Addressing Crowded Loneliness: A Recomposed Residential High-Rise Typology

by

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Dalhousie University is located in Mi'kmaq'i,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

Contents

Abstract

The demand for density in today's urban environment has created the ideal condition for the residential high-rise typology as it increases land density and prevents urban sprawl. However, the rapid implementation of the typology has revealed its shortcomings in fostering social connections, relating to context, and creating utilized spaces. The conventional typology neglects the characteristics of a connected environment with its exclusivity, scale, isolated circulation, and concealed common spaces. Residents in high-rises have never been closer, yet loneliness and social isolation have never been more prominent. This phenomenon indicates the significance of one's environment on whether they feel connected. This thesis aims to address the social and typological issues by introducing public spaces amongst the private, creating micro communities within the macro, embedding program within the circulation, and using transparency to promote utilization. These will facilitate opportunities for social interaction and create a community of social cohesion.

Acknowledgements

I would like to thank Niall Savage for your unwavering support, commitment to understanding, and continued belief in my ideas. I would also like to thank Steve Parcell for your critical insights and guidance throughout this thesis journey.

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Chapter 1: Introduction

Urbanization in modern cities has created the ideal condition for the success and accelerated use of the residential high-rise typology as it increases land density. The typology can be recognized for its success as a solution to urban sprawl, land scarcity, and housing shortages, however, it currently fails to serve social and psychological needs of the individual. As the juxtaposing title 'crowded loneliness' suggests, proximity to others does not equal connectivity to others. One's perception of how connected they are to others is arguably as critical as how physically connected one is as they both reap equivalent consequences on one's mental and physical well-being. Perceived connection to others is relevant in architecture as it is evident that the spaces in one's environment play a fundamental role in whether they feel connected. The significance of perceived connection to others indicates the importance of facilitating environments that encourage social interaction and connection to combat loneliness and isolation in urban contexts.

Collage of an imagined and connected residential high-rise.

The first issue that perpetuates loneliness and social isolation within the residential high-rise is the disconnection from urban and social contexts. The current typology restricts interactions between residents as well as the public which contributes to feelings of loneliness and isolation. The speed of densification has resulted in the demand for mass production which innately fails to address context and the human scale. The incomprehensible scale of residential high-rises has led to the disconnection at both the city and residential scale, creating islands within the city and inhibiting a relationship between the building and the street. High-rises function as islands both physically and programmatically and do not rely on each other as a network of resources, rather as independent entities. The mono-programmatic organization and incomprehensible scale of residential high-rises are two elements that can be identified as contributors to the disconnection within residential high-rises.
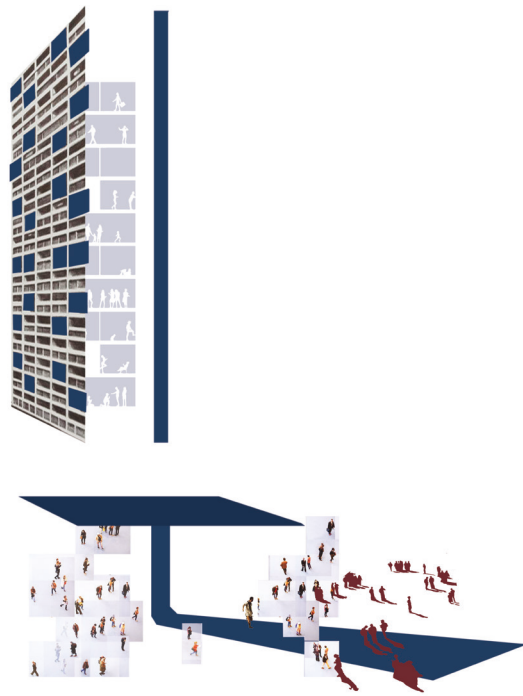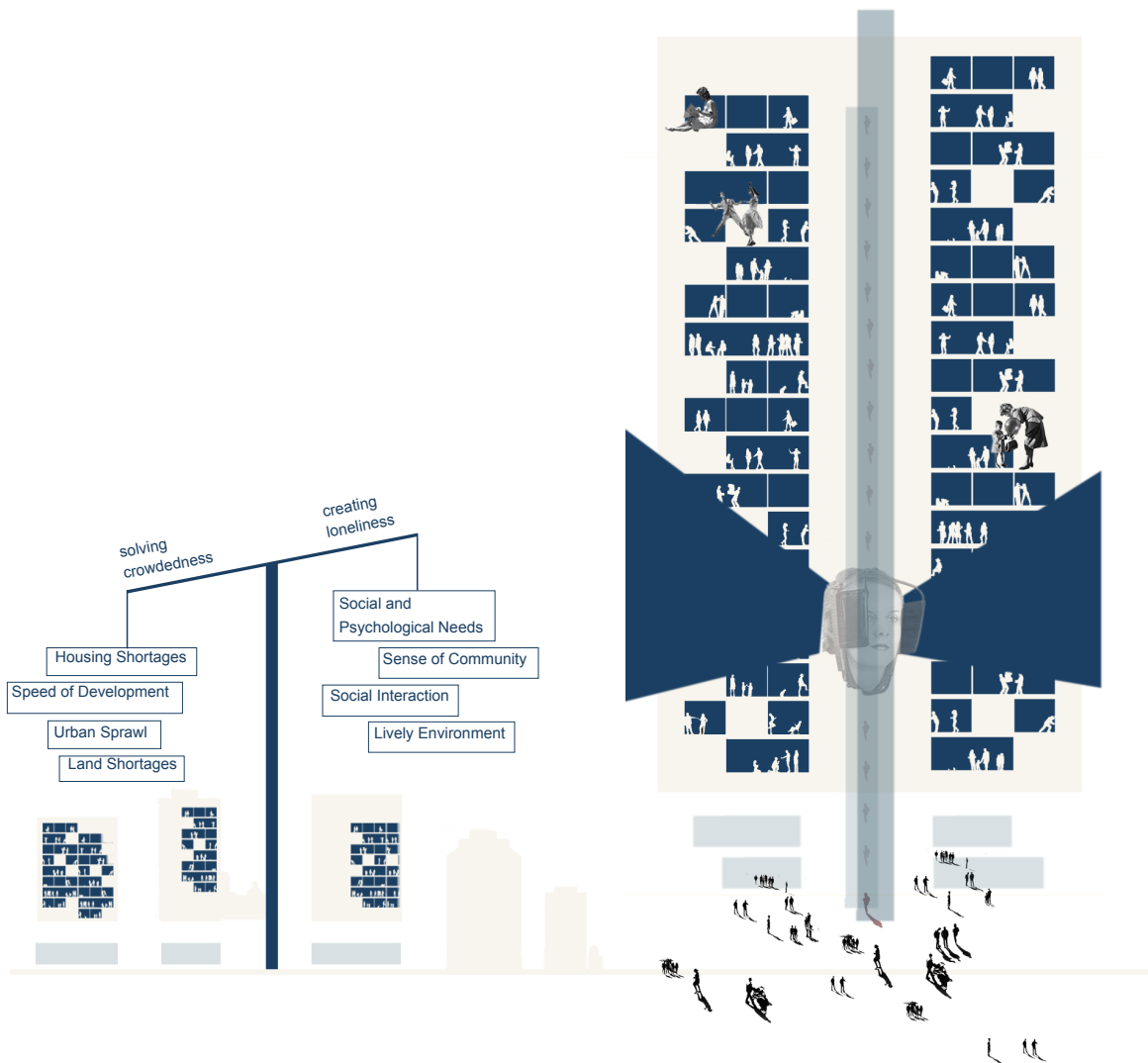
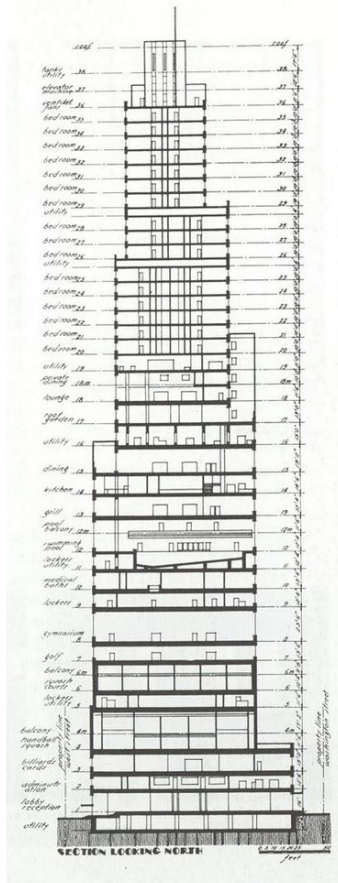The disconnection from urban and social context.

The underutilization of amenities and public space.

The second issue that perpetuates loneliness and social isolation within the residential high-rise is the underutilization of amenities and public space. The utilization of amenities is critical to encourage social interaction, increase connection, and create a sense of community and belonging. Many cities have by-laws in place to ensure proper designated spaces for amenities within a residential high-rise, however, they are often underutilized. Amenities are typically located in undesirable and concealed areas of a high-rise as they are required but not profitable. The profitability reduces the value many developers place on them which impacts their proximal location, visibility, and execution of them. Along with amenity placements, the innate scale of high-rises requires vertical circulation which abandons the interactive characteristics of horizontal circulation. The use of elevators reduces the opportunity for passersby interactions that would otherwise be present on the sidewalk. The concealed communal spaces and isolated and uninhabited circulation cores both contribute to the underutilization of amenities and public space in residential high-rises. Recomposing the typology will facilitate opportunity for social interaction and connection to its urban context using four architectural principles derived from the identified issues of disconnection and underutilization. The four principles are multiprogramming, defined neighbourhoods, inhabited circulation, and visible utilization which aim to create a healthier and livelier environment for the residents and the surrounding community.

solving
crowdedness

creating
loneliness

Social and
Psychological Needs

Sense of Community

Housing Shortages

Social Interaction

Speed of Development

Urban Sprawl

Lively Environment

Land Shortages

The disconnection and exclusivity of the residential high-rise typology from their surrounding contexts.

Section of the Downtown Athletic Club in New York (Koolhaas 1994, 157).

Baugruppe LiSA model as a precedent for inhabited residential circulation (WUP Architektur 2013).

Multiprogramming addresses the mono-programmatic nature and the segregation of functions by shifting the residential high-rise to a multi-programmed community resource by dispersing public programs amongst the residential. The mixing of public and residential programming challenges the boundary between the street and the high-rise as it reduces exclusivity by increasing public accessibility. The corresponding architectural strategy to multiprogramming is active dispersal which disrupts the conventional zoning strategies by dispersing public program throughout the high-rise. Multiprogramming the residential high-rise creates spaces for the public and the residents to interact, increasing feelings of connection to neighbours and to the surrounding community.

Inhabited circulation addresses the conventional isolated and uninhabited circulation cores by embedding public programs and activity into daily circulation routes to encourage social interaction. The principle is derived from the high frequency of interactions found in circulation and the high percentage of interactions found in activity spaces, making it an ideal environment for social interaction to occur (Huang 2006, 201). The corresponding architectural strategy is the active commute which aims to liven the circulation route from the street to the unit by revealing the circulation core and embedding active programs throughout. Circulation is considered a passage space intended to pass through, whereas activity spaces are stay spaces with the intention to remain for a longer period. The combination of high-traffic passage spaces with active stay spaces creates a lively commute within the high-rise in contrast to the isolated circulation core present in the current typology. Circulation routes are considered the spaces in-between as they are

the spaces connecting destinations. The presence of them may seem insignificant, however, they play a critical role in facilitating social interactions as they provide a neutral space for informal interactions occur in (Oldenburg 1999, 22). Inhabited circulation emphasizes the importance of the spaces in-between by embedding lively activities along the route between the street and the unit.

Visible utilization addresses concealed communal spaces by revealing amenities and public spaces along circulation routes. The principle uses the ability to see activities and movement in space as a tool to increase the utilization of those spaces. The ability to see a space in use creates more desire to use it, subsequently, increasing the utilization of that space. Visible utilization stems from Jan Gehl's theory surrounding the attraction and importance for one to see, hear, and be near to others (Gehl 2011). The need to see, hear, and be near to others is facilitated by public space and arguably more important than the public space itself (Gehl 2011). The corresponding architectural strategy is the active façade which reveals the daily activity and movement to the exterior using intentional transparency. The ability to see activity within the residential high-rise reduces one's perception of its scale and brings a presence to the street, connecting the high-rise back to the urban realm. Visible utilization aims to increase the use of amenities and public spaces as they provide opportunities for social interaction to occur, connecting residents and the community.

The final principle is defined neighbourhoods which addresses the incomprehensible scale and density of the residential high-rise. The principle implements defined sets of neighbourhoods within the high-rise through the strategy of active clusters. Defined neighbourhoods stems from a
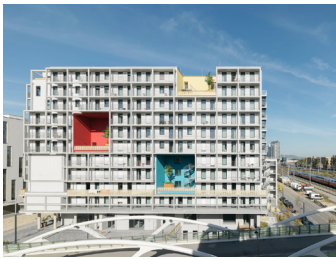
Music Box by Heri&Salli as a precedent for an active facade (Ott 2021).

The Interlace by OMA and a precedent for defined neighbourhoods (Baan 2013).

study conducted on appropriate neighbourhood studies in conjunction with Gehl's five storey disconnect theory. Clustering units into multiple neighbourhoods reduces one's perception of the scale and helps to connect residents to one another. Smaller scale neighbourhoods allow for stronger and more meaningful connections to form which provides a sense of belonging and community.

The application of the four principles will be tested in Halifax, Nova Scotia on a site with a current redevelopment proposal for a residential high-rise. This site and current proposal will be used to investigate and implement a comparative study between conventional and recomposed typologies. This thesis aims to demonstrate how recomposing the residential high-rise typology can redefine the role of the high-rise within an urban community and illustrate a design alternative that prioritizes social interaction and community cohesion.

