the new development. This existing two-storey building currently houses only seniors but does not have elevators. The new building (**Figure 1.8**), on the other hand, provides 82 affordable rental units in 12 storeys, accessible by elevator, which are "100% Universal Design" and "5% fully accessible" (Brightside, n.d.,

New Projects). In addition to ground floor indoor/outdoor amenity spaces, the rooftop affords extra spaces for “gatherings and leisurely enjoyments” (City of Vancouver, 2020b, p. 33). Display boards demonstrate that amenity areas of the Aster project are more accessible (e.g., kitchenette and WC) and flexible (moveable furniture) compared to other new projects; particular design considerations are noted, including an “informal play area”, “privacy planting”, and “views of the North Shore mountains” (City of Vancouver, 2020b, p. 33-34).

Figure 1.8. 349 E 6th Ave.
Source: City of Vancouver. (2020) *Display Boards*.
https://council.vancouver.ca/20201202/documents/phea7DisplayBoards.pdf

1.4. Research Design

Since Brightside properties include a range of apartment buildings spanning 7 decades (1952-2023), my study of common spaces within these community housing buildings may help in understanding the evolution of ideas around design features specific to affordable multi-unit rental residential buildings in the city of Vancouver.

Therefore, this collection of buildings presents different characteristics: They consist of different typologies, namely, 2-3 storey walk-ups, mid-rises, and a few high-rises; they are dispersed in different geographical locations across Vancouver; they house a diverse resident population of independent seniors, families and couples, and

adults with disability; and they vary in terms of number and quality of common spaces/amenities. While some buildings feature only laundry rooms as their main common space, others feature amenity rooms, laundry rooms, courtyards, etc. Hence, the long time span of the design and construction of these 26 buildings, including existing and under development properties, and their diverse typologies and resident profiles provide an invaluable opportunity for my research of common space design features in affordable rental housing in Vancouver.

Research Design: the evolution of design ideas for common spaces

I conducted an expansive review of academic and non-academic literature concerning relationships between social interactions/social connections and building design. I started searching for this literature in the context of urban apartment living; then, I narrowed down my research to include only literature regarding specific designs of common spaces within such buildings. Further, non-academic literature including toolkits and reports concerning design strategies for social connection and community building (e.g., documents from Happy Cities and Catalyst Community Development) were also studied. Moreover, I conducted field observations and photo documented the 5 common space types within existing Brightside buildings (22 buildings) for the data collection process. For the 4 new projects under redevelopment, I relied on the City of Vancouver rezoning application documents: Display Boards, Referral Reports (including Urban Design Panel Minutes), and Public Hearing videos. These City documents formed the basis for data collection and subsequent data analysis regarding the new projects. Additionally, I studied building layouts of all 26 Brightside buildings with specific attention to quantitative and qualitative design aspects of their common spaces.

Inquiries:

This collection of data helped me in my study of the evolution of design considerations in Brightside buildings.

So, the main inquiries can be listed as follows:

- How have the ideas relating to the design of common spaces/amenities, in relation to their potential to facilitate social interactions, changed over the past 7 decades?

More specifically I will be answering the questions:

- Are there significant modifications to design features (or design ideas) within common spaces when comparing the older stock of buildings with the new redevelopment projects?

- What are some specific examples of design where social connection, well-being, and quality of life seem to be in focus and regarded as important elements?

- And finally, can we infer from data collection from existing and future Brightside buildings that *spatial* decisions may lead to *social* outcomes in affordable multi-unit residential buildings in the city of Vancouver? If yes, how?

Chapter 2.

Conceptual framework

The conceptual framework of my research is focused on three intersecting themes from scholarly and grey literatures: multi-unit urban housing; design-based approaches to improve daily life; and the value of social connections in cities. Together, these bodies of literature will highlight the specific physical and social characteristics of multi-unit housing and living in cities, and will help me uncover relationships between these characteristics and social interactions between residents in my field sites**.** Further, I use my second body of literature (design-based approaches to improve daily life) to study the six common themes highlighted in city rezoning application (RZ) documents: connectivity, accessibility, location, liveability, transition, and privacy. I will discuss these concepts in more detail in Chapter 4. Thus, section 2.2 in this chapter is divided into two sections: the first part discusses the interrelations between design and sociability, and the second part discusses ideas within the literature that connect to the themes from RZ documents. Both parts concern design-based approaches and, hence, are placed in the second body of literature.

It is important to note that both academic and grey literature about relationships between physical design and social life concern diverse regions, countries, and cultures and sometimes involve unique cultural, historical, social, and socio-demographical backgrounds within such geographies. Since I did not limit the focus of my literature review to a specific geographical location, the results of the search for academic/non-academic literature mainly concerned relations between design and sociability. The following literature, then, is a sample of the most relevant material concerning my research topic, and includes scholarship regarding North America, Europe, Australia, Asia, Middle East and North Africa, and South America; includes studies from countries around the world, including: the US, Canada, the UK, Scotland, Sweden, Australia, China, Taiwan, Vietnam, Korea, Jordan, Iran, and Brazil. Consequently, elements of the literature review might represent ideas which appear specific to a certain geography and intertwined with particular cultural and socio-demographic backgrounds. However, from this varied literature, I have endeavored to present the most prevalent views**.**

Also, it is important to take into consideration that much of the research in this literature review involves housing for certain demographics who reside in community housing; terms such as social housing, low-cost housing, and public housing are used throughout these studies of countries all around the world. My research and topic concern community housing, including affordable rentals in Vancouver too. In fact, there are many notions and design considerations which could only be related to housing which has been built, programmed, and funded by government and this impacts the results and findings in the scholarship reviewed in this research. However, there is also literature which does not necessarily reference public/social housing and which focuses on more general physical aspects of multi-unit housing of any type. Therefore, it should be noted that although design for these particular housing types may be distinct in terms of government funding and specificalities regarding the construction of community housing, I did not address these issues and studied merely the relationships between design features and sociability within the context of urban multi-unit housing.

Hence, this project does not interrogate the relationship between government funding and community housing design, which is beyond the scope of my research. Nonetheless, recent scholarship (Ozer & Jacoby, 2022) highlights the important role of governance in the realm of subsidized housing around the world. Ozer and Jacoby (2022) assert that housing studies should include comparative approaches that involve contextual circumstances within different countries, i.e., “more detailed and contextual cross-national housing comparisons” (p .2).

The first body of literature examines the qualities of multi-unit housing in cities that make it different from other housing types in terms of its higher density and physical structure. The second body of literature, from design-based scholarship, builds a foundation for understanding good, shared space and amenity design of multi-unit housing. The third body of literature explores the importance of social connections in the urban environment and therefore supports my inquiry on the likely impact of designed environments in the daily social interactions between city dwellers at home.

2.1. Multi-unit Urban Housing

This body of literature focuses on the specific physical characteristics associated with multi-unit urban housing, including housing layouts, physical and perceived density,

and outdoor common space design. Scholarship has examined relationships between these physical attributes and a variety of social aspects, including social relationships and interactions between residents, psychological impacts of apartment living on residents, social sustainability concerning apartment living, and the (social) image of liveability in this housing typology.

There is a divergence of views regarding the impacts of multi-unit housing on the well-being and social behavior of households. While some scholars disregard relationships between housing type and quality of life, others point to disadvantages of apartment living. Some, like Yeung (1977), focus on the misconceptions around ideas such as impacts of high density on neighborliness in high-rise high-density housing noting that there is no clear evidence that connects this particular housing type to fewer social connections between neighbors, compared to other housing types. Others, however, such as Gibson et al. point out the deficiencies in apartment living in comparison to the detached housing typology (2011). In the context of Scotland's social housing, these scholars, while comparing household living conditions between detached houses and apartments, highlight a few issues around apartment living. They maintain that psychological effects due to less privacy and control for apartment dwellers negatively impact their well-being.

In the reviewed literature, concepts used to differentiate multi-unit urban housing from detached housing include: density, perceived density, and crowding (Lehmann, 2016; Mousavinia et al., 2019; Yeung, 1977). Yeung (1977) disagrees with hypotheses that claim high-rises intensify densities, meaning that these building typologies disproportionately elevate densities compared to housing which is not multi-storey. He puts forward an alternative term: *building coverage*, a concept that denotes the amount of open space in building projects. Hence, Yeung (1977) believes that issues regarding density could be related to the increased building coverages: extreme horizontal expansion of apartment buildings may impact resident perception of density much more than the vertical expansion of high-rises. On the basis of such observations, he concludes that "high-rise development does not necessarily lead to less living space (internal density) and more people per unit area (external density)" (Yeung, 1977, p. 593), where internal density denotes number of individuals per room while external density denotes number of individuals per land unit area.

Further, literature defines perceived density as opposed to physical density. Mousavinia et al. (2019) concur with the distinction Yeung makes between assumed and actual density differences and use the term perceived density. They assert that "perceived density is not related to actual density such as the number of dwelling units per hectare, but is a reflection upon the physical form, design and layout" (Mousavinia et al., 2019, p. 9); their studies on three housing types of gated communities in Mashhad, Iran prove that different layouts (Courtyard, Super block, and Linear block) impact residents' perception of density within the properties, consequently affecting social interaction among residents (**Fig. 2.1**). As alternative terms associated with density, "crowdedness" or "crowding" have been considered as subjective concepts with culturally based connotations (Yeung, 1997, p. 591; Mousavinia et al., 2019, p. 2). However, while socio-cultural and geographical factors are involved in how people perceive density, apparently extremely dense residential buildings lead to negative effects on quality of life. In fact, extreme density has led to disastrous living conditions in some cases, including Kowloon Walled City in Hong Kong (Lehmann, 2016). The infamous Walled City (**Fig. 2.2**) contained "300 interconnected buildings ranging from 10 to 14 floors, on a small site of 2.2 hectares," with living conditions so drastic that it was finally demolished in 1992-1993 (Lehmann, 2016, p. 4).

Figure 2.1. Building layouts: gated communities in Mashhad, Iran
Source: Mousavinia, S. F., Pourdeihimi, S., & Madani, R. (2019). Housing layout, perceived density and social interactions in gated communities: Mediational role of territoriality. *Sustainable Cities and Society, 51*, 101699. https://doi.org/10.1016/j.scs.2019.101699

However, multi-unit housing cannot be defined merely in terms of form or scale; it is also intertwined with cultural, socio-demographic, and geographical dimensions. Two pieces of research showcase nuances regarding apartment living related to cultural and demographic backgrounds. These two refer to Hanoi, Vietnam and Mashhad, Iran. In terms of cultural contexts, housing for low-income populations through high-density public housing projects in Hanoi shows alternative aspects of social life of these specific socio-demographics in terms of resident use of common spaces. In fact, there are overwhelming incidents of use of common corridors for different types of social gatherings such as marriage celebrations, smoking and drinking, or playing (Nguyen et al., 2020). In terms of socio-demographic contexts, findings on social interactions between residents of gated communities in Mashhad cannot easily be applied to different resident communities. Mousavinia et al. (2019) warn the readers about generalizing their study results beyond Mashhad, Iran. These scholars point out that residents' perceptions of density as a consequence of varied building layouts and the resulting social relations might reflect findings related to only these specific socio-demographics, namely, middle-class households living in gated communities.

Figure 2.2. The Kowloon Walled City
Source: "KWC-1975" by Ian Lambot, 1975, Wikimedia Commons, licensed under https://creativecommons.org/licenses/by/4.0/deed.en.
https://commons.wikimedia.org/wiki/File:KWC_-_1975.jpg

Geographical dimensions connected to studies around relationships between multi-unit urban housing and sociability demonstrate the importance of context. As another example of specificities of high-rise living within different contexts around the world, we can look at the Korean apartment complexes. These complexes might be a unique phenomenon that needs to be investigated through historic and social backgrounds specific to Korea: the socio-economic characteristics of Korean high-density apartment buildings; the branding of these apartments and associated images of their residents; and their physical characteristics manifested through their layouts and associated social exclusion of their residents from surrounding public life (Gu, 2020).

Gu (2020) points to specific built form characteristics where apartment buildings are physically separated from the public realm. The author also underlines the distinct socio-demographic characteristics where resident profiles are comprised of mostly middle-class populations. Accordingly, the author explains the unique identities associated with high-rise living in Korea: demographically they resemble gated communities of the middle classes and spatially they reinforce social exclusion and disconnection from urban public life.

Moreover, academic research points out different views on the built forms of multi-unit housing in relation to residents' quality of life. For instance, Al-Jokhadar and Jabi (2017) propose traditional designs incorporating into apartment living in order to improve resident well-being; they recommend integrating an L-shape inward looking courtyard model into modern multi-unit residential buildings in the Middle East and North Africa (MENA). Yeung (1977), however, sees quality of life through a different lens which is more concerned with the number of provided housing units. The author highlights the success of old public housing projects in Hong Kong in their original (crowded and densified) built form as he sees them providing housing for larger populations.

In sum, some scholars believe that design in multi-unit urban housing could result in detrimental social impacts. For instance, specific layout design in Korean large-scale apartment buildings, where buildings are part of complexes and disintegrated from the public realm, have contributed to socio-cultural consequences: the circulation areas and physical connection of outdoor communal spaces mostly lead to the exclusion of the residential community from their surrounding urban public realm (Gu, 2020). Gu (2020) concludes that apartment living may be responsible for the disintegration, i.e., division

between different social groups, which could be quite visible in these housing types as opposed to other Korean dwelling types (p. 1378). Such notions also relate to the gated communities in Mashhad where demographic and spatial characteristics may lead to social disconnection between the residents and their surrounding urban realm.

2.2. Design-based approaches to improve daily life

This section of literature review directly answers my inquiry about the favorable design criteria of common spaces and amenities in connection to social interactions among multi-unit urban dwellers.

So, where do people really interact in multi-unit buildings? And why do they choose these spaces over other options for social exchange? In fact, indoor and outdoor circulation spaces within multi-unit urban developments appear as a theme in research concerning design-based approaches. Indoor circulation areas, namely “corridors, lift/lobbies, main hall/entrance” are presented as spaces where most interactions happen in low-income housing complexes in Hanoi, Vietnam (Nguyen et al., 2020, p. 12). Moreover, outdoor circulation spaces rank first in terms of number of interactions in high-rise building complexes in Taipei, Taiwan; however, scenic spaces (spaces containing plants or attractive features) and activity spaces (spaces facilitating play or recreation) are where the highest percentage of social interactions occur (Huang, 2006).

Therefore, while Nguyen et al. (2020) assert that corridors denote the most frequently used shared space which inflict negative consequences with regard to “privacy and safety,” Huang (2006) does not seem to be so certain about the social potential of circulation areas for apartment dwellers: “they are not better than other space types in enhancing social behaviour due to their transitional character and linear pattern” (Huang, 2006, p. 201). Huang maintains that elements such as sculptures and water fountains developed in scenic spaces, and open areas featuring generous size and various facilities for joint activities (like playing) are more prominent factors in social interactions.

Next, outdoor common space design appears as a popular theme in the reviewed literature. However, outdoor common spaces are categorized differently throughout the literature. Huang (2006), studying high-rise complexes in Taipei, Taiwan,

divides such shared spaces into five differentiated ‘space types,’ namely, seating space, scenic space, circulation space, activity space, and vague space, each containing specific ‘design elements.’ But Zhang et al. (2018) group outdoor common spaces of Taiwan’s public housing into three categories based on their layouts: alley, cluster, and courtyard (**Fig. 2.3**). These authors investigate the impacts of outdoor planning within these three layouts on the residents’ place relationships, where place relationship denotes “the connection between spatial settings and people” and is comprised of three dimensions: place attachment, social interactions, and community participation (Zhang et al., 2018, p. 1). They assert that, among these three layouts, “communities with cluster layout are the most influenced by planning factors onto their residents’ place attachment” while “social interaction is most influenced by personal characteristics” (Zhang et al., 2018, p.15). Mousavinia et al. (2019) follow similar categorization of pattern and group outdoor common spaces based on their layouts: Courtyard, Super block, and Linear block. They propose that these layouts, associated with a particular socio-demographic, that is, middle-class gated communities in Mashhad, affect residents’ perception of density and, hence, their social interactions within the community.

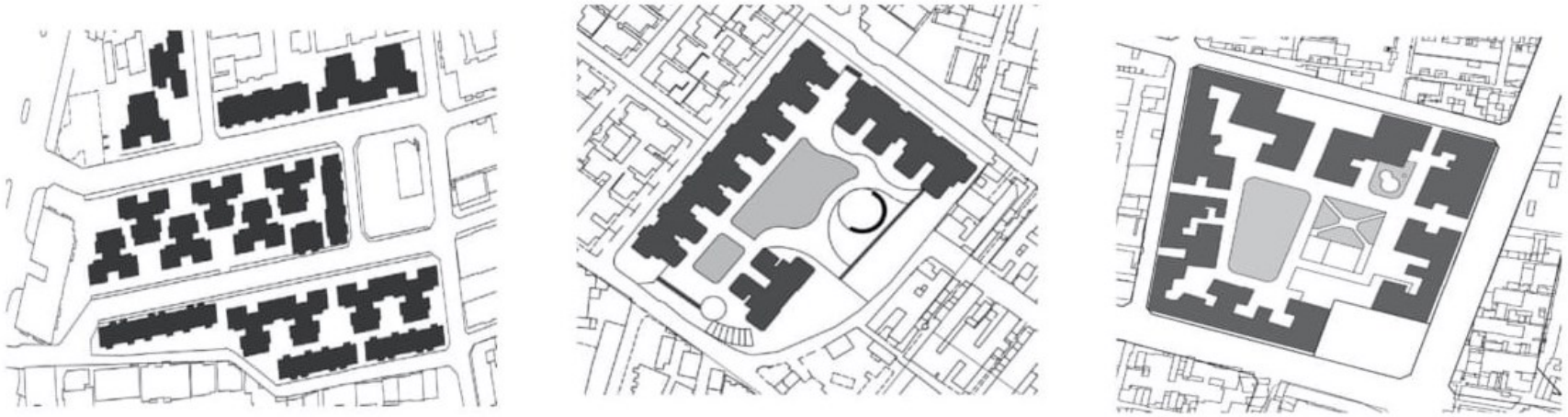

Figure 2.3. Courtyard Design in Tainan, Taiwan: alley, cluster, courtyard (left to right)
Source: Zhang, H., Matsuoka, R. H., & Huang, Y.-J. (2018). How Do Community Planning Features Affect the Place Relationship of Residents? An Investigation of Place Attachment, Social Interaction, and Community Participation. *Sustainability (Basel, Switzerland), 10*(8), 2726. https://doi.org/10.3390/su10082726

More explicitly, in the reviewed literature, there are design suggestions for certain areas or amenities. Provision of private outdoor spaces, denoting private balconies or patios, and designs which incorporate courtyards or atriums into multi-unit housing are two examples of such notions. As a matter of fact, both in RZ documents (referral reports and public hearing videos) and articles (City of Vancouver, 2020d; Prochorskaite et al., 2016) balconies/patios are regarded as contributors to liveability. A variety of phrases refer to these similar spaces throughout the academic literature and city documents, i.e., 'private outdoor open space', 'private outdoor space', and 'balconies.' The City of Vancouver (2020d) emphasizes the vitality of these private spaces "adjacent to" every apartment and for "exclusive use"; COV highlights qualities such as "sunlight access, safety, adaptability for a variety of family activities" within these spaces (p. 11). Moreover, research conducted by Prochorskaite et al. (2016) in the UK on the rankings of most preferable housing features in the views of diverse groups, including housing users and housing providers, shows that private outdoor space appears a priority to 'housing users' in the UK and one of the areas of apparent divergence between users and providers of housing there.

Additionally, atrium/courtyard design emerges as another example of a certain valued design in multi-unit housing. Here, two case studies in different geographical locations, one in the Middle East (Amman, Jordan) and one in Europe (Sweden), depict the significance of atriums/courtyards in the minds of scholars in addition to similarities in ideas concerning design features of these shared spaces. Heated atrium design in Sweden shows potential for more opportunities for social interaction where the atrium's location, orientation, hierarchy of shared spaces, that is, separation between public and private spaces and connectivity to other common spaces, function as social facilitators (Danielski et al., 2018). In the context of Jordan, Abed and Al-Jokhadar (2022) stress the social impacts related to contemporary apartment living where changes in housing typology, from vernacular houses (**Fig. 2.4**) to multi-family housing, correspond to changes in lifestyle, from collectivism to individualism. The authors maintain that apartment design in Jordan focuses on private zones, i.e., apartments, rather than public zones within the buildings, hence prioritizing individualistic views. This, however, does not mean that there are fewer private spaces in vernacular Jordanian houses but rather that there is greater balance between private and public living spaces in such traditional designs: generous private spaces are connected to public spaces (like courtyards) via

semi-public spaces. Nevertheless, how to integrate such design features into modern apartments in Amman seems a challenging undertaking because common spaces within these typical apartment layouts mostly serve as circulation areas to pass through; further, they follow similar patterns consisting of relatively small common areas to lot size ratios.

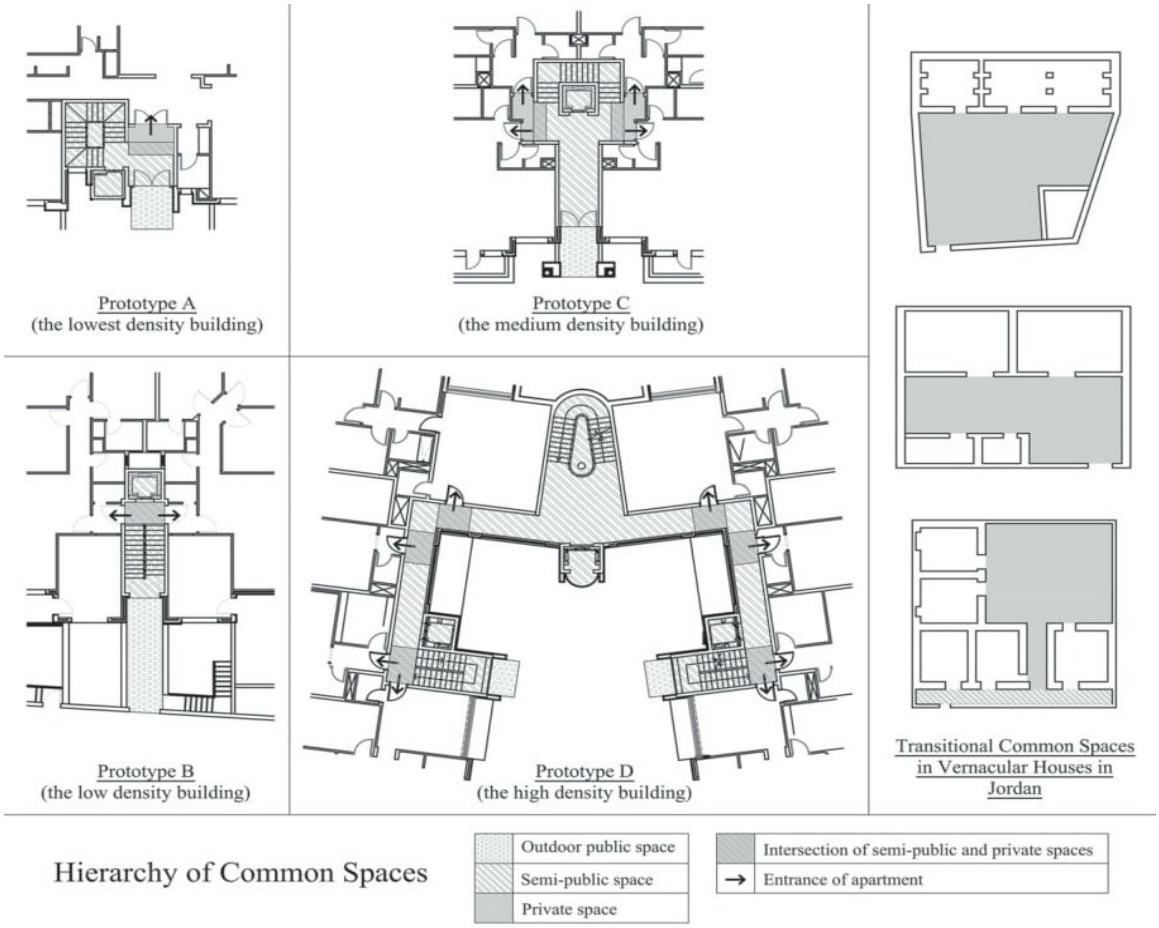

Figure 2.4. Contemporary apartment vs vernacular houses in Amman
Source: Abed, A., & Al-Jokhadar, A. (2022). Common space as a tool for social sustainability. *Journal of Housing and the Built Environment, 37*(1), 399–421. https://doi.org/10.1007/s10901-021-09843-y

Finally, it is imperative to note that in addition to factors concerning physical design, personal characteristics of households may impact their social interactions in multi-unit housing. In fact, age group, employment status, length of residence and household types (with children or without children) denote some of these contributing factors: the lowest number of interactions in a sample of high-rise apartments for low-income families in Hanoi are among the oldest group (over 55) (Nguyen et al, 2020,

p.15); unemployment negatively affects social interactions between neighbors, probably due to less self-esteem compared to employed residents; families with children have more social exchange with neighbors; and 'home-ownership' positively affects the number of social interactions (Nguyen et al., 2020). Regarding the personal impacts, Zhang et al. (2018) maintain that community planning features have noticeable influence over two out of three "place relationship" indicators including "place attachment, social interactions, and community participation" (p.1); however, "social interaction is most influenced by personal characteristics, such as age, length of residence and level of education" (p.15). Hence, design-based approaches need also to include the personal aspects of apartment living when designing for social connectedness.

Therefore, design for sociability appears as a complex concept which involves not only favorable features for social relations but also personal characteristics of households, cultural values, geographical contexts (e.g., Middle East vs Sweden), and different perceptions of housing density among varied populations. Moreover, academic research relating to such designs consists of a range of studies concerning diverse criteria such as building layouts, different socio-demographics including lower-income populations and middle-classes, and place-based connotations of high-rise living such as the case for Korea. Adding to this scholarship, my research on the evolution of design for shared spaces in rental housing in Vancouver helps to better understand how design for specific context and demographic in a major city in North America may foster social connections between the residents of this particular housing typology, i.e., multi-unit urban housing.

The final part of my literature review in this section introduces the grounding in the academic and grey literatures for six key themes related to common and amenity space design. These six themes are found in COV documents and concern design features of new Brightside projects (reviewed through rezoning applications). The themes include connectivity, accessibility, location, liveability, transition, and privacy.

Linking the scholarly literature to the City of Vancouver (COV) documents

Now, I discuss ideas in literature which are similar to the main themes in RZ documents. The following six themes, their definition, and applications will be discussed in detail in chapter 4 of this project and I offer only a brief definition of them at the

beginning of each subsection below. Moreover, because these themes constitute a major part of my research, it seems quite reasonable to present the similarity of ideas between the city and the literature.

2.2.1. Connectivity

Basically, the concept of connectivity in RZ documents concerns physical and visual connections between shared spaces. Nevertheless, physical and visual connectivity do not belong only to COV documents in the Rezoning Applications for the new developments of Brightside, but also exist in multiple examples in scholarly literature. For instance, there are suggestions which concern visual connectivity within common spaces; lack of “visual boundaries” has been mentioned by Huang (2006) as a design consideration with respect to functional “activity nodes” (pp. 194-195). Additionally, there are notions regarding physical connectivity: connectivity of circulation areas (balconies and interconnected corridors) of atrium design in Sweden appears crucial to the creation of opportunities for social interactions (Danielski et al., 2018). Further, Zhang et al. (2018) stress the connectivity of the built form as in the “connection between the residential buildings and the nearby neighborhood” when they discuss “circulation planning” in Taipei high-density residential buildings (p. 9). When it comes to *families with children*, the City of Vancouver is concerned with connectivity (both physical and visual) between outdoor amenity spaces, including children’s play areas, and indoor common spaces (City of Vancouver, 2020d). Each of these will be discussed briefly.

