

SPACE TO PLAY.

SOCIALLY FIT HOUSING FOR CHILDREN

Researcher

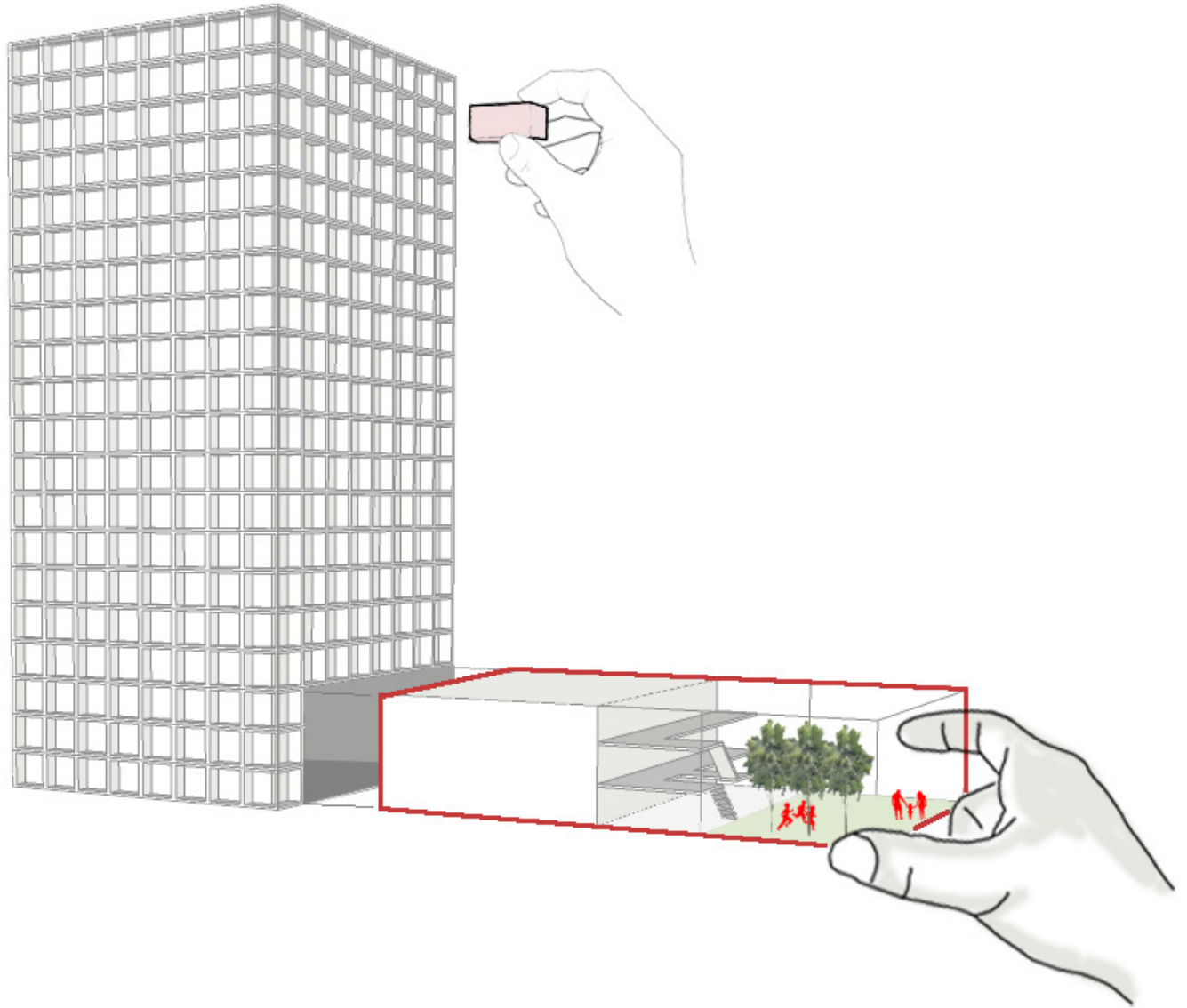
David Peterson

We shape our buildings;
thereafter they shape us.”

Winston Churchill

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1.

What design changes to towers are needed to accommodate children in their early childhood development?

2.

How does the distance from the dwelling unit to a shared play-space impact a child's socialization?

3.

What are the essential design principals and policies necessary to ensure socially fit housing for households with children?

In Toronto, increasing numbers of children will spend their early childhood development in towers. Child developmental psychologists warn of a mental health crisis for our children as face-to-face play steadily declines in western nations. The tower typology, long accused as socially isolating, seems to be adding to the problem. In a City of Toronto survey, when children and parents were asked what can be done to improve the situation, they most often mention places to play. Some high-rise projects have been rethinking their amenity spaces to accommodate families.

The research examines semi-public and semi-private spaces with the mindset of a child's wants and needs as described by sociologists and environmental psychologists. The research concludes its findings with design principals that can be used when considering multi-residential housing and its socio-spatial appropriateness for children.

Keywords: Children, Housing, Well-Being, Socialization, Play, Apartment, High-Rise, Semi-public Space, Semi-private Space

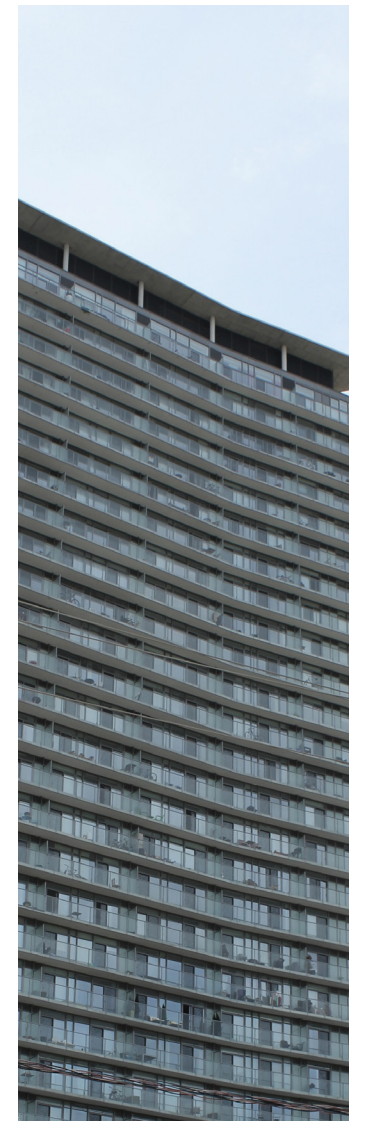


Figure 1.
Residential Tower
Queensway and Windermere,
Toronto, Completed 2015
Photo by David Peterson Architect

As a demographic group, children in their early development have unique needs. They learn social skills and develop emotionally through face-to-face play.^[1] When their physical contact with other children decreases, they report higher levels of anxiety and stress. Conversely, children will say they are happy and sleeping well when they have routine amounts of play.^[2] This relationship between well-being and play in early childhood development is widely accepted as evidenced by the numerous academic papers on the subject. Emerging data from the field of environmental psychology points to the design of buildings and communities as a key determinate in a child's frequency of play.^[3] A recent study conducted in 2021 asked children where they play. The study reveals that children in low-rise buildings have several outdoor spaces adjacent to their dwelling where they can play and possibly meet other children. This is in sharp contrast to children living in condominium buildings.^[4] These studies confirm what parents have inherently understood, high-rises as designed today are not ideal for their children. This perception has, in part, fueled a demographic movement of households with children to leave the city and move into the 905 region where they are more likely to find affordable housing in a low-rise form.^[5] Tower or detached house, the choice of building form is not only representative of economic disparity but also social inequality. Without alternatives to today's stock of multi-residential buildings and low-rise house forms, we can expect social inequity to grow.

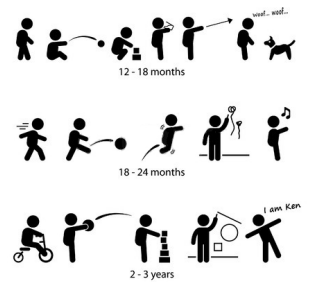


Figure 2.
Early Childhood Development Stages

Introduction

- 1 Gray, Peter, *Free to Learn*, 2013.
- 2 Fullan, Josh, ed, *The Role of Play and Outdoor Space*, 2021.
- 3 Ibid.
- 4 Ibid.
- 5 City of Toronto Planning, *Housing Occupancy Trends 1996 to 2016*