Chapter 2: Crafting Connected Communities

Loneliness

Loneliness can be defined as a feeling, or personal perception of lacking connection or social relationships (Pearson 2019, 26-28). The term loneliness is considered subjective whereas, the term social isolation is considered objective. While the objectivity of social isolation is perhaps more recognized than the subjectivity of loneliness, studies have revealed no significant difference between the negative impacts of loneliness and social isolation (Pearson 2019, 28). The essence of loneliness highlights the subjective nature of connection as it implies the ability to feel lonely while in the presence of others. A state of loneliness is due to a lack of psychological and emotional connection which indicates the significance of environments that facilitate connection and interaction.

The negative impacts of loneliness and social isolation have been studied for decades and have revealed numerous correlations with poorer health conditions and increased mortality rates (Pearson 2019). The health risks associated with loneliness are comparable to physical inactivity, obesity, and substance abuse, yet are not valued the same in society (Pearson 2019). Possibly due to the intangible qualities of loneliness, it loses credibility as it is difficult to quantify, however, as evidence has revealed, the consequences of perceived isolation are as detrimental to one's health as physical isolation.

The residential high-rise typology is a quintessential model for how impactful the built environment is on one's mental

Illustration of isolated activities occurring simultaneously within a residential high-rise.

and emotional well-being as its scale poses the most difficult conditions to feel connected in. The typology abandons the characteristics of the street, the neighbourhood, and the community, resulting in the loss of informal interaction and connection. The main method of circulation through a high-rise has become vertical, removing the possibility of passive contacts and chance run-ins that would typically occur on a horizontal street or pathway. The elevator isolates the commuting path from the street to the unit, enforcing the perception of loneliness. An isolated commuting path inhibits the ability for one to maintain connection to others and their environment, reinforcing the disconnect from local context.

Social Interaction

Fostering social interaction in communities and living environments increases perceived social connection and can be used as a tool to combat feelings of loneliness by providing a sense of community. Social interaction can be defined as a reciprocal contact between two or more individuals ranging in intensity and type (Yuliastuti, Sukmawati, and Purwoningsih 2018, 135). The key element to creating a sense of community is considered social interaction and can be enhanced through the presence of three elements: opportunity for contact, proximity to others, and appropriate spaces for interaction (Abu-Ghazzah 1999, 43). These enhancements further emphasize the value of circulation with regard to social interaction.
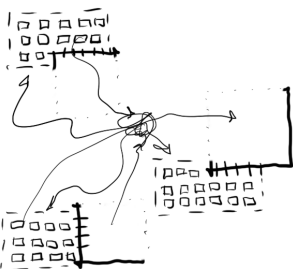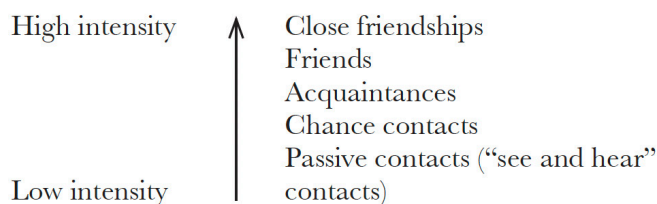

Diagram of neighbouring and a connected sense of community.

Jan Gehl defined an intensity scale of interaction ranging from low to high intensity: passive contacts, chance contacts, acquaintances, friends, to close friendships (Gehl 2011, 15). Gehl's scale of contact intensity places passive contacts as the least intense contact, however, that does not reflect

its significance (Gehl 2011, 15). Passive contacts can be defined as unintentional encounters between two persons (Abu-Ghazzah 1999, 43). They provide opportunity to acknowledge the other through observation or conversation and commonly occur in the spaces in-between such as streets or commuting paths (Abu-Ghazzah 1999, 43). Public space along with the spaces in-between are facilitators for low intensity contacts which provides opportunities for higher intensity contacts to transpire. The absence of public space and street activity, therefore, implies the absence of low intensity contacts (Gehl 2011, 15).

High intensity ↑   Close friendships
                              Friends
                              Acquaintances
                              Chance contacts
                              Passive contacts ("see and hear"
Low intensity   contacts)

Gehl's scale of contact intensity for interactions.

The commute from the street to the residential unit, lacks the spaces in-between, resulting in the reduction of low-intensity contacts. The absence of low-intensity contacts sharpens the boundary between isolation and contact and increases perceptions of loneliness (Gehl 2011, 17). Interactions and contacts that occur in the spaces in-between destinations, provide varying interaction types and soften the public to private gradient. Sufficient amounts of daily social interactions improve one's well-being and living conditions which subsequently results in a sense of belonging and community (Yuliastuti, Sukmawati, and Purwoningsih 2018, 134). Inadequate levels of social interaction within residential high-rises are a critical issue in architecture, as the typology is disconnecting residents from each other and from their communities.

Complete Communities

The persistence of interaction between individuals is what leads to the formation of social relationships and a sense of connection. This concept suggests the significance of repetitive contact and the value of concentrated commuting paths. The 15-minute city is a proximity centred approach used by urban planners to condense daily resources. The approach aims to offer most daily activities within a 15-minute walking or cycling radius of their residing residence (Pozoukidou and Chatziyiannaki 2021, 2). The proximity of daily used resources reduces commuting lengths and increases repetitive contacts within a given neighbourhood, arguably completing the community. Large urban cities have become disconnected due to urban sprawl strategies and has resulted in decreased proximity to daily resources. The sprawl of daily resources has exacerbated the scale of the spaces in-between, in turn reducing the chance of low-intensity contacts.

Illustration of a high-rise connected to its surrounding context and contributing to the contextual resource network.

The high-rise typology poses as an ideal model to integrate concepts from the 15-minute city as it combines the themes of proximity and program density. The shift from mono-programmed to multi-programmed residential high-rises creates opportunity for daily resources to be provided within the proximity of housing. The integration of public program throughout high-rises provides the opportunity to increase resource density, contribute to neighbourhood resource networks, and shorten commuting lengths. Closer proximity to resources concentrates circulation and provides greater opportunities for repeated contacts.

Chapter 3: Typological Analysis of the Residential High-Rise

Issue 1: Disconnection from Urban and Social Context

The disconnection from urban and social context is one of the two identified social issues within the residential high-rise typology. The mass production of high-rises has contributed to the disconnected housing typology as it prevents the ability to customize the model to its corresponding site, yielding site-less entities that disregard their surrounding context. The lack of regard for context combined with its disconnected organization, expels residents from their communities and provokes feelings of isolation and disconnection. Residential high-rises function as islands within the city, each as independent entities, discouraging reliance on nearby resources and interactions among others. Disconnection is evident through two typological problems which are the mono-programmatic organization and the incomprehensible scale.

Mono-Programmatic Organization

The conventional residential high-rise is distinctly separated between commercial and residential programs through both its form and organization. The commercial spaces are typically located on the first few stories and the residential units are located above. The residential units are formally and socially setback from the street with no interventions to reconnect them. The current programmatic strategy segregates the building by program creating mono-programmatic pieces with no link between, consequently, segregating user groups. The segregation of user groups

prevents social mixing among residents of the building and those of the surrounding community. The residential piece of the high-rise is understandably exclusive to the residents of the building due to the lack of public programs; however, the mixing of public programs and residential units would allow for social mixing and interaction among the residents and the public.

Program Segregation

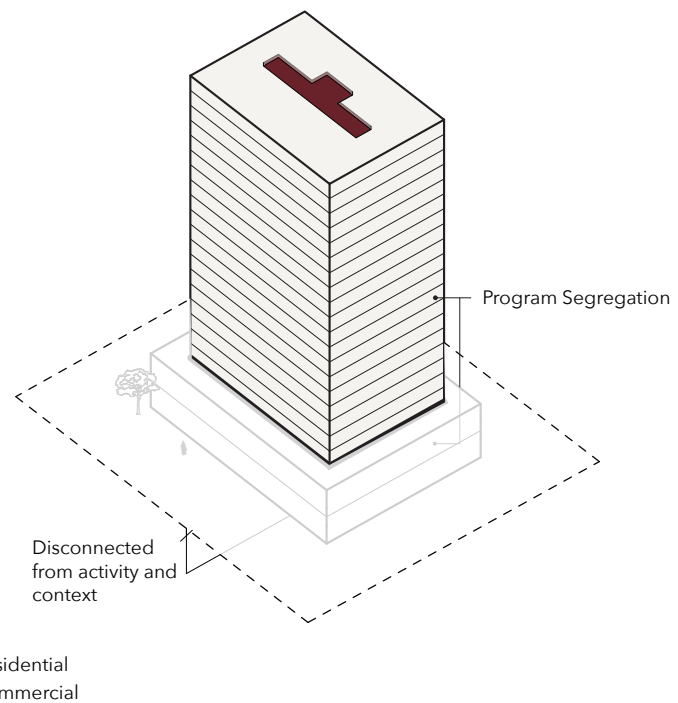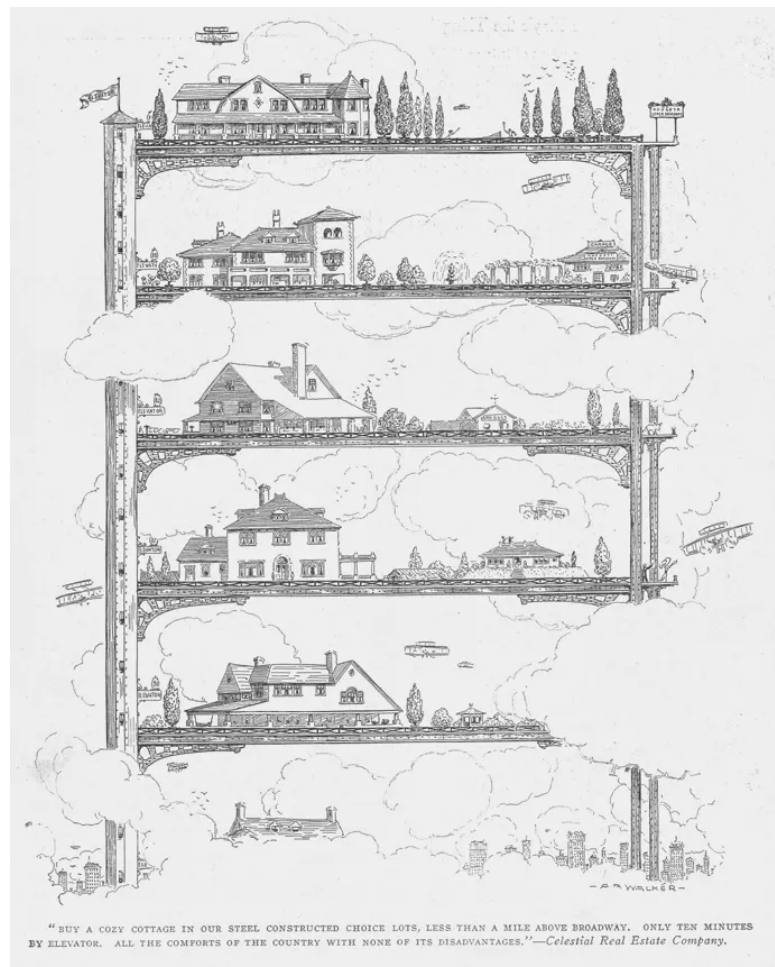Disconnected from activity and context

Residential
Commercial

Diagram of the mono-programmatic organization found in the conventional residential high-rise.

The concept of segregating programs and user groups is represented in the 1909 theorem illustration which featured numerous disjointed plots stacked vertically indicating the initial intention for segregation of programs (Koolhaas 1994, 82). Each plot was intended to exist as an isolated version of the next, creating a new lifestyle at every elevator stop (Koolhaas 1994, 82). The issue of disconnection in the current high-rise typology can be traced back to the intentions illustrated in the 1909 Theorem, as they

currently function as individualized slabs, one independent from the next with no engagement between programs or residential units. Although the utopian image implied the concept of disconnection, it also illustrated the concept of the unknowable urbanism. The concept of unknowable urbanism was described by Koolhaas as the inability for a particular site to be matched to a predetermined program or purpose (Koolhaas 1994, 85). The inability to predetermine a site purpose established the opportunity for hybridization and the mixing of programmatic types on a single urban plot (Koolhaas 1994, 85).

"BUY A COZY COTTAGE IN OUR STEEL CONSTRUCTED CHOICE LOTS, LESS THAN A MILE ABOVE BROADWAY. ONLY TEN MINUTES BY ELEVATOR. ALL THE COMFORTS OF THE COUNTRY WITH NONE OF ITS DISADVANTAGES."—*Celestial Real Estate Company.*

1909 Theorem cartoon illustration following the invention of the high-rise (Koolhaas 1994, 82).

Incomprehensible Scale

The residential high-rise by design is extremely dense which implies a need for a significant scale. The linearity of the façade at the urban scale perpetuates an inaccessible and exclusive attitude towards the surrounding neighbourhood as it stands directly vertical to the street activity. The inaccessible attitude towards the street forms a harsh boundary between the street and the high-rise, reducing social mixing among residents and the public, and enforcing a disconnect. The required verticality has generated a scale that has inherently led to difficulties in maintaining connection at the residential and urban scale. Connection at the resident scale poses difficulties within the typology due to the number of residents living within one building. The density of residential high-rises highlights the importance of neighbourhood sizes, as neighbourhoods that are too large, reduce interactions and negatively affect one's sense of belonging (Abu-Ghazzeh 1999, 44).