Firstly, there are notions of visual connections. Huang (2006) not only asserts the importance of “few visual boundaries” within activity nodes but also points to the visual connection which could be established through concave seating arrangements since “concave seating allows facial contact and encourages interaction” (pp. 195, 202). Furthermore, with respect to atrium design in Sweden, certain visual facilities developed through centrally located shared spaces may ease social interactions between residents. Although visual connectivity appears as a favorable design consideration with advantageous social outcomes, when it comes to more private areas like apartment units, there are arguments and guidelines which particularly emphasize privacy. COV guidelines suggest designs where “entry doors should be staggered” in double loaded corridors “to protect privacy by reducing the opportunities for neighbors to look into each

other's entries or be disturbed by each other's comings and goings" (City of Vancouver, 2020d, p. 6).

Secondly, physical connection as a design concept is noted throughout the literature through different perspectives: when discussing the priority of private outdoor spaces proximate to households in comparison to public green spaces in the neighborhood; when describing the interconnected outdoor corridors and balconies in atrium design; and when emphasizing the connectivity at the neighborhood scale developed through outdoor walkways in Taiwan's high-rise complexes (Prochorskaite et al., 2016; Danielski et al., 2018; Huang, 2006). Yet, ideas around connectivity do not always align. Reynald and Elffers (2009) discuss more generally the physical built environment of public spaces rather than a building's shared spaces and they do not explicitly refer to connectivity as a distinct design aspect within such spaces. Nonetheless, there are similar implications to the concept of connectivity through their assertions regarding access to shared spaces. As a matter of fact, it can be inferred from the propositions made by these two scholars that they do not entirely approve of ubiquitous physical connectivity as, in their view, a combination of easy access and high attractiveness in public areas may lead to encouragement of criminal activity.

2.2.2. Accessibility

Accessibility is a recurrent theme in RZ documents. In these documents, the concept of accessibility concerns easy access to shared spaces within properties as well as the surrounding public realm (e.g., streets and lanes), plus provision of accessibility features for people with disabilities. Within the scope of the scholarly literature, however, accessibility has been viewed at different levels of the urban environment: at the level of local community; at the level of outdoor circulation areas; and at the level of certain resident populations such as people with disabilities.

At the level of the 'local community', Prochorskaite et al. (2016) point to their findings about respondents' ranking of 'soft features' of housing design in the UK where housing providers ranked "proximity to amenities," i.e., public amenities in the neighborhood, higher than housing users did. Nguyen et al. (2020), however, believe in the significance of accessible public amenities and assert that accessibility to nearby amenities such as local parks or lakes for recreational activities and availability of shared

pathways around high-density buildings create environments that may lead to increased social interactions.

Secondly, at the level of outdoor circulation areas, Huang (2006) highlights the significance of ‘nodes,’ compared to ‘routes,’ on outdoor paths. The author believes nodes afford more space and do not merely function as access features but also provide opportunities for lingering and longer chats. Nevertheless, good outdoor circulation planning might not always lead to more serendipitous encounters between residents as these plannings could facilitate car use over pedestrian use and allocate major proportions of outdoor common spaces to cars (Foth & Sanders, 2005; Zhang et al, 2018). Furthermore, public and street access to outdoor public spaces may cause planning concerns because greater accessibility to strangers makes it difficult for residents to defend their private residential areas, possibly impacting their control over such areas (Reynald & Elffers, 2009).

Additionally, the literature is concerned with accessibility needs of people with disabilities. Rick Hansen Foundation Accessibility Certification (RHFAC) (2020) contains design measures relating to such accessibility concerns. Such measures involve designs which consider specific features such as color contrasts, ramps, adequacy of approach space, and universal design for a multitude of amenities and spaces including corridors, unit doorways, seating areas, and common kitchens and laundries (RHFAC, 2020). Moreover, City guidelines regarding parking facilities point out that “where access is not at grade, elevator access should be provided” and parking spots “should be sited so as to minimize walking distance to units” (City of Vancouver, 2020d, p. 9).

2.2.3. Location

In the context of rezoning applications, there are frequent references to location as a design feature; these references include: location of courtyard, indoor and outdoor amenity spaces, and overall location of building and site. Such considerations favour easy access and proximity to the residents as well as favorable orientation for certain amenities including south facing aspect. Within urban design literature, the term ‘location’ has similar connotations and relates to a variety of design considerations. Sometimes, it is associated with notions of ‘proximity.’ Within the context of high-rise housing for low-income populations, Nguyen et al. (2020) maintain that indoor common

areas need to be evenly located on different floors so that residents get easy access to these social spaces. Sometimes, however, location is associated with courtyard design or overall layout of common outdoor amenities. And sometimes, location is a focus due to concerns for certain demographics such as families with children living in multi-unit housing who need visual connections and ease of access to semi-private spaces designated for children.

At times, design considerations related to location discuss detail features rather than overall layout of spaces. Consider, for instance, the 'scenic spaces' of courtyards where a high percentage of social interactions take place in Taipei's high-rise complexes. This successful social outcome might indicate elements of good design: the location of "visual focuses (water features and sculptures) and plants (trees, shrubs flowers)" with respect to common outdoor seating (Huang, 2006, p. 197). Courtyard design might also benefit from Zhang et al.'s (2018) research. Their survey about outdoor planning features (listed under the category of community layout and administration), asks about "location of the play areas," a further consideration affecting the interrelationships between spatial arrangements and residents (p. 9). Furthermore, overall building layouts demonstrate how residential buildings could be situated within high-rise complexes. Different configurations (such as alley, cluster, and courtyard) (**Fig. 2.5**) determine the open areas and the level of accessibility to outdoor common areas by the public, i.e., the non-residents (Zhang et al, 2018).

The City of Vancouver (2020d) pays attention to the location of family units within high-density housing in two regards: first, as a provision related to building layout and aiming for "overlooking common outdoor play area"; second, as a provision related to siting and seeking proximity to "community services and recreational amenities" (p. 1).

Figure 2.5. Open spaces in three layouts of alley, cluster, and courtyard
Source: Zhang, H., Matsuoka, R., & Huang, Y.-J. (2018). How Do Community Planning Features Affect the Place Relationship of Residents? An Investigation of Place Attachment, Social Interaction, and Community Participation. *Sustainability (Basel, Switzerland)*, *10*(8), 2726. https://doi.org/10.3390/su10082726

In addition, studies on location as a design concept might involve particular geographic regions and their relevant climate conditions and, hence, go beyond sociability considerations. For instance, in Middle Eastern and North African vernacular designs, living spaces surround the central courtyard (**Fig. 2.6**) and are divided into 4 blocks (2 spring blocks, 1 summer block, and 1 winter block) corresponding to conditions of different seasons: the solar orientation of these public/private spaces could be linked to sustainability goals concerning strategic utilization of heat and sunlight (Al-Jokhadar & Jabi, 2017). The authors discuss such traditional architectural designs also on the grounds that their semi-public spaces manifest a potential functional hierarchy of spaces. Accordingly, they propose strategies to integrate an inward-looking courtyard configuration (**Fig. 2.7**), resembling traditional home designs, into modern apartment living.

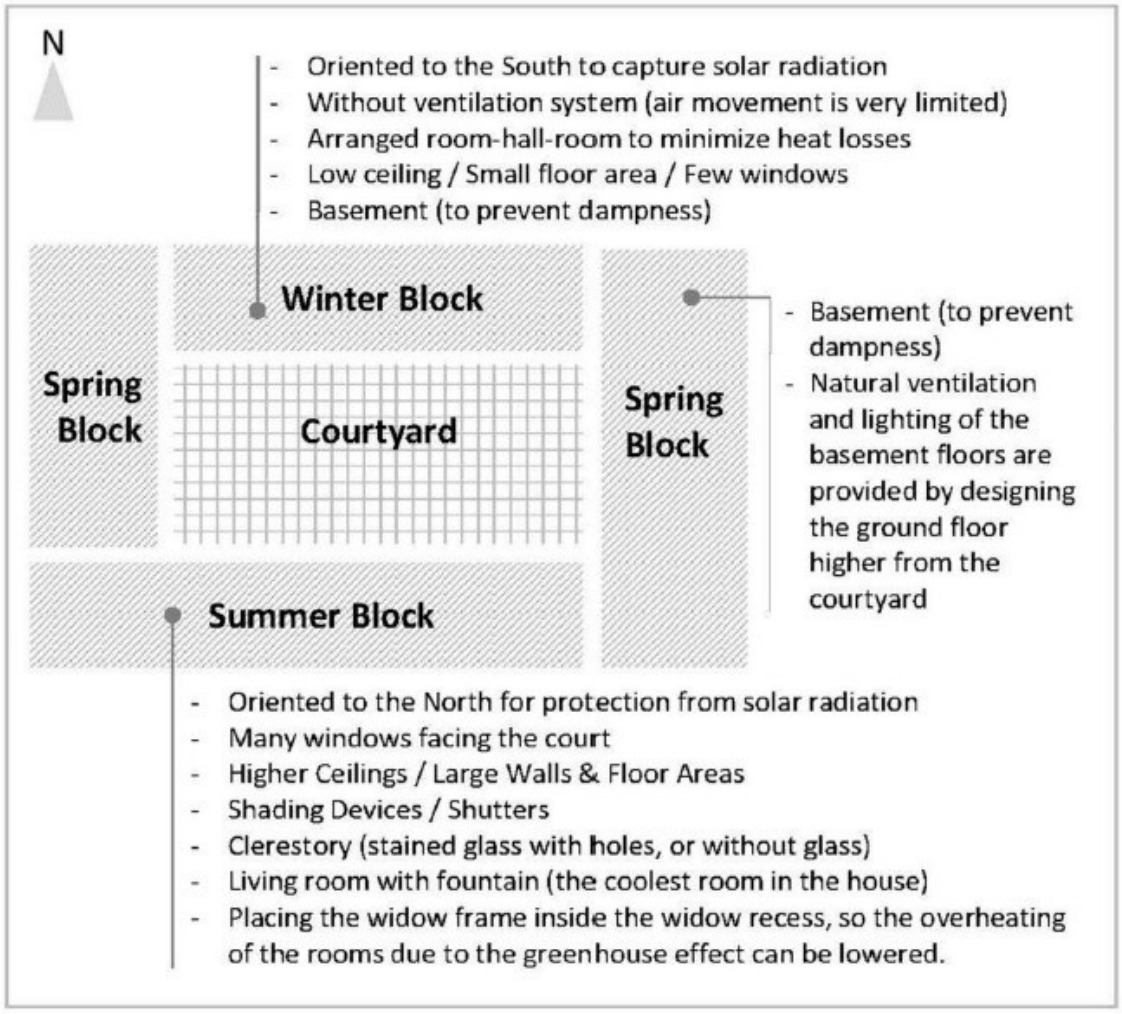

Figure 2.6. Living spaces in courtyards in MENA
Source: Al-Jokhadar, A., & Jabi, W. (2017). Applying the Vernacular Model to High-Rise Residential Development in the Middle East and North Africa. *International Journal of Architectural Research, 11*(2), 175-189.

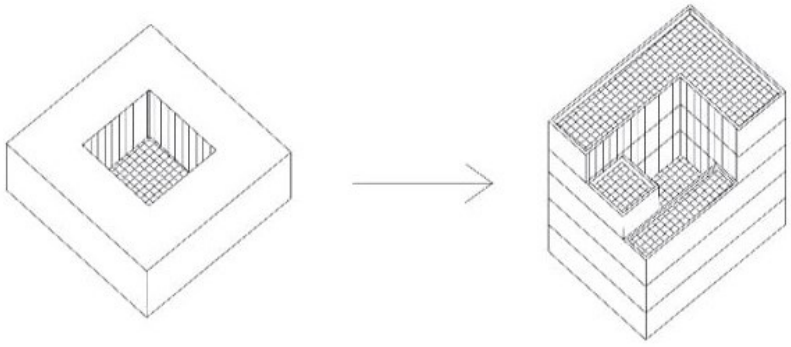

Figure 2.7. Integrating courtyard design into multi-unit urban housing
Source: Al-Jokhadar, A., & Jabi, W. (2017). Applying the Vernacular Model to High-Rise Residential Development in the Middle East and North Africa. *International Journal of Architectural Research, 11*(2), 175-189.

2.2.4. Liveability

Liveability is a broad ranging concept which is also sometimes referred to as well-being or quality of life. Within the context of RZ documents though, it is linked to: access to natural light; access to green space; access to common spaces including indoor/outdoor amenity spaces; access to semi-private outdoor spaces (like patios and balconies); privacy; proper ventilation; availability of a range of unit types and adequate unit size; and a sense of openness. The literature reviewed here refers to similar criteria regarding liveability.

Access to green space and natural light seem to constitute the most referenced aspects of liveability in multi-unit urban living around the world. For instance, plants (i.e., trees, shrubs and flowers) comprise pleasant features within 'scenic spaces' which are quite valuable in the eyes of Huang (2006). Moreover, "attractive views" (to the outside) along with "private outdoor space" are amongst the most highly ranked housing features by survey respondents in the UK (Prochorskaite et al., 2016, p. 8); such design features may be relevant to access to green spaces and sunlight. Further, "amount of green space" (an indicator of 'outdoor space quality') is utilized by Zhang et al. (2018) to examine the connections between community features and residents (p. 9). In terms of natural light, Zhang et al. (2018) include "access to sunlight" as one of the indicators of "outdoor space quality" (p. 8). Also, City of Vancouver guidelines suggest "quality design" which involves "provision of views, sunlight penetration, [and] privacy" among other features (City of Vancouver, 2020d, p. 2).

There are also alternative design considerations which involve liveability. Such designs mainly concern quantity/quality of common spaces within residential properties. Some of these strategies entail factors relating to outdoor community features such as "outdoor air circulation," "amount of open space," "outdoor provisions that shelter users from the sun, rain, and wind" and "outdoor seating" (Zhang et al., 2018, pp. 8-9). The Rick Hansen Foundation Accessibility Certification (2020) points out other aspects of liveability within shared spaces, that is, size of common spaces and availability of adequate space for maneuvering and approach for PWD.

Finally, concerning another aspect of liveability, the literature also points to privacy issues in multi-unit housing. Nguyen et al. (2020) are concerned about the

“safety and privacy” of households in low-income high-rises in Hanoi where corridors are utilized as gathering spaces for casual socializing or ceremonial events (p. 15). The authors assert that consequent noises and issues around hygiene related to such activities negatively affect the daily life of residents (**Fig. 2.8**). Residents use these circulation areas for a variety of purposes including smoking and drinking, child play (e.g., cycling and soccer), gatherings and even parties. Many residents complained that such activities affect cleanliness and damage shared spaces when people dispose of trash or when children use corridors as streets for play; residents view these activities as “inappropriate in modern life” (p. 15).

Figure 2.8. Use of corridors for social gatherings in Hanoi
Source: Nguyen, T., Berg, P. E. W. van den, Kemperman, A. D. A., & Mohammadi, M. (2020). Where do People Interact in High-rise Apartment Buildings? Exploring the Influence of Personal and Neighborhood Characteristics. *International Journal of Environmental Research and Public Health*, *17*(13), 4619. https://doi.org/10.3390/ijerph17134619

2.2.5. Transition

The concept of transition, as detailed in rezoning applications, mainly concerns gradual transitions between the built environment of the new developments and the surrounding built environments in connection with building scale, height, texture, and material; it also concerns a gradual transition between the surrounding public realm and the new development. Other aspects regarding transition noted in the applications will be discussed in Chapter 4. Reviewed literature also discusses ideas related to designs which facilitate gradual transitions between public and private spaces and hierarchy of spaces within residential properties. In fact, a prominent concern in the literature involves delineations between public and private realms as well as the existence of semi-public/semi-private spaces which could create opportunities for informal social exchange. Appropriate transition may affect sociability by increasing the feeling of privacy and safety as well as better control and authority over common spaces within the residential buildings. Moreover, appropriate transition can facilitate social connections through a range of design features that relate to hierarchy of spaces, availability of both semi-private (residents only) and semi-public (the public in addition to residents) spaces, and distinguishability of use and access to common spaces (Happy City, n.d.; Abed and Al-Jokhadar, 2022). Such design features are linked to design ideas which stress residents' control over access and exposure while using shared spaces, and feelings of safety and defensibility of spaces (Happy City, n.d.; Reynald and Elffers, 2009). Studies suggest that such feelings and perceptions might consequently lead to better opportunities for casual encounters within shared spaces which are, in effect, designed based on well-conceived hierarchies (Happy City, n.d.; Al-Jokhadar & Jabi, 2017; Foth & Sanders, 2005).

Abed and Al-Jokhadar (2022) conducted a spatial analysis on four types of multi-unit building layouts in Amman in order to evaluate "the dominant spatial configurations in the layouts of the apartment buildings and the effect on the pattern of social interactions" (p. 404). Investigating the "hierarchy of spaces" denoting "the availability of buffer zone(s) between the indoor common spaces and the apartments," they notice a lack of gradual transition to private spaces and an insufficiency of common spaces in contemporary apartment buildings (p. 405). Huang (2006), however, focuses on the outdoor common spaces rather than the indoor spaces and points to a particular design issue: what the author calls "vague spaces" could denote common spaces which are not

part of the well-zoned communal spaces with demarcated public or private use (p. 198). Huang (2006) includes “undefined area and border areas” under the category of vague spaces (p.198); these areas show the fewest social interactions between residents of high-density housing in Taipei, while other more defined common areas (such as seating spaces, scenic spaces, and activity spaces) show more social interactions. However, there are examples of well-conceived transition space designs within residential buildings. Atrium/courtyard design for instance facilitates the connections and, consequently, transitions between different public, semi-private and private spaces (**Fig. 2.9**). In fact, the relative balance between public and private spaces, the adequate size of semi-private spaces (i.e., courtyard and communal corridor and balconies), and the proper transition between private and public zones, can positively impact social exchange between residents.

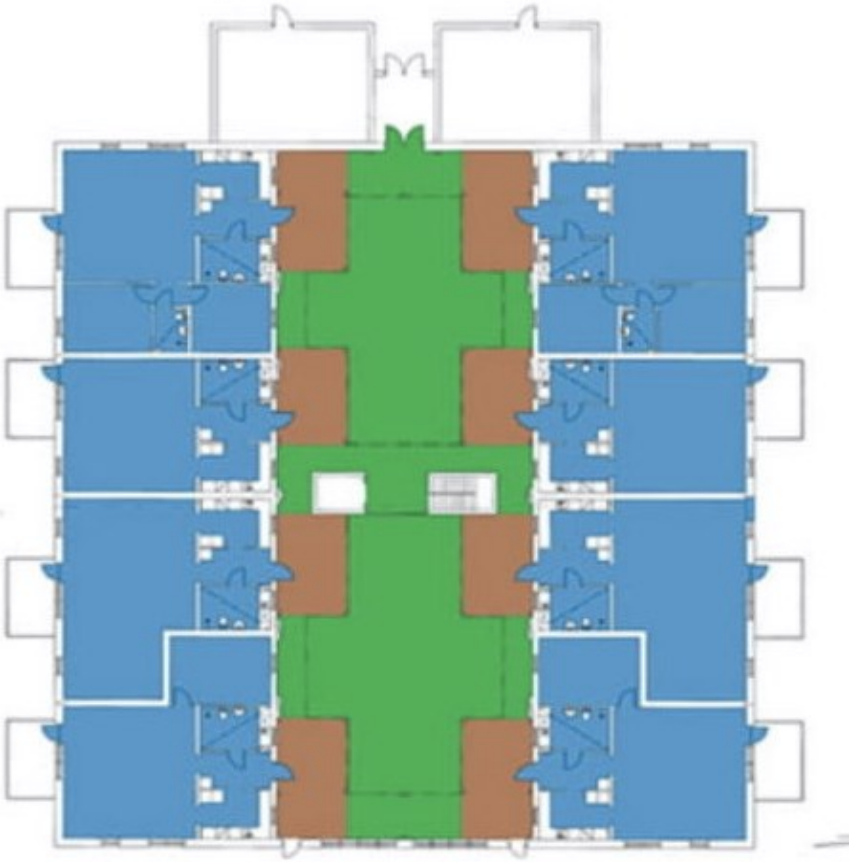

Figure 2.9. Atrium design: Transition from public to private: atrium (green) to balconies (brown) to units (blue)

Source: Danielski, I., Krook, M., Veimer, K. (2019). Atrium in Residential Buildings—A Design to Enhance Social Interaction in Urban Areas in Nordic Climates. In: Johansson, D., Bagge, H., Wahlström, Å. (eds) *Cold Climate HVAC 2018*. CCC 2018. Springer Proceedings in Energy. Springer, Cham. https://doi-org.proxy.lib.sfu.ca/10.1007/978-3-030-00662-4_65

In comparison to this scholarship, the RZ documents reviewed for this research discuss transition more specifically. In addition to ideas about gradual transitions to the public realm, these documents include ideas about smooth transitions to neighborhood context, heights of adjacent buildings, and form and massing. The common ground between scholarship and RZ documents, related to opinions about gradual transitions between public/private realms, does not appear to be uniformly positive though. While some RZ documents emphasize smooth transitions with few visual and physical barriers, other documents stress delineations between different public/private zones. COV guidelines state that “a clear hierarchy of spaces should be established within each development”; through this system, areas are distinguishably demarcated: “individual units, their entries and private outdoor spaces” constitute the private realms and “common outdoor open space and indoor amenity space” constitute the semi-private realms (City of Vancouver, 2020d, p. 4). Moreover, the same document suggests that “the amount of semi-public territory should be minimized, especially in high-density projects” (p. 4). In a similar way, Reynald and Elffers (2009) refer to Newman’s Defensible Space Theory which expands on the concept of *territoriality* when “the sub-division of space into zones of influence and control should result in a clear delineation between public, private and semi-private space” (p. 28). In effect, defensible theory supports hierarchy of spaces which denote specified uses to facilitate defense and control (by residents) of personal territories. Hence, such arguments support transition systems where use and access are defined and made clear through design.

2.2.6. Privacy

Another common concern, which may also be linked to liveability, is privacy. Both reviewed literature and rezoning applications show recurrent concern for privacy. For instance, some authors contend that lack of privacy in multi-unit residential buildings will lead to the appropriation of common spaces for private use (Abed & Al-Jokhadar, 2022; Nguyen et al., 2020). Others believe that design should take into consideration ways to incorporate more private areas, designated for small rather than large groups, or semi-private areas, designated for residents only, or areas allocated to specific groups (Danielski et al., 2018; Foth & Sanders, 2005).

A lack of proper hierarchy in design of common spaces in apartment buildings may lead to intentional personal strategies regarding the use of such spaces. Residents

in Amman apartment buildings, for example, try to “personalize the space in the front doors of their apartments” to limit use and access by neighbor residents (Abed & Al-Jokhadar, 2021, p. 414). This is due to the insufficient private space in contemporary urban building design in Jordan, which contrasts with traditional living environments with “spacious private spaces” (**Fig. 2.4**) (p. 414). Similar issues around hierarchy, in addition to a lack of common spaces, in high-rise complexes in Hanoi has caused the utilization of common corridors for socializing with consequent negative effects on “people’s privacy, the feeling of safety, and cleanliness of shared spaces.” (Nguyen et al., 2020, p. 1).

Figure 2.10. Corridors in Hanoi
Source: Nguyen, T., Berg, P. E. W. van den, Kemperman, A. D. A., & Mohammadi, M. (2020). Where do People Interact in High-rise Apartment Buildings? Exploring the Influence of Personal and Neighborhood Characteristics. *International Journal of Environmental Research and Public Health*, *17*(13), 4619. https://doi.org/10.3390/ijerph17134619

Furthermore, there is a focus on the use and design features of semi-private (residents only) spaces in connection with privacy. Danielski et al. (2018) underline the design of semi-private spaces. They maintain that indoor balconies of atrium design in Sweden afford at the same time both some privacy for individual households and some public access by neighbors: these balconies appear as an extension to private apartment units while other residents can pass through them to reach their units. Foth and Sanders (2005) underline the use of semi-private spaces. They propose that the design of inner-city apartment buildings in Australia is less concerned with the needs of the resident community than with individual concerns of apartment dwellers. The authors suggest the limited communal spaces need to be modified for the purpose of "peer-to-peer" rather than "many-to-many" interactions, hence creating more privacy for their users (p. 39).

Privacy appears to be a primary concern when it comes to high-density housing for families with children. As a matter of fact, COV guidelines argue that absence of privacy "will increase a person's perception of crowding" (City of Vancouver, 2020d, p. 11). In terms of design features, "visual and acoustic privacy" is highly recommended in the design of "dwelling units" and their "private open spaces"; additionally, in double-loaded corridors, "unit doorways should be offset to avoid visual and acoustical intrusion" (pp. 10-11). Moreover, whether through evoking certain perceptions or outright restrictive measurements, there are some design recommendations for greater privacy. Reynald and Elffers (2009), for instance, suggest both "physical barriers" and "symbolic barriers" as strategies to prohibit access or "convey the message of private or restricted access" (p. 28).

2.3. The Values of Social Connection in Cities

Richard Sennett (2018) points out the values of community manifested in housing in China, where community living in Shikumen (**Fig. 2.11**) housing proved advantageous to well-being and social connectedness among neighbors and residents, even during the hardships of Chairman Mao's rule. However, housing forms do not have to conform to certain typologies such as those of the courtyard designs in Shikumen. Similar social fabric could also be observed in high-rise public housing in cities in China or even in the purpose-built high-rise housing of the 'vertical company town' (Sennett, 2018, p.112). Sennett (2018) highlights a specific aspect of traditional building design in

Shikumens: their collective identity. Today, the reality of urban living has evolved and does not much resemble those traditional forms of courtyard living of China, yet the need for building resilient communities which can tackle social problems in cities seems crucial. The Vancouver Foundation (2012, 2017) surveys show a pressing need for social connections that may ultimately lead to improved engagement in cities like Vancouver.

Figure 2.11. Shanghai's Shikumen Residences
Source: Li, E. (2016, May 20). Saving the Shikumen of Shanghai
https://www.thatsmags.com/shanghai/post/13696/saving-the-shikumen-of-shanghai

So, what is lacking? Why are we so concerned about social connectedness in cities like Vancouver? Based on 3821 surveys and interviews, the Vancouver Foundation (2012) concluded that there was a "growing sense of isolation and disconnection" among urbanites in Metro Vancouver (p. 3). Many in this population complained about feeling lonely: "one in four people say they are alone more often than they would like" (p. 9); one third said "it is difficult to make new friends here" (p. 7). In effect, the report tries to make clear the link between 'connections' and 'engagement' predicated on the premise that city dwellers that do not feel any social connectedness will not feel the need to engage in civil activities at the scale of either the neighborhood

or the city (Vancouver Foundation, 2012, p. 4). Moreover, survey results show the significance of trust in social relations in a city like Vancouver where individuals' views of the level of trust existing among neighbors influences their own interactions with them (feeding back into the cycle of mistrust): "the perceptions of neighborhood trust relate powerfully to how people interact with their neighbors and how they view the intentions of their neighbors" (p. 39).