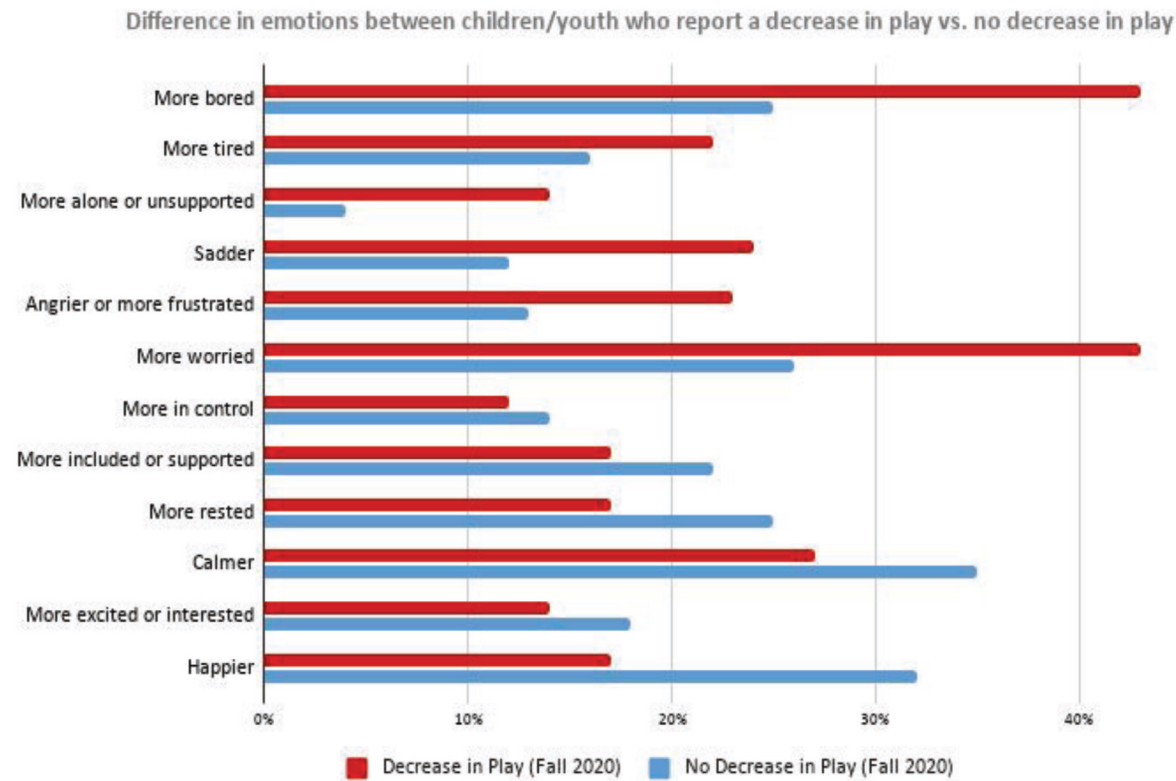
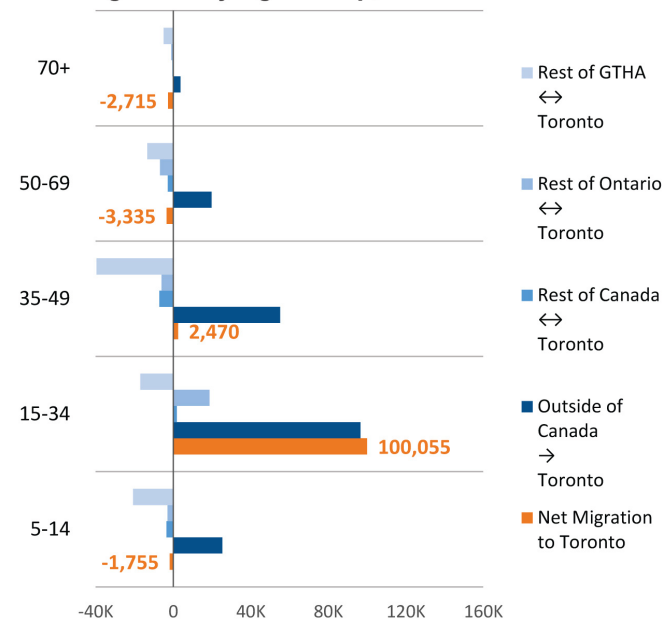


Figure 3. Well-Being and Play, Fullan, Josh, ed, *The Role of Play and Outdoor Space*,

Net Migration by Age Group, 2006-2011



Note: Estimates for emigration and net temporary emigration are not included. Rest of the GTHA means the Greater Toronto and Hamilton Area excluding Toronto; Rest of Ontario means Ontario excluding the GTHA; Rest of Canada means Canada less Ontario.

Figure 4. Migration by Age. 1,755 Net Loss of Children, City of Toronto Planning, *Housing Occupancy Trends 1996 to 2016*.

It is the policy of the City of Toronto that fair access to a full range of housing is fundamental to strengthening Toronto’s economy, its environmental efforts, and the health and social well-being of its residents and communities.^[6]

This quote from the Housing Action Plan makes clear that housing is an important agenda item for the city. This statement connects social well-being to housing. To a lesser extent, the Canada Mortgage and Housing Corporation’s (CMHC) definition of acceptable housing also includes a notion of social suitability.

Acceptable Housing refers to housing that is adequate in condition, affordable, and suitable in size.

Adequate Housing does not require any major repairs, according to residents.

Affordable Housing costs less than 30% of before-tax household income.

Suitable Housing has enough bedrooms for the size and make-up of resident households, according to National Occupancy Standard (NOS) requirements.^[7]

Alina McKay in reviewing the National Occupancy Standard (NOS) upon which the CMHC definition is based, notes that

“crowding has been identified as a public health and safety concern, there is little evidence to support restrictions to housing based on family composition. Within the context of BC’s affordability crisis, women who have experienced gender-based violence are disproportionately negatively impacted by NOS. There is substantive academic and legal evidence that NOS has acted as a barrier to housing. Federal, provincial and municipal governments should limit their use of NOS to measure housing suitability.”^[8] **Suitability, as a definition, should broadly speak to socially-fit housing or the well-being of its occupants.** This correlation between housing form and well-being does not have a single quantitative measure like affordability (ie. costs less than 30% of before-tax household income). It is a qualitative association and is best captured by a series of principals which could eventually become the basis for legislation.

6 *Housing TO 2020 -2030 Action Plan*
 7 *CMHC: Acceptable Housing and Core Housing Need, Definitions, Housing in Canada Online*
 8 McKay, Alina, *National Occupancy Standards: Use and Misuse*

An examination of the Ontario Building Code (OBC) and the Toronto Zoning By-law reveals that there is no legislation that specifically considers the social needs of children in the design of residential buildings.

Fortunately, the Day Care Act provides a legislative example that relates the social needs of children and the design of the built environment.

The Day Nurseries Act was born during a time of social turmoil, which was created by World War Two. The earlier form of the legislation was called the wartime Day Nurseries Act which began in 1944 and was funded by the federal government lead by Prime Minister Mackenzie King. The funding was pulled after the war when many women returned to the home. In Ontario, several groups, including the Toronto Medical Officer of Health, successfully advocated for a return of the Daycare Act.

The dictates of the act have many specific requirements that emerged in an effort to provide for the well-being of children in their early development years. While the policies continue to be refined since its inception in 1946, there is broad agreement among Early Childcare professionals that children are being served well by its mandates.

Unique to the act, there are prescriptive spatial provisions which correlate to the mental and social health of children. These minimum standards for interior and exterior spaces apply when a child is in care for longer than six hours.

The Day Care Act. A Social Needs Policy Precedent



Figure 5.
Fuji Kindergarten, design by
Tezuka Architects.

The Ontario Child Care and Early Years Act, 2014
presently regulates childcare facilities in Ontario.

The rules that govern the design outdoor space which hosts the children's face-to-face play is noted below.

1.

Maintenance

Subject to regular maintenance and official licensed inspector

2.

Size of the Outdoor Play Area

5.6m²/Child minimum

3.

Adjacency to the Interior Space

4.

Safety and Supervision

5.

Space Design

Regulated by CSA Z614-14 "Children's Play Spaces and Equipment"

These rules are used as social-spatial rating system for evaluating housing design.



Figure 6.
Studio 123 Daycare,
401 Richmond Avenue, Toronto,
Design by Doubledam Architecture

Culturally, we have a strong preference for low-rise housing. The residential yellow belt within the Greater Toronto Area (GTA) occupies more land area than any other building form or land use.^[9] Historically, parents have considered the detached home as ideal for raising children. Today, many more parents expect to raise their children in towers. The 2016 census data indicates that in downtown Toronto, 66% of households with children live in buildings 5 storeys or greater. Some newly established Toronto neighbourhoods have 100% of their children living in towers.^[10] Apartment units account for the majority of new housing starts throughout the city.^[11] This trend to apartment living does not pose a problem until we check-in on the well-being of children living in these environments.