Scale and linearity of form
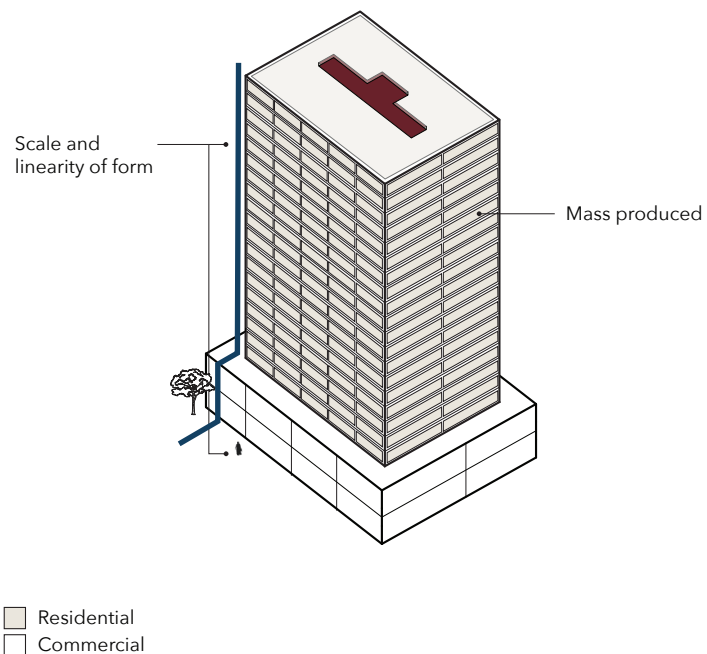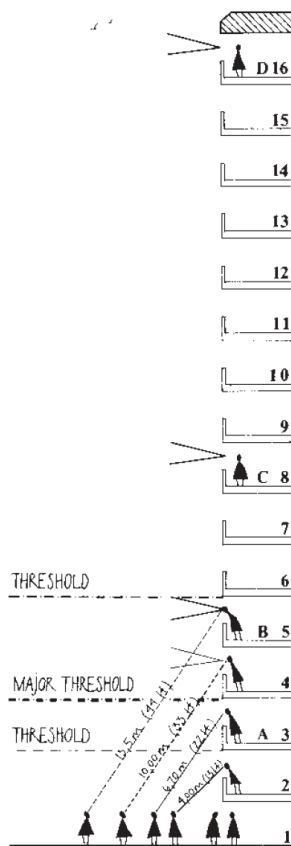
Mass produced

☐ Residential
☐ Commercial

Diagram of the incomprehensible scale and repetition found in the conventional residential high-rise.

"Meaningful contact with the ground level events is possible only from the first few floors in a multistory building... anything and anyone above the fifth floor is definitely out of touch with ground level events." (Gehl 2011, 98)

Gehl's five storey disconnect theory addresses connection at the urban scale as it suggests that buildings beyond five stories from the street are out of touch with ground level activity, classifying the majority of residents in high-rises, disconnected from ground level activity and interaction (Gehl 2011, 98). The linear form, density, and proximity of residents to the street poses issues with the form and organization of the typology regarding connection to social and urban contexts.

Issue 2: Underutilization of Amenities and Public Space

Amenities and public space play a significant role in a residential high-rise living as they create a space to connect with residents by establishing opportunities for social interaction (Huang 2006, 194). They are considered a 'social arena' for residents to interact in and the absence or underutilization of them becomes a critical issue in terms of residents feeling connected to one another (Huang 2006, 194). A study conducted in Indonesia examined multiple housing types in relation to public space and concluded that the absence of public space significantly reduced the ability for residents to gather and interact with one another (Yuliastuti, Sukmawati, and Purwoningsih 2018, 135). The findings from this study imply the imperative qualities of public space when encouraging and fostering interaction (Yuliastuti, Sukmawati, and Purwoningsih 2018, 135). The study referenced in chapter two, conducted in Abu-Nuseir, emphasized the importance of quality over quantity regarding public space as the arrangement of space appeared to be more critical than the size (Abu-Ghazzeh 1999, 41). Public space and amenities not only foster social interaction among residents but provides a neutral condition to house

community connections (Abu-Ghazzeh 1999, 66). The results of these studies imply the importance of amenities and public space while highlighting the negative implications on social interaction and connection in their absence. Two typological problems present within the residential high-rise that contribute to the underutilization of amenities and public spaces are the isolated and uninhabited circulation core and concealed amenity spaces.

Isolated and Uninhabited Circulation Core

Circulation is considered the space in-between as it functions as the transition space amongst destinations, however, the invention of the elevator shifted the role of circulation regarding social interaction as it significantly reduces one's ability to interact 'along the way'. Circulation, by its definitive purpose, is intended to be a passage space, however, it houses some of the most valuable informal interactions in one's daily life (Gehl 2011, 115). In the book Death and Life of Great American Cities, Jane Jacobs stresses the importance of streets to cities and classifies them as the vital organ of the city (Jacobs 1992, 29). A successfully activated street is a primary example of how lively and effective circulation, along with the places in-between, can be for encouraging social interaction and reinforcing connection to place and others (Gehl 2010, 7). However, vertical forms of circulation, such as elevators, abandon the social characteristics of horizontal circulation as they significantly reduce informal interactions and passive contacts.

Concrete surrounding

Visibly isolated from interior and exterior activity
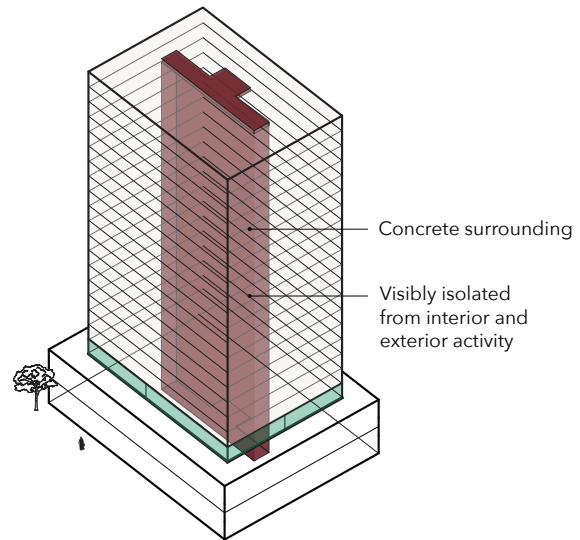
☐ Residential
■ Circulation Core
☐ Commercial

Diagram of the isolated and uninhabited circulation core found in the conventional residential high-rise typology.

The conventional typology isolates the circulation within a concrete core which in turn isolates residents during the commute and reduces one's awareness of their surroundings. Prior to the elevator, buildings were limited to smaller scales due to the inaccessibility and inconvenience of accessing upper levels, making the high-rise typology reliant on them (Koolhaas 1994, 82). The reliance on elevators has contributed to the reduction of daily social interactions, therefore, enforcing a disconnect among residents. The initial intention of the elevator can be traced back to the 1909 Theorem which was a utopian cartoon illustration created following the invention of the high-rise. The illustration conveys the elevator as a transportation method between plots, disregarding the spaces in-between and one's awareness of their surrounding context (Koolhaas 1994, 82). The elevator shortens the journey to the destination to a vertical cubical; removing the opportunity for interaction that would otherwise be present (Koolhaas

1994, 82). The repetition and variation of circulation paths are what generate rich and lively commuting paths which is eliminated using the elevator (Fernández Per, Mozas, and Arpa 2011, 43). Circulation is a critical element to social interaction as it generates the highest frequencies of social interaction in a space and aligns with Abu-Ghazzah's three key elements for enhancing social interaction (Huang 2006; Abu-Ghazzah 1999, 43). The isolated circulation core visually isolates residents from interior and exterior activities and reduces opportunities for interactions. The uninhabited nature of the circulation core prevents the ability for residents to interact with programs and amenities during the commute which contributes to the underutilization of them.

Concealed Amenities

Many city plans have implemented by-laws that require amenities and public space to be provided within residential high-rises; however, from personal observation, it does equate to successfully utilized spaces. Many developers are profit motivated which poses an issue with amenity spaces as they are not profitable. As a result, amenities in residential high-rises are typically located in undesirable and concealed areas with little to no visibility. They are often disconnected both physically and visually from daily circulation routes which affects the number of passersby interactions. The distance from daily circulation routes is important because of the correlation between visibility and utilization. The ability to view a space in use or active, increases one's desire to use it, therefore, utilization can be increased by way of visibility (Gehl 2011, 29). Spaces that are located along circulation routes are not only visible but in proximity to passersby which provides the opportunity for unplanned run-ins or interactions among residents and the amenities

(Gehl 2011, 29). In contrast, amenities that are concealed away from daily passersby require dedicated trips with no opportunity for chance run-ins, decreasing the use of them. The proximity of amenities to daily circulation routes, along with the visibility of them, work concurrently as a strategy to increase the use of amenities, therefore, increasing opportunities for social interaction and connection. These fundamentals can also be applied to public space; however, public space is rarely integrated throughout the current typology. The integration of public programs amongst the residential units provides connection at the scale of the neighbourhood, connecting the residents to the public.
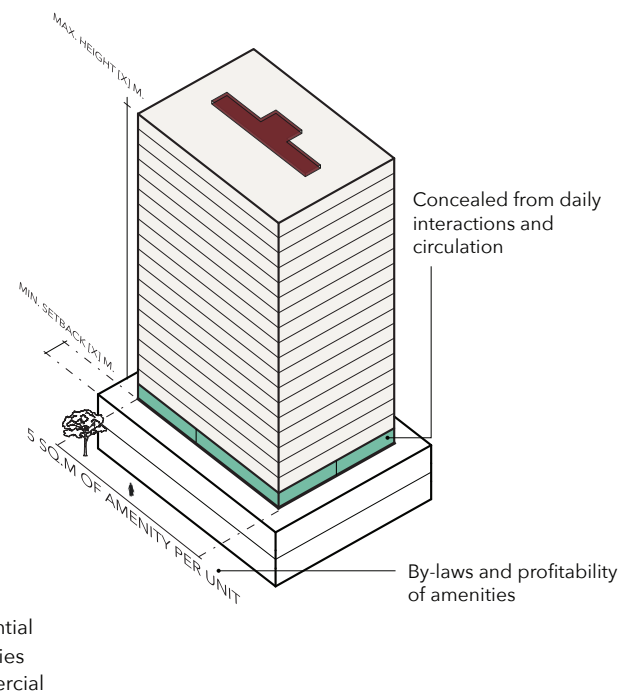

Diagram of the concealed amenity floor commonly found in the conventional residential high-rise.

Role of Bylaws and Profitability

The exclusive use of by-laws to incentivize amenity spaces has created required spaces, rather than desired spaces. The New York exchange is an example of a bylaw

requirement that caused countless undesirable spaces. Public plazas were the currency between the city and the developers which secured more vertical square footage for the developer in exchange for providing at grade public plaza spaces (Whyte 2010, 16). The New York plaza exchange appeared to be a successful by-law as it reserved spaces within the city for the public. However, through observations conducted by Whyte, it became evident that simply providing the space was not enough to create effective public space (Whyte 2010, 18).

Image of a plaza in New York being underutilized (Whyte 2010, 14).

The findings by Whyte can be applied to the amenity by-laws as exclusively providing square footage within a residential high-rise is not enough to create connected and lively spaces. Whyte claimed that the underutilization of the New York plazas was rooted in developers' fear of creating 'too desirable' spaces and thereby attracting the 'undesirable' (Whyte 2010, 18). The fear of too desirable has resulted in empty plazas which has shifted the *fear* of

over usage to an *issue* of under usage (Whyte 2010, 73). Observations conducted by Whyte at the Seagram Ledge in New York City revealed that spaces are self-regulating and naturally maintain certain thresholds of capacities, providing evidence against the fear of over usage (Whyte 2010, 72). Whyte's findings conducted regarding New York's plazas highlighted a necessary shift in concern from over usage to under usage of space. Additionally, the New York plaza exchange indicated that implementing bylaws alone, does not produce valued or effective spaces.

The Halifax Regional Centre Land Use By-law document outlines that all high-rise dwellings require five square meters per dwelling unit with a minimum of 50 percent of that space inside (HRM 2021, 68). However, evidence from the New York plaza exchange along with the current underutilization of amenities in residential high-rises, suggests that the exclusive use of by-law interventions are not enough. The implementation of public profitable programs in addition to amenity spaces within residential high-rises provides an opportunity for profit incentivized programs and can work as a strategy to motivate developers to create desirable and interactive spaces.

Chapter 4: Method

Principle 1: Multiprogramming

Multiprogramming as a principle is the mixing of program, varying in both public and private programmatic types and addresses the problem of mono-programmatic organization. It shifts the residential high-rise from mono-programmed to multi-programmed and aligns with the hybrid model. Multiprogramming addresses the disconnection of residential high-rises through the mixing of public and private programming which in turn, reduces exclusivity. The principle aims to improve the relationship between the street and the high-rise through the dispersal of public programs beyond the first few stories to encourage social mixing among the residents and the public. Mono-programmed high-rises segregate function and prevent social mixing, implementing a boundary between the street and the intended users. The dispersal of public programs throughout the building disrupts conventional programmatic strategies and creates an environment for community cohesion. The shift from mono-programmed to multi-programmed additionally allows the residential high-rise to act as a community resource and fill in programmatic voids within the urban fabric. The implementation of public programs begins to address issues of profitability with amenities as the amenities can become public, therefore, becoming profitable. Public amenities increase the quality of resident amenities due to the profitable value to developers. The residential high-rise becomes a community resource and allows the neighbourhood to rely on it for daily programmatic needs. The principle of multiprogramming is in contrast to
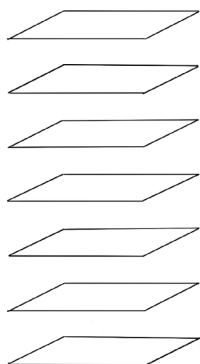
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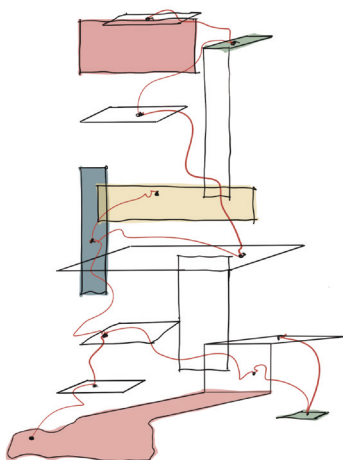
Hybridized

Diagram of the principle multiprogramming and the contrast of segregated programs.

the segregation of function found in the current typology and derived from the concept of hybridization.

Segregation of Function

The invention of the high-rise challenged the segregation of functions as it provided opportunity for multiple programs to be stacked on a single plot of land (Koolhaas 1994). Segregation of function can be defined as the separation of living, working, and leisure (Pozoukidou and Chatziyiannaki 2021, 4). The segregation of function divides living, working, and leisure into compartments by use which reduces the amount of social mixing and shared circulation paths (Pozoukidou and Chatziyiannaki 2021, 4). The concept of unknowable urbanism, introduced by Koolhaas also began the shift of multi-programmed areas (Koolhaas 1994, 85). The segregation of functions reduces proximity to resources while expanding the commuting lengths (Pozoukidou and Chatziyiannaki 2021, 4). The lengthening of commuting paths reduces the chances of repeated contacts while increasing the chances of one needing vehicular transportation (Pozoukidou and Chatziyiannaki 2021, 4). The removal of walkable commutes drastically affects levels of daily interactions as vehicular commutes can be compared to elevators as they are both isolated commutes. Multiprogramming defies the fundamentals of segregation of function through the architectural strategy of active dispersal.