Social disconnection in modern cities:

Lofland (1998) talks about the processes which contribute to social disconnection at the level of cities. Within the context of urban public realms, the author reviews perspectives on the types of relationship between city dwellers and how they are ranked; she then links such social relations to their corresponding spatial settings to highlight the nature of social interactions in city public realms. Accordingly, the author highlights how 'primary' relations have been prioritized in comparison to the 'fleeting' relations. Focusing on the socio-spatial characteristics of this realm, she points to the ideas developed by public realm opponents regarding the priority of intimate relationships with immediate relatives at home versus the strangers in the public realm. Moreover, she maintains that 'privatism,' denoting desires for personal privacy, also plays an important role in the formation and character of social relations in cities, both through physical forms of detached housing and social forms of private lifestyles. Although Lofland is particularly concerned about the public realm in urban settings, her propositions can also relate to the social fabric of multi-unit urban housing in connection with promotion of privacy and detached housing, in contrast with more collective lifestyles associated with multi-family housing. While the promoters of urban living underline the advantages of social contacts with strangers and learning through communications with diverse urban populations, the opponents signify the dangers of unrestrained social mixing within urban build forms (Lofland, 1998).

Richard Sennett (2018) talks about people in our contemporary big cities who are occupying space but are not actually dwelling as he strives to explain the gaps between the "Cité" and the "Ville." In other words, he wants to stress the difference between urban life (Cité) and the built environment (Ville), where the sanitized and controlled Ville and accompanying imposed architectural forms might endanger the social fabric (the Cité), and the real everyday experiences of the 'flaneur.' In addition, Sennett explains

the relation between planning and segregation. He divides design ideas in cities into two categories: open vs closed. In connection with such city designs he presents two types of edges: borders and boundaries. Then, he asserts that “borders are porous edges, boundaries are not” (p. 220). Hence, boundaries have been utilized to create physical and social division between communities: two bridges connecting an island to the rest of Venice affected the segregation of Jews living in ghettos during the Holy Roman Empire, and the modern Googleplex, as a self-contained physical structure, marks the boundary between a certain community (employees of Google) and the surrounding city of Mountain View, California (**Fig. 2.12**).

Figure 2.12. Boundaries: Former Jewish Ghetto; Googleplex
Source: Google (2022) Ghetto Embraico. Available at: https://earth.google.com/web/search/ghetto+ebraico+venezia/@45.44519277,12.32722094,15.15070193a,489.09523141d,35y,-0h,0t,0r/data=CigiJgokCXUQImNLuUZAETmZHyd3uEZAGf59vdEJrChAIcGgI8m1oihA (Accessed: 8 August 2023) & “Googleplex Headquarters, Mountain View, US” by Wikimedia, licensed under https://creativecommons.org/licenses/by-sa/4.0. https://en.wikipedia.org/wiki/Googleplex

Community as a concept

High and Walsh (1999) try to extend our understandings of community. This is relevant as it seems obvious that social connections in cities are closely tied with notions of community. Therefore, the question is whether community, as a concept, is defined by fixed geographical boundaries or by social relations among its members? Tracing the development of the concept of community within the scope of varied disciplines of anthropology, history, and sociology, these scholars demonstrate the evolution of ideas and debates around community. Initial notions associating a place to community have evolved through the development of “social network theory” which defines community as

a “process” rather than a place (High & Walsh,1999, p. 259). Finally, the authors refer to scholarship which conceptualizes community as a socially constructed idea intertwined with and challenged by power dynamics and including aspects of gender, race and ethnicity, and class. Moreover, the RZ documents which I studied for the new Brightside projects highlight the importance of community in designs for social connectedness: both in the context of debates in public hearings and in the application documents presented in display boards, the applications apply positive connotations of community including terms such as ‘community-oriented’ designs. Later in the Research and Methodology chapter, I will explain the methods I used to collect relevant data from these city documents.

Unique circumstance and social connections in cities

Aside from theoretical debates around concepts, building resilient communities within defined physical boundaries of apartment housing appears to be as important as expanding the definition of ‘community’ to include broader geographies. Hence, considerate physical design within residential buildings might help in community development and well-being of residents. Accordingly, Kuo et al. (1998) highlight the value of small changes in outdoor shared spaces; they point to the importance of green spaces in close proximity to inner-city public housing complexes in Chicago. These scholars maintain that green spaces add to the use of these common spaces and consequently facilitate the development of what they call *neighborhood social ties*, meaning the relations at the scale of one’s neighborhood and based on mutual trust between households.

Summary

Sennett (2018) does not believe that big plans would eventually lead to positive social outcomes favorable to city dwellers perhaps because these plans do not always follow the intentions of urban designers. The author reminds us of famous urban thinkers, namely, Haussmann, Cerda, and Olmsted who strove to make cities more accessible, equal, and social, respectively. Haussmann, in collaboration with the central government, designed purpose-built boulevards to make Paris more accessible. His initial ideas concerning practical solutions to transportation issues had unpredicted implications for the public: they became inviting social spaces for urbanites from all around the city. Also, Cerda strove for social equality through designs that had hygiene

and public health at focus. The irregular construction patterns at the time (especially within the slums) inspired the city designer to invent new plans aiming at improved liveability conditions for residents through provision of greater access to natural light, air, and more generous sized dwellings. Cerda developed the cellular grids. Nonetheless, his invention of cellular grids with perimeter blocks as their constituent (**Fig. 2.13**) created forms which represented ‘monocultures’ with limited adaptability to the social needs of their later residents.

Figure 2.13. Cerda’s cellular grids (Barcelona, Spain)
Source: archistyladmin. (2023, January 30). Exploring the Different Types of Urban Blocks with Examples. Architectures Style. https://architecturesstyle.com/types-of-urban-blocks/

These master plans have not been entirely successful in serving their target urban populations. Thus, Sennett (2018) proposes an idea called ‘seed-planning.’ This form of planning does not follow universal designs; it is “dynamic rather than static” and “instead of masterminding the whole, seed-planning seeks to create ‘pocket of order’ in open-systems terms” (Sennett, 2018, p. 237). Designs based on ‘pockets of order’ rely on smaller improvements to the built environment (Ville) that might also, eventually, affect the Cité. In addition, such designs learn from their mistakes and remain open to

new concepts and ideas. This implies that planners and designers should lower their expectations about the extent to which plans and designs will come to fruition. Social connections in the Cité then, cannot be master planned and controlled by even the most intelligent urban planners. However, designs following ideas like seed-planning, when combined with favorable contexts, might succeed in delivering desirable outcomes for urban dwellers. Consequently, these plans may be applied in similar circumstances.

Chapter 3.

Research design and methodology

Four main sources of data were collected to answer my research question:

1) Building plans

2) Field observations of existing Brightside buildings

3) Literature review (academic literature plus grey literature)

4) Rezoning Applications (RZ) of four new developments

For more details on sources of the above documents refer to Tables A1 to A4.

Firstly, I studied the collection of building layouts for existing and new properties to determine the spatial configurations and characteristics of common spaces within Brightside buildings. Secondly, I conducted field observations of 22 existing buildings and photo-documented physical elements of five common spaces. Thirdly, I reviewed for my literature review a combination of academic and grey literature (including COV documents and organizational toolkits and reports; refer to Table A3). Lastly, I collected and studied documents relevant to the rezoning applications for the new Brightside developments.

The above-mentioned steps do not represent exact sequencing of research steps, as data from different sources was sometimes collected simultaneously. However, it should be noted that collection of data regarding rezoning applications constituted the last step in data collection. Moreover, review of academic and grey literature has been an ongoing process throughout the research; it started before taking on my thesis project (in the thesis proposal development course). Also, more literature was selected and added during the research and while collecting other data sources at the same time. In fact, this set of accumulated academic/grey literature along with other main sources (building plans, observations, and RZ applications) contributed to continual revisions of the initial observational checklist to its final versions summarized in six summary tables. These processes are discussed in the sections that follow.

3.1. Analysis

In terms of analysis, I followed three modes of data analysis: document analysis including building plans, literature review, and rezoning applications; observational analysis based on field observation and photos taken during observations; and evaluative analysis of design features based on all stages of my data collection and summarized in final summary tables. These analyses were performed in parallel, and the results are presented together as a synthesis of analytical findings.

In general, the research objectives of the study of evolution of ideas around favorable design features were realized through three stages where the collected data were analyzed and synthesized. Firstly, data gathered through the study of building plans, field observations, and the literature in my conceptual framework were used to construct a preliminary observational checklist which included quantitative and qualitative variables relevant to the design of common spaces. Therefore, design features and present physical elements of old and new buildings were presented in this checklist for use in the next stage of analysis. This inventory of variables helped in later data analysis; it also helped in the comparisons made between features of old versus new buildings. The initial version of the observational checklist was based on the design themes in the literature reviewed and relevant findings and data from building plans and field observations. This version was revised a few times as my research progressed, and some scholarly literature was added at later stages.

Secondly, data collected from the rezoning applications was utilized to develop common themes among the four new developments. Six themes of connectivity, accessibility, location, liveability, transition, and privacy were finally selected as the main common themes in applications. Subsequently, existing buildings were evaluated to see whether the same themes have been implemented in the design of common spaces of this set of older buildings. At this stage, data relating to building plans and data relating to field observations were analyzed to find out about similarities in thinking about design ideas which could facilitate social interactions between residents. In effect, each one of the six themes was defined according to the context of the rezoning applications; then, features in existing buildings were examined to assess whether similarities in design existed between old and new buildings. Moreover, if it was possible that such features could manifest potential to foster social relations between residents, they were

highlighted. Hence, the analysis process included document analysis of rezoning applications and building plans, and observational analysis using photos and observations of existing buildings.

The observational analysis part of this procedure included two steps. First, design features in the set of old buildings were compared to those in the set of new buildings through the lens of six common themes. This comparison follows an investigation of similarities and differences between old and new buildings. These observations are more general rather than specific, yet there are some examples that clarify points in particular cases. Second, an evaluation of favorable design features within individual existing Brightside buildings was conducted; these specific features might not exactly follow the common design themes yet they demonstrate potential for well-being of the resident community.

Lastly, observational analysis provided the foundation for a clearer presentation of research findings: the evaluative analysis of design features. The evaluative analysis followed a similar pattern to observational analysis as common themes in the new projects constituted the baseline for this step as well. This analysis resulted in the construction of six summary tables containing more definite variables than the earlier versions of my observational checklist. These findings are displayed in Tables A5 to A10 in the Appendix. I will call these six tables the summary tables throughout this research. Summary tables portray design features and concepts consistent with the common themes in a synthesized and summarized tabulated format.

The summary tables in turn were slightly modified to include only the variables that mark design features/concepts easily perceived through the real physical environment of study buildings. Then, scores were assigned to these variables. Tables A11 to A16 in the Appendix present the results. Table A17 in the Appendix shows the rankings of all existing Brightside buildings for different themes.

Below, I explain why I selected each of the variables, noted in headers of the six summary tables. The logic applied in scoring these design variables appears next.

3.1.1. Summary tables

Connectivity (Table A5)

Variables are divided into two main categories of physical connectivity and visual connectivity between amenity rooms (abbreviated as AR) and other common spaces. The last two columns show an analysis of the potential for design features to be a contiguous space and/or an extended public realm. The reason for the selection of the last two columns comes from a recurrent reference to these two concepts in rezoning applications. I found it most appropriate to include these two design ideas in my first theme (connectivity).

Accessibility (Table A6)

The first set of variables under *Accessible Design* relate to ideas concerning accessibility in rezoning applications revolving around improved accessibility for PWD or persons with mobility challenges.

Ramps/ barrier-free routes: are there ramps within the particular common space? are the routes within the common spaces barrier-free?

Corridor width: width of corridors in feet.

Adequate maneuvering space: based on field observations, are common spaces spacious enough for maneuvering of PWD?

Accessibility facilities in AR: are the facilities (such as washrooms or kitchens) in amenity rooms accessible for PWD?

Elevators/Automatic Door Openers: does the building feature elevators? are the entrance doors (to lobbies) automatically operated?

The second variable (*Ease of access*) combines factors including proximity (to residents and their apartment units), availability of barrier-free routes, availability of elevators, and the location (floor or level) of common spaces to answer the question: are the common spaces easily accessible by residents?

Location (Table A7)

Link to different common spaces: this variable can also be connected to the first theme (physical connectivity); it tries to answer the question: does location of common spaces facilitate connection and access to adjacent shared spaces?

*Proximity to resident*s: On which floor are the common spaces located? When also examined by the question concerning the availability of elevators, this variable in Table A7 ties in with the variable Ease of Access in Table A6.

Proximity (arrangement of common spaces in relation to one another; co-location): are common spaces located close to one another?

Provision of attractive views: does the location of common spaces afford views to attractive features like plants or sculptures?

Liveability (Table A8)

Access to natural light: do windows/glass doors provide access to natural light*?*

South facing: are the common spaces facing south, providing more access to sunlight?

Access to green spaces: are there any green spaces within the property? if yes, where are they located?

Access to common spaces: number of common spaces available within the property including the five common spaces, plus additional common spaces like community gardens, seating areas, common patios/balconies, and side yards/backyards.

Access to open amenity spaces: are there common spaces available which are outdoors (e.g., courtyards, common patios/balconies, seating areas, etc.)?

Well-designed indoor/outdoor amenities: are there any indoor amenity spaces (such as amenity rooms) which are connected to adjacent outdoor amenity spaces (such as patios and courtyards)?

Access to patios/balconies: does the building feature private patios/balconies for individual use?

Transition (Table A9)

The following variables in the table examine design features to understand potential for improved transition from the property to the public realm of surrounding streets. In addition, the last variable (streetscaping) examines features which may add to pedestrian experience.

Setbacks:

- *setbacks from neighboring buildings*: based on field observations, are there setbacks from neighboring buildings?
- *setbacks from public realm*: based on field observations, are there setbacks from public realm (public sidewalks, lanes, and streets)?

Open spaces:

- *well positioned open spaces*: are there any open spaces at the edges of the property (e.g., front lawns, landscaped areas, courtyards on the periphery, gardens etc.) that can facilitate smoother transitions from public to private realm?

Landscape buffering:

- *planting beds:* are there any planting beds? where?
- *planters/patios in front of units*: are there planters or patios in front of private apartment units?
- *trees/shrubs:* are there trees/shrubs on the peripheries of the building?
- *hard landscape*: are there any hard landscape areas (e.g., concrete walkways and ramps, elevated planting beds, fences or walls, etc.) on the periphery of the building?

Streetscaping:

- *interface of property and sidewalk*: are there any natural or manmade buffers (such as trees and hedges) on border lines?

Privacy (Table A10)

Limiting views; exposure (common spaces):

- *landscape screening; glass-pane opacity; setbacks (planted?)*: are there any features aiming for privacy screening of common spaces through landscaping, opaque glass-panes, and setbacks? are setbacks planted?

Limiting views; exposure (private living spaces):

- *landscape screening; setbacks (planted?)*: are there any features aiming for privacy screening of private living spaces (apartments) through landscaping, and setbacks? are setbacks planted?

Private vs. public access:

- *available amenities for public:* are there any amenity spaces like seating areas or yards within the property which are accessible to the public, i.e., non-resident users?
- *separation between semi-private and public space, i.e., street and sidewalks:* are there features aiming for an improved privacy of semi-private spaces (such as common outdoor spaces) through landscaping, fences, changes in elevation etc.?
- *separation between private spaces and semi-private spaces:* are there features aiming for an improved privacy of private spaces (apartments)? For instance, are there features separating private patios from courtyards or common yards?
- *views (by public) to semi-private spaces:* are semi-private spaces such as courtyards visible to passersby?

Analysis of the data gathered from tables A5 to A10 regarding the design features of common spaces within existing Brightside buildings leads to my scoring methodology in the following categories: connectivity, accessibility, location, liveability, transition, and privacy, detailed below.

3.1.2. Scoring

A combination of binary yes/no and Likert scale is used to score each building in relation to the six themes. Every variable in the tables and its corresponding scoring method is presented below. (Scores are noted in parentheses).

yes= (**1**); *no*= (**0**)

Likert scale: *very poor (***0**); *poor (***1**); *acceptable (***2**); *good (***3**); *very good* (**4**)

Connectivity

Physical connectivity:

- Amenity room and outdoor amenity spaces: **yes/no.**
- Amenity room and laundry room: **yes/no.**

Visual connectivity:

- Amenity room and outdoor amenity spaces: **yes/no.**
- Amenity room and laundry room: **yes/no.**

Accessibility

- Ramps/barrier-free routes: **yes**, if present in all common spaces; otherwise, **no**.
- Corridor width: **yes**, if equal or greater than the average width (4 feet) in new projects; otherwise, **no**.
- Adequate maneuvering space: **yes**, if present in all common spaces; otherwise, **no**.
- Accessible facilities in amenity rooms: **yes/no**.
- Elevators/ automatic door openers: **yes**, if building features elevators; otherwise, **no**.
- Ease of access: **yes**, if answer is yes for all common spaces (does not apply to lobby spaces).

Location

- Proximity to residents: **poor**, if on ground floor or basement in a building of more than 2 storeys with no elevators; **acceptable**, if on ground floor in a walk-up building of at most 2 storeys; **good**, if buildings feature elevators.
- Proximity of shared spaces to one another: **poor**, if not on same floors; **good**, if at least two spaces are on same floors; **very good**, if at least three spaces are on same floors.
- Provision of attractive views: **poor**, if no spaces have views; **acceptable**, if at least one space has views, **good**, if at least two spaces have views.

Liveability

- Access to natural light: **yes**, if all common spaces have access to natural light (does not apply to corridors); otherwise, **no**.
- South-facing: **yes/no.**
- Access to green spaces: **yes/no.**
- Access to common spaces: **poor**, if only one space; **acceptable**, if at least two spaces; **good**, if three or more spaces.
- Access to open amenity spaces: **poor**, if no spaces; **acceptable**, if only one space; **good**, if two or more spaces.
- Patios/balconies: **yes/no.**

Transition

- Setback: neighboring buildings: **yes/no.**
- Setback: public realm: **yes/no.**
- Open spaces: **poor**, if no spaces; **acceptable**, if one space; **good**, if two or more spaces.
- Planting beds: **yes/no.**
- Planters/patios: **yes/no.**
- Trees/shrubs: **poor**, if there are only few trees; **acceptable**, if there are some trees; **good**, if there are adequate trees, especially on ground floors; **very good**, if there is lush landscaping.
- Hard landscaping: **yes/no**.
- Streetscaping: **yes/no.**

Privacy

- Limiting views (common spaces): **poor**, if only one common space; **acceptable**, if two common spaces.
- Limiting views (private living spaces): **yes/no.**
- Available amenities for public: **yes/no**
- Separation (semi-private and public): **yes/no**
- Separation (private and semi-private): **yes/no**
- Views by public: **yes/no**

The summary tables provide the result of the revisions to the preliminary observational checklist which involved omission of unnecessary variables, meaning that they were non-existent design themes in the new projects, and addition of new variables, which were those that were stressed in the new projects. The preliminary observational checklist included six variables of size, quality, quantity, location, orientation, and hierarchy. In revised versions of this checklist the variable *orientation* has been renamed *views*; however, it included the same design factors. Also, a new variable (Orientation) was added to the checklist denoting the compass orientation (North, South, East, and West) of common spaces.

3.2. Building plans

I obtained the building plans for all Brightside buildings but one, including 21 existing buildings and the 4 new redevelopment projects. The one existing building for which building plans were not available, First Lutheran Court, was studied using field observations and Google map views.

Building plans helped me in the collection and consequent analysis of a variety of quantitative and qualitative design aspects of the common spaces. Below I present the factors which I investigated while studying the building plans. However, some of the following design features were not used in final analysis since they did not seem relevant

to the main themes or did not match features highlighted in alternative data collection sources such as observations and RZ documents.

- Layout and configuration of common spaces to find out their proximity to residents in addition to their proximity to other shared spaces. (It should be noted that proximity of common spaces to one another is called co-location in the context of this research.)
- The floor on which common spaces are located
- Link between individual common spaces and other common spaces
- Ease of access, by studying whether there are elevators available; whether residents need to take stairs to reach common spaces; whether common spaces were centrally located and, hence, more accessible
- Variety and number of common spaces and amenities within each building
- Compass orientation of common spaces to see whether they are south facing, hence affording more sunlight
- Orientation of common spaces concerning the provision of attractive views to outdoors
- The titles used for common spaces in the drawings (e.g., Lounge, Sundeck, Waiting Area, etc.)
- Sizes (area) of common spaces including lobbies, amenity rooms, and laundry rooms; also, width of corridors

When it came to the new projects, in addition to the above data, plans included more detailed information about the shared amenities within common spaces and the landscaping within outdoor spaces. This additional useful information is listed below:

- Variety of amenities within common spaces (e.g., playgrounds, urban agriculture, etc.)
- Landscaping and buffering (e.g., natural buffering like planting)
- Walkways and outdoor amenity spaces

3.3. Field observation and photo documenting

I conducted field observations of all 22 existing Brightside buildings. Although permission had been given to me in fall 2021, I could not conduct any field observations until March 2022 due to the rules and restrictions concerning COVID. The Brightside

management team arranged for the building tours and collaborated in providing access to all common spaces when I had the opportunity to take photos of the design features. Also, the Brightside team provided some background information regarding availability of facilities inside these shared spaces and certain programs occurring at those areas. Moreover, photos were taken at moments when nobody was using the common spaces as my research is not interested in the ongoing human interactions within such spaces; rather, this research is concerned with the potential of features' use for possible social interactions. Further, observations did not involve any human contacts and were merely based on recording the physical environment.

I managed to photo document all buildings except one on 23 March 2022 where in total I took around 500 photos. I had to observe Londonderry at a later date on 23 June 2022. I documented the five common space types of interest to my study: lobbies, corridors, courtyards, amenity rooms, and laundry rooms.

Photo documenting was followed by recording the quantitative and qualitative characteristics of the design features within common spaces. This process involved the study of photos in addition to note taking at home right after conducting the field observations. The parameters of interest during this procedure are listed below:

- Qualitative characteristics within common spaces: these features may contribute to the creation of welcoming/inviting social spaces.
    - Green spaces or green features: planters, flowers, etc.
    - Lighting: natural light and lighting fixtures
    - Being spacious: this is a subjective quality; City of Vancouver (2020) discourages the design of indoor amenity spaces smaller than 27.9 m.² However, during field observations, I was checking whether common spaces are large enough for the use of at least four persons.
    - Colors: bright or white colors vs darker colors for carpets, walls, apartment doors, etc.
    - Comfort: comfortable chairs and seating areas plus a variety of seating options (e.g., sofas, armchairs, lounge chairs, etc.)
    - Access to open-air areas
- Windows to outdoors
    - Access to natural light

    - Views to nature/green spaces, streetscape, activity spaces, visual interests such as sculptures or artistic objects
    - Privacy (e.g., opaque windows)
- Upkeep, general condition, and maintenance
    - Neat and well-maintained?
    - Storage amenities (e.g., for bikes, mobility aids, household equipment etc.)
- Amenities included in common spaces
    - Furniture such as seats, tables, desks
    - Entertainment and recreation facilities
    - Washrooms and kitchens
    - Libraries
    - Closets/storage
    - Potential for multi-purpose use of common space?
- Outdoor green spaces/open spaces
    - Community gardens
    - Backyards/front yards
    - Front lawns
    - Setbacks and landscaping buffers
    - Plants including trees and shrubs
- Accessibility features
    - Elevators
    - Ramps
    - Handrails in corridors
    - Barrier-free routes
    - Door thresholds connecting common spaces: flush with the grade or raised?
- Maneuvering space in lobbies, corridors, amenity rooms, and laundry rooms

- Access to common spaces:
    - Elevators or need to take stairs?
    - Barrier-free?
- Connection/transition to the public realm (i.e., street):
    - Walkways and paths
    - Setbacks
    - Lanes
- Balance between privacy and public (non-residents) access to common spaces: are amenities like seating spaces available for use by the public?
- Immediate neighborhood:
    - Neighborhood connectivity
    - Neighborhood context (e.g., family-housing, high-rises, etc.)
- Borders of the property:
    - Defined and distinguishable entrances? (e.g., gates)
    - Buffers between outdoor shared spaces and public realm (e.g., fences, walls, etc.)
- Pleasant features (including features within spaces additional to the 5 common spaces of interest) such as arrangement of seating spaces, attractive landscaping, personalization of apartment front doors through decoration, etc.)
- Extra social spaces such as nooks and outdoor seating spaces
- Co-location: common spaces being located adjacent or at close proximity to one another (also studied via building plans)

Observations and photos contributed to my findings about quantitative and qualitative features within these spaces. Regarding quantity, the number of specific common space types (e.g., number of laundry rooms within the buildings) and the number of all available common spaces, including spaces additional to the 5 study common spaces were recorded. Also, field observation data were examined for any discrepancies between what had already been noted from the building plan review, such as discrepancies in the layout of corridors and courtyards and connections between common spaces.

As noted in the above list, in addition to the quantitative aspects of design, common spaces were studied with respect to their qualitative aspects such as the quality of lighting, their comfort, and their upkeep.

3.4. Literature Review

Resources included all the studies reviewed in my conceptual framework which consist of a combination of academic literature and grey literature. Grey literature included documents from the City of Vancouver and toolkits and reports on projects/ pilot programs conducted by different organizations:

- Vancouver Foundation Report: Connections and Engagement (Vancouver Foundation, 2012)
- Report on the pilot project by Catalyst Community Development (non-profit developer): Homes That Connect Us (Hoar, 2018)
- Happy City Report: Designed to Engage (Happy City, n.d.)
- RHFAC rating survey (Rick Hansen Foundation, 2020)
- High-density Housing for Families with Children Guidelines (City of Vancouver, 2020d)

The selection of such literature was finalized after my own search for material relevant to my research interest in addition to suggestions of useful materials from my supervisor. I focused on these few documents since they highlighted areas most aligned with my research inquiry regarding design for sociability. Materials in this list either discussed the sociability aspect of urban living (relating to social connection), the design aspect of urban living (design in multi-unit housing) or both. The Connections and Engagement report for instance focuses on social issues in Metro Vancouver communities; it points to issues such as social isolation and lack of strong communities. Some documents, however, focus on specific solutions to such social problems within the context of multi-unit housing: Homes That Connect Us proposes ideas that aim for improved sociability in multi-family rental housing through design and programming; and Designed to Engage talks specifically about the potential for certain designs to promote

sociability. Also, two documents target certain populations: City of Vancouver guidelines include planning and design considerations that concern liveability outcomes for families with children; and RHFAC contains detailed design specifications for numerous spaces within buildings concerning the well-being for people with disabilities.

My literature review led to a preliminary observational checklist which has evolved throughout the process of data collection and analysis. The categories obtained for this checklist structure the discussion in the Conceptual Framework chapter. In fact, my variables in the (preliminary) observational checklist corresponded to the main topics which I found throughout most of the literature. Then, such variables, at later stages, were examined using alternative sources of data, i.e., building plans and observations, which helped complete the inventory of design variables. Moreover, the checklist went through revisions to showcase the most relevant data corresponding to the observed conditions of common spaces and to contain the common ground between alternative data sources. The checklist was structured as six summary tables reflecting the common themes in rezoning applications while also incorporating information included in previous versions.

I must make two notes about the data collection regarding my literature. Firstly, I had to rewrite major parts of the first draft of my conceptual framework to link them to the six themes from the rezoning applications. Secondly, these themes, although they might have been evident in the academic/non-academic literature in addition to the applications, were conceptualized based on the rezoning applications rather than on the academic/grey literature. The reason for this choice is that these themes have been recurrent and present in all rezoning applications while the same themes have been mentioned in some but not all academic/grey literature. Further, references to themes within the literature were at times indirect rather than explicit. Therefore, documents in the rezoning applications constituted the baselines for analysis of the six main themes. Finally, the review of academic and non-academic reports and toolkit materials resulted in a deeper understanding of the design concepts, guidelines, and policies discussed in the three sets of selected materials from rezoning applications, namely, display boards, referral reports, and public hearings.