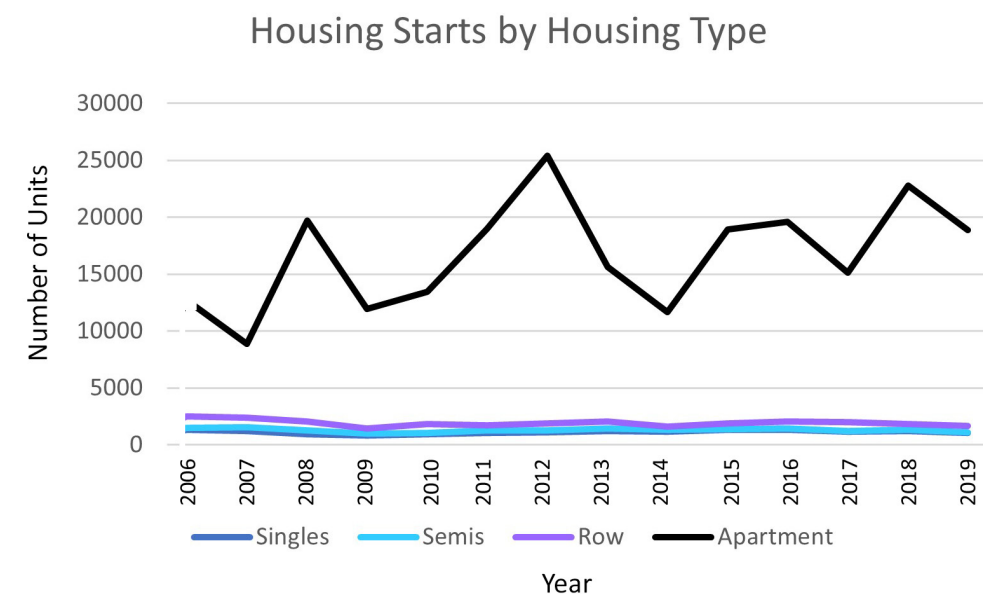


Figure 7.
Housing Starts in Toronto
Compiled from CMHC Online Database

Figure 3, this research study which relates frequency of play and a child's well-being also asked where children play. The survey indicated that children living in low-rise housing units had several more places to play, including private yards, driveways, and local streets. Not surprisingly, children living in high-rise housing units played less and consequently reported more negative emotional outcomes.^[12]

9 MapTO.ca
10 Growing Up, City of Toronto Report, 2020.
11 CMHC Housing Starts Online Data
12 Fullan, Josh, ed, *The Role of Play and Outdoor Space*, 2021.

The Housing Market

Defining the Typology

The early proliferation of towers started in the 1960's and 1970's. The conceptual site plan strategy was to place the towers in a park. In practice, the space between buildings was more often a parking lot or ambiguous unused lawns. On rare occasions, we saw this territory as gardens and other amenities. Located in the base of these building were the semi-public spaces such as the lobby, laundry room, or other indoor amenity.

The contemporary tower will rise from a podium. The gardens and amenities have been relocated to the roof of the podium. As a base, the podium may have a variety of uses. Unlike its suburban cousin set apart from the street, the contemporary tower-podium meets the street to establish or continue the urban fabric.

While the tower's base or podium may have some programmatic variety, the middle of the tower has seen very little socio-spatial change since its widespread introduction half a century ago. Given the similarity in spatial characteristics, it should be possible to examine towers from different generations and form socio-spatial conclusions which will apply to the typology as a whole.



Figure 8.
60-70's "Towers in a Park" Site Planning
City of Toronto Tall Building Guidelines,
2013.

The plan in figure 10 could be from a building in the 1970's or it may have been built in last year. There are three dominate design features of a typical multi-residential plan:

1. **Central Elevator Core** which gathers all units within the building into one lobby.
2. **Double-loaded Corridor** which functions as an access to an exit rather and a semi-public social space.
3. **Single Use Floors** composed of only residential units

These features are independent of the buildings shape or architectural style. Each apartment has no visual or auditor connection to the corridor. An occupant will largely be unaware of other residents on the same floor. This isolation of units is intended to manage the spread of fire from a unit into the shared corridor which leads to the fire exit stairs. The Ontario Building Code regards each unit as separate fire compartments. However, as a minimum, fire-rated glass door side-lights could be used to provide a visual connection from the apartment to the corridor. This single design gesture would be a step toward socially connecting what are otherwise socially isolated housing units.

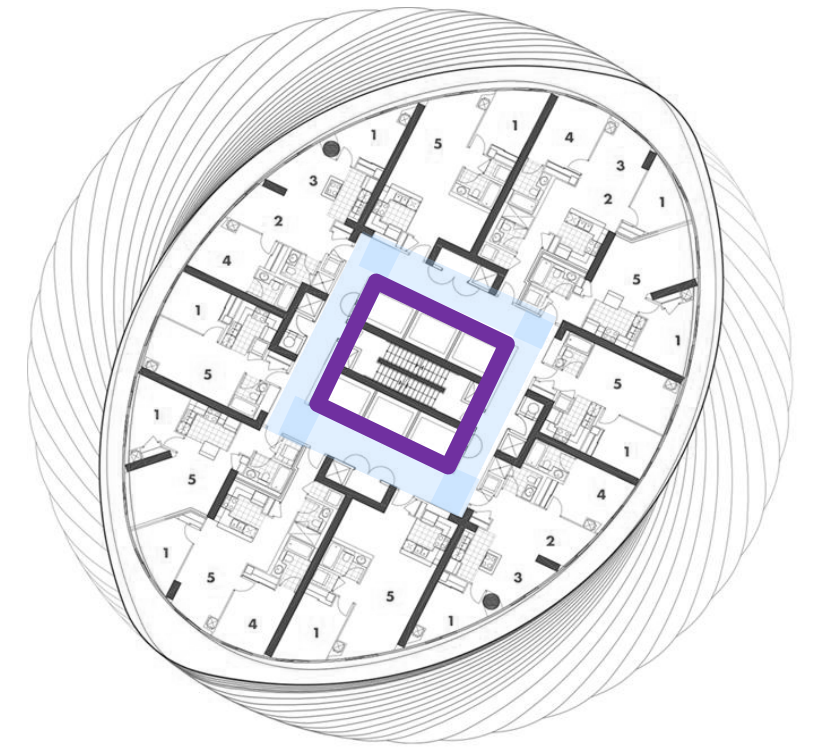
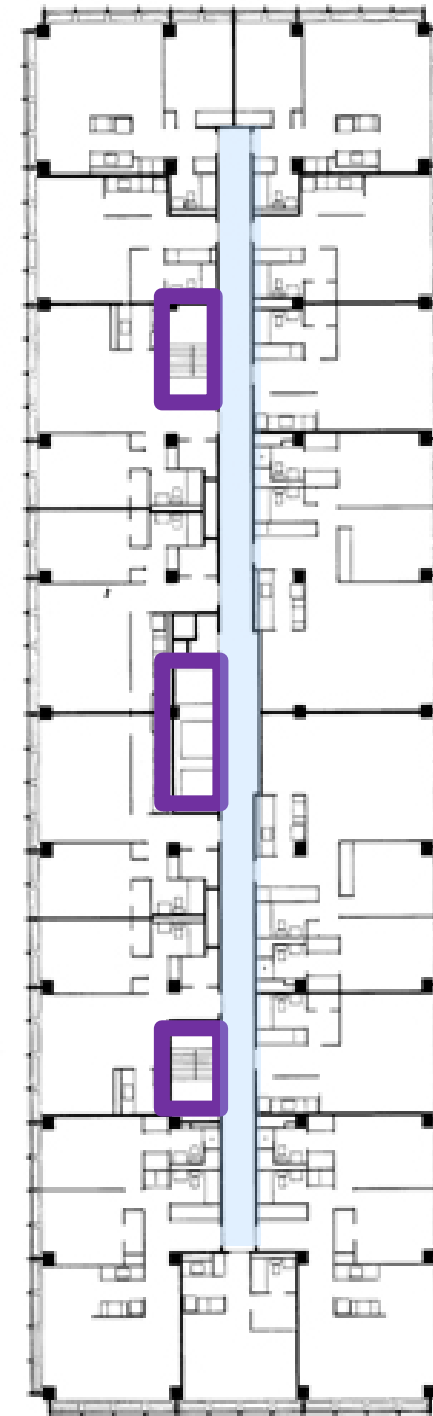


Figure 9.
Typical Plan of "Absolute Condo,
Mississauga, Completed 2012

Figure 10.
Typical Tower Floor Plan
City of Toronto Tall Building
Guidelines, 2013.