Hybridization

The high-rise typology made the concept of hybridization possible at a significantly greater density than other typologies due its scale and verticality. The social condenser was used as a method to hybridize high-rises and described by Ginzburg

as a building to transform the relationship among citizens and collective housing, clubs, and factories (Fernández Per, Mozas, and Arpa 2011, 48). The social condenser began the shift from mono-programming to multiprogramming high-rises however, raised issues of self-sufficient buildings. The Downtown Athletic Club by Rem Koolhaas was a precedent of a social condenser and included numerous different programs throughout the entirety of the building, however, failed to interact with surrounding context. The building resembled characteristics of the 1909 Theorem as it was a series of vertically stacked plots of land, each occupied by various programs and operated independent from the next (Koolhaas 1994, 82). The social condenser was intended to function as a machine to generate and intensify human interaction and activity, however, as a result, disregarded interaction beyond its own entity (Fernández Per, Mozas, and Arpa 2011, 152). The disregard for surrounding context, consequentially created self-sufficiency which reinforced the idea of islands within the city (Fernández Per, Mozas, and Arpa 2011,152). The social condenser illustrates the necessary balance between a mono-programmed high-rise and a multi-programmed self-sufficient high-rise. Self-sufficiency reduces the need for one to exit the 'machine' which reduces the use of the streets and the activation of the places in-between. The hybrid model attempts to address the issues of self-sufficiency within the social condenser as it relies on resource networks beyond the building (Fernández Per, Mozas, and Arpa 2011, 13).

The hybrid model is considered an evolution of the social condenser and was introduced to fit within the developer model as the programs were profitable (Fernández Per, Mozas, and Arpa 2011, 13). The integration of public

programs and amenities creates a profit incentive for developers as it provides an opportunity for public programs to generate profit while providing spaces for interaction among the public and the residents to occur. It encourages the natural display of unexpected activities which creates dense and lively environments (Fernández Per, Mozas, and Arpa 2011, 13). The hybrid recognises the importance of indetermination as opposed to the control that the condenser imposes (Fernández Per, Mozas, and Arpa 2011, 13). The framework of a hybrid building seeks the unexpected and unpredictability of unprogrammed spaces (Fernández Per, Mozas, and Arpa 2011, 43). A successful hybrid encourages the coexistence of intimacy in the private life and the sociability of public life which benefits the environment of both realms (Fernández Per, Mozas, and Arpa 2011, 43). The hybridization of buildings creates multi-programmed, mixed-use chambers of activities, therefore, providing a space for the public and residents to interact, forming lively and active environments.

Strategy 1: Active Dispersal

Active dispersal is the strategy of the principle of multiprogramming and disrupts conventional programmatic organization by dispersing public programs throughout the entire residential high-rise. The central component to multiprogramming is the unpredictability and unexpectedness of varying programmatic combinations which stems from the hybrid model (Fernández Per, Mozas, and Arpa 2011, 43). The combination of public space and private life, generate lively environments, and provide opportunities for interaction at all scales (Fernández Per, Mozas, and Arpa 2011, 43). The strategy of active dispersal maintains connection to surrounding context by creating
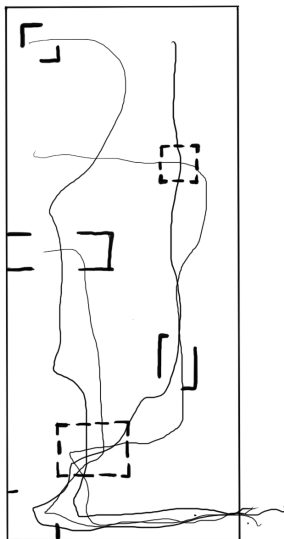

Conceptual illustration of the dispersal of public programs

28

a network of programs all interacting and relying on each other. Dispersing programmatic resources throughout an urban area creates a larger resource network and expands the principles of interaction and connection beyond the residential high-rise. Broadening the size of a resource network beyond a singular building reconnects high-rises to their site and to their community.

Principle 2: Defined Neighbourhoods

The principle of defined neighbourhoods addresses the issue of the incomprehensible scale present in conventional high-rises. The principle recognizes the importance of appropriate densities with respect to creating connected communities. Defined neighbourhoods was informed by a neighbourhood size study in combination with Dunbar's number theory to reduce the perceived scale through formally and organizationally clustering multiple neighbourhoods within a single residential high-rise. Neighbourhoods play a critical role for spatial and functional organization of a city as well as how connected one feels to their environment (Pozoukidou and Chatziyiannaki 2021, 2). They have been used as organizing elements in creating urban cities with proximal resources and appropriate densities as those are key to providing a successfully connected community (Pozoukidou and Chatziyiannaki 2021, 2). A sense of community and neighbouring can be defined as a sense of 'we-ness' and can be measured through the level of involvement with neighbours (Abu-Ghazzeh 1999, 43-44). The residential high-rise typology contradicts the critical element of appropriate densities as they are designed to accommodate high densities which results in such incomprehensible scales.
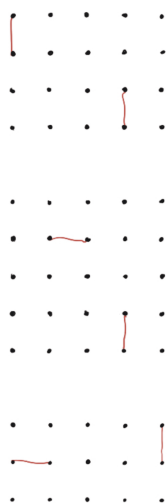
Incomprehensible
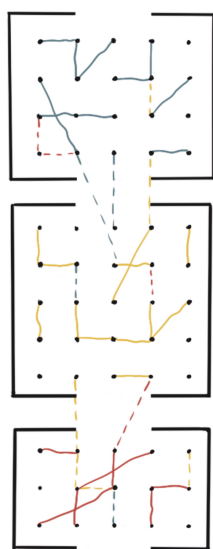
Defined

Diagram of the principle defined neighbourhoods and how it contrasts the effect of incomprehensible scale.

Appropriate Density

The appropriate density for connected neighbourhoods can be presumed by the findings from a study conducted on neighbourhood sizes combined with Dunbar's number theory. The study on appropriate neighbourhood sizes was performed in Abu-Nuseir, a suburb in Jordan, and objectively measured the strength of relations among neighbours (Abu-Ghazzeh 1999, 43-44). The Abu-Nuseir study revealed the necessity for appropriately sized neighbourhoods in conjunction with grouping like-minded individuals together (Abu-Ghazzeh 1999, 44). Creating smaller cohorts allows for stronger relationships among residents and fosters a sense of identity within the neighbourhood (Abu-Ghazzeh 1999, 46).

Dunbar's number theory was developed through a ratio between brain and social network size and concluded with a generalized quantifiable set of numbers correlated to size of social network (BBC 2019). The theory broke down six layers of social networks starting with the tightest circle of five people which are loved ones, followed by 15 good friends, 50 friends, 150 meaningful contacts, 500 acquaintances, and the final layer as 1500 people you can recognize (BBC 2019). Dunbar's layers inform the capacity of an individual's social network and can be used to inform appropriate densities of neighbourhoods. Large scale residential high-rises typically range between 50-200 units on a singular lot which highlights the extreme high density occurring within it. Such extreme densities of people with very little interventions to connect residents discloses the difficulty that the typology poses regarding a sense of community and connection to others.

Organization

Along with the appropriate sizing of neighbourhoods, the organization also plays a significant role in connected neighbourhoods. The results of a study on the impact of confined and opens spaces on the intensities of relationships formed, combined with Jan Gehl's theory of the five-story disconnect generates ideas on how the residential high-rise can be recomposed to provide a sense of connection and community. The relationship intensities study was conducted on military barrack sleeping cubicles and explored the difference between defined and open spaces and their impact on relationship intensities (Blake et. al. 1956, 133). The study reflected that within the enclosed sleeping cubicles it limited interactions with others outside of the cubicles, however, formed stronger and more meaningful relations within them (Blake et. al. 1956, 138).

The findings of this study in the context of residential high-rises indicates the importance of physical separation between appropriate neighbourhood sizes to create meaningful interactions and connections. The application to the residential high-rise would imply smaller cohorts, therefore, forming stronger relationships within each neighbourhood. Although the physical separation of neighbourhoods limits interaction outside of the neighbourhood, it allows for stronger and more meaningful relationships to form which creates a sense of belonging and community. Jan Gehl's five storey disconnect theory in conjunction highlights the disconnect that occurs beyond five stories which suggests that the neighbourhood clusters could happen in increments of five (Gehl 2011, 98). The cubicle study in conjunction with Jan Gehl's theory will inform how the residential high-
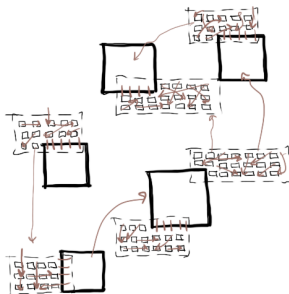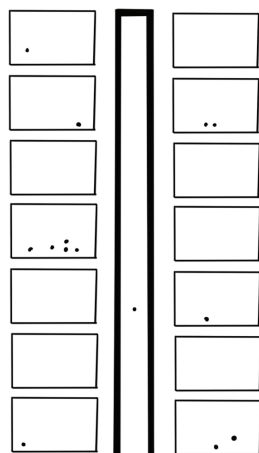

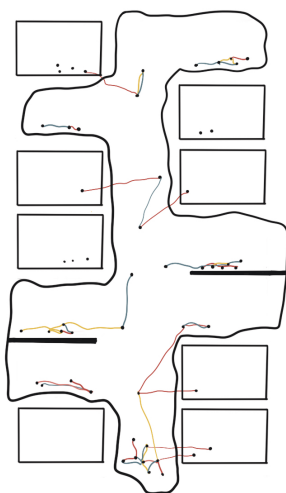Illustration of clustered communities within a single entity.

rise can be altered pertaining to form and organization, to provide a sense of community and connection.

Strategy 2: Active Clusters

The corresponding strategy to the principle of defined neighbourhoods is the active cluster. The strategy addresses the scale and density of the residential high-rise through creating defined and clustered neighbourhoods within the building. Creating clusters of units within a high-rise reduces the perception of the scale and increases the strength of relationships formed amongst residents. Active clusters within a residential high-rise that is multi-programmed provides the opportunity for the neighbourhood clusters to respond to proximal programs which creates like-minded clusters. The strategy aims to reduce the perception of scale while providing a sense of belonging and community within such a densely populated housing typology.
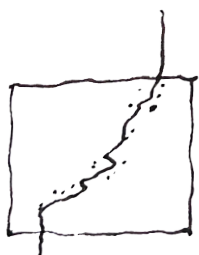
Principle 3: Inhabited Circulation

Inhabited circulation is the second principle and addresses the problem of the isolated and uninhabited circulation core. The principle combines program and circulation by embedding public programs within and along the circulation. The amalgamation of program and circulation blurs the boundary between them by inhabiting the circulation. The principle stems from a study referenced in chapter two on five different spatial types which indicated that circulation spaces had the highest quantity of social interaction, whereas activity spaces had the highest percentage of social interaction (Huang 2006, 201). The results of the study indicated that by amalgamating circulation spaces with activity spaces; it combines the highest quantity of interaction with the highest percentage of interaction (Huang

Isolated

Integrated

Inhabited circulation diagram illustrating a connected and inhabited circulation core, contrasting the conventional isolated circulation core.

2006, 201). As a result, it creates an ideal environment for social interaction to occur. Additionally, it aligns with the hybrid model as the hybrid model was one of the first housing models to view circulation as a social space and as an opportunity for events and socialization (Fernández Per, Mozas, and Arpa 2011, 54). Inhabited circulation challenges the isolated conventions of circulation within the residential high-rise by inhabiting and activating the circulation.

Stay Spaces and Passage Spaces

Circulation spaces are considered passage spaces which can be defined as spaces intended as transitions. Stay spaces differ from passage spaces in that they are typically programmed and are intended to welcome users to pause and remain in (Boettger 2014, 19). The integration of stay spaces into passage spaces activate the passage spaces, while slowing circulation and providing awareness of one's surroundings. Residential high-rise lobbies are typically meant to appear as stay spaces, however, are perceived as passage spaces. The integration of activating spaces within passage spaces such as residential lobbies will create livelier environments and symbolize spaces of stay rather than commute.

Buffer Zones

It is known that the coexistence of housing and shared public spaces should increase levels of interaction, however, a lack of buffer zones can cause the opposite effect (Williams 2005, 213). A buffer zone can be defined as a sequence of semi-public to semi-private layers that create a natural gradient between public and private spaces. The absence of buffer zones was reported to cause residents to withdraw from interactions due to a lack of privacy (Williams 2005,

Stay Space

Passage Space

Activated Passage Space

Diagram of a stay space, passage space, and the integration of stay space within a passage space.

213). The withdrawal reaction acknowledges the necessity of buffer zones to successfully promote social interaction (Williams 2005, 213). The impact of buffer zones speaks to the impact of design and how the lack of layers between public and private can prevent or reduce interaction and connection levels. While inhabiting the circulation blurs the boundary between program and circulation, it is critical that buffer zones are present.

Suburban Home

Residential High-Rise
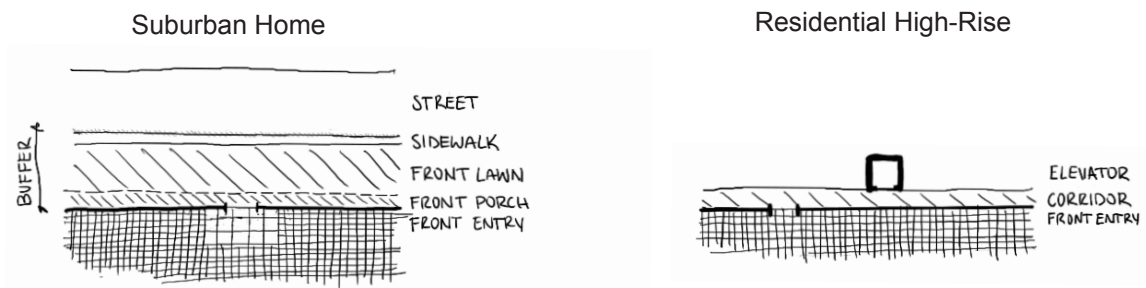
Comparative diagram of the buffer zone layers between the typical suburban home and the residential high-rise.