The final version of the observational checklist was prepared through an iterative evaluation and comparison of relevant parameters concerning physical features and

qualitative characteristics in the checklist in connection with themes in the conceptual framework and rezoning applications. Moreover, photo documenting and the subsequent observational analysis assisted in a more refined version of the checklist where qualitative, in addition to quantitative, design variables were evaluated and recorded. In terms of the sequence in the construction of this final checklist, variables were initially selected based on the topics within the academic/grey literature; then, the inventory was filled out using the data collected from the building plans and observations from Brightside buildings; lastly, the study of rezoning applications made it feasible to summarize the results of the checklist into six summary tables (included in the Appendix section) corresponding to the themes in the applications. Throughout these iterative processes, I examined which items seemed applicable to my research question and which did not; accordingly, I omitted or added data to the final tables.

3.5. Rezoning Applications

I studied the rezoning applications (RZ) for four new Brightside redevelopments. In each application, three documents were selected for study: Applicant Open House Boards (also called Display Boards), Referral Reports including Urban Design Panel Minutes, and Public Hearing videos. Consequently, common themes within these City of Vancouver documents, including texts and videos, were observed resulting in the selection of six key themes relating to design features.

From the collection of city documents concerning the rezoning applications for redevelopment projects, I decided to focus on the three documents of display boards, referral reports, and public hearing videos. In fact, there were some benefits to the selection of these specific city materials. First, display boards provided a more summarized, overall evaluation regarding siting and graphics of future completed projects as well as video clips showcasing the completed project in 3-D views. Second, referral reports offered a more detailed examination of the projects, revealing form and scale, sustainability goals, and layout and unit design. The same documents also incorporated recommendations and guidelines for design improvements along with required adjustments to proposed designs, whether concerning detailed design features or broader design strategies such as considerations for greater access and connectivity. Third, council discussions reviewed through public hearing videos presented more of a qualitative perspective into the new designs including contestations around certain

features and amenities (or even the entire project) and debates around beneficial versus disadvantageous aspects of designs. Moreover, public hearings provided insights into how the public and councillors view the new redevelopment projects. Do members of the public hold differing opinions on some subjects and concepts, compared to councillors? Or do they agree on most design aspects? Where exactly do we see divergence in ideas regarding favorable design features of new developments? Fourth, each of the selected sources from the City of Vancouver showcases a specific perspective towards the new projects: display boards are the documents which portray key aspects of planning and design through the perspective of the applicant team and mainly include design features, design processes, rationale for certain design strategies, favorable shared amenities, etc.; referral reports are the documents which present views from the perspective of professional city staff including planners, designers, and engineers and they consist of critical assessment of design features (such as shared amenities) and design strategies (such as location of shared spaces and setbacks from the public realms); lastly, public hearing videos are the documents which demonstrate views from the perspective of different interest groups including the applicant, the City, and the public and they contain debates and arguments as well as supportive feedback.

The six key themes recurrent in RZ documents were noted as connectivity, accessibility, location, liveability, transition, and privacy. I utilized these main themes to compare and contrast design features of the existing older buildings and the newer projects. As a result, evaluations were based on the occurrence of design elements and ideas about design of common spaces of the existing buildings to find out how these compare with the design strategies promoted within new projects. The comparison included a search for both similarities and differences.

It should be noted that there may be some old buildings that afford good examples of new design strategies, yet they might have been the result of independent ideas, since design thinking about building common areas 50 to 60 years ago is not expected to be consistent with what are considered progressive designs today. Besides an overall comparison between the newer and older stock of Brightside buildings, I evaluated the pros and cons of design features of the existing buildings, compared to the design thinking reflected in the new buildings. This allowed me to reflect on the comparative qualities that may have existed in the older buildings, although they were built without the benefit of contemporary up-to-date design strategies.

RZ documents

First, I studied 'display boards' of the four redevelopment projects. These documents showcased, in a condensed format, the data regarding building contexts, design strategies and design rationale. The most prominent materials within all display boards include:

- Timeline for rezoning applications
- Project overview/background and projects statistics
- Building design and design rationale
- Context plans, site plans, building plans, and unit layouts
- Design strategies concerning building massing and form
- Landscape plans
- Project goals through description of available amenity spaces and their values

The material provided in display boards contained the benefits of the shared amenities and the design of common spaces. For the purpose of this research, I focused on the materials which emphasized the benefits of design in light of their social potential. Such information was highlighted through terms which described shared amenities as spaces which facilitate social interaction and social connections; as spaces which appear as vibrant and active; as spaces which contribute to building communities within the residential buildings; and as spaces which provide amenities/facilities for active participation of future residents in diverse activities. Therefore, these specific documents were assessed based on the relationships between design and expected opportunities for social connections/social interactions. Sometimes, reference to certain common spaces such as courtyards, roof gardens, and amenity spaces were accompanied by explanations of their exclusive advantages in relation to better engagement and sociability among residents. And sometimes reference to design features for sociability were less explicit, brought up through the use of distinct terms such as *social* seating (spaces), at-grade amenity spaces, and natural/informal play which hinted at underlying design concepts for well-being and quality of life. The former data were mostly present in the text portion of display boards and the latter in the images and plans. I investigated both contexts for my analysis. In sum, this set of City of Vancouver documents

comprised an interesting part of my studies as they entailed design aspects that were stressed and promoted by the applicant team.

Secondly, I studied the 'referral reports.' These city documents contained a variety of information regarding suggestions for certain design features or strategies, approval and praise of certain design features or amenities as well as objections to some aspects of designs proposed in the new applications. Such suggestions and opposition fell within a broad range of concerns from building design to unit layout to setbacks from the public realm; they included ideas around privacy and thoughtful location of family units, courtyard design, setbacks from street and neighboring residential buildings, affordability concerns, accessibility (both at the neighborhood scale and accessibility for PWD), etc. Referral reports at times required adjustment to the proposed projects. These design changes might include plans which connect the residents and local community to the history of the specific location (e.g., a historical stream passing through the project), community planning in greater accordance with neighbors' needs and concerns, and modification to layouts of common and private spaces, landscape plans, and setbacks. It should be noted that, in general, referral reports seemed to be more concerned with issues related to overall building design and planning than details of design features of common spaces: many topics in the reports, including comments from the Urban Design Panel, revolved around the form of the development, proper setbacks of the new projects, tree retention strategies, and affordability issues. There were also considerations regarding design of shared spaces and private living spaces. In addition to the review of the rezoning application by city staff, referral reports included a *Public Input* section which discussed the methods and time schedules for consultation with the public regarding the new project and the comments received.

Thirdly, I watched 'public hearing' videos. Generally, each video was divided into sequential segments starting with a presentation from the applicant team, followed by recommendations and explanations by city planners, and ending with statements by the public in favor of or against the new projects. There was some redundancy with data presented in 'display boards' brought up in public hearings; however, debates for or against specific designs or concepts (such as community or neighborhood context) proved to be quite informative and constructive to my research objective. In fact, some topics such as affordability and accessibility features were common points of approval

between the public and council members. Some topics such as respecting the neighborhood context versus the need for more social housing, however, were points of disagreement among the public. In general, a larger proportion of the feedback from both city and public involved the form and scale (e.g., height) and consequent problems (e.g., shadows on adjacent buildings) rather than specific designs for sociability. However, there were both positive and negative remarks on certain shared spaces such as courtyards.

In sum, the combination of building plans, field observations, the construction of the observational checklist based on policy and scholarly literature review, and the rezoning applications, constitute the data sources for the analysis that follows. The purpose of this is to answer the research inquiry about the evolution of design for sociability in multi-unit residential affordable housing buildings over the last seven decades. The analysis used quantitative (including data from building layouts) and qualitative (including data from observations) measurements to compare and contrast design features in old and new projects where the baseline for such analysis comprised the six common themes identified as significant in the RZ documents. I examined similarities between design features and ideas of old and new buildings and investigated unique characteristics of individual buildings contributing to well-being which may not match leading-edge design strategies.

Chapter 4.

Data analysis

4.1. Document Analysis

This chapter begins with an overview and analysis of the main themes in the rezoning applications. Section 4.1 goes through the references to each theme within the applications, the meanings and connotations of the themes in the context of the applications, and a comparison of the existing Brightside buildings and the new projects. The 6 RZ themes constitute the baseline for the compare and contrast. Also, the analysis in this section highlights mainly similarities and differences between designs of old and new buildings as two separate collections; it does not specifically examine design features within individual buildings unless there are case studies which clarify certain concepts and features. Next, in section 4.2, I conducted an observational analysis where, with the help of field observations, favorable/unfavorable design features of individual buildings from the set of existing buildings were analyzed to understand the potential for sociability. Finally, the last part in section 4.2 displays design features of all 26 buildings (existing and new) in tabulated formats as a summary of the analytical processes. The variables in these tables are derived from the common themes in the applications and the entries in these tables were filled in by the information previously obtained and presented in the revised versions of observational checklists.

4.1.1. Connectivity

Connectivity in the context of RZ documents covers three major aspects in spatial configurations. First is connectivity (physical and visual) between indoor/outdoor amenity spaces. These design goals have been realized through locating the amenity spaces adjacent to one another on ground floor levels where physical connectivity is achieved: by considerations of level surfaces between the two spaces; by ‘direct’ connection of one to the other where exterior doors open into the courtyards/outdoor spaces; and by entirely foldable wall glass within indoor spaces.

Secondly, physical connectivity between amenity rooms and laundry rooms appears to be an important design concept within the applications. Although there seems to be less focus on this particular design in comparison with indoor/outdoor space connectivity, the plans of two of the new projects (Sunrise Village and The Hawthorn) show laundry amenities included within the amenity rooms. The Hawthorn's application documents specifically note the importance of connections between these two spaces for the spread of "social activities" from the amenity room to the laundry room. As well, the laundry rooms function as "informal spaces where neighbors gather and socialize" (City of Vancouver, 2021a, p. 9). Hence, physical connectivity between indoor/outdoor spaces and laundry rooms, as a spatial consideration, could result in socially favorable outcomes contributing to greater well-being. It should also be noted that as a common design theme in the plans of all new projects, the three common spaces of amenity rooms, laundry rooms, and courtyards (or outdoor amenity spaces) are situated in quite close proximity on ground floors. These common spaces are spatially interconnected. The Aster project (located in Mount Pleasant) features extra indoor/outdoor amenities on its roof level. In both The Aster and Timbre and Harmony (located in Kensington-Cedar Cottage), in addition to these three spaces, the lobby is also situated adjacent to amenity areas, separated from indoor amenity space only by a common wall.

Thirdly, connection between east and west buildings of Sunrise Village (located in Hastings-Sunrise) and Timbre and Harmony has been brought up in the discussions around the applications; central courtyards serve as common outdoor areas which offer physical/visual connectedness between separate east and west buildings. The design rationale of the project in Hastings-Sunrise commends the central courtyard noting that it provides "physical and visual connections between the buildings" (Brightside, 2020b, p. 16). Moreover, the referral report for the building in Kensington-Cedar approves the deviation of the new project's design from the T-form configuration proposed in the Community Plan (**Fig. 4.1**). The changes in plans do not follow the recommended T-shape and showcase two separate buildings that offer "connectivity of the amenity-rooms to the shared/sun-lit courtyard," (E 12the Ave. Referral Report, p. 7).

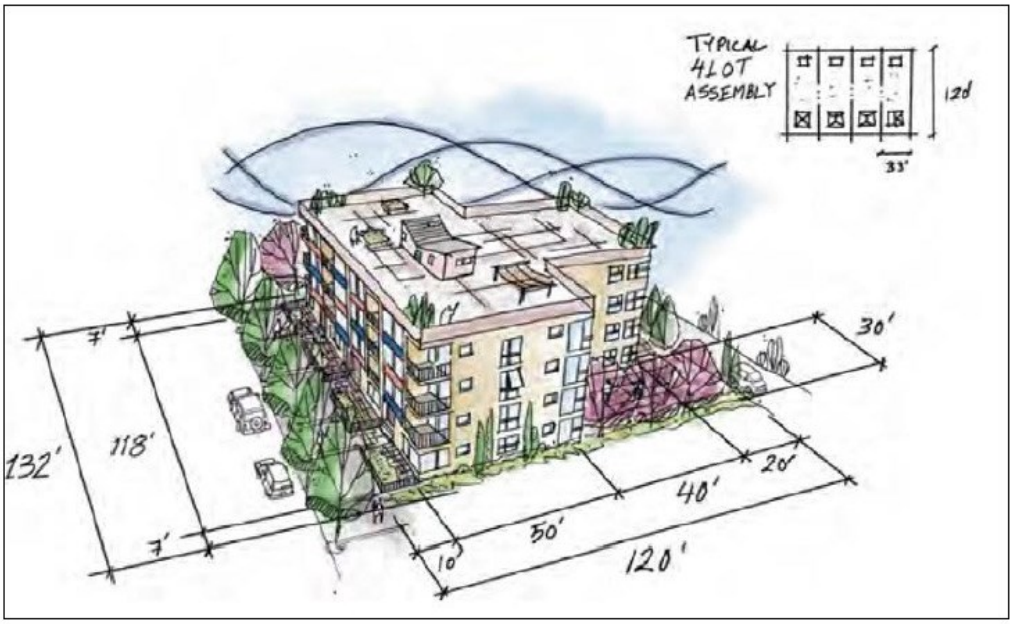

Figure 4.1. T-form proposed in Grandview Woodland Community Plan
Source: City of Vancouver. (2020). *REFERRAL REPORT CD-1 Rezoning: 1425 and 1451 East 12th Avenue*.

Throughout the RZ documents (display boards, referral reports, and public hearing videos) is an overarching design concept that visual and physical connections should be maintained between outdoor amenity spaces (such as courtyards) of two adjacent buildings, between amenity rooms and courtyards, and between amenity rooms and laundry rooms. The concept of physical connectivity also relates to a recurrent notion about 'spilling'; discussing laundry and amenity rooms as examples, this idea maintains that "direct connections" between shared spaces such as those lead to "the probability of common social activities spilling from the amenity to the laundry room" (City of Vancouver, 2021a p. 9). This is why the designs which physically and visually link areas such as indoor/outdoor amenities are highly praised by the city staff. Referral reports suggest further reducing the visual barrier through utilization of glass to improve connectivity so that the two indoor and outdoor common spaces develop into a 'contiguous' space; city staff suggest the installation of "glass wall systems that can fold open entirely" (City of Vancouver, 2020c, p. 9) or "full height glass walls" that "allow for clear visibility" (E 12th Ave. Referral Report, p. 9).

Additionally, there is an emphasis on the perception of shared spaces within the new Brightside properties which could be linked to the ideas of connectivity, in terms of

lack of physical/visual barriers. Rezoning applications emphasize how design could create a public perception of outdoor communal spaces which evoke an ‘extension’ to the public realm. Debates relating to the courtyard design of the building in Kensington-Cedar highlight that it “expands the perceived public realm” (City of Vancouver, 2020g); and, recommendations for front and side yards of the new project in Mount Pleasant note that they “should be seen as extensions of the open public realm” (City of Vancouver, 2020a p. 10). Here, the applications highly recommend physical/visual connectivity through deliberate planning to create a barrier-free contiguous space that makes the semi-private amenity, used exclusively by residents, seem like an extended public space. As new projects are currently under redevelopment and not yet completed, the beneficial outcomes of such designs for residents need to be tested in the future. So, whether these features work in real circumstances and showcase amenity spaces as inviting open spaces to the public or present them as private spaces spread out into the public realm needs further research.

Older spatial configurations in Brightside’s existing buildings do not generally provide such physical and visual connections between common spaces. However, there are some examples where the same design concepts are manifested in common spaces. Below, I look at several of these designs.

The common room on the ground floor in Collingwood Tower is connected to a welcoming garden (side yard) through a sliding door. King Daughter’s Manor features an inviting generous patio, containing a small gardening space and planters, which is connected to the ground floor amenity space; large windows within this room provide nice views to the green space and natural light. Moving on to Soroptimist Lions Manor, a sliding transparent door physically and visually links the common room to the green communal open space, the patio. For Coleopy Park (the Family Housing complex), it is the common laundry room which provides access to the generous yard located at the back and stretched along the whole property. Ground floor amenity rooms in Lion’s View 1 and 2 offer views and connections to the central courtyard; laundry rooms, located on second floors and within the same buildings, overlook the central courtyard creating visual interest for residents who are using the facilities.

Other layouts in existing buildings, although they do not exactly conform to the new design principles of accessible, at grade, and interconnected indoor/outdoor

amenity spaces, connect common spaces that offer different uses or atmosphere. For instance, the amenity room in Muir Manor, located in the basement, links to a small outdoor amenity space. This common space is not spacious enough for large gatherings though (**Fig. 4.2**). The open concept indoor common lounge situated on the ground floor in Wallace Wilson affords views to the property's spacious garden/back yard on the lower level, satisfying the visual connectivity principle yet lacking the physical connectivity principle. First Lutheran Court reflects new design concepts regarding where laundry rooms are located; its common laundry amenities are included within the indoor amenity room. Bridgeview Place and Gordon Fahrni support connectivity in design of their upper floor amenities: the 2nd floor amenity/laundry room in Bridgeview Place is attached to a large outdoor parcel and the 8th floor amenity/laundry room features an attached balcony. Lastly, a thoughtfully decorated and well-appointed lounge on the 8th floor in Gordon Fahrni affords residents spectacular views of English Bay via its balcony.

Figure 4.2. Patio space connected to amenity room in MM
Source: Ahad Kamranzadeh

There are also some old design features which do not exactly fit the new concepts but appear advantageous. For example, laundry rooms in Londonderry and Magnolo Manor may be utilized as amenity spaces as they provide opportunities for

sitting, reading, and relaxation. Nonetheless, such places relate more to a multi-purpose use of space rather than physical connectivity between shared spaces since the size of these rooms is not sufficient to be physically separated for different uses. Thus, provision of different activities within the same space showcases creative thinking on the part of building residents or managers in the face of design constraints.

4.1.2. Accessibility

Accessibility is a recurrent theme within the RZ documents. In the context of the referral report for the building in Hastings-Sunrise, accessibility both refers to the connection between two places within the neighborhood, such as two streets (Venables Street and the lane), and the provision of facilities/designs which facilitate access for people with disabilities or the elderly, such as Universal Design, ramps, and avoidance of abrupt vertical changes. In the public hearing for the building in Kensington-Cedar, three main concerns regarding accessibility are noted: accessible design for seniors and people with disabilities, as regards aging buildings that do not provide accessible features such as elevators and ramps; accessibility features which facilitate neighborhood connection and walkability, e.g., central ROW connecting places and neighbors; and finally, easy access to the central courtyard as a spacious communal space. However, some applications are mainly concerned with accessibility with respect to the needs of PWD and the elderly. For instance, Applicant Open House Boards of The Hawthorn and The Aster, located in Marpole and Mount Pleasant, respectively, focus on specific considerations for people with mobility challenges; these can be listed as:

- at-grade landscaped areas, ramp to the entrance, allocation of more spaces for wheelchair and mobility aids, accessible vehicular and bicycle parking space, and the variety of amenities in the courtyard (play areas, community gardens and seating) (The Hawthorn's display boards)
- adequate "maneuvering space," accessible "height and knee space," (laundry machines) accessible "door levers," "slip-free flooring," "step-free," "straight," and "minimum length" routes (The Aster's display boards)

Therefore, there are evident considerations for improved accessibility specifically within the common spaces of the project in Mount Pleasant. Specific examples include the kitchenette in the amenity room (called the 'Multi-purpose Room') that is wheelchair accessible and the accessible washroom on the same floor; the same applies to similar spaces at the indoor amenity on roof level, where an accessible washroom is located.

Accessibility also relates to the interactions between the public and the communal outdoor spaces within the projects. In fact, public access proves to be a common challenging design idea due to concerns about the extent of access by the public to the private residential property. Discussions around public use and access then could be categorized into two major branches: material design features such as physical elements like seating areas at the edges of the property (E 12th Ave. Referral Report); and design strategies that provide a perception of public access, yet not necessarily real access, such as the central courtyards or front and side yards serving as expansions of the perceived public realm (City of Vancouver, 2020g; City of Vancouver, 2020a). Regarding actual features, there are a few suggestions like: “developing areas within the courtyard that are accessible to the wider neighborhood” (City of Vancouver, 2020c, p. 22); “having some parts of the courtyard accessible to the wider public” which is provided through seating areas on the borders of the courtyards and ROW (E 12the Ave. Referral Report, p. 21); and “publicly accessible seating at the edges of the open spaces” (City of Vancouver, 2020a, p. 27).

Furthermore, notions related to accessibility revolve around ‘smooth’ and ‘barrier free’ connections between indoor and outdoor amenity spaces or between the amenity spaces of two adjacent buildings. The Urban Design Panel advised the developer to “provide further accessibility between the two amenities for a more direct barrier-free connection”, where amenities denote the common amenities of East and West buildings (City of Vancouver, 2020c, p. 6 in Appendix C). As a matter of fact, in the public hearing of the Mount Pleasant project, the same concept was brought up by one speaker who applauded the (outdoor) amenity space design for being barrier-free. Additionally, the Applicant Open House Boards of the Kensington-Cedar project indicate that simple access to amenity spaces is an important design consideration because most of the residents in this building will be senior citizens. Easy access to the courtyard is also appreciated by the public in the public hearing for the same project. Lastly, the “mounded areas” within the outdoor common space of the Mount Pleasant project afford seniors an “accessible locale” for “gentle exercise” and, hence, provide opportunities for social interaction through joint activities and possible social gatherings (City of Vancouver, 2020b, p. 33).

Walkability and pedestrian connectivity within the neighborhood and through the property demonstrate another design aspect which relates to accessibility. City staff

required adjustments to the plans for the Hastings-Sunrise project so that connection between northern and southern streets is devised and there are no “abrupt vertical edges” throughout the connecting route (City of Vancouver, 2020c, p. 23). The ROW on E 12th Ave. clearly shows a good design strategy that promotes walkability and connects places and neighbors, an accessibility feature which facilitates connections.

My survey of the existing Brightside buildings revealed that ten out of twenty-two properties do not afford elevators, and that First Lutheran consists of townhouses and as such has no elevators by design. Moreover, there are ten two- or three-storey walk-ups constructed in the 50s, 60s and early 70s (KD and SL). Specific accessibility challenges for PWD include raised door thresholds, unavailability of ramps to entrances, and nonautomatic doorways. There are, however, some examples of proper access to amenity spaces and shared areas within the old stock of Brightside buildings.

Gordon Fahrni’s ramps from the parking lot in the back lead up to the main entrance in the front making it easier for wheelchair users to reach the lobby. Moreover, there are three benches by the entrance which offer a semi-public locale accessible to residents and neighbors. As discussed already, RZ documents assert the need for an ‘accessible locale’ where residents, especially seniors, can actively participate in social settings (City of Vancouver, 2020b). Similarly, the common room located on the 8th floor is a contiguous space integrated into the corridors by design; it could be commended as a semi-private locale featuring generous access to sunlight and opportunities for relaxing, dining and gardening. This communal area features an attached balcony. The only shortcoming, however, would be the door threshold to the balcony which is raised and not wheelchair friendly.

Some buildings demonstrate another aspect of design that is highlighted in the applications: the perception of public accessibility. This concept closely relates to the connectivity concept previously discussed. There are no gates or fences physically separating Burrard Manor’s central courtyard from public space. This feature might pertain to the “extensions of the open public realm”, yet might not actually be used by the public (City of Vancouver, 2020a, p.10). However, this design feature appears in accordance with rezoning applications because there is in fact more focus on the perception of open spaces enhancing pedestrian experience than there is on actual public use of such spaces. At the same location, inaccessible design where residents

need to walk up the stairs to the upper floor is alleviated by direct access to the courtyard by lower floor residents; their apartment doors open to this green, shared area.

When it comes to accessibility, an exemplary case would be Bridgeview Place (BVP) where design features of common spaces prove to be more inclusive and accessible in comparison with other existing Brightside buildings. Constructed in the 1990s, the entrance door is automatically operated and the building features elevators. Its spacious lobby affords adequate maneuvering space needed for people with mobility issues. Also, easy access to common spaces appears as another design consideration at BVP. The most prominent design would be the amenity rooms on the 2nd and 8th floors: households can enjoy a range of activities including cooking, dining, and reading in the amenity room or playing in the courtyard while doing laundry on the 2nd floor; moreover, additional amenity space on the 8th floor contains a washroom and ample access to natural light. However, the exterior door to the balcony space is not at-grade. Overall, taking into account the communal deck on the 10th floor, there are three amenity spaces connected to outdoors within the 10-storey building. Being distributed on different floors, these common spaces provide easy access to shared spaces for the community at Bridgeview Place.

There are more examples of accessible designs. Arbutus Court for instance, does not include an elevator but presents a few favorable design features as follows. The community gardens at the building's front are connected to the larger public realm around it and there are no barriers or hedges delimiting the property line; this feature resembles a continuous open public space potentially facilitating public access. In Glynn Manor, the spacious lobby and amenity room on the ground floor make these shared spaces more accessible for PWD; the kitchenette in the amenity room is open concept and its washroom is accessible. Lastly, the ground floor common space in Wallace Wilson, merged with corridors, gives a perception of openness and accessibility while offering comfortable seats and adequate room for wheelchair use. Further, situated at street level, access to the backyard/garden in the same building is facilitated by its location; this area affords an expansive green space.

4.1.3. Location

The rezoning application for the Hastings-Sunrise building regards ‘location’ or layout as a favorable design consideration: location of the courtyard is appropriate as it is “central,” “south-facing” and connected to indoor amenity spaces; additionally, it is recommended that three-bedroom family units be relocated to the ground floor to be close to the courtyard and play area (Brightside, 2020b, p. 16; City of Vancouver, 2020c).

In addition to the courtyard in Sunrise Village, ‘location’ is presented as a theme within all four redevelopment applications, as categorized below:

- Location of the courtyard
- Location of the family unit types
- Location of the building
- Location of the site/property
- Location of the shade garden (1425 and 1451 East 12th Avenue Referral Report)
- Location of amenity rooms and outdoor amenity spaces
- Location of main entrances

At the Hastings-Sunrise building, the courtyard can “ease the transition” to the southern side single housing lots and add to the “area’s connectivity and walkability” through creating additional pedestrian paths; the location of the courtyard then proves to be of pragmatic significance (City of Vancouver, 2020c, pp. 8-9). Moreover, city staff are in support of the “overall unit layouts and location of the unit types” (p. 10), and minor adjustments are being considered for better privacy. The location of the building is praised at the Kensington-Cedar project as it delivers open spaces and permeability, i.e. architectural porosity, through its spatial arrangements and promotes walkability in the neighborhood; also, the shade garden at the north-west corner of the development is situated where seniors can enjoy some quiet relaxation (East 12th Avenue Referral Report; City of Vancouver, 2020f). Within the same documents, the location of the amenity rooms meets approval since, combined with their sufficient “size and dimension” and link to the courtyard, their layout facilitates “a broad range of activities for residents

and their guests" (Referral Report, p. 9). Further, when it comes to the redevelopment projects, location of the property/site matters specifically in relation to proximity to the neighborhood amenities (City of Vancouver, 2020a; City of Vancouver, 2020g). It is not only the city planners who commend the appropriate locations of building amenities though; the public feedback, during the Public Consultation for the project, is in favor of the location of the amenity room connected to the laundry room because this creates opportunities for residents "to interact with each other" (City of Vancouver, 2021a, p. 4 in Appendix C). As an example regarding outdoor communal spaces, the outdoor amenity space at the Mount Pleasant project (Fig. 1.8 in Chapter 1) is thoughtfully located: situated by the main entrance, seniors have easy access to the common area which could be utilized for retreat as well as socializing. Additionally, the same space is accessible through the indoor amenity space (City of Vancouver, 2020b).