Figure 11.
22 Newport Avenue, Toronto,
Front and Backyard,
Typical Low-Rise Site plan Arrangement

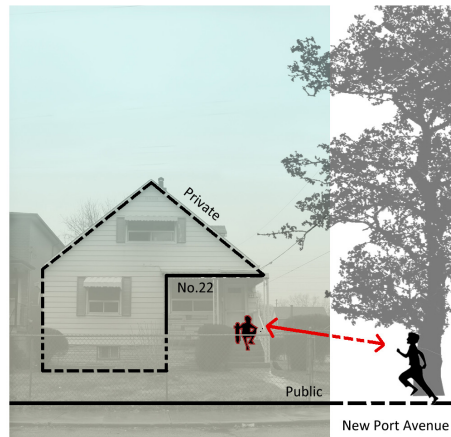


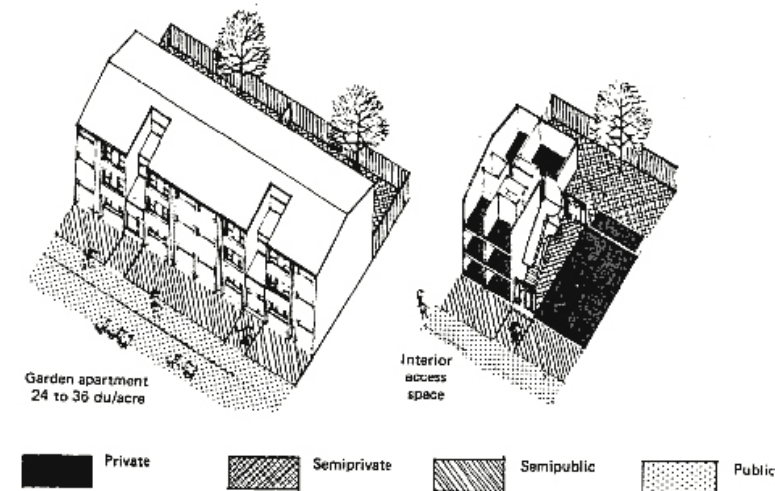
Figure 12.
22 Newport Avenue, Toronto,
Typical Low-Rise Sem-Public and
Semi-Private Spatial Arrangement

13 Road Classification System,
City of Toronto

Low-rise residential buildings have a site arrangement that includes a front yard and private backyard. These buildings are accessed from “local roads” which are described by the city as having the following characteristics:

- Provide access to property
- Less than 2,500 vehicles per day
- Low traffic speed
- Generally, they do not have bus routes
- Cyclists – special facilities as required
- Sidewalks on at least one side of road
- Truck restrictions preferred
- Low priority for winter maintenance ^[13]

20 Newport Avenue, seen in figure 11, is representative of the site arrangement and urban condition typical to low-rise neighbourhoods. The sidewalk along this quiet local street makes it easy for a passer-by to interact with a resident sitting on their porch. The porch is not nearly as private as the interior of the home. It is best described as semi-private. Adjacent to the public space of the sidewalk is a zone that can be called semi-public; it is the territory that is not fully public. While walking my dog, I might step onto the semi-public space of the property’s driveway to allow an oncoming pedestrian to pass-by. If I were to move further onto the porch, I have entered into the semi-private realm and should expect personal contact with the residents of the home, see figure 12. The transition from semi-private to semi-public is made clear by the spatial change created by the porch. The porch steps provide an elevation change which requires further deliberate action on the part of the visitor. The covered space of the canopy creates another distinguishing feature of the change to a more intimate space. **This hierarchy of spaces, public to semi-public into semi-private and private, are well established in low-rise typologies.**



- Private space is within the apartment unit only.
- The interior lobby, stairs, and corridor are semiprivate.
- Grounds can be designated for one family but are usually shared by all the families in the building.
- Only a small number of families (three to six) share the interior circulation areas and grounds.
- The street is within the sphere of influence of the dwellings.

Figure 13.
Semi-Public Semi-Private Diagram
By Oscar Newman from
Defensible Space, 1971

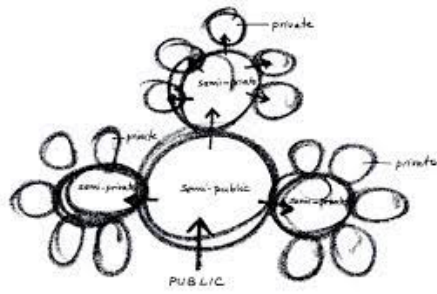


Figure 14.
Semi-Public Semi-Private Diagram
By Oscar Newman from
Defensible Space, 1971

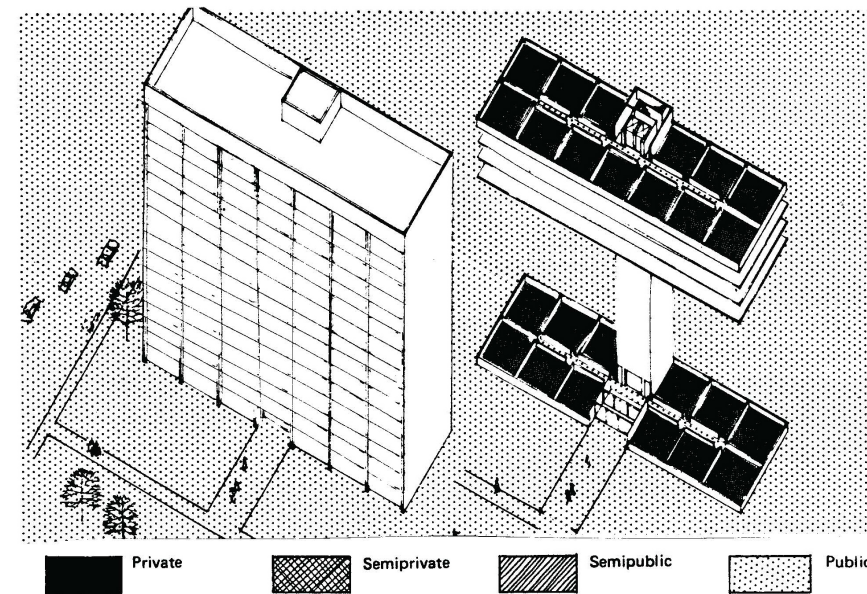


Figure 15.
3244 Danforth Avenue, Toronto
Commercial Ground Floor with Multi-Residential Above

The socialization that is made possible because of this urban design arrangement is equally well practiced. The imagined contact between the children illustrated in figure 12 seems familiar. If not two children, then a senior gardening in the front-yard who pauses to greet a neighbour on their way to the shop. This social-spatial arrangement provides more than “eyes onto the street”; it creates an active public realm.^[14]

Unfortunately, our relative inexperience with the social-spatial conditions within multi-residential typologies is all too apparent. Figure 15 is seen from the local road. Local roads are connected to arterial roads that host mixed use buildings. Visible is the rear yard of the commercial property on Danforth Avenue. The transition from low-rise single use streets to taller commercial-residential zones (CR) along arterial streets poses several urban design challenges. The ground floor commercial program can often produce an unkept back-of-house condition. When these service-oriented spaces occupy the entire backyard the street’s urban life suffers, as does the second-floor residential units. Where is the residential semi-public and semi-private spaces? The sidewalk makes the public realm of the street distinctly understood. Commonly, the private space of the residential unit begins at the apartment door accessed from a corridor. If we were to call the corridor semi-public then where is the semi-private space? **In the multi-residential building, the connective social-spatial fabric between public and private is very weak or non-existent.**

14 Jacobs, Jane, *Death and Life of Great American Cities*, 1961.



- Private space exists only within the apartment units.
- The interior circulation areas and the grounds are public.
- There is no association between buildings and street.

Figure 16.
Semi-Public Semi-Private Diagram
By Oscar Newman from
Defensible Space, 1971

Social-Spatial Rating System

The Day Care Acts' needs based rules for outdoor play areas is used as a rating system for housing typologies. Taken individually, each criteria provides valuable insights into the successful formation of residential social spaces. An adult can take a child to a place where they might find a playmate. This serves the child needs for socialization and provides all the consequential mental health benefits that early childhood researchers have shown are necessary. However, a child that lives adjacent to the outdoor play area has more independence. If the space is deemed safe by their care provider, the child can decide for themselves when to leave their home. Figure 18, among all the reflections in the water and foliage is a child. She is not unattended. She can be seen and heard by the adults in her household. She can decide to return home at a moment's notice; then change her mind and return to the outdoors. This is a condition seen in private backyards in single family homes. The advantage to this child is that her play may attract another child living adjacent to the courtyard. Without an adult scheduled playdate, the children will decide to gather. In this regard, adjacency has two necessary conditions. First, the housing unit is best served socially when it is adjacent to a shared space. Secondly, the household with children should be adjacent to one another. Essentially, housing units that are presumed to have children should be grouped.

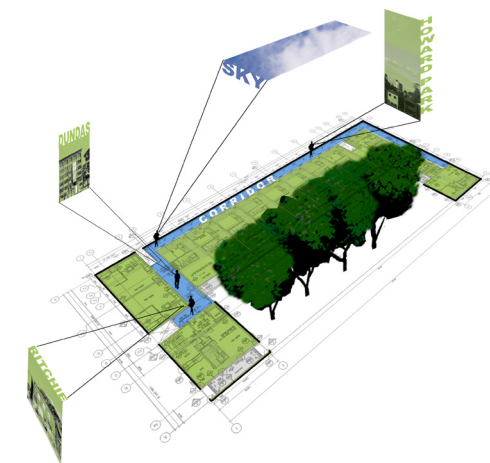


Figure 17.
Circulation and Views Concept Drawing
25 Ritchie Courtyard Residence,
Toronto, Completed 2012.
Design By David Peterson Architect

The space where the children will gather should allow them to interact with the natural world. The changing condition of their environment is a necessary source for their learning and entertainment.^[15] The size and maintenance of the space are also key factors in ensuring the children and adults will be accommodated. The courtyard condominium, shown in figures 17,18, and 19, achieves near fully adherence to the Day Care Act. While its design might not completely comply with the CSA rules, it provides an ample landscape amenity (12m²/unit) compared to the Toronto bylaw required 2m²/unit of outdoor space.