The neighbourhood typology of a detached suburban home offers numerous layers that function as buffer zones between the public street and the private home, whereas the residential high-rise typology does not. The layers of a suburban home flow from the street, to the sidewalk, to the lawn, to the porch, and to the door. The layers differ drastically in the residential high-rise where it goes from the elevator to the corridor which is adjacent to the unit entrances. The principle of inhabited circulation embeds stay spaces within passage spaces while acknowledging the importance of buffer zones.

Strategy 3: Active Commute

The corresponding architectural strategy for the principle of inhabited circulation is the active commute. The strategy addresses the current circulation and transition spaces between the street and unit. The strategy defies the current isolated circulation core by activating the circulation and redefining it as a space of interaction and activity. The combination of high-traffic passage spaces with active stay spaces, catalyzes an ideal environment for social interaction to occur. The active commute focuses on the activation of transition spaces, and the necessity of buffer zones.

Illustration of the active commute strategy and the integration of programs within circulation spaces.

Principle 4: Visible Utilization

The principle visible utilization addresses the problem of concealed amenities by increasing the utilization of amenities by way of visibility. It combines Gehl's attraction analysis with the stop look effect, to increase the utilization of amenities and provide a sense of awareness and presence. The principle is intended to increase the use of amenities and public space within residential high-rises by revealing utilized spaces and activity within them. Increasing transparency and views to
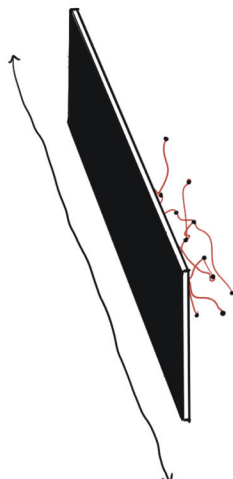
Concealed

Visible

Visible utilization diagram
illustrating the effect of
transparency on the use
and engagement of spaces.

activated public spaces subsequently increases utilization and encourages connection among residents and the community. Visibly exposing lively spaces increases one's desire to use it which contests the current organization of amenities in residential high-rises. The psychological desire to have contact with and be near others is evident in Jan Gehl's theories in "Life Between Buildings" (Gehl 2011). The principle stems from Jan Gehl's attraction analysis involving the need for one to see, hear, and be near to others, in combination with the stop-look effect (Gehl 2011; Erkartal and Uzunkava 2019, 4). Visible utilization aligns with Gehl's attraction theories as it addresses the desire for contact and proximity to others by visibly revealing activities and use of common spaces. The ability to view activity in a space increases curiosity and prompts utilization of the viewer by way of visibility and observation. The increase in utilization of amenity spaces is critical due to the role amenities play in fostering connection among residents, therefore, promoting a sense of community and belonging.

Gehl's Attraction Analysis

Gehl's theory of attraction derived from an analysis carried out on a main pedestrian street in Copenhagen to investigate where pedestrians stopped and what they looked at (Gehl 2011, 28). The results from the analysis revealed fewer stops in front of banks, offices, or show rooms and a greater number of stops in front of shops and exhibits that had a direct relationship to other people in the surrounding social environment, such as newspaper kiosks (Gehl 2011, 28). The greatest amount of interest was found in various human activities that occurred on the street themselves which

indicated the role of various forms of human activity in connection (Gehl 2011, 28). Gehl's conclusion stated,

> People and human activity are the greatest object of attention and interest. Even the modest form of contact of merely seeing and hearing or even being near to others is apparently more rewarding and more in demand than the majority of other attractions offered in the public spaces of cities and residential areas. (Gehl 2011, 28)
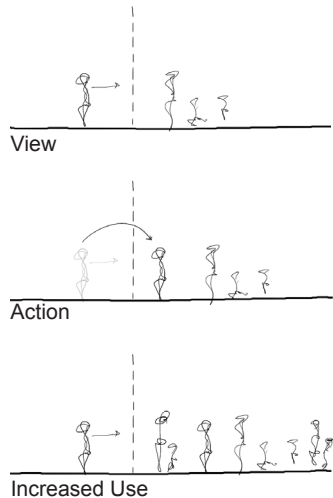
The analysis revealed the importance of visible human activity and argues that the life in buildings and between buildings in nearly all situations is more essential and more relevant than the buildings themselves (Gehl 2011, 28). Gehl's attraction analysis indicates the importance of direct human relationships which is absent in the conventional residential high-rise.

Stop-Look Effect

The stop-look effect is based on one's awareness of their surroundings from both the interior and exterior realms. The effect occurs using transparency to bring awareness to surrounding context while providing a relationship between both the interior and the exterior (Erkartal and Uzunkava 2019). The effect was demonstrated through a case study in Istanbul on an existing public building located adjacent to a public square (Erkartal and Uzunkava 2019, 4). The existing façade was of a translucent material and did not address or interact with the public square. The façade was renovated to a transparent façade displaying the circulation and activity within the building (Erkartal and Uzunkava 2019). It became a public asset to the street and caused users in the public square to stop and investigate the façade while building users were equally prompted to pause along the interior to look out (Erkartal and Uzunkava 2019). The transparency of the façade created a dialogue between the square and

View

Action

Increased Use

Illustration of Gehl's attraction theory and the desire to use spaces that are viewed being used.

the building and connected the building to a space that was previously disconnected. The Istanbul case study provides evidence that urban continuity, connection to site, and public experience can be achieved through transparency. The exposure of amenities and circulation throughout a residential high-rise equally engages passersby and interior users while maintaining connection to their surroundings. The ability to see activity within a high-rise from the street allows for easier comprehension of scale and a greater presence along the street.
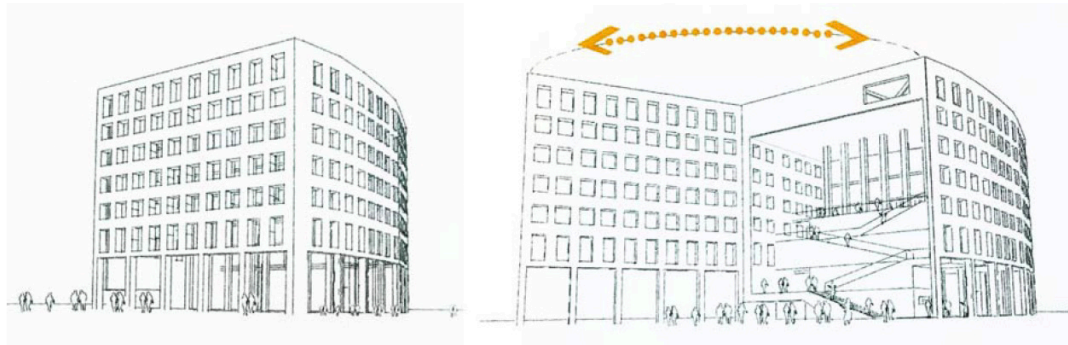
Illustration of the facade being revealed to interact and engage with the public (Erkartal and Uzunkava 2019).

Strategy 4: Active Façade

The corresponding strategy to the principle of visible utilization is the active façade which was derived from the stop-look effect case study conducted in Istanbul. The principle uses transparency within the façade to reveal activities and movement within the residential high-rise to exude life within the building. The active façade focuses on providing contextual awareness of one's surroundings by providing glimpses into the building as well as to the exterior.

The ability for users to see in and out of the building reduces exclusivity and aims to disrupt the boundary between the street and the high-rise. It addresses the underutilization of amenities and public space by making them visible from both the exterior and interior, creating a display of active spaces. The strategy reveals the elevators to exterior views to provide glimpses of movement to the exterior as well as contextual awareness for the user. The activation of the façade allows the residential high-rise to have a presence on the street and welcomes the public within, reducing exclusivity and in turn, increasing its approachability.
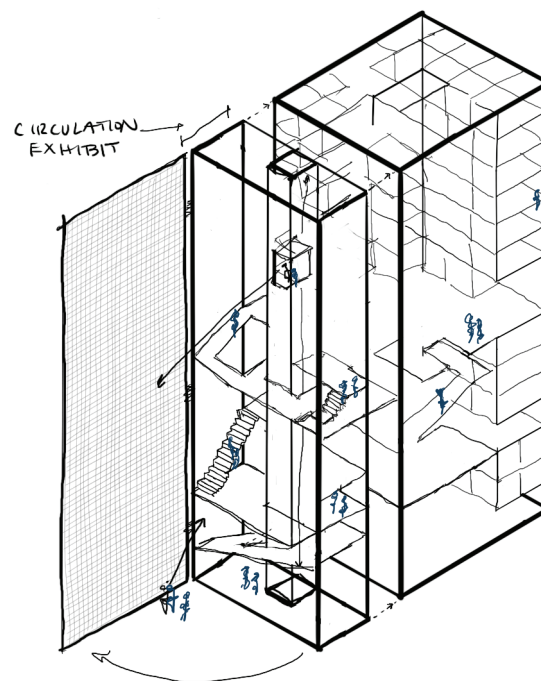

Illustration of the strategy the active facade by revealing circulation and daily movement throughout the residential high-rise.

Chapter 5: Design Application

Site

The application of the four principles, multiprogramming, defined neighbourhoods, inhabited circulation, and visible utilization will be tested on a site located in Halifax, Nova Scotia, on the corner of Robie Street and Spring Garden Road. The block that the site is situated on currently has two active redevelopment proposals that involve four 30 storey residential high-rises, one of which is located on the test site of this thesis. The proposals have received resistance from the community due to the drastic shift in scale, along with the negative connotation attached to what a residential high-rise is. The site will be used to investigate the residential high-rise typology and the results of this thesis to be composed as an explorative study amongst the conventional three that are proposed.
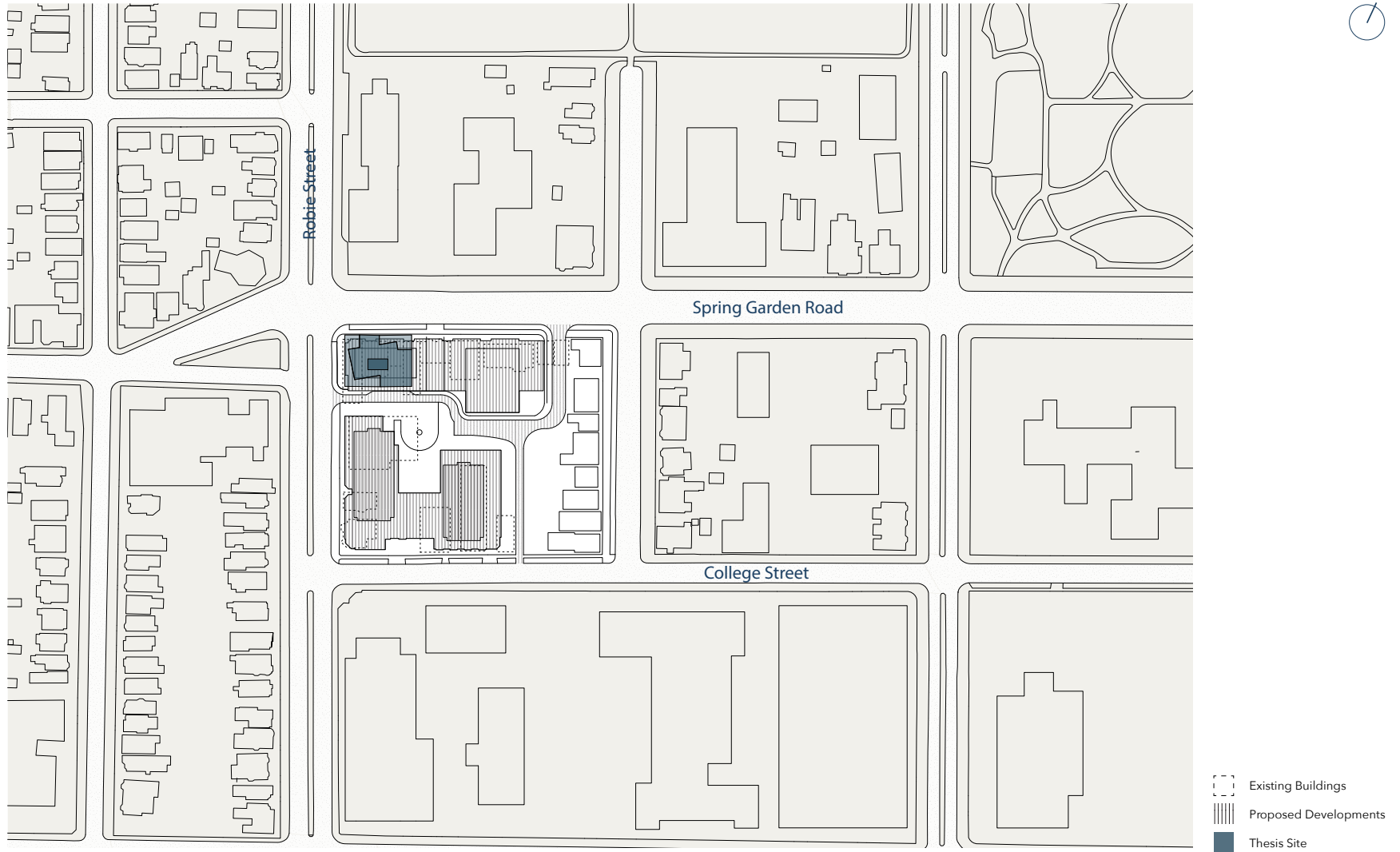

Map of Halifax Peninsula with site located at the intersection of Robie Street and Spring Garden Road.