The location of some of the shared amenities in existing Brightside buildings, although not exactly following the design principles evident in the new projects, might prove beneficial to the creation of favorable spaces for social interaction. LV1, 2 and 3 share an expansive courtyard located centrally; moreover, ground floor amenity rooms of two out of the three buildings (in LV1 and 2) are directly linked to the same open space at-grade. At Soroptimist Lions Manor, the green space patio is situated adjacent to the ground floor amenity room enhancing opportunities for social activities within a property which does not quite reach contemporary accessibility standards. Moving on to indoor common spaces, in some of the older stock apartment buildings, laundry rooms are located on ground floors and are well-lit due to their southern orientation; examples include Florence Manor and Magnolo Manor and the Family Housing complex at Coleopy Park. Other old properties share issues around inaccessibility in their design, yet some of them exacerbate such unfavorable physical conditions, such as lack of elevators, by making their residents take additional stairs to reach the laundry facilities in basements; Harwood Manor, Arbutus Court, Londonderry, and Mount Pleasant Lions Manor fall within this set of buildings.

On the contrary, it should be taken into consideration that well positioned additional garden spaces in a few buildings add some quantitative and qualitative value to the communal spaces within individual buildings. As a matter of fact, such green spaces increase the cumulative size and quality of overall shared spaces. For instance, the large garden in Wallace Wilson, opposite the main entrance, affords both visual

interest and opportunities for retreats and social interactions between residents. The layout of the communal garden offers a quiet setting for enjoyable social exchange and provides attractive views to this green amenity space from the ground floor common room. Moreover, the central courtyard/garden of First Lutheran Court, comprising amenities for play, lounging, and gardening and situated by a daycare, may cultivate social exchange and enhance the livelihood within the context of a property which is comprised of townhouses rather than typical apartment units.

Location relates also to alternative aspects of well-being. For example, location of second floor laundry rooms in LVI and II offer an exceptional chance to view the green and expansive common courtyard while doing laundry. Therefore, location, besides factors such as access and proximity, relates to access to natural light and provision of views. Incidents where such spatial strategies have been incorporated into the building layouts (whether intentional or accidental) include the ground floor 'Lounge' at Collingwood Tower, the outdoor connected corridors at Burrard Manor, the ground floor amenity room at King's Daughters Manor, the amenity room at Soroptimist Lions Manor, the bright and inviting open concept amenity room at Wallace Wilson, and the well-lit amenity rooms at Gordon Fahrni House and Bridgeview Place which feature spectacular views to English Bay and False Creek, respectively.

4.1.4. Liveability

Liveability is a recurrent theme in the rezoning applications. Discussions around liveability within the context of RZ documents include the following main topics:

- Access to natural light
- Access to green space
- Access to common spaces: open amenity spaces and well-designed indoor/outdoor amenity spaces are highlighted
- Access to semi-private outdoor spaces (namely, patios and balconies)
- Privacy
- Proper ventilation
- Sense of openness

Also, availability of a range of unit types and adequate unit sizes are noted in the rezoning application, yet these liveability factors, related to private spaces, do not concern my research about shared spaces.

In some of the applications, access to sunlight and access to amenity rooms are noted as qualities which enhance liveability (East 12th Ave. Referral Report). In addition, nature and natural light contribute to the key discussions around liveability in almost all of the applications; for instance, “access to nature and natural light” are connected to liveability and showcased in the Design Rationale part of the display boards document for the Mount Pleasant building (p. 5). Another important and common liveability factor, private outdoor spaces (also referred to as ‘semi-private outdoor spaces’) are indicated throughout all new projects. Such references denote patios and balconies attached to the apartment units where ideal spatial designs would be such that sunlight is not obstructed and there are no privacy concerns. With respect to these concerns, the level of privacy increases when buffers are developed through soft or hard landscaping and careful gradings that limit views to private living spaces. Nevertheless, discussions about the level of privacy, and measurements to achieve such levels, regarding both patios/balconies and outdoor amenity spaces remain ambiguous: while there is an emphasis on design considerations to improve privacy, there is also an emphasis on the same spaces being perceived as open spaces extended to the public realm.

Furthermore, configuration and design of indoor/outdoor amenity spaces relate to liveability concerns within the context of the new projects. The Urban Design Panel suggests “Relation between the indoor and outdoor amenity spaces” on the ground floor at the Mount Pleasant project so that they achieve higher levels of liveability; here, relation denotes an interchangeable term for (physical) connection (City of Vancouver, 2020a, p. 3 in Appendix C). Additionally, “usability” and “privacy” of these common spaces are emphasized within the same text (p. 3 in Appendix C).

In addition to the most frequent themes noted in the bullet points above, liveability also relates to matters linked with quality of life and well-being. At the public hearing sessions, speakers (including previous and current residents of Brightside) raised serious problems such as pests, floods, and inaccessible features (e.g., lack of elevators and broken elevators) in some of the current aging buildings. These problems reveal liveability issues more relevant to the health and well-being of households than

the concerns listed on the display boards (City of Vancouver, 2020g). This illustrates how the public, at times, raises concerns about different aspects of liveability than those pursued by the building designers and the City. Liveability concerns mentioned by speakers at the public hearings did not quite match the design strategy concerns regarding access to sunlight, green spaces, and spacious common spaces, but rather revealed more basic needs for living spaces in good repair and free of pests.

When it comes to the liveability characteristics of existing Brightside properties, many do not include any amenity rooms. Arbutus Court, Burrard Manor, Harwood Manor, Londonderry, Magnolo Manor, and Florence Manor do not feature indoor amenity spaces. Burrard Manor, however, offers outdoor amenity spaces within its property lines: a common courtyard and a backyard. Since there are no alternative common spaces in the above-mentioned properties, lack of adequate indoor amenity spaces may significantly reduce liveability. Yet, it is worth pointing out that there are some examples of attractive features which could potentially enhance liveability in a few of the older buildings, despite the inaccessibility issues that they also face. Access to natural light, for instance, contributes to the creation of more welcoming places: the tiny lobby in Arbutus Court is well-lit by natural light; the large windows of laundry rooms in Londonderry, Harwood Manor, and Magnolo Manor light up these common spaces. Moreover, Florence Manor features a bright lobby due to its exposure to the outdoors via its glass entrance; it also features an adequately lit laundry room on the ground floor.

On the contrary, there are some apartment buildings whose laundry rooms are less inviting and, in some instances, fairly dark. There is no access to sunlight in the laundry rooms of Collingwood Tower, Soroptimist Lion’s Manor, Wallace Wilson, Muir Manor, and Lion’s View III. Moreover, the laundry rooms in Gordon Fahrni House and Mount Pleasant Lions Manor are quite dark and uninviting.

Green outdoor spaces, as an indicator of liveability, are missing in a few buildings including Glynn Manor, Harwood Manor, and Wilson Heights Manor; these properties afford only unremarkable green pockets on the periphery. While Arbutus Court, Londonderry, Magnolo Manor, and Florence Manor do not offer any designated and delineated outdoor green spaces, their meagrely sized but well-kept and trimmed front lawns, community gardens, and planters positively accentuate the entries to these buildings. Further, some existing buildings that nominally (based on building plans) do

not include courtyards as green areas, provide generous green spaces on their front or side yards: Collingwood Tower, King's Daughters Manor, Moreland Kennedy House, Wallace Wilson, and Mount Pleasant Lions Manor fit this description.

Finally, balconies and patios are a frequent point of discussion concerning liveability in the rezoning applications. In fact, both referral reports and display boards point to the availability of these spaces for the private use of individual households and as private open-air spaces adjacent to their units. Both the referral report and the display boards of the Mount Pleasant project point to the availability of balconies as private spaces contributing to liveability. Moreover, display boards of the Marpole project (**Fig. 4.3**) highlight the privacy component of patios in the landscape plan displaying "private patios with planted buffers" (City of Vancouver, 2021b, p. 21).

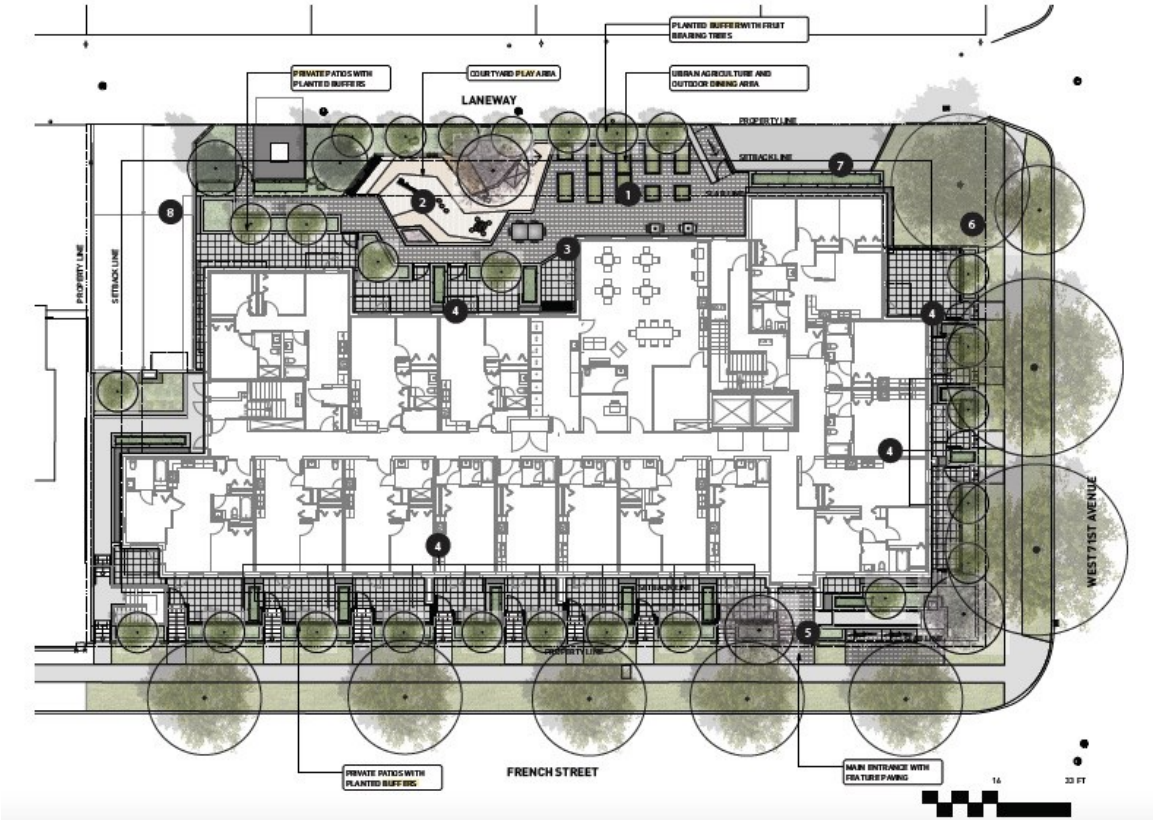

Figure 4.3. Natural buffers for patios at 8725 French St.
Source: Brightside. (2021) *Open House Boards.*
https://council.vancouver.ca/20210615/documents/phea2OHboards_revised.pdf

Some older buildings mitigate their inadequate living conditions by featuring spacious balconies. Balconies in Moreland Kennedy House, Mount Pleasant Lions

Manor, Collingwood Tower, LVI and LVII are quite sizable. Having said that, a noticeable number of older stock buildings do not provide any balconies or patios, including Glynn Manor, Harwood Manor, King's Daughters Manor, Londonderry, Soroptimist Lions Manor, Wallace Wilson, and Florence Manor.

4.1.5. Transition

Transition is another key theme within the rezoning applications. This theme covers five main aspects which may be realized through design strategies of new developments: transition to the neighborhood context and fabric; gradual transition through buffering between the private properties of the new projects and the neighboring properties; transition between public and private realms; transition strategies to minimize privacy concerns; and transition strategies concerning accessibility issues.

There are a noticeable number of references to the concept of 'appropriate' transition to the neighbourhood context and fabric; such ideas of transition are noted throughout the discussions about the setbacks from neighboring buildings and public realms, the area's massing, the area's building heights, and the character and context of the neighborhood. At the same time, a multitude of strategies have been recommended (or are currently present in the plans) to achieve such appropriate transitions. First, thoughtful design of façades is highlighted, when cladding, materials, texture, and even coloring are applied in ways that reduce the bulkiness, excessive massing, perceptions of horizontality and height of the new projects so as to create a smoother transition to the neighborhood context (Brightside, 2020b; E 12th Ave. Referral Report; City of Vancouver, 2021c). Second, adequate setbacks from the projects' property lines, especially at intersections with peripheral streets and lanes and adjacent residential buildings, assist in the transition between different properties and zones (City of Vancouver, 2020h); in addition, shoulder setbacks on buildings' upper floors break the massing and bulkiness and alter the perception of height (Brightside, 2020b; City of Vancouver, 2021a). Third, the provision of extra open spaces such as courtyards and the strategic positioning of these areas ease the transition to the neighboring contexts (City of Vancouver, 2020c).

Buffering between the new projects and the neighboring properties is another aspect related to the theme of transition in the rezoning applications. Here, buffers

function as transitional spaces, developed through design, to mediate the spatial variations between the new and old contexts. Such buffers are devised via different design features such as landscaping, planting beds on the edges of property lines, large planters in front of the units, trees and shrubs planted/maintained on the edges of the properties, and elevation variations between the street and outdoor common spaces. In some documents, however, design features intended to function as buffering are suggested for specific outcomes that may not correspond to strategies concerning gradual spatial transitions. Examples of such recommendations include features which can enhance privacy, reduce air and noise pollution, reduce pedestrian traffic, and reduce public use (E 12th Ave. Referral Report; City of Vancouver, 2020b). Moreover, there are a few examples of buffer zones in the new developments with different functions. At the Mount Pleasant building, the outdoor amenity space is "highlighted by vibrant planting that acts as a buffer with the adjacent property" (City of Vancouver, 2020b, p. 33). Further, in the public hearing session for the same project, one councillor approves of the building as it reminds him of the "garden park approach" in the West End neighborhood, where generous green spaces serve as buffers between the towers and neighboring residential complexes. Buffering was also raised in city debates, specifically the lack of proper buffering. In the referral report for the Marpole project, one area of dispute within the Public Consultation section revolves around transition: "the project does not provide a smooth transition from neighboring three-story buildings" (City of Vancouver, 2021a, p. 36). This remark from the public, however, does not propose any solutions for improved transition and only presents negative feedback regarding the height difference between the new project (6 storeys) and the residential context. Having said that, it shows similar considerations between urban planners and the public around the concept of smooth transition.

The third aspect of transition in relation to the design of new projects could be closely linked to the hierarchy of spaces within the built environment of residential buildings, including interfaces with the public realm; in other words, the transition between public and private realms. Sometimes this particular type of transition is treated through landscaping: city staff stress the need for "more substantial landscape buffering to provide smooth transitions between public realm and private spaces at both Venables Street and Renfrew Street" (City of Vancouver, 2020c, p. 23). Sometimes transition is achieved through planting: the courtyard at French Street is buffered from the street by

planted trees (City of Vancouver, 2021b, p. 21). Sometimes, transition is realized through streetscaping: “a tree-lined streetscape with patios helps to soften the transition from the sidewalk to the building face” (City of Vancouver, 2020a, p. 43). And sometimes, it is achieved through stepped landscaping: “The Brunswick Street frontage consists of private patios buffered with planting and stepped landscape that accommodates the grade change” (City of Vancouver, 2020b, p. 33). Therefore, we notice how design principles related to smooth transitions are applied in the new projects. Design techniques highlight the transition between the public realm denoting streets and sidewalks and the private realm denoting any amenities within the property lines of the project such as semi-private spaces (e.g., courtyards and patios) and including building façades.

The fourth form of transition mainly responds to the concerns around privacy. So, appropriate transition schemes, whether applied through physical features or provided through adequate distancing, strive to provide a sense of privacy for both the residents of the new project and their neighbors. For instance, city staff point out the insufficient setback (only 2.4 m) from the southern border of the Marpole property which, consequently, “may pose privacy concerns for neighbors to the south” (City of Vancouver, 2021a, p. 8). Here, the current proposed setback as a material means of transition between neighboring apartments does not satisfy the privacy concerns of the households. In fact, in the same document related to the French Street redevelopment, two design recommendations are given so that improved “level of privacy” and “sense of openness” will be achieved: first, setback on the south border, at the “south interior sideyard,” be increased to 10 ft; second, no “balconies and primary living-room windows” be placed on the southern face of the building (p. 1 in Appendix B). It should be noted that other forms of buffering that have already been discussed, such as planted trees at the edges of properties and streets and landscape buffers before ground floor patios and common courtyards, help in providing more privacy for residents. Also, it should be noted that there are no definite lines that separate different design features with respect to transition considerations: design focused on improving privacy might as well contribute to improved gradual transitions from public to private realms and, hence, lead to better integration of the new project to the housing context in the neighborhood.

The fifth topic relevant to the concept of transition in the context of the rezoning applications is accessibility. The connotations of accessibility can be connected to a

couple of categories. First, transition within the built environment evokes ideas/features relating to accessibility for people with disabilities and people with mobility issues. Features such as barrier-free areas and lack of sudden grade changes correspond to this first category. Second, transition within the built environment implies ideas/features relating to improved access in a sense of availability of accessibility features and ease of access. Design features that facilitate access to the public (non-residents) or to the residents who use a car, walk through the property, or use mobility aids (e.g., wheelchairs) correspond to this second category. For instance, a speaker at the public hearing for the Mount Pleasant project commends the design of the outdoor amenity space because it is “barrier free” and hence accessible to all. Display boards of the same project portray this admired open common space, located by the lobby and linked to the indoor amenity space, as an inclusive space which could be utilized by people of different ages and at different stages, in terms of mobility. Moreover, city staff suggest improvement to the “accessibility” and provision of “a smooth transition free of abrupt vertical edges” for the path connecting Venables St. and the lane within the new site (City of Vancouver, 2020c, p. 23). These suggested advancements to the plans may benefit the future senior residents and people with disabilities; they could also facilitate access by the general public. Furthermore, appropriate transition, from the perspective of the city, means “street improvements” which entail improved finishing (**Fig. 4.4**) for the sidewalk through “broom finish saw-cut concrete sidewalk,” and construction of “curb bulges” and “curb ramps” (City of Vancouver, 2021a, p. 28); such design requirements would then lead to better and safer access for pedestrians and people using mobility aids.

Figure 4.4. Example of sidewalk design in Vancouver
Source: Chan, K. (2020, February 13). *City of Vancouver to spend $1.4 million on 240 additional accessible curb ramps.* Daily Hive. https://dailyhive.com/vancouver/vancouver-sidewalk-curb-ramps

In examining concepts of transition within existing Brightside buildings, it is important to consider the different built forms of these older buildings in relation to the built form of their surrounding neighbourhood.

Among the existing high-rises, Collingwood Tower demonstrates a gradual transition to the neighboring context through soft landscaping including the garden on its southern border and the landscaping on its northern and western borders. Situated in the West End, Gordon Fahrni seems to have adopted the garden park designs in the area, where green buffers and adequate setbacks provide smoother transitions to neighboring residential contexts. Bridgeview Place, in Yaletown, however, does not offer a gradual transition since there are no noticeable green spaces around the property and the only landscaped area of significant size is located on the second floor. That said, observational studies show adequate setbacks from adjacent buildings at some of the buildings in this research.

Within the set of low-rise buildings, some show smoother transitions to neighborhood contexts as well as gradual transitions from public to private realms. Soroptimist Lions Manor and King's Daughters Manor represent such buildings, where both (as low-rise residential structures) conform to their surrounding low-rise single detached housing fabric. As a matter of fact, landscape spaces of front lawns and patios and setbacks from the public realm provide open spaces between these buildings and

their surrounding built environment, allowing an improved transition. Other good examples of transitions among low-rises include Arbutus Court, Londonderry, and Magnolo Manor. These three buildings seem to follow similar landscape designs within their outdoor spaces where trees and shrubs function as transitional spaces between public and private realms.

Harwood Manor and Florence Manor (both located downtown), however, do not follow new design concepts regarding transition. Observations confirm that buildings adjacent to these properties are placed close to one another and the only buffer zones between the properties and sidewalks consist of small areas of (at-grade or raised) planting beds, at their entrances.

Lastly, as noted before, due to varied forms and scales between the existing buildings, a consistent analysis of design features relating to the concept of 'transition' seems impossible. As a unique example of a particular form, Lion's View buildings cannot exactly be compared to other apartment buildings since the three buildings form a residential complex closely located to one another and positioned around a central courtyard. Taking into consideration these buildings' specific characteristics, however, pedestrian connectivity and transition to surrounding residential areas in the neighborhood are achieved through accessible ramps and walkways that link lanes and streets. Transition does not appear as seamless at one particular area though, the main entrance. Although there are no gates or physical barriers to the main entrance to LVI and II, different texture, material, and design at this point (e.g., bollards and stone wall) signal the approach to a private property.

4.1.6. Privacy

Privacy concerns comprise the last design theme in my framework. These appear in various terms in literature regarding privacy in the design of the new projects: 'privacy issues,' 'privacy concerns,' 'screening,' 'level of privacy,' 'a sense of privacy,' and 'residential privacy' (City of Vancouver, 2020c; E 12th Ave. Referral Report; City of Vancouver, 2021a; City of Vancouver, 2020b). Multiple solutions to these privacy issues exist, as recommended by city staff or proposed in the display boards. Measures include 'screening devices,' windows that are 'appropriately sized and/or screened,' setback spaces that contain 'planting for added privacy screening,' 'tree retentions to aid

screening/ privacy,‘ existing on-site trees which give ‘natural acoustic and visual screens,‘ ‘landscape screening,‘ ‘glass-pane opacity,‘ ‘landscape design,‘ ‘planter screens,‘ ‘locations, and reconfiguring the unit layouts,‘ designs where ‘elevating‘ or ‘sinking‘ the courtyard can ‘separate it from the walkway,‘ ‘natural screening,‘ ‘planting and stepped landscape,‘ and ‘landscape buffers‘ (City of Vancouver, 2020c; E 12th Ave. Referral Report; City of Vancouver, 2020b; City of Vancouver, 2020a).

As is evident from the list above, many solutions are provided within the context of rezoning applications where a diverse range of natural to fabricated design strategies are suggested. For instance, natural settings integrate the potential of retained trees to increase privacy while hard and soft landscaping utilize features such as changes in grade or planting to buffer the more private spaces from public views or public access. Additionally, broader changes regarding building plans and layouts such as reconfiguration of units or replacement of window locations or changes in their sizes contribute to enhanced privacy. In sum, privacy concerns and relevant design measures to diminish such concerns could be divided into three broad categories: exposure of living spaces, buffer spaces as means for added privacy, and private versus public access to amenities. The first category concerns the views to residents’ or their neighbors’ private living spaces, the second one concerns the use of buffering to develop more privacy for future residents, and the third one concerns the balance between privacy and access (by the general public) to the shared building amenities.

First, private living spaces and views raise a privacy issue across the applications. For example, at the Hastings-Sunrise project, staff mention a concern that “the units around the inner corner at the east building contain balconies that face closely to each other” with “direct sightlines into each other’s living space.” In response, a “screening device” or reconfiguration of “the unit layout/floorplan” is offered as the solution (City of Vancouver, 2020c, p. 10). Moreover, “overlook” to the living spaces of “the easterly neighbors” should be controlled by screening or resizing the “balconies and primary windows” which face that direction (p. 10). City staff notice similar privacy issues regarding “overlook and direct sightline” at the Kensington-Cedar project, at “the inner corner of both buildings”: for windows and balconies placed in close proximity at the same spot, “planter screening and/or adjusting the window sizes, glass-pane opacity, and locations, and reconfiguring the unit layout” are some possible solutions (E 12th Ave. Referral Report, p. 22). Furthermore, considerations for enhanced “level of privacy”

leads to recommendations for “adequate distance from shared property lines” and redesigns for “building elevations that face neighboring residential buildings” (City of Vancouver, 2021a, p. 7). But another approach to achieving a higher ‘level of privacy’ is through increasing the setbacks. The city suggests “widening the setback” on the south border with the adjacent building at the Marpole building (p. 19). At the project in Mount Pleasant, providing “residential privacy” means design considerations that maintain “a lower ratio of glazing to wall” on the western façade (City of Vancouver, 2020b, p. 5). Privacy of shared spaces is also highlighted when staff ask that “the west side units have their primary view away from the interior side yard” (City of Vancouver, 2020a, p. 13).

Second, buffering is presented as a measure to create more privacy within the new properties. At the Hastings-Sunrise project, the extra setback suggested on the southern property line could be utilized for “planting for added privacy screening” (City of Vancouver, 2020c, p. 21); the same document proposes “tree retention to aid screening/privacy” when it comes to “Open Space Planning” (p. 40). Both suggestions involve planting and tree retention as buffer areas aiming for greater privacy. Moreover, retention of trees on E 12th Ave could serve as “natural acoustic and visual screens to the courtyard” (1425/1451 E 12th Ave. Referral Report, p. 40). However, one of the speakers (a resident living adjacent to the rear side of the building) during the public hearing for this project disapproved of the current location of the courtyard and preferred that it be located “behind the building” where it can “provide buffer between us and the tower” (City of Vancouver, 2020g). Additionally, the proposed landscaping for the Marpole project strives to develop buffers between private patios, the courtyards, and the public sidewalks (City of Vancouver, 2021b, p. 21). Regarding the side yards, staff have voiced concern about an inadequate buffer zone between neighboring buildings when they note that “the setback at the south interior side yard” does not fulfil privacy requirements (City of Vancouver, 2021a, p. 8). So, buffers may be able to cultivate “a sense of privacy”; display boards remind us that “mature trees, large plantings and a wooden trellis” provide privacy “from pedestrians and vehicles passing by” (City of Vancouver, 2020b, p. 5). In total, 8 mature trees will be preserved, 6 trees on the E 6th Avenue and 2 trees on the Brunswick Street. Lastly, in terms of unit layouts, those at the Marpole project that “face directly onto the north lane” are creatively “buffered by patios and planters” (City of Vancouver, 2020a, p. 10).

Third, privacy versus public access appears to be a key common concern in the rezoning applications. The debate within these revolves around provision of available amenities for the public (non-residents), access to the public, and the extent of such public amenities or access to the new properties. Some design features which were brought up during these discussions include courtyards, balconies, and side and front yards. In the Hastings-Sunrise project, for instance, it is advised that "a minor part of the courtyard" should become accessible to the public by measures such as "seating around the lane-edge and/or path cutting through the site"; courtyard design, then, should consider "a balance between having visual and physical porosity" and residential privacy (City of Vancouver, 2020c, p. 22). Interestingly, the paradox between private and public use of the courtyards is evident when the city panel requires "more separation" in design so that this common space "can feel that it belongs to the residents"; as a design strategy, a panelist advises "planting and low gates" for the courtyard in order to portray it as "semi-private, yet still allow views in" (City of Vancouver, 2020c, p. 41). Similar controversial ideas around private/public access and use of common spaces continue for the Kensington-Cedar project where the panel raises concerns regarding the Right of Way "being too public and not enough privacy for the units" (E 12th Ave. Referral Report, p. 42). During the public hearing, though, a planner indicated that the same SROW will be utilized "to connect folks in the neighborhood as a public access realm" (City of Vancouver, 2020g). Besides common outdoor spaces there are also opinions regarding privacy within indoor spaces. An example of this is that, while the common laundry room is praised as an "informal space" for socializing, comments received from the public during the pre-application open house express concern about unavailability of "in-suite laundry" (City of Vancouver, 2021a, pp. 9, 12). So, views are divided about the value of public use and access to shared spaces not only among planners but also among members of the mobilized public.