Legend		Socail Spatial Rating	
<input type="radio"/> Not Conforming	<input checked="" type="checkbox"/> Maintenance	Courtyrad Housing Type	
<input type="radio"/> Varies	<input checked="" type="checkbox"/> Safety	<input checked="" type="checkbox"/> Adjacent to a Social Space	
<input checked="" type="radio"/> Conforms	<input checked="" type="checkbox"/> Adjacent to Children	<input type="checkbox"/> Design	
	<input checked="" type="checkbox"/> Size		
		Socio-Spatial Rating	
		Adherence to Day Care Act	
		83-100%	



Figure 18.
Child Playing
25 Ritchie Courtyard Residence, 25
Ritchie Courtyard Residence,
Toronto, Completed 2012.
6 Storeys, 56 units,
Landscape Amenity 12m²/unit
Design By David Peterson Architect



Figure 19.
25 Ritchie Courtyard Residence,
Toronto, Completed 2012.
6 Storeys, 56 units,
Landscape Amenity 12m²/unit
Design By David Peterson Architect

15 Grey, Peter, *Free to Play*, 2013.

The Via Verde social housing project, seen in figures 20 through 23, includes courtyard units. The courtyard, as type, is enclosed on all sides which creates a safe environment for children. The adjacent residential suites make incidental social encounters frequent.

- Legend
- Not Conforming
 - Varies
 - Conforms

**Socail Spatial Rating
Courtyrad Housing Type**

- Maintenance
- Safety
- Adjacent to a Social Space
- Adjacent to Children
- Design
- Size

**Socio-Spatial Rating
Adherence to Day Care Act
83-100%**

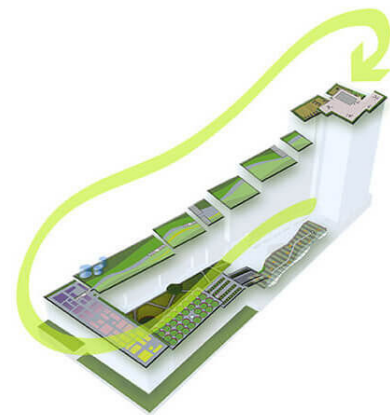


Figure 20.
Circulation and Massing
Via Verde Social Housing,
New York, 2012
222 Suites, 20 Storeys
By Grimshaw Architects



Figure 21.
Children Playing
Via Verde Social Housing,
New York, 2012
222 Suites, 20 Storeys
By Grimshaw Architects

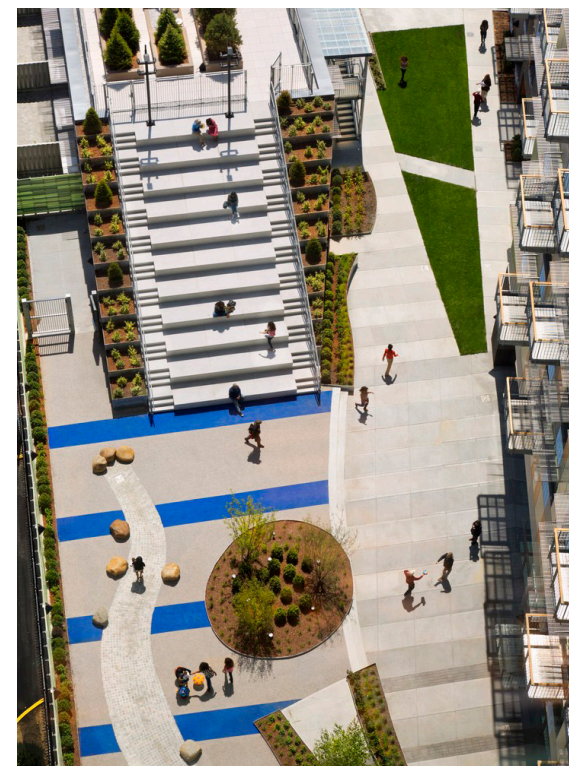


Figure 22,23
Aerial View
Via Verde Social Housing,
New York, 2012
222 Suites, 20 Storeys
By Grimshaw Architects

From the perspective of a child, the cul-de-sac behaves much like a courtyard. Children can play in a space adjacent to their dwelling. The visual and auditory connection combined with the sense of safety creates the spatial conditions for a well-functioning social space.

The shared social space, lack of outsiders, and a sense of territoriality on bulb and dead-end cul-de-sacs promote stronger neighborly ties on these streets.^[15]

Legend		Social Spatial Rating Cul-de-sac Housing	
○ Not Conforming	○ Varies	◻ Maintenance	◻ Safety
◻ Conforms		◻ Adjacent to a Social Space	◻ Adjacent to Children
		◻ Design	◻ Size
		Socio-Spatial Rating Adherence to Day Care Act 83-100%	

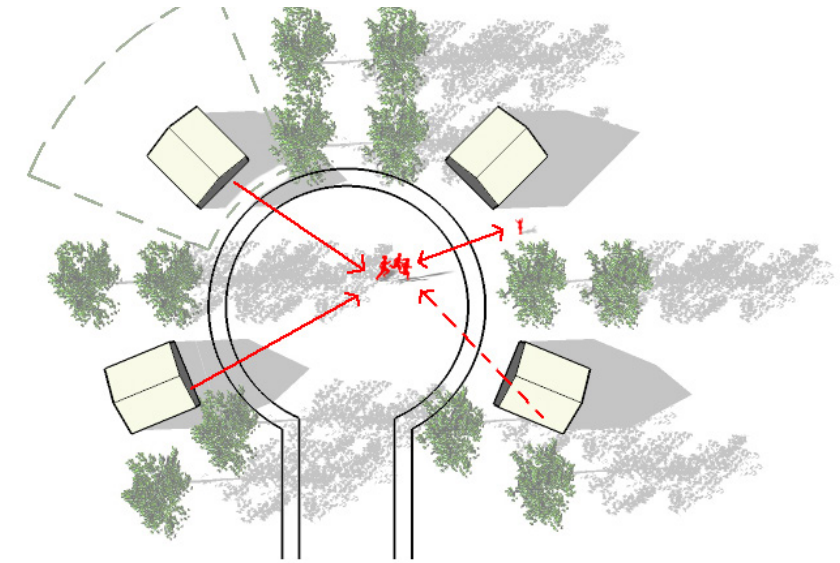


Figure 24. Diagram of a Typical Cul-de-sac, Red lines indicate visual and auditory connections to the shared space

Children living in a cul-de-sac are 4x more likely to play in the street than other street morphologies.^[16]

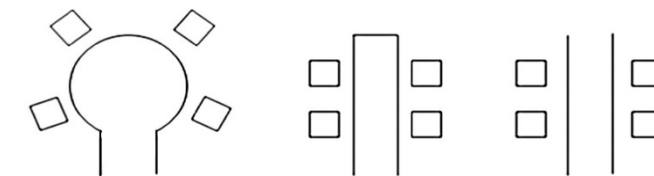


Figure 25. Diagram Street Morphologies, Cul-de-sac, Dead-end, Linear Streets, Hochschild, Thomas R.

15 Hochschild, Thomas R., *The Cul-de-sac Effect: Relationship between Street Design and Residential Social Cohesion*, 2014.
16 Veitch, J.; Salmon, J.; Ball, K., *Individual, social and physical environmental correlates of children's active free-play: a cross-sectional study*, 2010.

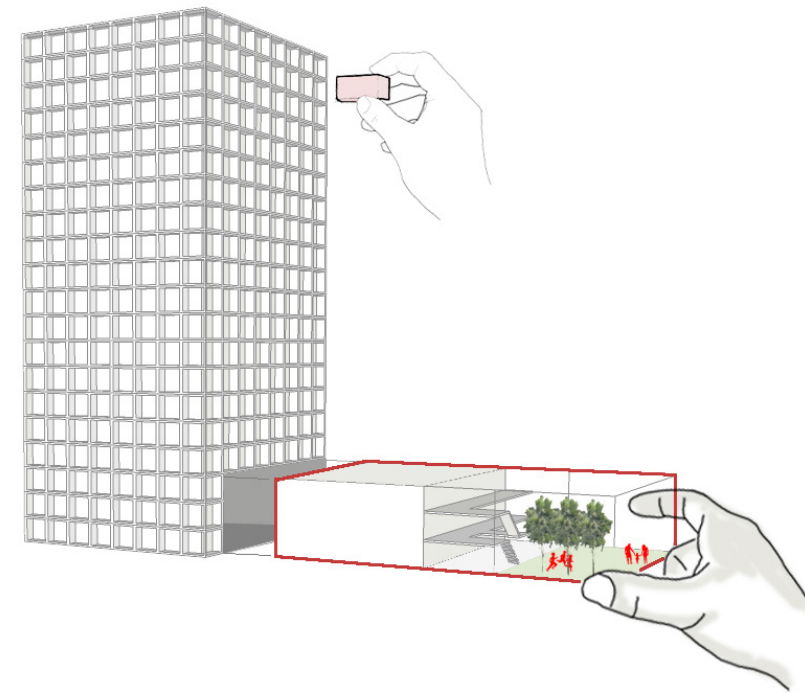


Figure 26
Concept Drawing,
Isolated Units & Socially Grouped Units

Housing Module

Grouping Housing Units

The courtyard and cul-de-sac group housing units against a semi-private enclave. Private space, semi-private patio, adjacent to a semi-public landscape is the spatial condition at the Ritchie Courtyard Condominium, seen figure 17 through 19. The shared landscape amenity is easily accessible to a senior with limited mobility. Households have a visual and auditory connection with their children playing within the landscape. It is a multi-residential form that has maintained the intermediate layers of semi-public and semi-private. Units above the landscape level can still find connections to the semi-public space when their private “day rooms”, balcony and living room, face the shared space. Admittedly, the upper units miss having semi-private space against the courtyard. Their sense of ownership, if it were to be described as a gradient, is less than those units living on the ground floor. Yet, their daily visual presence and easy of access into the space can produce a feeling of entitlement with respect to its use. A child might still leave a toy in the space and expect to find it there the next day. The value of having an intimate connection to well planted, shared space is fundamentally different than the isolated units of the tower. Figure 26 conceptualizes a building with a combination of units, some are conventional floors with isolated units. Other parts of the building development would use a social module that groups units together with a shared semi-public landscape.