Quinpool Road

Robie Street

Spring Garden Road

1km Resource Network

South Street
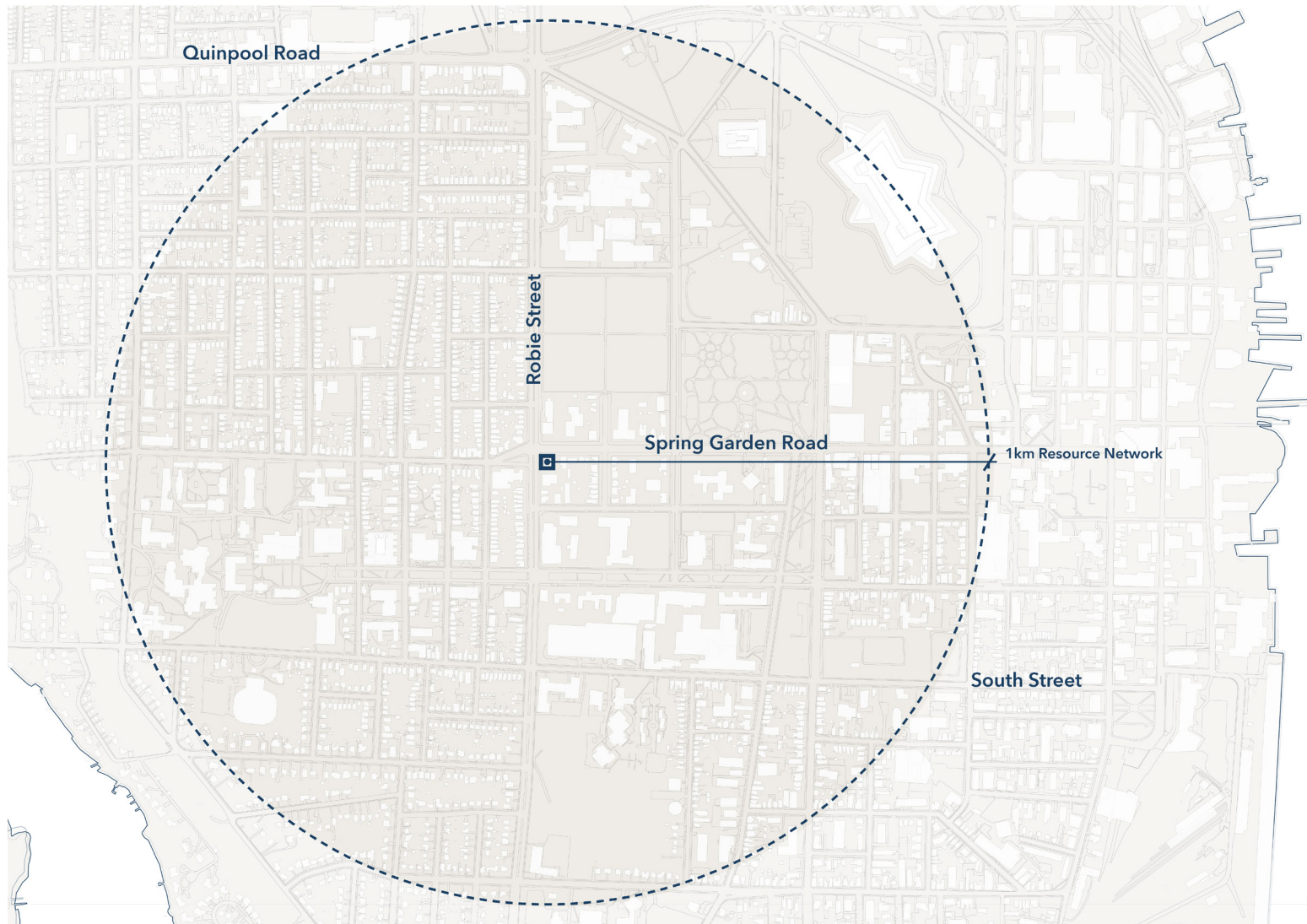
Context map of Halifax showing the site location and 1 kilometer resource network.

Site plan showing the existing buildings, proposed developments for the block, and the thesis site.

Robie Street

Spring Garden Road

College Street

Existing Buildings
Proposed Developments
Thesis Site

The Activator

The application of the four principles has resulted in the activator which is the recomposing element of the typology. The activator disrupts the conventions of the high-rise by dispersing public programs throughout, defining clusters of neighbourhoods, inhabiting and revealing the circulation core, and visibly displaying activity and movement within the building. Its irregular form rotates against the residential grid and distinguishes it from the neighbourhoods from both the interior and exterior. The transparency within the activator reveals building activity to the exterior as well as provides a sense of contextual awareness from within the building. The neighbourhood façades contrast the transparency of the activator with privacy treatments such as operable window shutters that allow for varying levels of privacy. The implementation of operable window shutters follows the strategy of the active façade as it allows residents to continually contribute to the look of the façade. The project can be further broken down into four components which are the public dispersals, the resident commons, the neighbourhoods, and the open core.

Neighbourhood 4

Neighbourhood 5

Neighbourhood 2

Neighbourhood 3

Neighbourhood 1

Exploded Axonometric
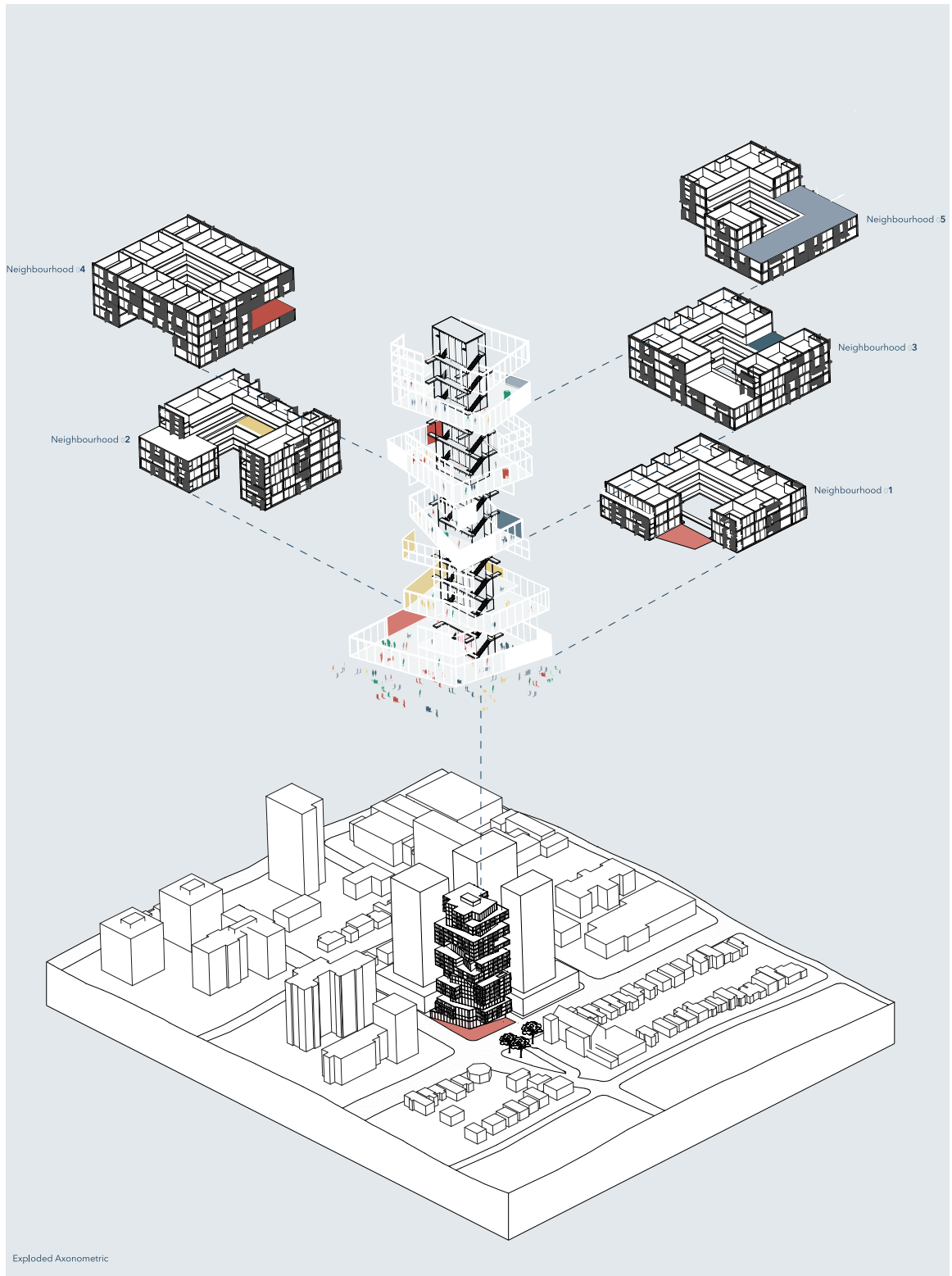
Axonometric view of the activator that is made up of the public dispersal, the resident commons, the neighbourhoods, and the open core.
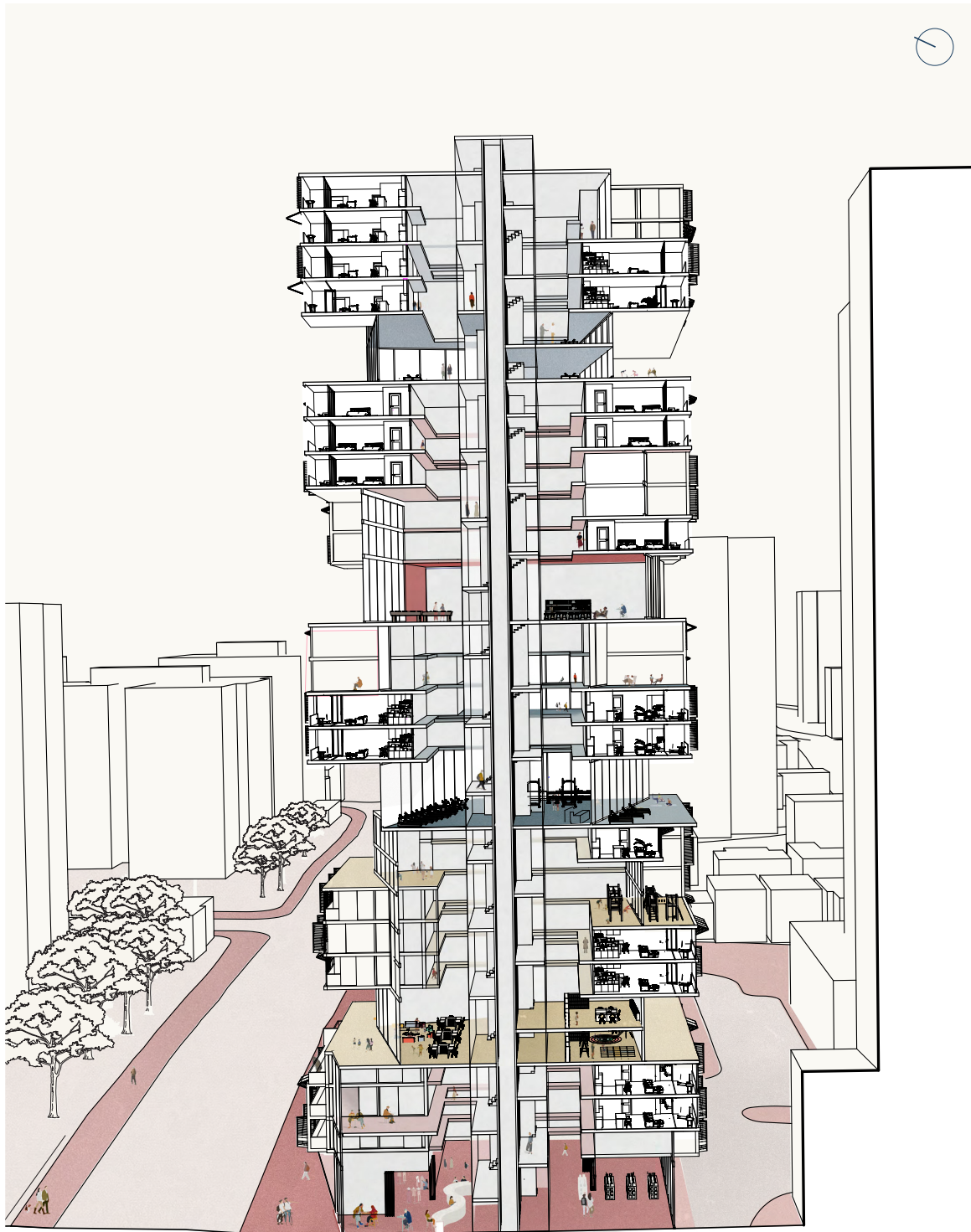
Inhabited section showing the organization of the activator and the relationship between the public floors, the residential units, and the circulation vestibule.