Sometimes, however, the dichotomy between private and public access is connected to ideas concerning designs which are visually attractive to the public. For instance, for the Mount Pleasant project specifically, the "public realm interface", meaning the physical design at the borders of the property with the public realm, is emphasized; in fact, the peripheral setbacks and landscaping are recognised as important factors in the development of "visual interest to the public realm" and an improved "pedestrian experience" (City of Vancouver, 2020h).

In addition to the abovementioned three themes relating to privacy, certain design features offering private rather than shared uses appear repeatedly in comments. In fact, the importance of balconies or 'private open spaces' is clearly indicated on display boards for the Mount Pleasant project that highlight that every unit has access to these open space amenities. Balconies have also been referred to as 'semi-private spaces.' Whether called private or semi-private, regular reference to patios and balconies proves that such areas seem as valuable to the well-being of the community as public spaces like indoor/outdoor amenities.

Good examples of privacy in the design of existing Brightside buildings include LVI and II and Gordon Fahrni House. LVI and II properties are quite separated from the public zone via stepped walkways and ramps and the central courtyard. The same properties also provide privacy between units through wider indoor corridors and sizable balconies that create buffer zones between private living spaces and the common courtyard. Gordon Fahrni House features wide corridors, balconies, and adequate buffer between public sidewalks and the complex via hard and soft landscaping.

Examples which do not present ideal privacy conditions comprise buildings that have narrow corridors, lack semi-private spaces like balconies, and have an abrupt transition to properties. Glynn Manor affords patios for units only on the ground floor, with none on upper levels; the buffer between the public sidewalk/street to residential area is minimal. Corridors in Harwood Manor are quite narrow and there are no balconies; corridors in King's Daughters Manor (KD) diminish the 'sense of privacy' where neighbors are made to use long narrow indoor routes to reach their units. KD however, provides smooth transitions between the public zone and private apartments through landscaping and siting.

4.2. Observational Analysis

Small Features at Arbutus Court

A low-rise building of only three storeys, AC showcases a couple of interesting design attributes. There is a small library (**Fig. 4.5**) situated under the staircase within the lobby which includes a side chair. It is also worth noting that although corridors are not well-lit, the main staircase (**Fig. 4.6**) to upper floors, located by the entrance,

functions as a light well providing natural light to this circulation area. Therefore, design within these common areas supports access to natural light, a frequently highlighted liveability criterion in the RZ documents.

Figure 4.5. Library in the lobby at AC
Source: Ahad Kamranzadeh

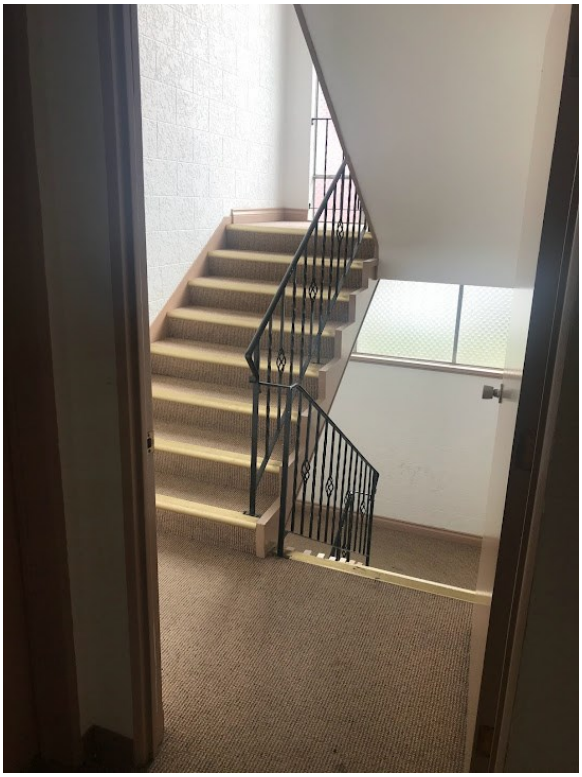

Figure 4.6. Main staircase at AC
Source: Ahad Kamranzadeh

Nooks and common balconies at LV buildings

Prochorskaite et al. (2016) point to the attractive views to green spaces as an important ‘soft feature’ in the context of apartment living in the UK and there has been a multitude of remarks in RZ materials regarding the value of semi-private outdoor spaces for the wellbeing of residents (City of Vancouver, 2020d; Gibson et al., 2011). Nooks and common balconies provide LV households with these valued benefits. LV I and II feature nooks located on the third floor and on the third and fourth floors, respectively; situated at the corner of hallways these spots provide attractive views to the natural landscape. Additionally, the communal balcony spaces (**Fig. 4.7**) in LV III (on 2,3, and 4 floor) feature similar benefits where residents can view nature and the streetscape.

Figure 4.7. 4th floor communal balcony at LV III
Source: Ahad Kamranzadeh

Outdoor amenities at LV and BVP

In contrast with the new building designs, neither Lion's View buildings nor Bridgeview Place feature amenity-rich outdoor spaces. The central courtyard at Lion's View buildings offers only community gardens and the courtyard at Bridgeview Place does not provide any facilities other than a couple of lounge chairs. So, these earlier spaces are envisioned and designed mostly as open green spaces which may be utilized for social gatherings and activities, whereas the new projects are explicitly designed for multiple uses, featuring dining equipment for BBQ, playgrounds, and gardening spaces, in addition to seating spaces and green landscape.

LVs vs KD

LV buildings: Certain design features such as the stone wall and bollards at the interface of the complex with the sidewalk, give a perception of a private property, and this might contrast with the concepts of contiguous open spaces integrating into the public realm or ideas around accessibility by the public, both advocated for in the RZ applications. As it is, Lion's View complex seems a bit fortified and projects the image of a private community separated from public use and access.

Figure 4.8. Walkways to courtyard at LV buildings
Source: Ahad Kamranzadeh

King's Daughters: There is adequate setback on the front and back faces of the property. The frontal setback features the lawn which contains a few wooden box community gardens, and the back setback features a strip of green space stretching along the property line on both sides of a looping walkway (**Fig. 4.9**). Comprised of natural buffer (**Fig. 4.10**), the setback evokes a seamless linkage to the back lane.

Figure 4.9. Looping walkways at KD
Source: Ahad Kamranzadeh

Figure 4.10. Buffer interfacing the back lane at KD
Source: Ahad Kamranzadeh

Co-location at FLC & KD

The location of the courtyard in First Lutheran Court (**Fig. 4.11**) affords more privacy than public (non-resident) use of its varied seating/gathering spaces and play amenities. In addition, the amenity/laundry room door leads out to the courtyard. Furthermore, an outdoor space belonging to the adjacent day care facility is fenced off by only chain link fences. The layout showcases an appropriate zoning of private (townhouses), semi-private (resident community), and public (street) spaces. This is reminiscent of design strategies, noted in the academic research, which respect a hierarchy system where private/public realms are delineated (Reynald and Elffers, 2009; Abed and Al-Jokhadar, 2022).

Figure 4.11. Courtyard location in relation to units and day care (left) at FLC
Source: Ahad Kamranzadeh

Figure 4.12. Central courtyard at Burrard Manor
Source: Ahad Kamranzadeh

In the building layouts of King's Daughters Manor, lobby, laundry room, amenity room (titled 'common lounge' in plans) and its neighboring patio are located near each other. Moreover, in the same building, the recreation room, while located in the basement, connects to the back area's outdoor landscape via a door and an upward exterior ramp.

CT, distinct tower design in the 1970s

Although built in 1977, CT displays distinctive designs in terms of both open-air and indoor shared amenities. The property is bordered by outdoor landscaped areas on the periphery and there are multiple open-air shared spaces, i.e., outdoor landscaping on the ground floor and a sundeck and roof garden on the 10th floor. These characteristics contribute to the gradual transition of the residential building into its neighbouring built environments. There is a landscaped side yard to the right of the entrance area (**Fig. 4.13**). This common space is accessible to all residents as it is demarcated by only fences and a low gate. In addition, Collingwood Tower features large balconies for every unit and there are common laundry facilities on every other floor throughout the building. In addition to the remarks about the social potential of laundry rooms in RZ documents, Foth and Sanders (2005) stress the importance of serendipitous and casual social encounters; the easy access to shared laundry rooms at CT can help foster such informal contacts between neighbors.

Figure 4.13. Side yard at Collingwood Tower
Source: Ahad Kamranzadeh

Figure 4.14. Lounge linked to the outdoor space at CT
Source: Ahad Kamranzadeh

MM, WW, & BM; potential for social spaces

Muir Manor: The courtyard at Muir Manor (**Fig. 4.15**) is located at the back of the building and can be accessed via corridors on the ground floor. Additionally, it can be accessed via the stairs from the amenity room on the basement floor. The courtyard is a spacious green space stretching along the east façade where residents can enjoy the open air and sunlight. Although the courtyard/backyard is an expansive open space comprising gardens, trees, and plants, it does it not feature amenities which could be utilized for social events or gatherings. However, as it is an accessible broad area located on the main floor, there is potential for design improvements that are better aligned with social activities.

Figure 4.15. Courtyard at MM
Source: Ahad Kamranzadeh

Wallace Wilson: The courtyard/backyard at Wallace Wilson is an expansive area comprising natural and planted landscapes. The open green space is located on the south-west corner of the property and features a few seating options such as a picnic table, a few benches, a few lounge chairs, and a few community gardens. As it borders on Grandview Highway, there is no appearance of a gradual transition to the public realm. Having said that, the backyard could be refurbished to incorporate features that would encourage joint activities such as playing or large social gatherings. As a matter of fact, Hoar (2018) encourages the transformation of “underutilized spaces for social spaces” and the backyard at WW shows the potential for such undertakings.

Figure 4.16. Seating areas within courtyard at First Lutheran Court
Source: Ahad Kamranzadeh

Burrard Manor: The courtyard is not large and there are no amenities present except for a single bench oriented towards the sidewalk. In fact, in Huang's (2006) words, this place mainly serves as a 'scenic space' (containing plants in the middle) as well as a 'circulation space' (containing routes to the units that circle around it). So, this area could barely be utilized as an 'activity space' due to its inadequate size. Nonetheless, what this particular building layout cannot deliver in provision of adequate activity spaces the households make up for by placing their chairs (**Fig. 4.17**) by their unit doors on common corridors. This seems a creative strategy that might induce interactions between neighbors.

Figure 4.17. Placing chairs by the unit doors at BM
Source: Ahad Kamranzadeh

Extra Social spaces

The older stock of Brightside buildings does not follow the leading-edge design principles of the redevelopment projects where accessible outdoor amenities and directly connected indoor/outdoor amenity spaces signal inclusive design and considerations for quality of life. However, some design features or additional design elements in existing buildings add to everyday experiences of the households and enhance liveability through creation of accessible ‘locales’ for social exchange.

For example, a few existing buildings feature pleasant seating spaces near their main entrances. Soroptimist Lions Manor features a picnic table and a couple of side chairs by its entrance door. In addition, the landscaping and setback at the entrance area properly buffers this space from the public sidewalk while at the same time providing views to the green landscape and streetscape. This semi-private locale

demonstrates a couple of advantageous points with regard to its interface with its adjacent environment and the public. First, being located under the canopy at the entrance area, the seating space is sheltered from rain and excess sunshine. Second, being positioned at lower grades than the sidewalk and adequately set back from the public realm, residents can enjoy decent privacy; simultaneously, they can observe comings and goings of neighbors and pedestrians. This seems valuable because Cattel et al. (2008) regard observation of social activities to be an important factor in well-being, as important as active social engagements.

Figure 4.18. Seating area and landscape buffer at the entrance to SL
Source: Ahad Kamranzadeh

Soroptimist Lions features an additional social space on its upper floor. There is a nook on the second floor at the end of the hallway by the main stairway and facing E 13th Avenue. This ad hoc use of the hallway for seating offers opportunities for social exchange especially for residents on the second floor by making the circulation space function as a social space for small chats/greetings. Yet, this could not quite fit the description of a ‘social corridor’ promoted in the Happy City report (n.d.) since it does not afford any amenities other than a couple of chairs. Also, the arrangement may impact privacy because it is on a segment of the hallway close to an apartment unit. Having said that, the nook presents attractive views to the outdoor natural landscape.

At King’s Daughters Manor, random seats are placed all along the concrete walkways stretching along the southern edge of the property line. This outdoor area

functions as a landscape buffer from the back lane. It is separated from the public realm by only chain link fences. As a consequence, there are no visual or physical obstructions preventing sunlight or blocking views to the surrounding public space. In addition, there is plenty of green landscaping like mature trees and shrubs within the same space. Hence, a combination of design features including the presence of plants and green space, a generous access to natural light, a sense of openness developed through design, and access and connectivity to the neighborhood context showcases this common area as quite favorable for residents' use. In fact, make-shift seats can be observed all around the walkways (**Fig. 4.19**): a chair and an iron bench are placed on the path connecting the patio space to the opposite corner; a table and couple of chairs are placed on this corner (by the gate to the parking area); and a couple of seats are placed at the end of the downward ramp to the Recreation Room.

Figure 4.19. Chairs by the door to Recreation Room at KD
Source: Ahad Kamranzadeh

Mount Pleasant Lions Manor features a spacious backyard that includes concrete picnic tables, tables and chairs, and community gardens. Nevertheless, a relatively more inviting common space appears to be the front lawn close to the main entrance. Within this area, there is a small garden (**Fig. 4.20**) by the entrance door carefully decorated by a variety of plants and flowers. Also, in the middle of the lawn, there is a picnic table. It should be noted that there is no buffer zone between the seating area and the sidewalk, and the only buffer consists of a raised planted area on the border with the adjacent building. Consequently, the interface is quite open to the neighboring public realm. Studying the social networks at inner-city public housing in Chicago, Kuo et al. (1998) maintain that accessible green spaces adjacent to properties impact social ties within the neighborhood. So, this physical feature might help in building a social connection between residents at MPLM and residents in the neighborhood because it gives the impression of a welcoming space which does not restrict access to the neighbors. Those residents who need more quiet space for private activities may use the backyard.

Figure 4.20. A garden by the entrance at Mount Pleasant Lions Manor
Source: Ahad Kamranzadeh

Laundry/ Amenity Rooms in the old buildings

In the new projects, amenity spaces and laundry rooms are located on ground floors and are accessible via and adjacent to the outdoor amenity spaces. Many of the aging Brightside buildings however do not afford such features. In fact, in a few of them,

laundry rooms are located on basement floors, including Arbutus Court, Gordon Fahrni, Harwood Manor, Londonderry, MPLM, and Muir Manor. A further barrier to accessing laundry amenities is the lack of elevators at Arbutus Court, Harwood Manor, Londonderry, and MPLM, making it even more difficult for people with disabilities or seniors who live at these walk-up apartment buildings.

LDY & MAG: The modest size of current laundry rooms at these buildings does not allow for the present-day designs similar to the new projects, yet, residents use the same areas, initially planned for laundry purposes, to relax while reading a book from the library; to maintain or store their bikes; and to store excess equipment.

The laundry room at Londonderry (three-storey, built in 1957) is located on the basement floor. As the only indoor common space, this room could facilitate social relations between households since, in practice, it functions as a multi-purpose room for utilitarian and recreational activities. The laundry room at Magnolo Manor (four-storey, built in 1959) is located on the ground floor, and similar to Londonderry this room is the only indoor amenity space within the building. However, because there is a table and a relatively comfortable chair, this room appears more comfortable than its counterpart space at Londonderry. The room is well-maintained and tidy which may show that the insufficient quantity of common spaces, ironically, has led to a proper maintenance of the only available amenity.

Figure 4.21. Laundry Room at Magnolo Manor
Source: Ahad Kamranzadeh

4.2.1. Evaluative analysis of design features

In this section I present my findings about design features within five common spaces of my studies in connection with the six common themes (**Fig. 4.22**) of rezoning applications. Since the variables in my observational checklist did not correspond perfectly to the six themes, I included only variables/factors which connected with these themes. Tables A5 to A10 show findings for each theme where header columns are chosen based on my analysis and synthesis of design ideas and concepts from rezoning applications.

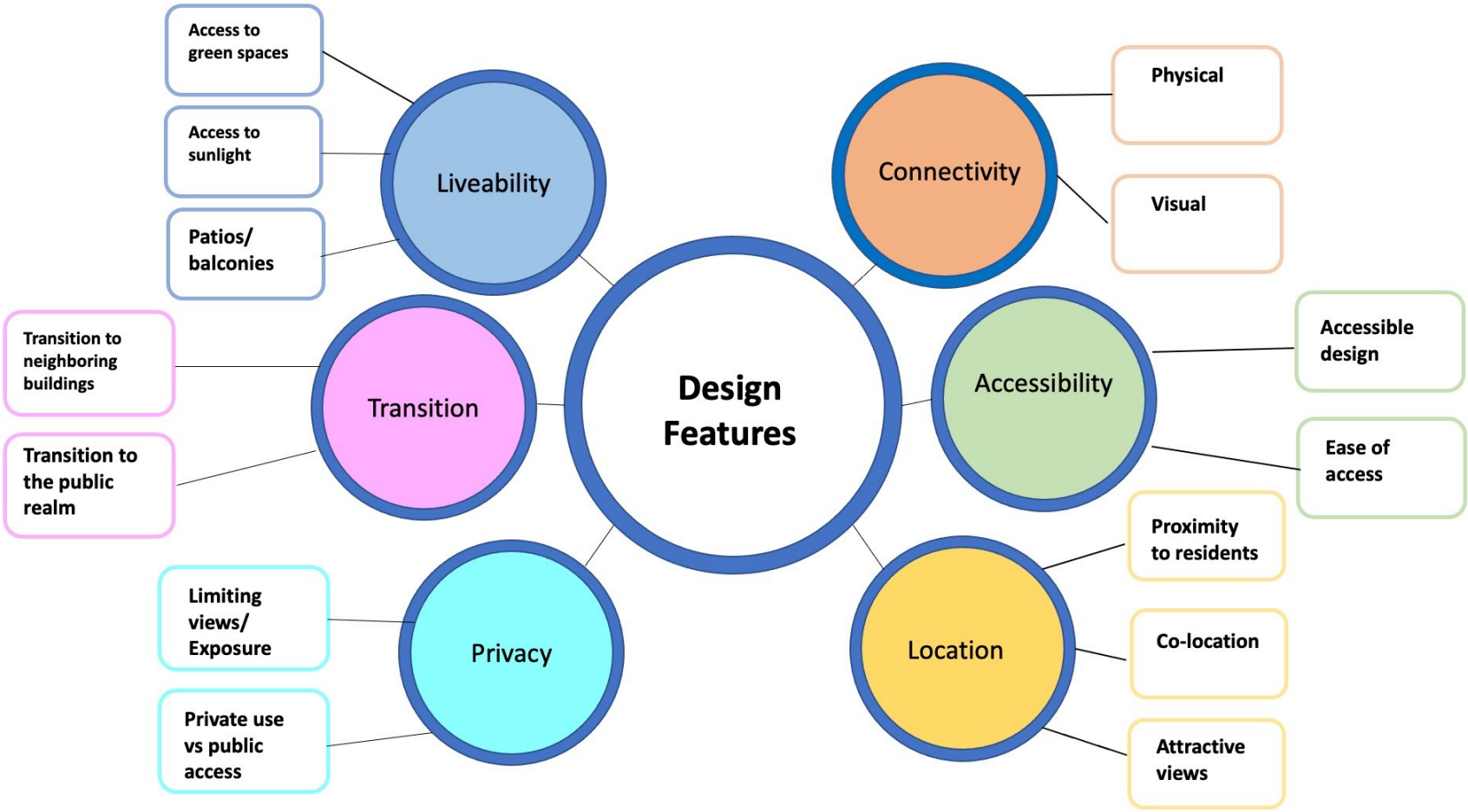

Figure 4.22. Design features and common themes for evaluative analysis

Tables A11 to A16 show the results of scores for the six different themes.

Analysis of scores based on separate themes:

Connectivity

BVP, COL (Family Housing) and FLC score the highest in terms of connectivity. In BVP and FLC laundry rooms are included within amenity rooms and there are outdoor amenity spaces linked to indoor amenity spaces. COL (Family Housing) features an open-air garden space adjacent to its amenity room and its laundry room. Although not directly connected to the AR, the garden is located a few meters away from it.

As can be observed from the ranking table in Table A17, a few of older buildings (AC, BM, FM, HM, LDY, MAG, MP) score zero as there are no connections between indoor/outdoor amenity spaces or there are no designated indoor or outdoor amenity spaces.

Accessibility

BVP, COL (Senior's Units), FLC, LV I, and LV II score the highest when it comes to accessibility. They feature elements which correspond to accessible designs: they afford wide corridors, accessible WC/Kitchen in amenity rooms, elevators (except FLC), and barrier-free routes to common spaces. Moreover, easy access is facilitated through design where indoor and outdoor shared spaces are located in close proximity.

Except BVP, all indoor/ outdoor shared spaces (e.g., courtyards and amenity rooms) are situated on ground levels. Also, access from the public realm (sidewalk) to the property is provided through ramps and at-grade design. However, there are steps (no ramps) to the entrance at FM, AC, and HM and there are no amenity rooms; the door threshold to SL's patio space is raised; and MP does not satisfy qualities regarding ease of access because both the amenity room and laundry room are located downstairs. That is why they score low in *accessibility.* In addition to such unfavorable designs, there are stairs midway along corridors on the floors in HM which exacerbate this building's low accessibility quality.

Location

BVP, COL (Senior's Units), CT, LV I, and LV II score the highest in terms of location. Common indoor/outdoor spaces are co-located (i.e., in close proximity) in these

buildings. MP, AC, and HM score the lowest. Common space (LR) at AC is located in the basement where residents need to take the stairs down. The same situation applies to HM. Further, residents at MP need to take the stairs to both the amenity room and the laundry room located in the basement in this 2-storey walk-up.

Liveability

Inferring results from liveability does not seem to be quite clear since more than half of the buildings score at the median mark (8). Therefore, analysis of the highest and lowest scores appears to be most useful. MK scores the highest: there is quite a noticeable number of green spaces (mature trees, shrubs, plants, and community gardens). However, unlike MK, there are no noticeable green areas at HM and the only common room available is the laundry room. Hence, the lack of outdoor open spaces, limited number of indoor common spaces, and inadequacy of green spaces result in a number of older buildings (namely, MAG, FM, HM) ranking the lowest in comparison to the remaining buildings. WHM is placed at the bottom of the ranking list due to the unavailability of shared outdoor amenities and green spaces.

Transition

CT and GF rank the highest. CT provides a smooth transition from public to private realms through hard and soft landscaping. Mature trees, the side yard/garden, and the landscaped green areas lining the walkways and the northern periphery comprise buffer areas which contribute to the gradual transition. GF's design features for siting and setback, including the areas at the front entrance and the parking lot at the back, assist in transitions to the neighboring buildings and public realm. COL (Senior's Units), KD, MP, and LV buildings also feature landscaped green buffers at their interfaces with their surrounding public realms. Front lawns and backyards at KD and MP provide both additional setbacks and landscaping, which simultaneously contribute to improved transitions to private realms.

However, there is no design feature facilitating transitions at BVP. This condition could partially be associated with its location. Being downtown and within a relatively denser area containing many mid-rise and high-rise buildings, BVP has no open spaces on its borders that could function as transitional buffer zones.

Privacy

GF, MP, and SL, all feature spaces at their borders which could be utilized by the public (i.e., non-residents) while at the same time providing privacy for their residents through landscape buffering: trees and shrubs at GF; fences at the backyard at MP; and trees, shrubs, and landscaping at SL. Benches by the entrance to GF, and the picnic tables by the entrances to MP and SL are accessible to the public.

COL (Family Housing) scores the lowest among existing buildings since there are no privacy screens or setbacks between public sidewalks and private patios (**Fig. 4.23**). AC, FM, GM, and LDY do not provide balconies as semi-private outdoor spaces and there are no adequate buffers between private and public realms. BVP scores low in privacy as there are no features providing screening to the property, nor are there any public amenities available to non-residents. Finally, COL (Senior's Units) also scores low as there are no common outdoor spaces for gradual transition from private to public spaces. Additionally, there are no public amenities nor views (for general public) to common spaces. So, these buildings score only 4 in *privacy.*

Figure 4.23. Low privacy ranking at Coleopy Park
Source: Ahad Kamranzadeh

Chapter 5.

Conclusion

In this research I utilized different methodologies to understand the question: how have design ideas and strategies concerning social interactions between residents in affordable rental multi-unit residential buildings in Vancouver evolved during the last seven decades? Academic literature, City of Vancouver rezoning application documents, field observations, and building layouts were studied and relevant data was analyzed to arrive at the findings presented in Chapter 4 of this thesis. In this chapter, I summarize and synthesize my findings in connection with the potential of design features for social connectedness within old and new Brightside buildings.

It should be noted first however that, although this research studies multiple relevant sources related to the relations between design and social connections, one core source of data is missing here: observation of such common spaces in use. Due to time constraints and scope limitations of this Master of Urban Studies project, the research design did not involve observing human subjects actually using common spaces. Nevertheless, the data that was collected, including observations of common spaces of existing Brightside buildings, analysis of the configurations of common spaces and amenities through building layout studies, review of academic and grey literature, and the study of themes from rezoning applications, provides good basis to infer some important considerations which may positively affect social exchange within common spaces in multi-unit housing.

So, the main concern of this study revolves around this specific inquiry: ***does spatial lead to social through the mediation of common spaces?*** Based on field observations, we can link a combination of design factors currently existing within favorable common spaces that contribute to improved qualities for social exchange. Some of these factors are in addition to the key design strategies present in RZ documents and are based on the physical designs of existing buildings. These findings of observational analysis support a more comprehensive approach than focusing only on the design strategies existing in the RZ documents for new buildings studied and involve a combination of design criteria. Such a combination includes:

- available amenities for social gathering inside the common spaces (such as seating and kitchen facilities)
    - relates to notions about “gathering spaces where people could experience nature, socialize, eat and play” (Hoar, 2018, p. 1 in Part 2) and “Sociocultural Animation” (Foth and Sanders, 2005, p. 40)
- orientation and configuration of common spaces contributing to pleasant views and access to sunlight (Huang, 2006; City of Vancouver, 2020d)
- easy and direct connection between indoor and outdoor amenity spaces when applicable (*connectivity* theme in RZ documents)
- ease of access to these common spaces for residents, and potential for a variety of activities within such common spaces (Nguyen, et al., 2020; Hoar, 2018)

These variables point to the important role of individual experience of the environment and were also highlighted within some aspects of design concerns in rezoning applications, e.g., connectivity between amenity spaces and liveability concerns such as access to natural light and green spaces. They also relate to some key points highlighted in the reviewed literature, e.g, activities available for different needs and for different demographic groups and visual foci and views to attractive places.

Within the older buildings studied here, common spaces which feature linkages between amenity spaces, receive plenty of natural light, include green features or afford views to natural settings demonstrate more welcoming spaces for social activities.

In addition to the bullet points above, what is also worth mentioning regarding the older community housing building stock studied here is that small features can sometimes contribute to greater well-being for residents. Examples include ad hoc improvement within shared spaces by including small libraries, placing chairs in corridors and hallways, decorating spaces with small planters or works of art (e.g., paintings), and fixing mirrors on walls in lobbies. Furthermore, with regard to outdoor shared spaces,

community gardens add to the quality of life at a few of these older buildings. In fact, they can cultivate connections between residents who enjoy gardening, or they can merely enhance the aesthetics of outdoor spaces. This element was substantiated in the literature reviewed, too. Zhang et al. (2018) include “amount of green space” as a criterion for the evaluation of outdoor community planning in Taiwan’s public housing (p. 9); and Prochorskaite et al. (2016) highlight “accessible public green space” as a ‘soft feature’ for sustainable housing in the UK (p. 7). Further, most of the community gardens in existing buildings are fairly integrated into the surrounding neighborhoods, providing what has been noted in intended design features within RZ documents as the ‘pedestrian experience.’