The proposed module is three floors in height. Units may be one or two storeys. This produces a group 10 to 15 units against a shared landscape amenity. The ideal number of units in the group needs further research. However, this number can be informed by using precedents from other building types. Day Care and Elementary School Classrooms are designed with groups of occupants in mind. The Ontario Education Act limits a junior kindergarten classroom to a maximum of 29 students. In our module, if we presume that each household has 1 to 2 children, then the proposed shared landscape would have 10 to 30 children.

The size of the landscape area can be informed by the Day Care Act. It mandates 5.6m²/child. Contrasts this with the City of Toronto Bylaw that requires 2m²/unit of outdoor semi-public space. The Ritchie Courtyard Residence (figure 17-19) provided less indoor amenity in favour of an increased landscaped amenity of 12m²/unit. The proposed module has a shared area of 350m² which provides 12m² to 35m²/child.

It is important that the design of the semi-public space includes landscape. This form of amenity provides engagement in its seasonal changes and through its constant growth and decay. The landscape can be designed to increase biodiversity within an urban environment by providing bird and insect habitat. A daily connection to the natural world provides benefits to our well-being that is broadly documented. For a child, this interaction with the natural world is essential in their childhood development. [17]



Figure 27. Bird Habitat and a Changing Landscape, Learning about the Natural World



Figure 28. Space to Climbing, Running, Jumping

17 Gray, Peter, *Free to Learn*, 2013.

**Social Spatial Rating
Housing Module**

- Maintenance
- Safety
- Adjacent to a Social Space
- Adjacent to Children
- Design
- Size

- Socio-Spatial Rating
- Adherence to Day Care Act
- 100%

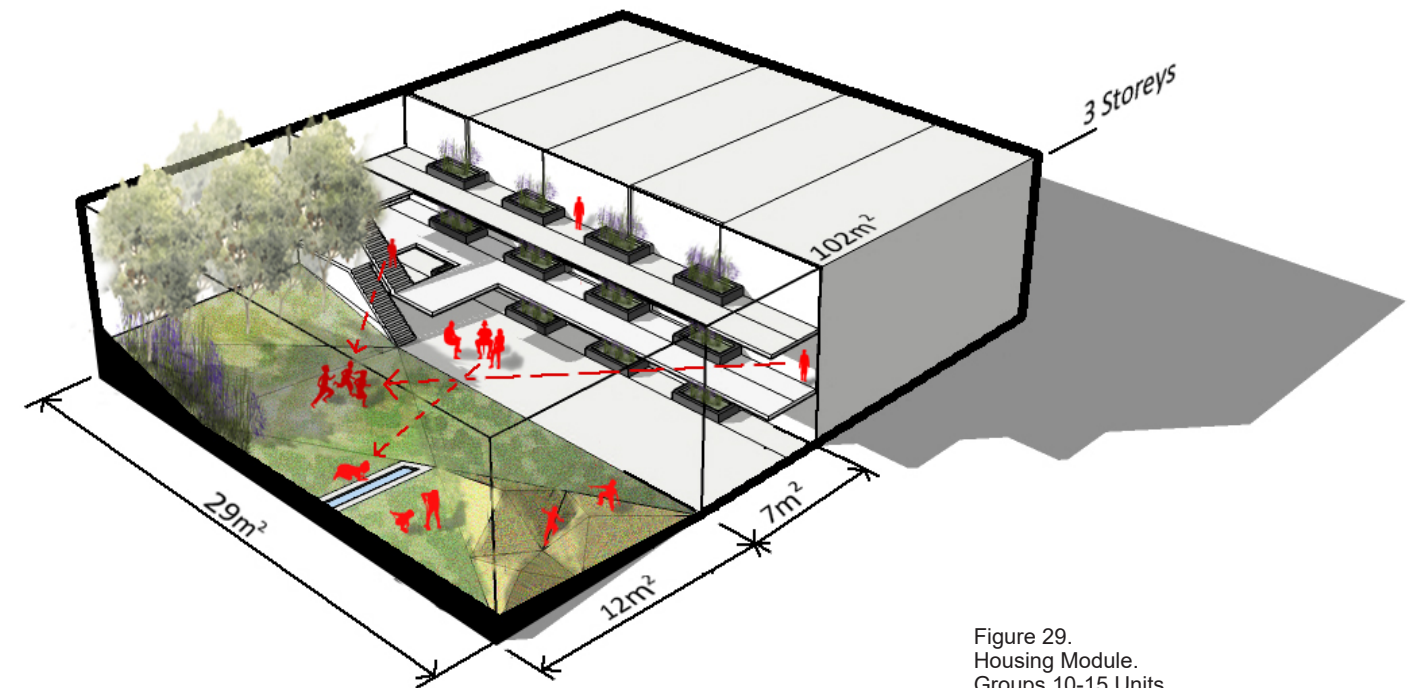


Figure 29. Housing Module. Groups 10-15 Units Semi-Public Landscaped Size 12-35m²/child

The module can be multiplied to create many arrangements. Figure 31 show several scenarios where the landscape of two or more modules combine. The result is a variety of densities within the landscape amenity. The scenario shown in the top left, two modules have a maximum 30 units adjacent to a landscape with 370m² providing 6-12m²/child (assuming one to two children per unit). The circular courtyard shown in the bottom right has 120 units with a shared landscape of 2,490m² providing 10-20m²/child.