Active Facade
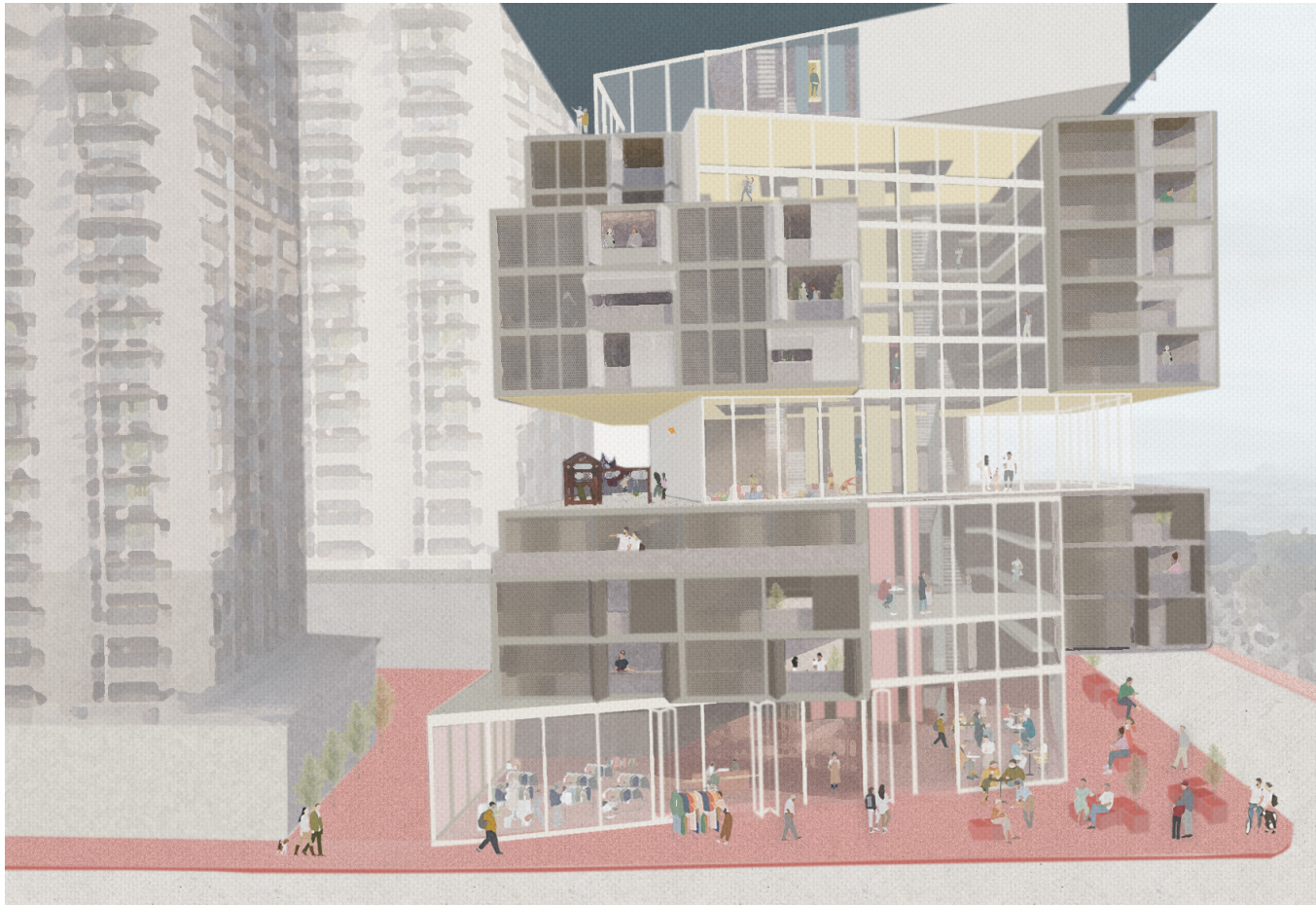
A neighbours view of the activity within the high-rise: watching the movement of the operable shutters by residents, the elevators as they go up and down with the people come and go, while the programs from within flow out onto the community plaza, drawing the public within and blurring the boundary between the street and the high-rise.
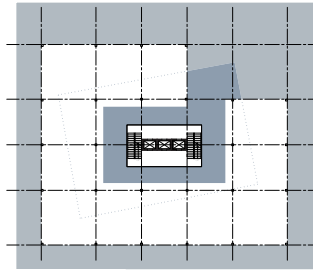
The Public Dispersal

The public dispersals act as the organizing element of the activator by dispersing the public programs, defining the neighbourhoods, inhabiting the circulation, and revealing the utilization of spaces. The public dispersals house all public programs within the high-rise and are placed between each neighbourhood to disperse public programs throughout. The public programs are organized around the open core which inhabits the circulation as the public dispersals blur the boundary between circulation and program which is demonstrated on the representational public dispersal plan.

The integration of the public programs allows amenities such as a gym or pool that are typically privatized, to become public which increases the value placed on amenities by developers, while providing a space for social mixing among the residents and the public. The public programs then contribute to the greater surrounding community by offering public programs that are accessible to the community, connecting the high-rise to the contextual resource network.

Each public dispersal is intended to function as the ground floor of each neighbourhood as a response to Gehl's five storey disconnect theory, which suggests that buildings become disconnected from ground level activity beyond five stories (Gehl 2011). Each neighbourhood, therefore, has a corresponding 'ground floor' program type which then informs unit types and resident types within the neighbourhoods. This organization forms like-minded communities which in turn reinforces stronger and more meaningful connections among residents. The form of each public dispersal determines the form of the activator and contrasts the conventional language of the neighbourhoods.

The contrasting forms serve as a distinguishing symbol of transition to the next neighbourhood and work to define and provide an identity to each. The active dispersal of public programs throughout, provides opportunities for interaction amongst the public and the residents which in turn, reduces the exclusivity of the high-rise.
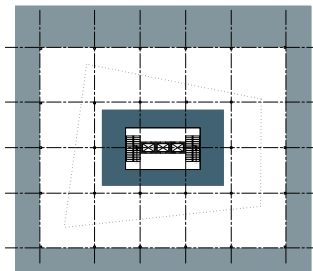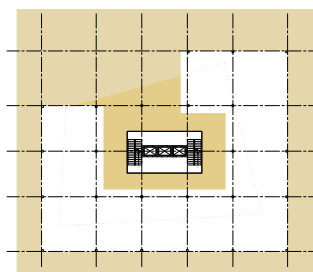
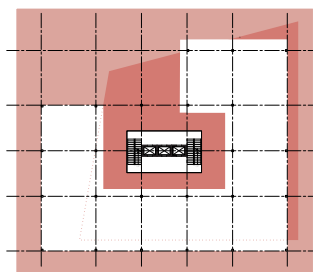05: Offices and Wework Spaces
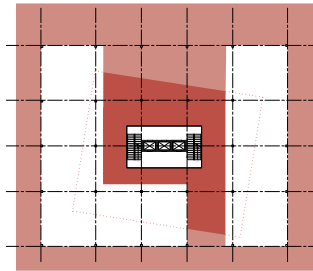
04: Hotel Lobby and Lounge

03: Fitness Centre and Pool

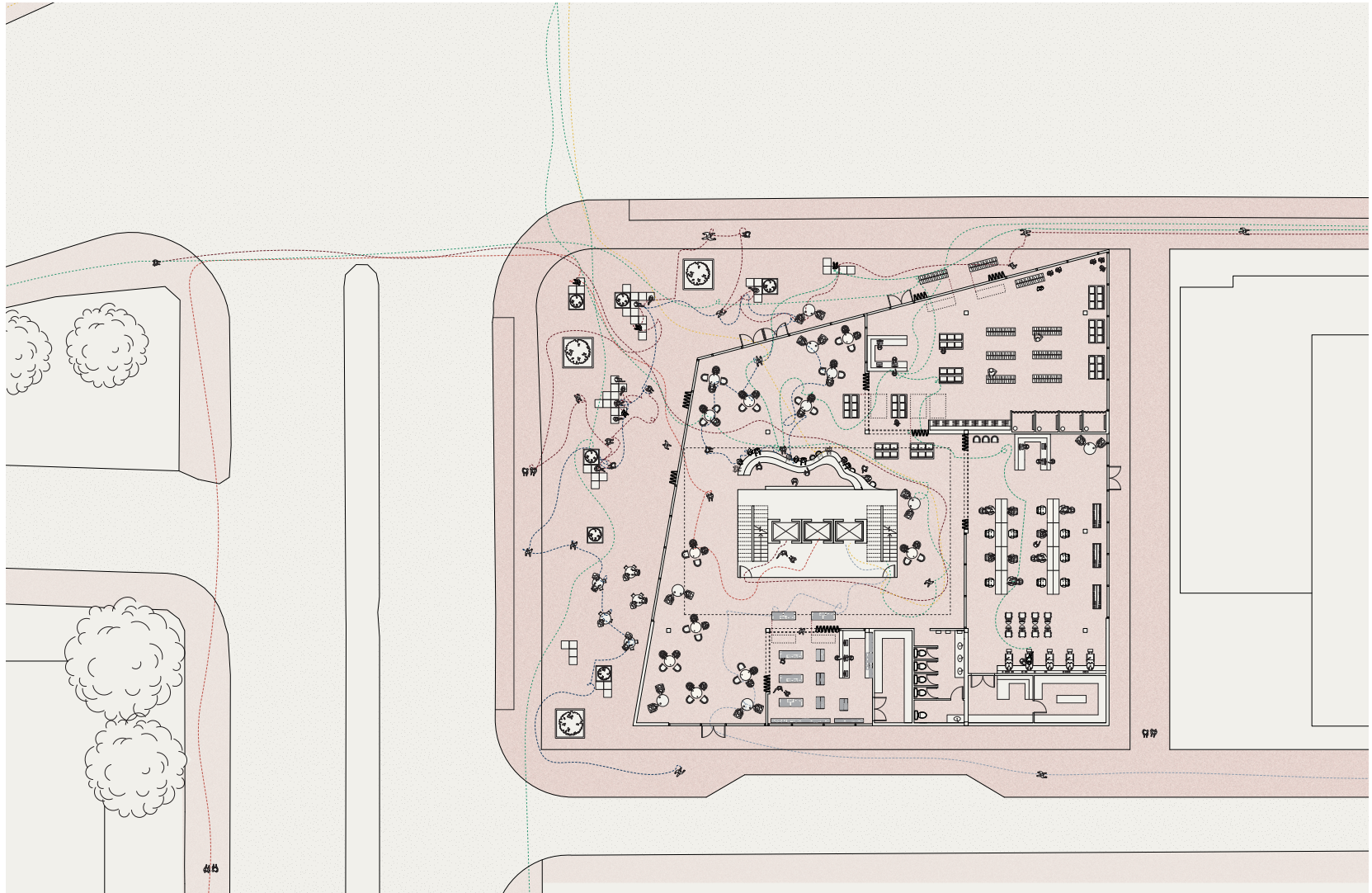02: Education Centre and Institution

01: Cafe, Bar, and Retail

Diagrammatic plans of the five public dispersals.

Representational public dispersal floor plan of public dispersal 1.

Active Dispersal

A resident arrives home after a day of work: On the way to the elevator they run into their friend at the cafe/bar and stop to have a drink and a visit with them before heading up to their unit.

The Resident Commons

Often times, resident run-ins are shortened or absent due to the lack of gradient space between the street and the unit. In response, the resident commons combines the characteristics of the suburban front porch, the amenity, and the street by providing a space between the street and the residential unit to foster informal run-ins that occur on the street, neighbour visits that occur on the porch, or gatherings that occur in the amenity. The resident commons soften the public to private gradient and provide spaces for residents to gather and interact without having to cross the private boundary of the unit or loiter in the undefined public.

The resident commons follow the principles of inhabited circulation and visible utilization as they are located adjacent to the residential unit circulation which in turn, visibly displays the utilization of the spaces along the resident commute. The adjacency to daily circulation provides more opportunities for resident run-ins and even the act of joining the gathering, while additionally displaying the presence of others within the building. These spaces align with Gehl's concept of the need to not only be *with* others but to be *around* others (Gehl 2011). The resident commons are intended for the residents as an extension of their unit and are a response to the lack of buffer zone layers within the residential high-rise. They are placed in the absence of units which resembles the exchange of units for common spaces. This exchange is meant to symbolize the value of providing sufficient common spaces over unit count. The resident commons take on the irregular form of the public dispersals which distinguishes them from the language of the neighbourhoods. They can be imagined to fosters interactions such as a neighbourhood block party, a family gathering, or an after-work run-in.

Active Cluster

A mother picks their child up from the daycare below: On the way home they run into a fellow resident and stop to have a visit in the resident commons before heading home to make dinner as other residents are returning from the grocery store and other after-work errands.

The Neighbourhoods

The neighbourhoods follow the principle of defined neighbourhoods as they cluster three to five stories of units into micro communities which reduces one's perception of its scale and fosters the opportunity for stronger connections. The neighbourhood clusters align with the results of the military barrack sleeping cubicles study which indicated that defined communities foster stronger and more meaningful connections (Blake et. al. 1956, 133). They are defined and informed by the public dispersals, however, contrast the irregular form of the activator by following a conventional unit grid. The entrances to the residential units open onto the activator which follows the principle of inhabited circulation and activates the commute from the street to the unit. The use of open corridors and bridging systems addresses the issue of isolated circulation by allowing residents to view the coming and going of other residents which increases opportunities for informal run-ins while reinforcing the presence of others. The corresponding public dispersals allow for proximity to act as an organizing element for residents which encourages the formation of like-minded communities. For example, those with children may choose to live in neighbourhood two, in proximity to the daycare, whereas someone that goes to the gym everyday may choose to live in neighbourhood four, in proximity to the gym, which would generate cohesive and connected neighbourhoods.