However, the existing buildings show some drawbacks in design. A noticeable number of laundry rooms appear as neglected areas where their small size does not allow any alternative activities and/or there is no access to natural light, making them uninviting spaces. Also, in comparison to the new developments, courtyards in the existing buildings do not include different amenities that would facilitate social activities. These courtyards are mostly green spaces containing seating areas and community gardens.

When it comes to the new designs though, we cannot pinpoint which will be successful as these projects are under redevelopment and not yet inhabited. We can, however, identify potential for sociability through design, by focusing on the prominent design considerations in the RZ documents. Below, I summarize and expand on some of these relevant design considerations. In other words, I explain where and why I believe such designs speak to any connections between spatial design and social interactions.

Rezoning applications and neighborhood context

Some notions in the rezoning applications concern the buildings’ integration into their neighborhood contexts. Such remarks include adequate setbacks, mindful design for cladding and façade, and forms that reduce bulkiness. The need for adequate setbacks from neighboring buildings and the public realm appear as recurrent themes within the applications. This specific planning consideration concerns privacy for residents as well as neighbors in adjacent buildings, in addition to gradual transitions to the public realm such as surrounding streets and lanes. Therefore, concerns over setbacks may not directly affect social connections between residents; rather these

considerations denote more of a delineation between private and public realms through design which incorporates open spaces to deliver smoother transitions.

Material and texture applied to the building's façade also relate to improved integration into the surrounding neighborhood. Here, these design features should be selected so as to break a sense of excessive height and bulkiness. Moreover, shoulder setbacks, that is, additional setbacks on upper floors, and dividing properties into two separate East/West buildings are suggested as strategies to lessen bulkiness.

With regard to conformity to the neighbourhood context, neither of these design considerations for the new projects can be expected to directly affect social relations between neighbors. As a matter of fact, the amount of discussion and reference to such design ideas indicates that a noticeable portion of applications concern aspects of design which are generally linked to subjective considerations of aesthetics and forms. Such notions bring about underlying contestations by members of the public, such as debates among public hearing speakers for the Mount Pleasant project, regarding form versus number of affordable housing units. Some complained that the *tower* does not fit into the mainly family housing feel in the neighborhood, while others stressed the need for more affordable housing even if that meant the construction of more high-rise buildings. Along with concerns around whether the new residents of community housing projects would be welcomed to the new communities, these debates speak to the ideas of Lofland (1998) regarding 'privatism' and inclinations toward a particular type of housing, detached housing, and the private-orientation of the lifestyle that this brings forth.

Rezoning applications: common space design commonalities

All the new projects follow similar designs for their ground floor indoor and outdoor amenity spaces: indoor amenity spaces are directly connected to outdoor courtyards and are located adjacent to laundry rooms. At least in theory, these features may work as catalysts for social activities between varied communities. That said, the typical siting of shared outdoor spaces may not be the only favorable strategic location for these. As Nguyen at al. (2020) suggest, the distribution of shared spaces throughout different floors may additionally promote socializing.

Rezoning applications and implicit design ideas

Leading-edge design ideas also hint at certain design aspects that can promote desirable types of social interactions within such spaces. *Informal/natural play areas* noted in the drawings (display boards) showcase ideas regarding design which does not encourage formal and demarcated use of shared spaces but strives for more casual, flexible, multi-use settings. Additionally, flexible/moveable furnishing of outdoor amenity spaces at the Mount Pleasant project (Aster) and even the title used for its indoor amenity space (multi-purpose room instead of amenity room) suggests design ideas emphasizing multi-purpose use and adaptability of these shared spaces. However, the size of open spaces at Aster do not afford as large gatherings as do the courtyards at the Hastings-Sunrise and Kensington-Cedar projects.

Rezoning applications and *privacy*

One of the indicators included in Appendix A10, which tabulates the scores for common spaces, is *private vs public access*. Here, to explore and come up with a compelling response to ‘what it means to have social potential in a space’ seems more complicated. How much privacy is good privacy when it comes to common spaces, specifically outdoor amenity spaces? And how does it relate to social potential within these spaces? Is privacy beneficial when residents are protected from public views through privacy screens such as plants or other buffering elements, which make them feel safer to interact? (Happy City, n.d.); or should we design for more spaces available to the public where social connection goes beyond residents of the same building and expands to the neighborhood? The second point seems as important as the first one; it highlights the design in connection with the outside community. Zhang et al. (2018) stress how outdoor circulation planning in Taiwan impacts interactions between nearby communities rather than the building residents themselves and Gu (2020) points to the social exclusion of high-rise residents due to outdoor common space designs in Korea. The majority of rezoning applications studied here recommend views (by the public) to the semi-private outdoor spaces yet, at the same time, they suggest screening methods to define these semi-private spaces as belonging to the resident community rather than to the public. In many cases, while ‘some’ amenities and spaces (mostly located at the borders of the property) are suggested in the new projects, they are limited to a few seats on the periphery.

Hence, the connections between well-being, social connection, and feelings of privacy within one's residential building requires more research. It is my hope that this thesis motivates this additional work.

Advantages of the new designs

New projects demonstrate some potentially advantageous qualities to promote sociability. Accessibility is clearly improved in the new designs, especially when considering that they are housing seniors and people with disabilities in addition to families. Outdoor amenity spaces are accessible and barrier-free and, where the project includes two adjacent buildings, shared spaces and walkways are interconnected. Second, there is an apparent focus on landscaping, tree-retention and additional planting, and natural buffering around private spaces. Third, RZ documents stress privacy as an important factor which should be available through design. Private patios and courtyards, for instance, need to be protected from being too public. Fourth, display boards emphasize features and activities specific to different demographics such as seniors or children.

Social potential in a space

We can look at the main enquiry of this research, regarding design for sociability, from an alternative perspective. The question then is: ***"what does it mean to have social potential in a space?"***

Although the existing buildings differ noticeably in terms of form by era, a few common factors detract from social interactions, across the board. Such physical characteristics can be listed as follows: when the only common spaces are limited to laundry rooms located in the basements, resulting in issues of accessibility and liveability; when there are no outdoor amenity spaces as transition areas for casual encounters; when there are no facilities (such as seating spaces) for social interactions within common spaces; when the only common spaces (like laundry rooms) are so small that they prohibit any chances for interaction and activities; and when there are major concerns around liveability and quality of life, i.e., there is no access to green spaces, natural light and ventilation.

With respect to RZ documents, there are some clear definitions and instructions concerning leading designs for common amenity spaces. However, except for a few

discussions, for instance with regard to laundry rooms as social spaces for potential interactions between residents and ideas around spilling of social activities between connected indoor and outdoor amenities, the rationale for certain design strategies, including the six common themes, is lacking. In fact, there are notions and remarks associating design-based strategies to social connectedness and well-being, yet they mainly include display boards of the applications and do not explain the 'how' of the relationships between the spatial and the social.

Summary

How has design and thinking around sociability evolved over the last seven decades after all?

- From 'lounges,' 'common rooms,' 'game rooms,' 'recreation rooms,' 'waiting rooms' to 'multi-purpose amenity rooms:' indoor amenity spaces of Brightside have been named differently over the last decades. These Lounges/Common rooms of earlier designs mainly serve as seating spaces. On the contrary, the new amenity spaces follow Universal Design and offer features to advance sociability. Amenity rooms in the new buildings will include spaces for meetings, dining and cooking, and relaxation.

- From undesignated random landscaped areas to courtyards with differentiated design for varied activities: most of the outdoor green spaces of the older stock do not fit the physical characteristics of what are called courtyards, with defined boundaries and uses, in new projects. In many, there are no hedges or other markings to distinguish them. They may include community gardens and landscaping that contain attractive plants but mainly they appear as spaces that are not well-zoned (Reynald and Elffers, 2009) for social activities.

- From negligible amenities for the public in the old buildings to accommodations made to enhance the pedestrian experience in the new projects: the new projects strive to create a balance between private spaces for the exclusive use of immediate residents and some public access to the shared amenities, or some visual interest at the very least. Most of the existing buildings, however, lack amenities for use by the non-resident community.

- A utilitarian approach in designs of older buildings: in the older stock, the size and proportion of shared spaces to private spaces (apartment units) is lower than in the new projects, leading to a major part of building layouts being allocated for private units rather than common areas. However, this may concern the specifications and policies of earlier days regarding community housing construction or different views on the amount of area needed for shared use.

More definitive findings on whether these changes will actually contribute to a better social well-being of future residents needs to be investigated with the benefit of

adequate data to compare the use patterns, satisfaction, and sociable quality of life outcomes of residents of the new buildings when compared with those of their counterparts in the older buildings.

There are still a few questions which may need to be answered: How would small features, in contrast with bigger changes, impact social relations in multi-unit housing? What about small social spaces like nooks in hallways, small libraries in lobbies, or open-concept (integrated into corridors) amenity rooms which we have observed in the older stock?

There are no discussions about creative retrofit or personalization of common spaces, through decorations, arts, and changes to seating arrangements, in the RZ documents. Also, there are no discussions about two common spaces of interest in this research: lobbies and corridors. Nguyen et al. (2020) counts circulation spaces (including lobbies and corridors) as “the most popular” for social interactions (p. 12); in addition, Happy City (n.d.) considers ‘social corridors’ as a key design concept to promote sociability in multi-family housing.

Finally, in addition to the frequency of social exchange, academic research is interested in the type and nature of social exchange within common spaces. Nguyen et al. (2020) divide ‘purpose of social interactions’ into categories of “greetings”, “long talks”, “joint activities”, and “accompanying kids for co-playing” (p. 13). There are also references to casual/ informal social encounters/settings (Foth & Sanders, 2005; drawings in display boards) where social exchange is not forced but voluntary, and where physical design promotes ‘natural’ exchange via flexible arrangements in corridors (social corridor noted by Happy City) or in-between spaces (e.g., staircase landings noted by Foth and Sanders (2005)). Future designs can include where and how to design for certain types of exchange or how to incorporate settings for casual exchange.

These design considerations in the reviewed literature show alternative solutions. Due to budget constraints, city regulations, and sometimes public contestations around construction of new social housing buildings, we need to look for alternative strategies in community housing design. As a matter of fact, the idea of redeveloping all the older buildings seems unrealistic and we should come up with ideas of how to make the best

out the existing buildings. Sennett (2018) would call these small changes ‘seed-planning’ instead of master plans (p. 237).

In sum, the relation between physical design and sociability proves to be a multi-faceted phenomenon that involves social and demographic aspects of the households as well as interests of different stakeholders including planners, the city, the public and the residents themselves. Thus, future studies need to include the personal experiences of different resident demographics as well as the opinions of professional planners and designers. Such research can help in addressing the shortcomings in current designs for sociability in the context of affordable rental housing in Vancouver.

Suggestions for shared spaces design in residential buildings

When it comes to the older stock, sometimes small changes could enhance opportunities for social interactions within existing shared spaces. In many cases, common spaces are few and residents and managers should be creative in utilising these limited available resources. Following, I propose some suggestions regarding design for the shared spaces of the existing buildings.

- Varied facilities for different uses: there are many indoor amenity spaces which do not feature any facilities other than seating spaces. Small features such as more comfortable chairs and amenities for dining and playing may invite more residents to the common spaces and lead to more social exchange.
- Outdoor shared spaces utilized for social events: where the size of outdoor shared spaces allows, managers and residents can modify them in order to create more opportunities for social activities. In fact, front lawns, gardens, backyards, and courtyards are convenient locales where including recreational amenities seems a practical approach. Even provision of a few chairs on the peripheries offers chances for social appearances. Additionally, underutilized shared spaces, like roofs, can function as extra social spaces in smaller buildings.
- Balance between private and public use: where applicable, managers and residents should aim to improve design features for both private and public (non-resident) use. Here, stakeholders should upgrade features within indoor common spaces to make them more inviting and inclusive for the private use of residents. At the same time, features in the publicly accessible shared spaces such as community gardens provide some access to the public in order for the residential building to be socially integrated into the immediate neighborhood.

Directions for further policy research

Further research can develop more policy-relevant knowledge related to the unexplored areas in this research project and build upon its findings and results. Firstly, a more qualitative approach to understating the impacts of city policies/regulations on current and future residents of community housing improves upon studies of sociable design. These studies may involve interviews with future residents of Brightside's new projects and/or interviews with policy planners, rezoning planners, developers, and providers of affordable housing.

Secondly, future research should include studies on the interrelations between policy-making and contextual/governmental factors associated with different geographies. In other words, researchers should investigate the effects of funding constraints and contextual characteristics (e.g., social contexts and cultural values) associated with community housing within the context of Canada, as a Western country, and Vancouver specifically. A comparative analysis including designs for shared spaces in different countries enriches scholarship on design for sociability.

Thirdly, further policy research would benefit from studies that highlight the impact of design policies on the social exchanges between different cultures and communities. Considering 'multiculturalism' as a prominent value set in Canada, future research can utilize this concept to explore how design for shared spaces in affordable rental housing in Vancouver could offer opportunities to socially connect communities of diverse backgrounds and cultures.

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Appendix.

Supplementary Tables

Table A.1. Building Layouts

Row#	Building name	Source
1	**Arbutus Court** 2085 W. 5th Ave.	Brightside staff
2	**Bridgeview Place** 238 Davie St.	Brightside staff
3	**Burrard Manor** 2330 Balsam St.	Brightside staff
4	**Coleopy Park** 5748 & 5788 Rupert St.	Blueprints at Brightside's office
5	**Collingwood Tower** 5657 Harold St.	Brightside staff
6	**First Lutheran Court** 5709 Wales St.	no layout available
7	**Florence Manor** 1325 Burnaby St.	Brightside staff
8	**Glynn Manor** 520 W. 7th Ave.	Brightside staff
9	**Gordon Fahrni** 1630 Barclay St.	Brightside staff
10	**Harwood Manor** 1222 Harwood St.	Brightside staff
11	**King's Daughters Manor** 1400 E. 11th Ave.	Brightside staff
12	**Lion's View I** 2950 Euclid Ave.	Blueprints at Brightside's office
13	**Lion's View II** 2980 Euclid Ave.	Blueprints at Brightside's office
14	**Lion's View III** 2975 Horley St.	Brightside staff
15	**Londonderry** 5550 Yew St.	Brightside staff
16	**Magnolo Manor** 2675 Alder St.	Brightside staff
17	**Moreland Kennedy House** 2495 W. 3rd Ave.	Brightside staff
18	**Mount Pleasant Lions Manor** 325 E. 6th Ave.	Brightside staff

Row#	Building name	Source
19	**Muir Manor** 2588 Nanaimo St.	Brightside staff
20	**Soroptimist Lions Manor** 1444 E. 13th Ave.	Brightside staff
21	**Wallace Wilson** 1620 E. 6th Ave	Brightside staff
22	**Wilson Heights Manor** 1602 E. 41st Ave.	Blueprints at Brightside's office
23	**Sunrise Village** 2924 Venables St.	Display Boards
24	**Timbre & Harmony** 1425 & 1451 E. 12th Ave.	Display Boards
25	**8725 French St.**	Display Boards
26	**The Aster** 349 E. 6th Ave.	Display Boards

Table A.2. Field Observations

Row#	Building name	Date observed	Shared spaces observed	Method of observations
1	**Arbutus Court** 2085 W. 5th Ave.	23 March 2022	lobby, corridors, LR, community garden	photo documenting and note-taking
2	**Bridgeview Place** 238 Davie St.	23 March 2022	lobby, corridors, AR, LR, courtyard, terrace, common balcony	
3	**Burrard Manor** 2330 Balsam St.	23 March 2022	corridors/balconies, LR, courtyard, backyard	
4	**Coleopy Park** 5748 & 5788 Rupert St.	23 March 2022	lobby, corridors, AR, LR, backyard	
5	**Collingwood Tower** 5657 Harold St.	23 March 2022	lobby, corridors, AR, LR, side yards, sundeck, roof garden	
6	**First Lutheran Court** 5709 Wales St.	23 March 2022	corridors, AR, LR, courtyard	
7	**Florence Manor** 1325 Burnaby St.	23 March 2022	lobby, corridors, LR	
8	**Glynn Manor** 520 W. 7th Ave.	23 March 2022	lobby, corridors, AR & patio, LR, common balcony	
9	**Gordon Fahrni** 1630 Barclay St.	23 March 2022	lobby, corridors, AR & balcony, LR	
10	**Harwood Manor** 1222 Harwood St.	23 March 2022	lobby, corridors, LR	
11	**King's Daughters Manor** 1400 E. 11th Ave.	23 March 2022	lobby, corridors, AR & patio, recreation room, LR, community gardens	
12	**Lion's View I** 2950 Euclid Ave.	23 March 2022	lobby, corridors, AR, LR, courtyard, nooks	
13	**Lion's View II** 2980 Euclid Ave.	23 March 2022	lobby, corridors, AR, LR, courtyard, nooks	
14	**Lion's View III** 2975 Horley St.	23 March 2022	lobby, corridors, LR, courtyard, common balconies	
15	**Londonderry** 5550 Yew St.	23 June 2023	lobby, corridors, LR	
16	**Magnolo Manor** 2675 Alder St.	23 March 2022	lobby, corridors, LR	
17	**Moreland Kennedy House** 2495 W. 3rd Ave.	23 March 2022	lobby, corridors, AR, LR, community garden	

Row#	Building name	Date observed	Shared spaces observed	Method of observations
18	**Mount Pleasant Lions Manor** 325 E. 6th Ave.	23 March 2022	lobby, corridors, AR, LR, backyard	
19	**Muir Manor** 2588 Nanaimo St.	23 March 2022	lobby, corridors, AR & patio, LR, courtyard	
20	**Soroptimist Lions Manor** 1444 E. 13th Ave.	23 March 2022	lobby, corridors, AR & patio, LR, nook (2nd floor), seating space by the entrance	
21	**Wallace Wilson** 1620 E. 6th Ave	23 March 2022	lobby, corridors, AR, LR, backyard	
22	**Wilson Heights Manor** 1602 E. 41st Ave.	23 March 2022	lobby, corridors, AR, LR	

Table A.3. Literature Review

Row#	Title	Author(s)	Date of publication	Type
1	Common space as a tool for social sustainability	Abed & Al-Jokhadar	2022	article
2	Applying the vernacular model to high-rise residential development in the Middle East and North Africa	Al-Jokhadar & Jabi	2017	article
3	Mingling, observing, and lingering: Everyday public spaces and their implications for well-being and social relations.	Cattell et al.	2008	article
4	High-Density Housing for Families with Children Guidelines	City of Vancouver	2020	guidelines
5	Housing as if people mattered	Coleman	1987	article
6	From Prisons to Penthouses: The Changing Images of High-Rise Living in Melbourne	Costello	2005	article
7	Atrium in Residential Buildings	Danielski et al.	2019	article
8	The key to sustainable urban development in UK cities?	Dempsey et al.	2012	article
9	Social Networks in Inner-City Apartment Complexes and the Implications for the Residential Architecture of Public Space	Foth & Sanders	2005	article
10	Understanding the Psychosocial Impacts of Housing Type	Gibson et al.	2011	article
11	Korean apartment complexes and social relationships of the residents	Gu	2020	article
12	Designed to Engage	Happy City	n.d.	report
13	Rethinking the concept of community	High & Walsh	1999	article
14	Homes That Connect Us	Hoar	2018	report
15	Loneliness and Social Isolation as Risk Factors for Mortality	Holt-Lunstad et al.	2015	article
16	A study of outdoor interactional spaces in high-rise housing	Huang	2006	article
17	Fertile Ground for Community	Kuo et al.	1998	article

Row#	Title	Author(s)	Date of publication	Type
18	Sustainable urbanism: towards a framework for quality and optimal density?	Lehmann	2016	article
19	The public realm: exploring the city's quintessential social territory	Lofland	1998	book
20	Housing layout, perceived density and social interactions in gated communities	Mousavinia et al.	2019	article
21	The social effects of architecture	Netto et al.	2019	article
22	Where do People Interact in High-Rise Apartment Buildings?	Nguyen et al.	2020	article
23	Housing Stakeholder Preferences for the "Soft" Features of Sustainable and Healthy Housing Design in the UK	Prochorskaite et al.	2016	article
24	The Future of Newman's Defensible Space Theory	Reynald & Elffers	2009	article
25	Rick Hansen Foundation Accessibility Certification: RHFAC v3.0 Rating Survey	Rick Hansen Foundation	2020	report
26	Hey Neighbour! Understanding a Pilot Project to Build Neighbourliness into Rental Housing	Seifi et al.	2020	article
27	Building and dwelling: ethics for the city	Sennett	2018	book
28	Social sustainability discourse: a critical revisit	Shirazi & Keivani	2019	article
29	Connections and Engagement	Vancouver Foundation	2012	report
30	High-rise, high-density housing: Myths and reality	Yeung	1977	article
31	How Do Community Planning Features Affect the Place Relationship of Residents?	Zhang et al.	2018	article

Table A.4. Rezoning Applications

Row#	Building name	Building address	Replacing?	Date approved	Documents analyzed
1	Sunrise Village	2924 Venables St.	Alice Saunders House (1977)	Dec. 2, 2020	Display Boards, Referral Reports, and Public Hearing videos
2	Timbre and Harmony	1425 & 1451 E 12th Ave.	Edward Byers House (1962) & Loyal Orange Manor (1971)	July 21, 2020	
3	The Hawthorn	8725 French St.	MacLeod Manor (1964)	June 15, 2021	
4	The Aster	349 E 6th Ave.	Mount Pleasant Lions Manor (located at 345 E 6th Ave.; built in 1968)	Dec. 10, 2020	

Table A.5. Connectivity in existing buildings. General notes about Tables A5 to A10: acronyms for different spaces or terms. L: lobby; C: corridors; CY: courtyard; AR: amenity room; LR: laundry room; RR: recreation room; OAS: outdoor amenity space; b.y.: backyard; s.y.: side yard; l.s.: landscaping; L.F.: lower floor; o.d.: outdoor; b.f.: barrier-free; *direct connection/access* means there are no physical barriers between two spaces, or the two spaces are only separated by a door

Building	Physical connectivity		Visual connectivity		Potential for a contiguous space (indoor/outdoor amenity spaces)	Perception as an extension to the public realm
	AR and outdoor amenity spaces	AR and LR	AR and outdoor amenity spaces	AR and LR		
Arbutus Court	no AR	LR in basement	no AR	n/a	no	community gardens and streetscape
Bridgeview Place	directly connected	included in AR	yes	included in AR	yes	n/a
Burrard Manor	no AR	no AR	n/a	n/a	no	courtyard and sidewalk
Coleopy Park (seniors)	no OAS	no	n/a	n/a	n/a	no
Coleopy Park (family)	LR to backyard	not direct	LR and backyard	no	yes, direct connection	no
Collingwood Tower	AR and side yard	no	yes	no	sliding door	no

Building	Physical connectivity		Visual connectivity		Potential for a contiguous space (indoor/outdoor amenity spaces)	Perception as an extension to the public realm
	AR and outdoor amenity spaces	AR and LR	AR and outdoor amenity spaces	AR and LR		
First Lutheran Court	AR and courtyard	LR within AR	limited views	separated	no	no
Florence Manor	no AR	n/a	n/a	n/a	no	no
Glynn Manor	AR to small patio	no	yes	no	no	no
Gordon Fahrni	AR and balcony	no	yes	no	door to balc. not accessible	hedges in the front
Harwood Manor	no AR	no AR	no	n/a	no	n/a
King's Daughters	directly connected	no	yes	no	yes, a door	yes, gates and fences
LV I	AR and courtyard	no	yes	no	a door to courtyard	no
LV II	AR and courtyard	no	yes	no	a door to courtyard	no
LV III	no	no	no	no	no	no
Londonderry	no AR	n/a	no	n/a	n/a	n/a
Magnolo Manor	no AR	n/a	n/a	n/a	n/a	n/a
Moreland Kennedy	no	no	AR and landscaping	no	no	no
MPLM	no	no	no	no	no	no; priv. b.y.
Muir Manor	yes, door and stairs	no	to patio	no	a door to patio	no; courtyard at diff. elevation
Soroptimist Lions	yes	no	yes	no	a sliding door to patio	no
Wallace Wilson	no	no	yes	no	no; different elevation	no
Wilson Heights	no	no	n/a	yes	n/a	n/a

Table A.6. Accessibility in existing buildings

Building		Accessible design					Ease of acc.
		Ramps/barrier-free routes	Corridor width (ft)	Adequate maneuvering space	Acc. facilities in AR	Elev./auto. door openers	
AC	L	no	5	no	no AR	no/no	n/a
	C	n/a		n/a			n/a
	CY	n/a		n/a			n/a
	AR	no AR		n/a			n/a
	LR	no		no			no
BVP	L	elevator	5.5	yes	WC	y/y	yes
	C	n/a		n/a			n/a
	CY	yes		yes			yes
	AR	yes		yes			yes
	LR	yes		yes			yes
BM	L	n/a	5.5	n/a	no AR	n/n	n/a
	C	stairs		no (2nd f)			no
	CY	at-grade		no			yes
	AR	n/a		n/a			n/a
	LR	b.f.		no			yes
COL sen.	L	ramps	5.5	yes	kitchen	y/y	yes
	C	n/a		n/a			n/a
	CY	n/a		n/a			n/a
	AR	ramps		Yes			yes
	LR	b.f.		yes			yes
COL fam.	L	n/a	n/a	n/a	no	n/a/no	n/a
	C	n/a		n/a			n/a
	CY	yes		yes			yes
	AR	yes		yes			yes
	LR	yes		yes			yes
CT	L	ramps	4	yes	WC	y/y	yes
	C	n/a		n/a			n/a
	CY	s.y., yes		s.y., yes			yes
	AR	yes		yes			yes
	LR	yes		no			yes
FLC	L	n/a	n/a	n/a	kitchen LR	n/a/n/a	n/a
	C	yes		n/a			yes
	CY	yes		yes			yes
	AR	yes		yes			yes
	LR	yes		yes			yes

FM	L	no; steps	4.5	no	no AR	n/n	no
	C	yes		n/a			n/a
	CY	no CY		n/a			n/a
	AR	no AR		n/a			n/a
	LR	yes		no			yes
GM	L	yes	5	yes	WC kitchen	y/y	y
	C	n/a		n/a			n/a
	CY	no CY		n/a			n/a
	AR	yes		yes			y
	LR	yes		no			y
GF	L	yes	3.7	yes	none	y/y	y
	C	n/a		n/a			n/a
	CY	no CY		n/a			n/a
	AR	yes		yes			y
	LR	yes		no			y
HM	L	no, steps	4.5	no	no	n/n	n
	C	no, steps		n/a			n
	CY	no CY		n/a			n/a
	AR	no AR		n/a			n/a
	LR	no, basement		no			n
KD	L	yes	4.7	no	sink	n/y	y
	C	n/a		n/a			n/a
	CY	patio; yes		patio; yes			y
	AR	yes		yes			y
	LR	yes		no			y
LV I	L	yes	5.5	yes	kitchen WC	y/y	y
	C	n/a		n/a			n/a
	CY	yes		yes			y
	AR	yes		yes			y
	LR	yes		yes			y
LVII	L	yes	5.5	yes	kitchen WC	y/y	y
	C	n/a		n/a			n/a
	CY	yes		yes			y
	AR	yes		yes			y
	LR	yes		yes			y
LV III	L	yes	5.5	yes	could not observe due to repair	y/y	y
	C	n/a		n/a			n/a
	CY	yes		yes			yes
	AR	yes		not observed			yes
	LR	yes		no			yes