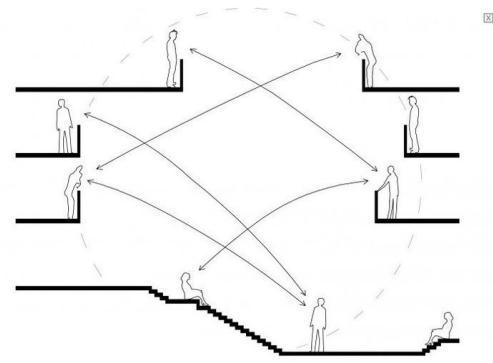


Figure 30. Hertzberger's Social Interaction in Vertical Space

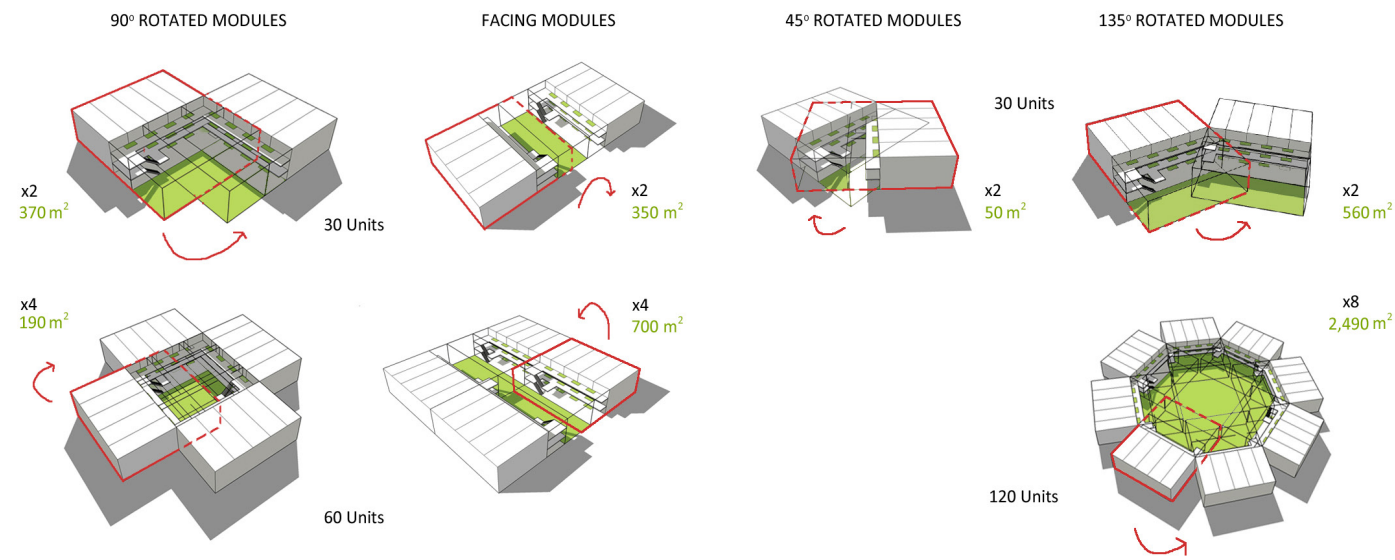


Figure 31. Housing Module Multiples

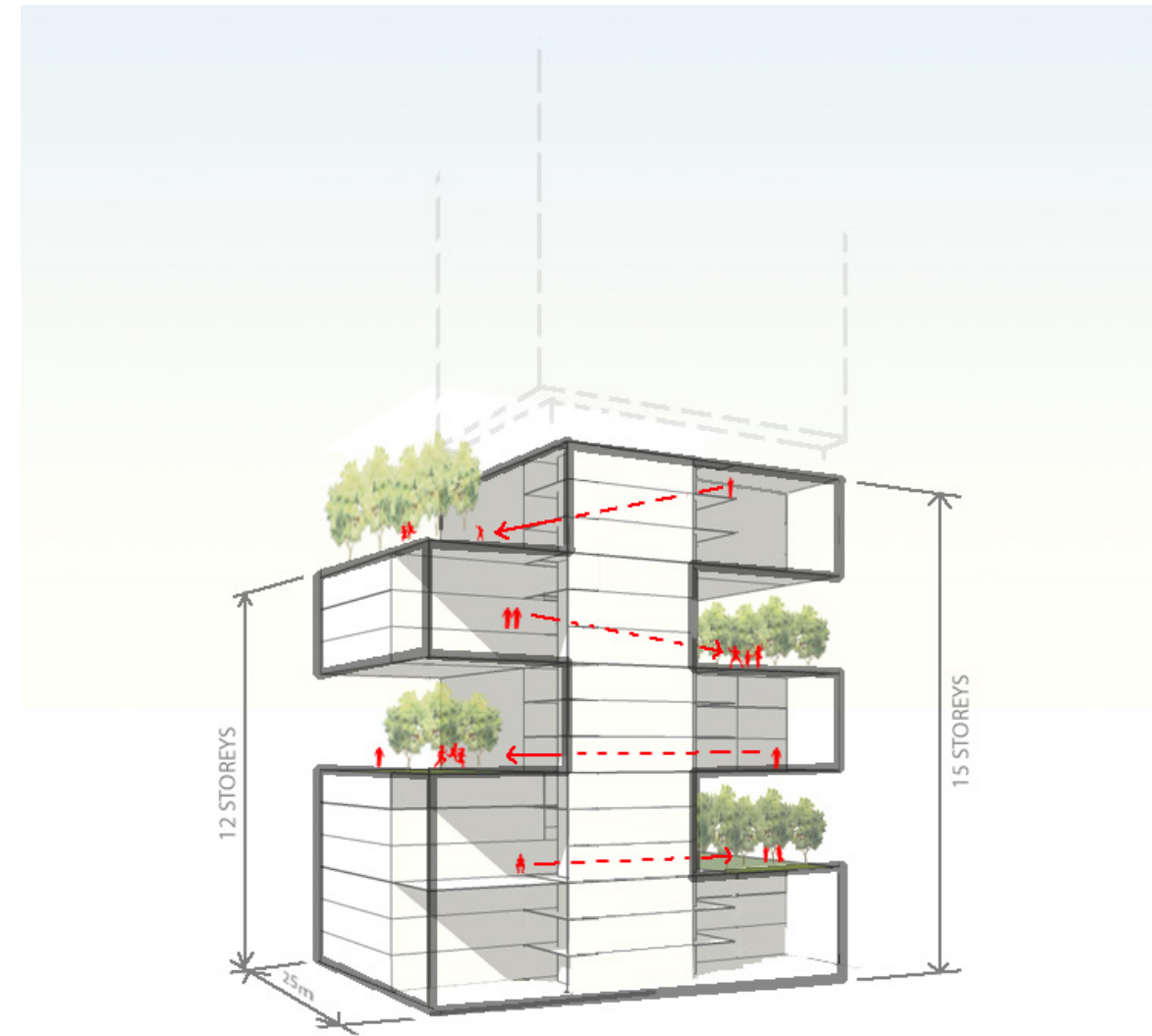


Figure 32. Stacked Housing Modules Offset Elevator Core

Figure 30, Herman Hertzberger's diagram of social interaction in a vertical space describes a condition that has been successfully emulated in many buildings. The 3-4 storey condition allows for a limited conversation and good visual connection. This is seen in figure 32 where the module is stacked on top one another to create a mid-rise building or podium for a typical tower. The stacked collection of social spaces provides the organizational structure for a vertical community.



Figure 33. Offsetting Spiral Modules

Figure 33 has the module spiraling up around an elevator core that is offset. The result is a series of connected landscapes that mimics the connectedness birds experience in a ravine system. Gone is a building wall in the traditional sense. This stacked landscape calls into question the urban design guidelines that regulate the height of a building wall based on a proportional relationship to the right-of-way, see figure 35. More than reducing bird mortality as required by the City of Toronto Bird Guidelines, the vertical landscape creates bird habitat.

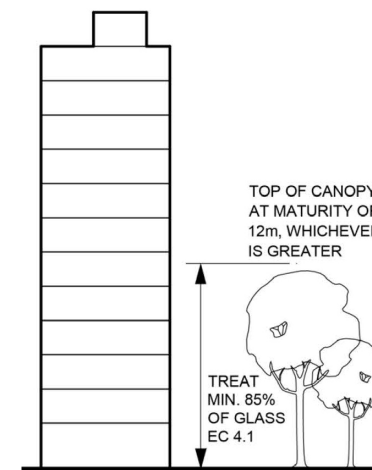


Figure 34. City of Toronto. Bird Friendly Guidelines, Regulates the Design of the first 12m of a building wall

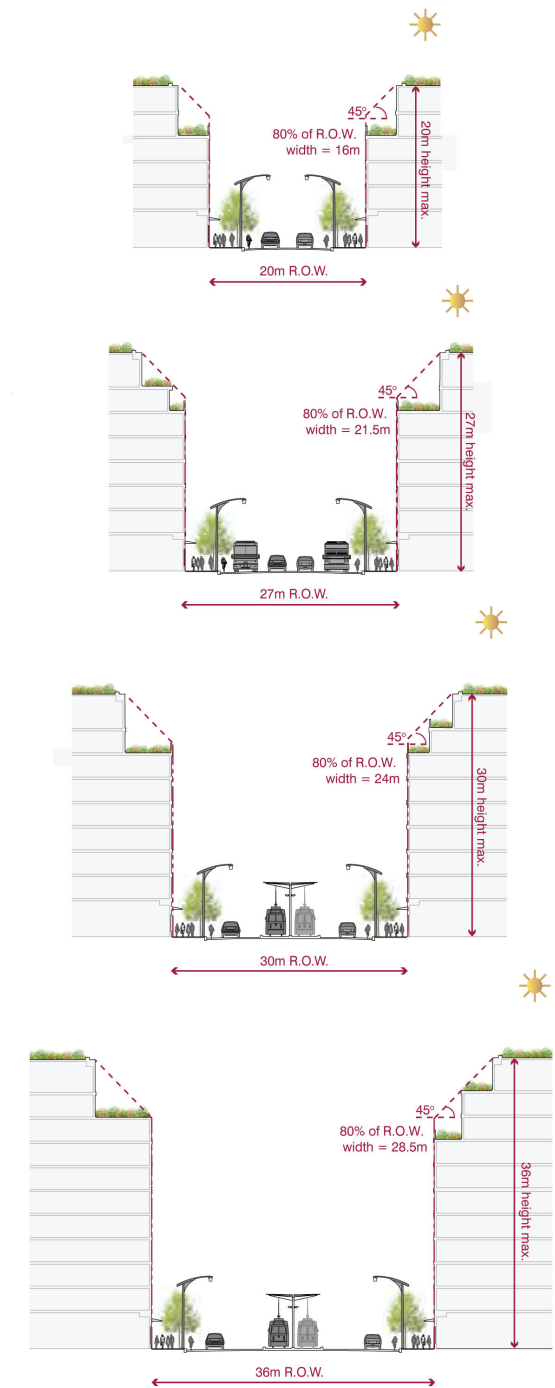


Figure 35. Urban Design Guideline, City of Toronto,

In an effort to create more affordable units the City of Toronto has three major policy initiatives under way:

- The Multi-Unit Residential Acquisition (MURA) Program
- Inclusionary Zoning (IZ) policy framework and
- The Housing Now Initiative