Resident Commons

Resident Services
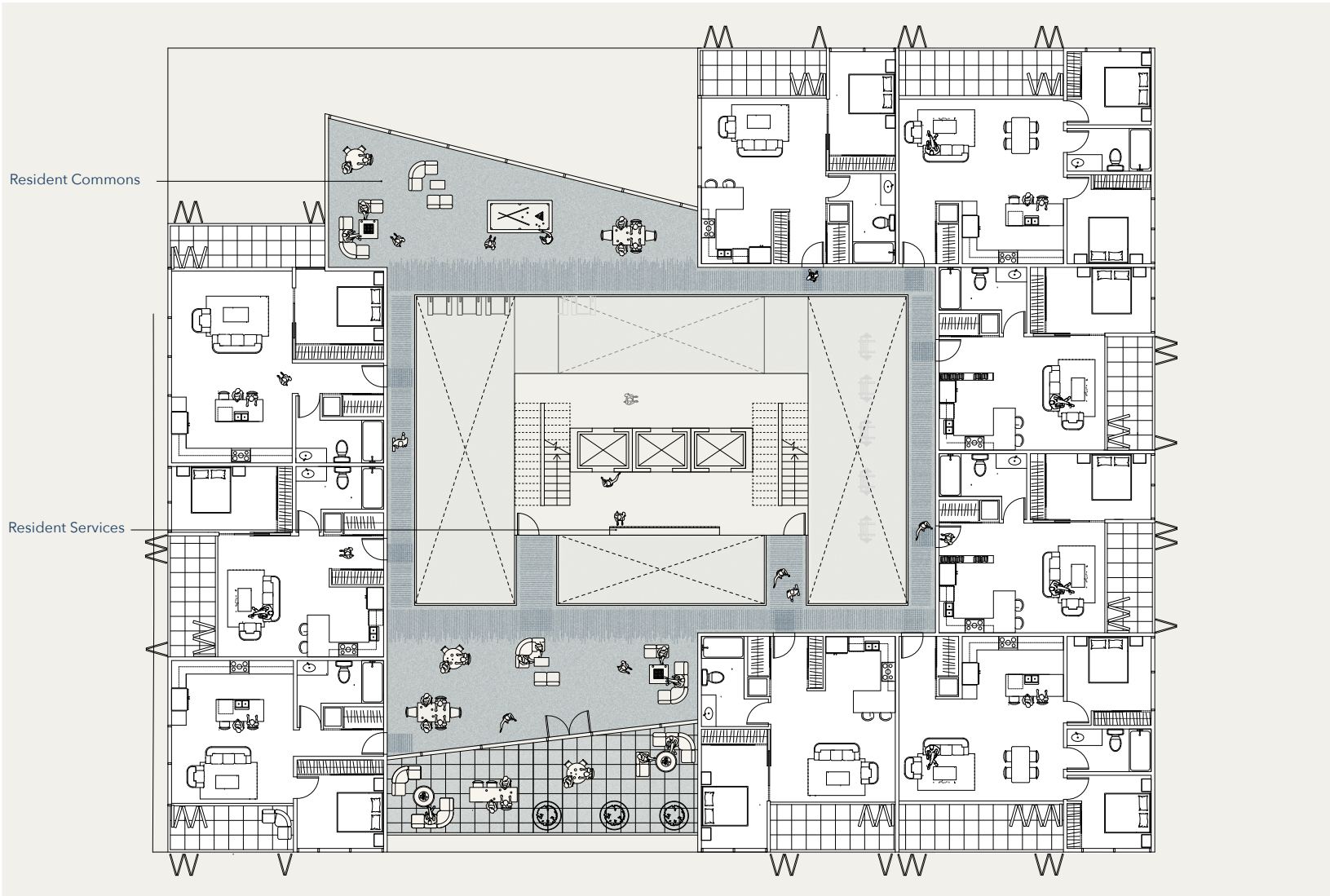
Representational Neighbourhood Floor Plan. Condition located in Neighbourhood 3.
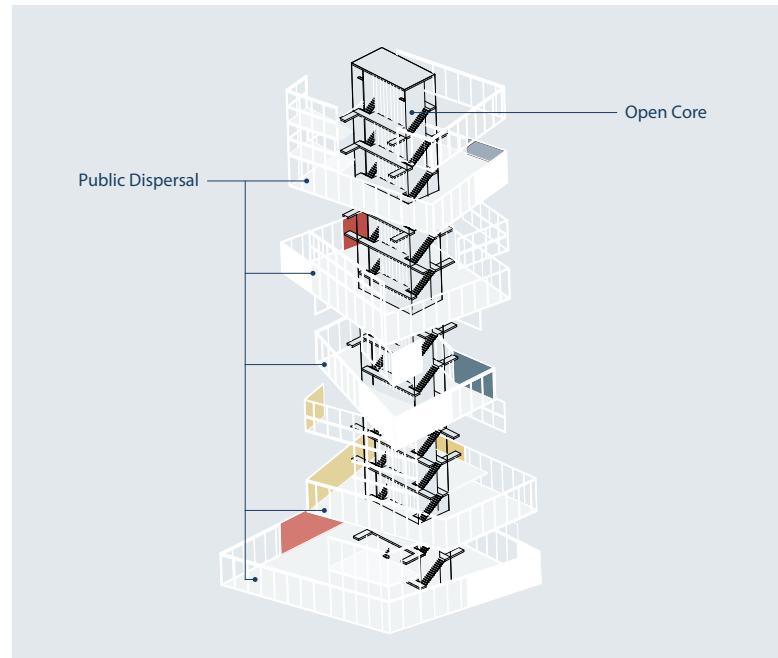
Axonometric diagram annotating the public dispersal and the open circulation core.

The Open Core

The open core houses all vertical circulation for the building, functioning as the funnel and follows the principles of visible utilization and inhabited circulation by revealing the circulation and integrating the core as an interactive piece to the high-rise. The exterior of the core is encased in glass, directly contrasting the characterized concrete core in the conventional typology. The transparency of the core allows for the display of movement and vertical circulation to both the interior and exterior of the high-rise, contributing to the active façade. The openings to the elevators are additionally left transparent to allow users to view current activity throughout the high-rise while also providing glimpses to the exterior while in transport, creating an active commute. The open core spans the height of each neighbourhood and is solely connected to the residential unit circulation by a bridging system that allows residents to view the spaces above and below their destination floor. The open

core contributes to creating a livelier and more interactive environment. The landings within the open core are meant to function as the resident lobby for each floor and houses resident services such as mailboxes or interactive bulletin boards. The resident services act as stay spaces which increases opportunities for resident interactions and chance run-ins within the core.

Active Commute

A hotel guest wanders through the hotel lounge: After checking in and getting settled into their room they sees the night views over city on one side and the activity of fellow guests on the other, while watching the movement of the elevators of people coming and going.

Active Commute

Active Cluster

Active Dispersal

Active Facade

Sequential series of four vignettes illustrating moments where each of the four strategies are evident throughout the high-rise.

Chapter 6: Conclusion

This thesis set out to explore why a typology of such high density and proximity to others is so disconnected. From living in a residential high-rise myself, the frequency of running into a fellow resident is few and far between, which prompted my initial question of 'why and how is that possible?' and essentially began this journey.

In response to my initial question, I argue that architecture can address social isolation through four principles; multiprogramming, which places public spaces amongst the private, defined neighbourhoods, which creates micro communities within the macro, inhabited circulation, which embeds program within the circulation, and visible utilization, which uses transparency to promote utilization. The design response demonstrates this hypothesis through the activator which is the architectural expression of these four principles. The activator challenges the exclusivity, scale, isolated circulation, and concealed amenities, that characterize the conventional high-rise typology. These principles, as demonstrated through the design project, establish an approach to a recomposed residential high-rise typology that prioritizes social interaction and community cohesion.

This thesis exemplifies that the role of architecture in addressing social isolation goes beyond objective proximity and density. In order to create an environment where people feel connected to those that surround them, the architecture must encompass these four principles. The residential high-rise typology was used as an example because it is where objective proximity and social isolation is most evident and prevalent. Nevertheless, the principles

from this thesis are broader than the high-rise and can be applied across architectural types. This thesis serves as a widespread response to how architecture can be used to address subjective issues such as loneliness to foster an environment where people are encouraged to interact and build cohesive communities.

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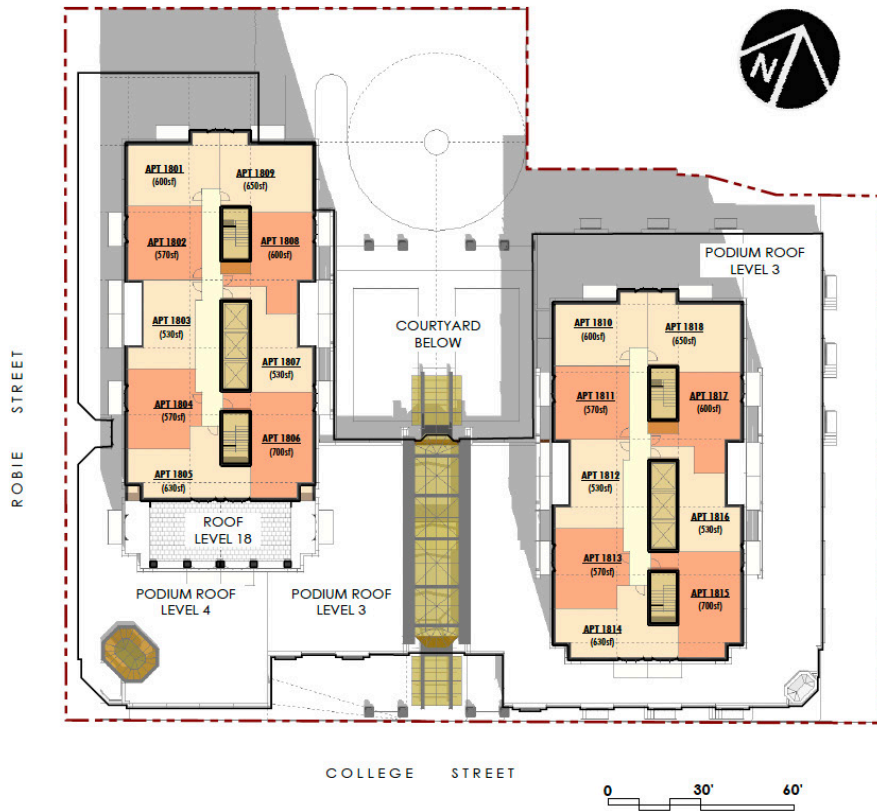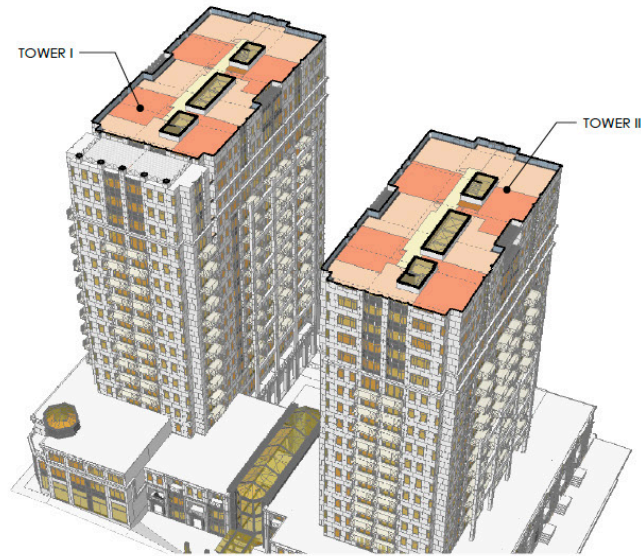Koolhaas, Rem. 1994. *Delirious New York: A Retroactive Manifesto for Manhattan*. New ed. New York: Monacelli Press.

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Appendix: Design Proposals That Informed The Site Context
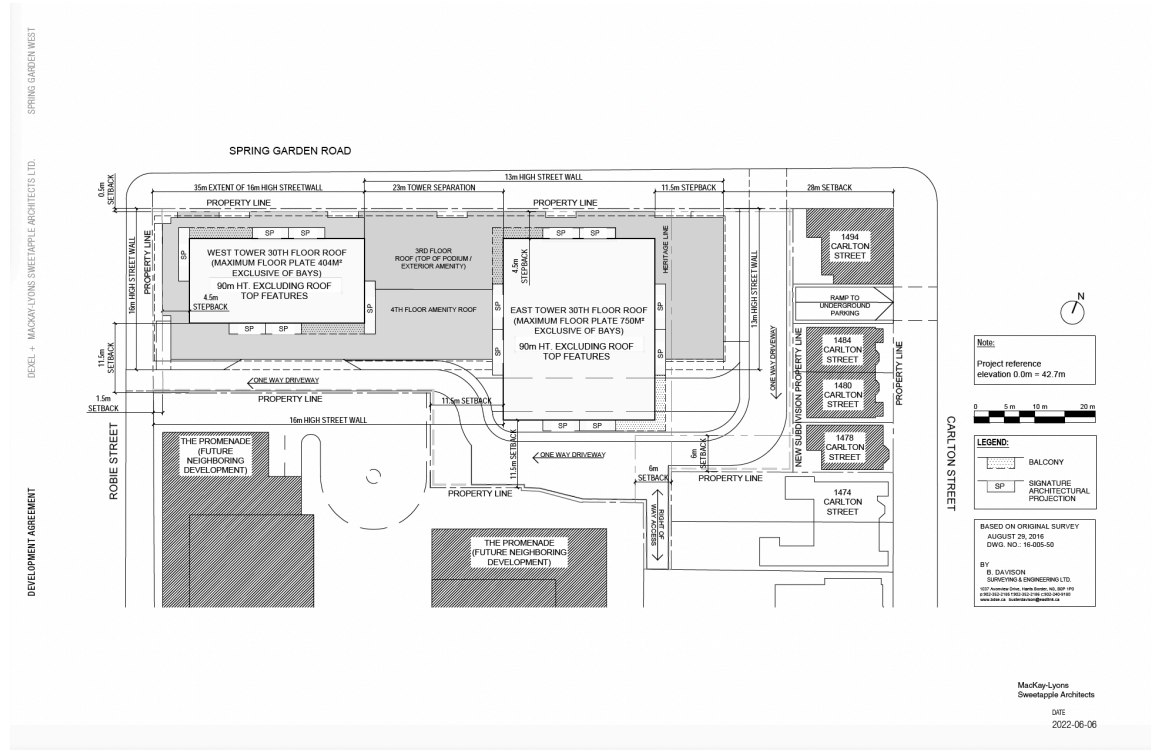
Current Amendments to the Regional Centre Secondary Municipality Planning Strategy and associated development agreement for lands located at Robie Street and Spring Garden Road, and Carlton Street, Halifax. Proposed drawings used to inform future site density and scale.

TOWER I

TOWER II

APT 1801
(600sf)

APT 1809
(650sf)

APT 1802
(570sf)

APT 1808
(600sf)

APT 1803
(530sf)

APT 1807
(530sf)

APT 1804
(570sf)

APT 1806
(700sf)

APT 1805
(630sf)

ROOF
LEVEL 18

PODIUM ROOF
LEVEL 4

PODIUM ROOF
LEVEL 3

COURTYARD
BELOW

PODIUM ROOF
LEVEL 3

APT 1810
(600sf)

APT 1818
(650sf)

APT 1811
(570sf)

APT 1817
(600sf)

APT 1812
(530sf)

APT 1816
(530sf)

APT 1813
(570sf)

APT 1815
(700sf)

APT 1814
(630sf)

ROBIE   STREET

COLLEGE   STREET

0   30'   60'

ZZap
Zwicker
Zareski
architecture +
planning
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The Promenade
Halifax, NS

PHASE 2 FLOOR LAYOUT LVL 18

A15

ISSUED FOR REVIEW
DATE: May 11, 2020

ZZap Architects proposed development for adjacent lots surrounding thesis site. Drawings used to inform the density and scale of the context surrounding the thesis site.