LDY	L	yes	4.5	yes		n/y	y
	C	no, steps		n/a			n/a
	CY	no CY		n/a			n/a
	AR	no AR		n/a			n/a
	LR	no, basement		yes			no
MAG	L	yes	4	yes	no	y/n	y
	C	n/a		n/a			n/a
	CY	no CY		n/a			n/a
	AR	no AR		n/a			n/a
	LR	yes		yes			y
MK	L	yes	3.7	yes	none	y/y	y
	C	n/a		n/a			n/a
	CY	no CY		n/a			n/a
	AR	yes		yes			y
	LR	yes		no			y
MP	L	yes	6	no	no	n/n	y
	C	n/a		n/a			n/a
	CY	b.y., yes		b.y., yes			no
	AR	basement		yes			no
	LR	basement		no			no
MM	L	yes	4.9	no	kitchen WC	y/y	y
	C	n/a		n/a			n/a
	CY	yes		yes			y
	AR	yes		yes			y
	LR	yes		no			y
SL	L	no, steps	4.5	yes	no	n/n	n
	C	n/a		n/a			n/a
	CY	no, patio		patio, no			n/a
	AR	yes		yes			y
	LR	yes		no			y
WW	L	yes	4.2	no	no	n/n	far
	C	n/a		n/a			n/a
	CY	yes		yes			y
	AR	yes		yes			y
	LR	yes		no			y
WHM	L	yes	4.3	no	kitchen	y/y	y
	C	n/a		n/a			n/a
	CY	no CY		n/a			n/a
	AR	yes		yes			y
	LR	yes		no			y

Table A.7. Location in existing buildings

Building		Link to different common spaces	Proximity: to residents	Proximity: arrangement of common spaces in relation to one another	Provision of attractive views
AC	**L**	no	GF (3-storey)	not close	lobby: to outdoor landscape
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	no AR	n/a		
	LR	no	basement		
BVP	**L**	no	n/a	AR, LR, and CY: on 2nd floor AR,LR, and balcony: on 8th floor	AR: to CY balcony and terrace: to False Creek
	C	n/a	n/a		
	CY	to AR/LR	2nd floor		
	AR	to CY	2nd /8th floor		
	LR	to AR	2nd /8th floor		
BM	**L**	n/a	n/a	LR near CY	corridors: to central CY
	C	to CY	n/a		
	CY	to C/LR	to GF units		
	AR	no AR	n/a		
	LR	to CY	on GF		
COL sen.	**L**	to LR	n/a	LR near lobby	LR: to streetscape AR: to o.d. landscape
	C	n/a	n/a		
	CY	n/a	n/a		
	AR	to o.d. landscape	on GF		
	LR	to lobby	by lobby		
COL fam.	**L**	n/a	n/a	AR, LR, and backyard are connected and central	LR: to backyard
	C	n/a	n/a		
	CY	to LR	yes		
	AR	to LR	yes		
	LR	to AR	yes		
CT	**L**	no	on GF	AR, sundeck, and sunroof located on 10th floor	AR (GF): to landscape area sundeck and roof garden: to natural landscape
	C	n/a	n/a		
	CY	n/a	n/a		
	AR	to o.d. landscape	GF and 10th floor		
	LR	no	1,3,5,7,9 floors		

FLC	**L**	n/a	n/a	LR included in AR CY close to amenity spaces	AR: to courtyard private patios: to courtyard
	C	to CY	n/a		
	CY	to corridors	GF/central		
	AR	to LR and CY	GF		
	LR	to AR	in AR		
FM	**L**	no	n/a	no	lobby: to natural streetscape
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	no AR	n/a		
	LR	no	on GF		
GM	**L**	no	n/a	common balcony close to LR on 2nd floor	no
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	to patio	on GF		
	LR	no	2nd and 3rd floor		
GF	**L**	no	n/a	no	AR: English Bay
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	to corridors/balcony	on 8th floor		
	LR	no	in basement		
HM	**L**	no	n/a	no	no
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	no AR	n/a		
	LR	no	no, basement		
KD	**L**	no	n/a	lobby, LR, AR, and patio located close to each other	AR: to patio RR: to landscape area
	C	n/a	n/a		
	CY	patio: to AR	patio: GF		
	AR	to patio	GF		
	LR	no	GF		
LV I	**L**	no	n/a	2 AR on GF close to courtyard	AR: to courtyard LR: to courtyard
	C	n/a	n/a		
	CY	to AR	central, GF		
	AR	to CY	GF		
	LR	no	2nd floor		
LVII	**L**	no	n/a	AR (GF) and lobby close to courtyard	AR: to courtyard LR: to courtyard
	C	n/a	n/a		
	CY	to AR	central, GF		
	AR	to CY	GF		
	LR	no	2nd floor		

LV III	**L**	no	n/a	LR close to common balconies on 2nd and 3rd floors	common balconies: to streetscape
	C	n/a	n/a		
	CY	to private patios	central, GF		
	AR	no	GF		
	LR	no	2nd and 3rd f		
LDY	**L**	no	n/a	no	Lobby: to attractive outdoor landscape
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	no AR	n/a		
	LR	no	no; L.F.		
MAG	**L**	no	n/a	lobby and LR	lobby: to attractive outdoor landscape
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	no AR	n/a		
	LR	no	on GF		
MK	**L**	to AR	n/a	lobby, AR, and LR on GF	AR: to outdoor landscape area
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	to lobby	on GF		
	LR	no	on GF		
MP	**L**	no	n/a	AR and LR are adjacent and on L.F.	no
	C	n/a	n/a		
	CY	no	b.y., on GF		
	AR	no	on L.F.		
	LR	no	on L.F.		
MM	**L**	no	n/a	AR, LR are located on L.F.	balconies at the back to the courtyard
	C	n/a	n/a		
	CY	to GF corridors	on GF		
	AR	to patio and CY	on L.F.		
	LR	no	on L.F.		
SL	**L**	to AR	n/a	AR is connected to patio and adjacent to LR	AR: to patio nook: to streetscape
	C	n/a	n/a		
	CY	n/a	n/a		
	AR	to patio	on GF		
	LR	no	on GF		
WW	**L**	to AR	n/a	AR merged into lobby/corridor space on GF	AR: to backyard
	C	n/a	n/a		
	CY	no	on L.F.		
	AR	to lobby	on GF		
	LR	no	on 2 levels		

WHM	**L**	no	n/a	AR and LR located on GF and adjacent to each other	
	C	n/a	n/a		
	CY	no CY	n/a		
	AR	no	on GF		
	LR	no	on GF		

Table A.8. Liveability in existing buildings

Building		Access to natural light	South-facing?	Access to green spaces	Access to common spaces	Access to open amenity spaces	Well-designed indoor, outdoor amenities	Access to patios, balconies
AC	**L**	yes	yes	outdoor landscape area	community gardens, laundry room	community gardens	no	no
	C	no	n/a					
	CY	no CY	n/a					
	AR	no AR	n/a					
	LR	limited	windows					
BVP	**L**	yes	no	courtyard	AR, LR, CY, terrace	courtyard, common balcony, terrace	2nd and 8th floor amenity spaces	balconies
	C	n/a	n/a					
	CY	yes	no					
	AR	yes	8th floor					
	LR	no	8th floor					
BM	**L**	n/a	n/a	courtyard	LR, corridors, courtyard	courtyard	no	no
	C	yes	n/a					
	CY	yes	yes					
	AR	n/a	n/a					
	LR	limited	blocked					
COL sen.	**L**	yes	no	landscape area by the parking	AR, LR	landscape area by the parking	no	balconies
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	yes	windows					
	LR	yes	no					
COL fam.	**L**	n/a	n/a	backyard	AR, LR, backyard	backyard	LR and backyard	patios
	C	n/a	n/a					
	CY	yes	no					
	AR	yes	no					
	LR	yes	no					
CT	**L**	yes	SE	landscape area around the building	AR on GF and 8th floor, sundeck and roof garden	landscape on both sides, sundeck, roof garden	AR on GF, AR on 8th floor	patios, balconies
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	yes	SW					
	LR	no	no					
FLC	**L**	n/a	n/a				no	

	C	yes	n/a	central courtyard	AR, courtyard	corridors, courtyard		patios, balconies (townhouses)
	CY	yes	yes					
	AR	limited	no					
	LR	no	no					
FM	**L**	yes	SW	landscape area by entrance	LR	no	no	no
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	no AR	n/a					
	LR	yes	no					
GM	**L**	yes	no	limited: gardening on 2nd f balcony, GF patios	AR, LR, common balcony	patio on GF, balcony on 2nd floor	AR (not well-designed)	patios on GF units
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	yes	patio: S					
	LR	no	no					
GF	**L**	yes	no	landscape areas on front and back, planters in AR	seating by entrance, AR and balcony, LR	seating area, balcony on 8th floor	AR on 8th floor	balconies
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	yes	SW windows					
	LR	no	no					
HM	**L**	yes	no	no	LR	no	no	no
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	no AR	n/a					
	LR	yes	no					
KD	**L**	yes	no	community gardens, patio, landscape at back	AR and patio, LR, rec. room, l.s. at back	community gardens, patio and l.s. at back	AR and patio, rec. room and landscape	no
	C	n/a	n/a					
	CY	patio: y	n/a					
	AR	yes	S: win.					
	LR	no	no					
LV I	**L**	yes	SE	courtyard	2 AR, LR, courtyard	courtyard	AR and courtyard	patios, balconies
	C	n/a	n/a					
	CY	yes	no					
	AR	yes	SE: win.					
	LR	yes	SE: win.					
LVII	**L**	yes	no	courtyard	AR, LR, courtyard	courtyard	AR and courtyard	patios, balconies
	C	n/a	n/a					
	CY	yes	no					
	AR	yes	no					
	LR	yes	no					

LV III	**L**	yes	SW	courtyard	AR, LR on 2 and 3 floors, common balconies 2,3,4	courtyard and common balconies	no	balconies
	C	n/a	n/a					
	CY	yes	no					
	AR	yes	no					
	LR	no	no					
LDY	**L**	yes	no	only the landscape area on front lawn	LR, roof garden	roof garden	no	no
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	no AR	n/a					
	LR	yes	no					
MAG	**L**	yes	no	only the landscape area on front lawn	LR	no	no	balconies, not sizable
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	no AR	n/a					
	LR	yes	no					
MK	**L**	yes	yes	landscape at front and comm.grd at back	AR, community garden	seating on walkway, community gardens	no	balconies
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	yes	1 win.					
	LR	limited	no					
MP	**L**	yes	yes	backyard	AR, backyard, seating by entrance	backyard	no	balconies
	C	n/a	n/a					
	CY	b.y.	no					
	AR	no	no					
	LR	no	no					
MM	**L**	yes	no	courtyard	AR, LRs, courtyard	courtyard, patio adjacent to AR	AR on basement floor	patios, balconies
	C	n/a	n/a					
	CY	yes	no					
	AR	yes	no					
	LR	no	no					
SL	**L**	yes	no	patio on GF	seating by entrance, AR, patio, nook	seating by entrance, patio	AR and patio	no
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	yes	no					
	LR	no	no					
WW	**L**	limited	no	backyard	AR, LRs, backyard	backyard	no	no
	C	n/a	n/a					
	CY	yes	yes					
	AR	yes	yes					
	LR	no	no					

WHM	**L**	limited	no	no	AR and adjacent LR	no	no	balconies
	C	n/a	n/a					
	CY	no CY	n/a					
	AR	yes	no					
	LR	no	no					

Table A.9. Transition in existing buildings

Building	Setbacks		Open spaces	Landscape buffering				Street scaping
	setbacks from neighboring buildings?	setbacks from public realm?	well-positioned open spaces	planting beds	planters, patios in front of units	trees, shrubs	hard landscape	interface of property and sidewalk
AC	yes	yes, on three sides	front lawn	no	no	yes, at SW corner	no	few trees
BVP	no	no	courtyard	no	no	few	no	no buffer
BM	yes	yes	courtyard	no	hedges around gf units	few by the street	east: wood fence north: fence and low wall	few mature trees
COL sen.	yes, quite	yes	garden at south	no	patios	high hedges on east side	garden at south	low hedges
COL fam.	yes	yes	garden at north	no	patios	few	garden at north	trees and hedges dispersed
FLC	no	yes	no	no	patios	bushes and mature trees	no	hedges in front of patios
FM	no	only small front lawn	no	raised at front	no	few bushes	elevated platers at front	lawn
GM	no	no	no	no	patios at front and back	few trees at front and back	no	private patios
GF	yes	yes	parking lot, entrance area	raised beds at front	no	at front and around parking lot	raised planting beds, walkways, and ramps	trees and shrubs
HM	no	no	no	at front	no	quite low hedges at front	buffer at front	low hedges at front, no buffer at back
KD	yes	yes, front and back	landscape and patio at back	no	no	landscape area at back	walkway, ramp, stepped planting beds at back	trees lining the fence at back
LV I	yes	yes	courtyard	no	patios	yes, lush at the front and less on the west side	walkways looping around the building	front: hedges and large trees west side: scattered trees and shrubs
LV II	yes	yes	courtyard	no	patios	lush at front and east side	looping walkway	lush hedges on east side trees and shrubs at front

Building	Setbacks		Open spaces	Landscape buffering				Street scaping
	setbacks from neighboring buildings?	setbacks from public realm?	well-positioned open spaces	planting beds	planters, patios in front of units	trees, shrubs	hard landscape	interface of property and sidewalk
LV III	yes	yes	courtyard	no	patios at the back	yes, on three sides	looping walkways, ramps to entrance	natural landscape
LDY	no	yes	front landscape	no	no	pruned land scape at front	no	no
MAG	no	yes	no	no	no	both sides of path to entry, on south side	no	few trees, wood fence by units on south side
MK	no	yes	no	no	no	lush landscape on N and W sides	no	shrubs on N and W sides
MP	no	yes	backyard and entrance area	no	patios	large and mature trees at front	backyard	trees at front
MM	no	no	courtyard	no	patios	hedges on south side, interm. hedges on front	no	hedges on south side and front
SL	yes	yes	front lawn	no	patios on W and N sides	trees at front and shrubs at back	no	shrubs at back lane
WW	no	yes	front lawn and backyard	entrance area	no	lining the sides	backyard	none
WHM	no	yes	no	at two corners at front	patios at back	no	no	hedges and common corridors on N and W sides

Table A.10. Privacy in existing buildings. Note: s.b. stands for setback

Building		*Limiting views; exposure (common spaces)*	*Limiting views; exposure (private living spaces)*	*Private vs public access*			
		landscape screening; glass-pane opacity; setbacks (planted?)	*landscape screening; setbacks (planted?)*	*available amenities for public*	separation between semi-private and public spaces	separation between private spaces and semi-private spaces	views (by public) to semi-private spaces
AC	*L*	*setback, y*	*landscape and front setback*	*no*	no	n/a	to community garden
	C	*n/a*					
	CY	*n/a*					
	AR	*n/a*					
	LR	*no*					
BVP	*L*	*no*	*no*	*no*	CY is elevated	n/a	by other high rises maybe
	C	*n/a*					
	CY	*trees*					
	AR	*CY*					
	LR	*n/a*					
BM	*L*	*n/a*	*no*	*no*	yes, landscape area	no private space, n/a	yes, courtyard
	C	*s.b. and hedges*					
	CY	*hedges*					
	AR	*n/a*					
	LR	*secluded*					
COL sen.	*L*	*setback, no*	*no*	*no*	parking lot	n/a	no
	C	*n/a*					
	CY	*n/a*					
	AR	*s.b. and landscape*					
	LR	*setback*					
COL fam.	*L*	*n/a*	*no*	*no*	hedges at back	no, patios are connected to backyard	no
	C	*n/a*					
	CY	*hedges and fences*					
	AR	*no*					
	LR	*no views*					

CT	***L***	*setback*	*on one side by landscape*	*side yard*	walkway and landscape	no separation between patios on side and side yard	no
	C	*n/a*					
	CY	*n/a*					
	AR	*s.b. and landscape*					
	LR	*no views*					
FLC	***L***	*n/a*	*no*	*no*	walkways	fences separate interior patios	limited
	C	*no views*					
	CY	*fences*					
	AR	*no views*					
	LR	*n/a*					
FM	***L***	*setback*	*no*	*no*	n/a	n/a	no
	C	*n/a*					
	CY	*n/a*					
	AR	*n/a/*					
	LR	*no views*					
GM	***L***	*setback*	*no*	*no*	no	n/a	to patio at back
	C	*n/a*					
	CY	*n/a*					
	AR	*setback*					
	LR	*no views*					
GF	***L***	*s.b. and landscape*	*balconies, trees at the back*	*benches at front*	hedges at front	n/a	to seating area at front
	C	*n/a*					
	CY	*n/a*					
	AR	*on 8th floor*					
	LR	*no views*					
HM	***L***	*setback*	*no*	*no*	n/a	n/a	n/a
	C	*n/a*					
	CY	*n/a*					
	AR	*n/a*					
	LR	*no views*					

KD	***L***	*setback*	*landscape screening*	*no*	not at front, only fences at the back	no	yes, to patio
	C	*n/a*					
	CY	*allowed*					
	AR	*patio*					
	LR	*no views*					
LV I	***L***	*courtyard*	*landscape all around the complex*	*seating on the sidewalk*	CY is sunk, no separation for patios on side	no, patios connected to courtyard	limited views to courtyard
	C	*n/a*					
	CY	*sunk*					
	AR	*no*					
	LR	*no*					
LV II	***L***	*courtyard*	*landscape all around the complex*	*seating on the sidewalk*	CY is sunk, lush landscape lining patios close to lane	no, patios connected to courtyard	limited views to courtyard
	C	*n/a*					
	CY	*sunk*					
	AR	*no*					
	LR	*no*					
LV III	***L***	*s.b. and landscape*	*landscape all around the complex*	*no*	CY is sunk	no, patios connected to courtyard	limited views to courtyard
	C	*n/a*					
	CY	*sunk*					
	AR	*landscape*					
	LR	*no views*					
LDY	***L***	*s.b. and landscape*	*no*	*no*	n/a	n/a	no
	C	*n/a*					
	CY	*n/a*					
	AR	*n/a*					
	LR	*limited views*					
MAG	***L***	*s.b. and landscape*	*trees on S and SE corner*	*no*	n/a	n/a	no
	C	*n/a*					
	CY	*n/a*					
	AR	*n/a*					
	LR	*glass-pane opacity*					

MK	***L***	*s.b. and landscape*	*landscape: mature trees and shrubs*	*seating area but cannot be viewed*	walls at the back	n/a	limited views to gardens at back
	C	*n/a*					
	CY	*n/a*					
	AR	*landscape*					
	LR	*no views*					
MP	***L***	*setback*	*trees at front and setback at back*	*seating area at front*	not at front, fences at the back	walkway between patios and backyard	limited views to backyard
	C	*n/a*					
	CY	*wood fences*					
	AR	*no views*					
	LR	*no views*					
MM	***L***	*setback*	*no*	*no*	CY is elevated, patios at front are fenced	n/a	views to some patios, no views to CY
	C	*n/a*					
	CY	*elevated*					
	AR	*no views*					
	LR	*no views*					
SL	***L***	*s.b. and landscape*	*patio, fences on the side and hedges at back*	*seating area by entrance*	patio: fences and setback	n/a	limited views to patio
	C	*n/a*					
	CY	*n/a*					
	AR	*no views*					
	LR	*no views*					
WW	***L***	*setback*	*green setbacks and trees on sides*	*no*	backyard: chain linked fences	n/a	views to the backyard
	C	*n/a*					
	CY	*landscape, fence allow views*					
	AR	*no*					
	LR	*no views*					
WHM	***L***	*setback*	*hedges, patios and elevated common balconies*	*no*	private patios are fenced off from back street	n/a	no, gf private patios blocked by fences
	C	*n/a*					
	CY	*n/a*					
	AR	*setback*					
	LR	*no views*					

Table A.11. Evaluative analysis: Connectivity Scoring

Building	Physical connectivity		Visual connectivity	
	AR and outdoor amenity space	AR and LR	AR and outdoor amenity space	AR and LR
AC	0	0	0	0
BVP	1	1	1	1
BM	0	0	0	0
COL sen.	0	0	0	0
COL fam.	1	1	1	0
CT	1	0	1	0
FLC	1	1	1	0
FM	0	0	0	0
GM	1	0	1	0
GF	1	0	1	0
HM	0	0	0	0
KD	1	0	1	0
LV I	1	0	1	0
LV II	1	0	1	0
LV III	0	0	0	0
LDY	0	0	0	0
MAG	0	0	0	0
MK	0	0	1	0
MP	0	0	0	0
MM	1	0	1	0
SL	1	0	1	0
WW	0	0	1	0
WHM	0	0	0	1

Table A.12. Evaluative analysis: Accessibility Scoring

Building	Accessible design					Ease of access
	Ramps/barrier-free routes	Corridor width	Adequate maneuvering space	Acc. facilities in AR	Elev./auto. door openers	
AC	0	1	0	0	0	0
BVP	1	1	1	1	1	1
BM	0	1	0	0	0	1
COL sen.	1	1	1	1	1	1
COL fam.	1	1	1	0	1	1
CT	1	1	0	1	1	1
FLC	1	1	1	1	1	1
FM	0	1	0	0	0	0
GM	1	1	0	1	1	1
GF	1	0	0	0	1	1
HM	0	1	0	0	0	0
KD	1	1	0	1	0	1
LV I	1	1	1	1	1	1
LV II	1	1	1	1	1	1
LV III	1	1	0	1	1	1
LDY	0	1	1	0	0	0
MAG	1	1	1	0	1	1
MK	1	0	0	0	1	1
MP	0	1	0	0	0	0
MM	1	1	0	1	1	1
SL	0	1	0	0	0	0
WW	1	1	0	0	0	1
WHM	1	1	0	1	1	1

Table A.13. Evaluative analysis: Location Scoring

Building	Proximity: to residents	Proximity: co-located common spaces?	Provision of attractive views
AC	1	1	2
BVP	3	4	3
BM	2	3	2
COL sen.	3	4	3
COL fam.	2	4	2
CT	3	4	3
FLC	2	4	3
FM	1	3	2
GM	3	3	1
GF	3	1	2
HM	1	1	1
KD	2	4	3
LV I	3	4	3
LV II	3	4	3
LV III	3	3	2
LDY	1	3	2
MAG	3	3	2
MK	3	4	2
MP	1	3	1
MM	3	3	1
SL	2	4	3
WW	1	3	2
WHM	3	4	1

Table A.14. Evaluative analysis: Liveability Scoring

Building	Access to natural light	South-facing?	Access to green spaces	Access to common spaces	Access to open amenity spaces	Access to patios, balconies
AC	1	1	1	2	2	0
BVP	0	0	1	3	3	1
BM	1	1	1	2	2	0
COL sen.	1	1	1	2	2	1
COL fam.	1	0	1	3	2	1
CT	0	0	1	3	3	1
FLC	0	1	1	2	3	1
FM	1	0	1	1	1	0
GM	0	1	1	3	3	0
GF	0	0	1	3	3	1
HM	1	0	0	1	1	0
KD	0	1	1	3	3	0
LV I	1	0	1	3	2	1
LV II	1	0	1	3	2	1
LV III	0	0	1	3	3	1
LDY	1	0	1	2	2	0
MAG	1	0	1	1	1	1
MK	1	1	1	2	3	1
MP	0	1	1	3	2	1
MM	0	0	1	3	3	1
SL	0	0	1	3	3	0
WW	0	1	1	3	2	0
WHM	0	0	0	2	1	1

Table A.15. Evaluative analysis: Transition Scoring

Building	Adequate setbacks from neighboring buildings	Adequate setbacks from public realm	Well-positioned open spaces	Planting beds	Planters, patios in front of units	Trees, shrubs	Hard land-scape	Interface of property
AC	1	1	2	0	0	2	0	1
BVP	0	0	2	0	0	1	0	0
BM	1	1	2	0	1	1	1	1
COL sen.	1	1	2	0	1	3	1	1
COL fam.	1	1	2	0	1	1	1	1
CT	1	1	3	1	1	3	1	1
FLC	0	1	1	0	1	3	0	1
FM	0	1	1	1	0	1	1	1
GM	0	0	1	0	1	1	0	1
GF	1	1	3	1	0	4	1	1
HM	0	0	1	1	0	1	1	0
KD	1	1	3	0	0	3	1	1
LV I	1	1	2	0	1	3	1	1
LV II	1	1	2	0	1	3	1	1
LV III	1	1	2	0	1	3	1	1
LDY	0	1	2	0	0	3	0	0
MAG	0	1	1	0	0	3	0	1
MK	0	1	1	0	0	4	0	1
MP	0	1	3	0	1	3	1	1
MM	0	0	2	0	1	2	0	1
SL	1	1	2	0	1	3	0	1
WW	0	1	3	1	0	3	1	0
WHM	0	1	1	1	1	1	0	1

Table A.16. Evaluative analysis: Privacy Scoring

Building	Limiting views (common spaces)	Limiting views (private living spaces)	Available amenities for public	Separation (semi-private and public)	Separation (private and semi-private)	Views by public
AC	1	1	0	0	1	1
BVP	2	0	0	1	1	0
BM	2	0	0	1	1	1
COL sen.	2	0	0	1	1	0
COL fam.	2	0	0	1	0	0
CT	2	1	1	1	0	0
FLC	2	0	0	1	1	1
FM	2	0	0	1	1	0
GM	2	0	0	0	1	1
GF	2	1	1	1	1	1
HM	2	0	0	1	1	1
KD	2	1	0	1	0	1
LV I	2	1	1	1	0	1
LV II	2	1	1	1	0	1
LV III	2	1	0	1	0	1
LDY	2	0	0	1	1	0
MAG	2	1	0	1	1	0
MK	2	1	0	1	1	1
MP	2	1	1	1	1	1
MM	2	0	0	1	1	1
SL	2	1	1	1	1	1
WW	2	1	0	1	1	1
WHM	2	1	0	1	1	0

Table A.17. Building score rankings for the six themes

Connectivity		Accessibility		Location		Liveability		Transition		Privacy	
BVP	4	BVP	6	BVP	10	MK	9	CT	12	GF	7
COL fam	3	COL sen.	6	COL sen.	10	BVP	8	GF	12	MP	7
FLC	3	FLC	6	CT	10	COL sen.	8	COL sen.	10	SL	7
CT	2	LV I	6	LV I	10	COL fam	8	KD	10	LV I	6
GM	2	LV II	6	LV II	10	CT	8	LV I	10	LV II	6
GF	2	COL fam	5	FLC	9	FLC	8	LV II	10	MK	6
KD	2	CT	5	KD	9	GM	8	LV III	10	WW	6
LV I	2	GM	5	MK	9	GF	8	MP	10	BM	5
LV II	2	LV III	5	SL	9	KD	8	SL	9	CT	5
MM	2	MAG	5	COL fam	8	LV I	8	WW	9	FLC	5
SL	2	MM	5	LV III	8	LV II	8	BM	8	HM	5
MK	1	WHM	5	MAG	8	LV III	8	COL fam	8	KD	5
WW	1	KD	4	WHM	8	MP	8	AC	7	LV III	5
WHM	1	GF	3	BM	7	MM	8	FLC	7	MAG	5
AC	0	MK	3	GM	7	AC	7	MK	7	MM	5
BM	0	WW	3	MM	7	BM	7	FM	6	WHM	5
COL sen	0	BM	2	FM	6	SL	7	LDY	6	AC	4
FM	0	LDY	2	GF	6	WW	7	MAG	6	BVP	4
HM	0	AC	1	LDY	6	LDY	6	MM	6	COL sen.	4
LV III	0	FM	1	WW	6	MAG	5	WHM	6	FM	4
LDY	0	HM	1	MP	5	FM	4	GM	4	GM	4
MAG	0	MP	1	AC	4	WHM	4	HM	4	LDY	4
MP	0	SL	1	HM	3	HM	3	BVP	3	COL fam	3
median	1		5		8		8		8		5