The MURA and IZ initiatives are important tools for delivering affordable units but fall short of broader sustainable goals as they depend on market derived housing forms. MURA seeks to acquire existing market housing stock. IZ will secure affordable units inside new private development projects. **Only the Housing Now program has the possibility of leading the private industry by creating demonstration projects that can address the intersecting challenges of affordability, environmental and social sustainability.**

The program will use government land to host mixed-income and mixed-tenure housing units. One of the goals of the program is to deliver public benefits.^[18] Unlike the private industry, the Housing Now projects are intrinsically motivated by societal values rather than profit. In for-profit developments, the design is considered in conjunction with the building pro forma. Architects and planners are commissioned to create the feasibility drawings that confirm the site's ability to host conventional building designs. If conventional forms can not be applied to the site, then, most developers will forego their interest in the property. In residential developments, the feasibility drawings are seen as quick studies. The expense of the study is easily recovered if the project is feasible and moves forward through the development process. However, it is an unrecoverable cost to the developer if the potential site is deemed unsuitable. It is at this early stage that change is needed. CreateTO is the real estate and early development arm of the Housing Now program. CreateTO is responsible for considering the sites, performing the feasibility studies, and consulting with the public. The success of the Housing Now program will rely on its ability to find development solutions to typical and unusual sites. This will require **greater investment in the feasibility study.**

Case Study

Applying the Module

Housing Now Site, 777 Victoria Park, Toronto

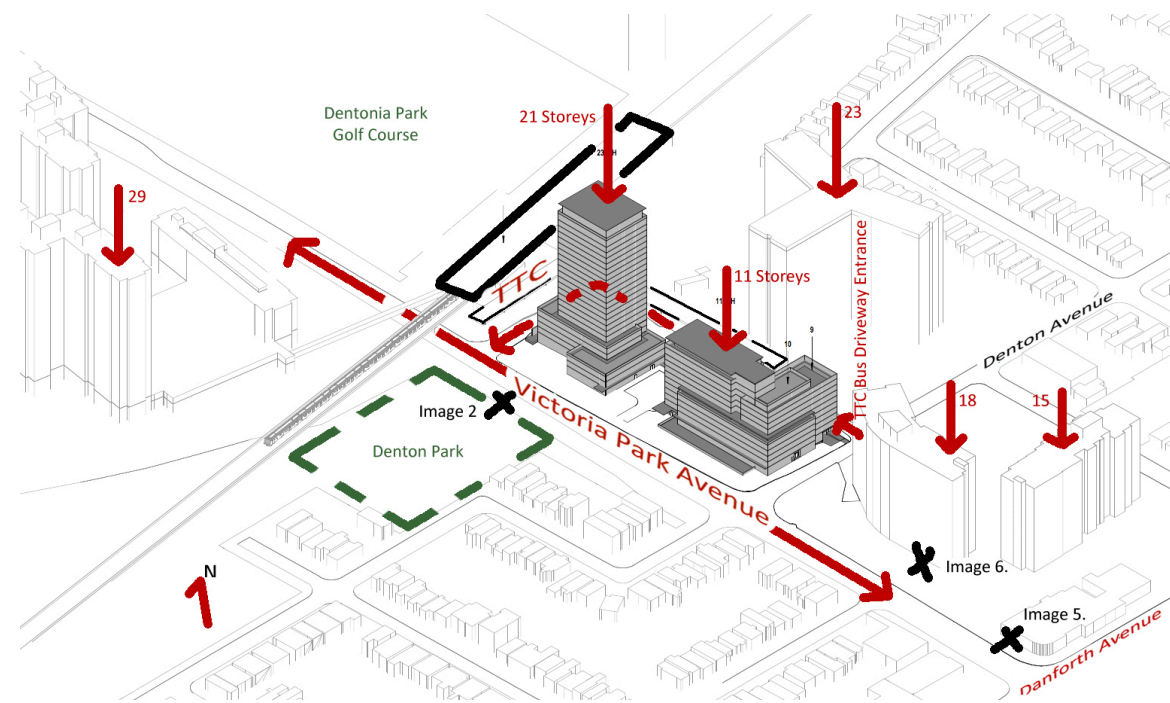


Figure 36. Proposed Massing in Site Context, CreateTO Design Brief, 2019

The next generation of residential building (see appendix A) will require fundamental changes to the vernacular private development. It is an intrinsic design change when we ask that a building use different mechanical and electrical systems to achieve net zero targets in response to environmental sustainability goals. Social sustainability will suggest that we create green spaces in and around buildings to accommodate those demographic groups with limited mobility. These considerations will necessitate changes to typical residential development forms. The comments from the Design Review Panel, when considering the Housing Now site at 777 Victoria Park Avenue, suggests that the project should be more ambitious.

The Panel’s comments represented a mixed bag of reviews, picking out the accomplishments and shortcomings of the concept. The overall theme for all Panel comments, however, was that they wanted to see more from the design team: bolder, bigger, precedent-setting moves that would set the stage for all other developments to follow.^[19]

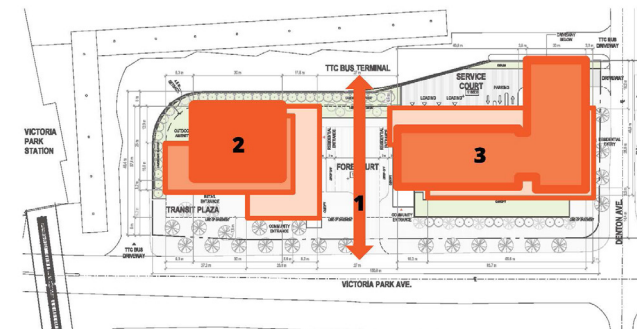


Figure 37. Multiple Massing, CreateTO Design Brief, 2019

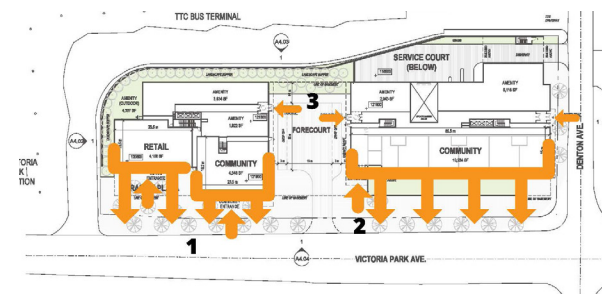


Figure 38. Building Entrances, CreateTO Design Brief, 2019

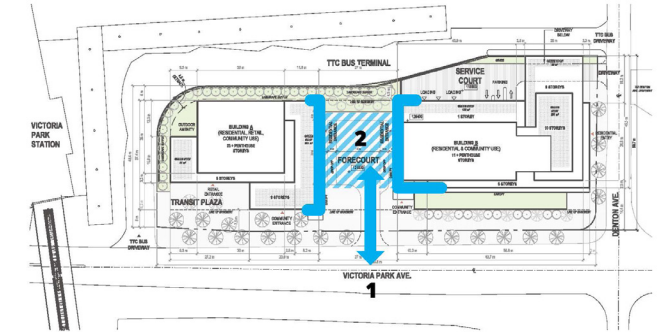


Figure 39. Vehicle Drop-off and Pick-Up Access, CreateTO Design Brief, 2019

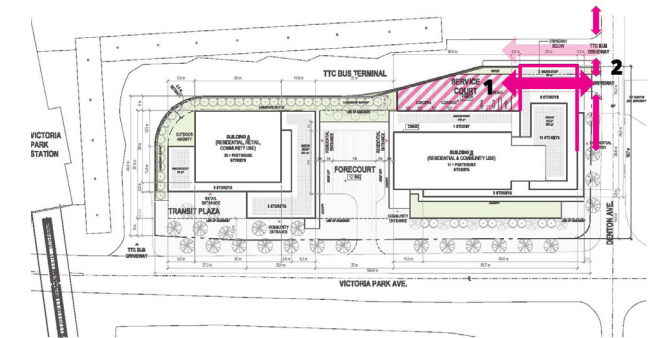


Figure 40. Service and Parking Garage Access, CreateTO Design Brief, 2019

The Housing Now proposal begins with a series of urban design decisions that consider the building’s massing relative to the context. Figure 37 proposes that the massing be divided into multiple units to avoid a long street wall. A view corridor is created to the TTC station. No access to the station is provided at this location. The TTC bus driveway wraps the site to the north and east. Denton Avenue, a “collector street”, is to the south. Victoria Park Avenue is to the west. The building’s entrances are off Victoria Park Avenue, the project’s most public of facades, see figure 38. The space between the buildings is intended for vehicle access to allow pick-up and drop-off, figure 39. The less trafficked Denton Avenue is used for the vehicle service entrance and parking garage ramp, see figure 40.

19 Mirabelli, Julian, *Two 'Housing Now' Projects Critiqued at Design Review Panel*

The height of the proposed buildings follows the City of Toronto’s Mid-rise and Tower guidelines very closely. The development proposal’s close adherence to the city guidelines reinforces the urban design principal that the right-of-way (ROW) should have a proportional relationship to the building’s height, see figure 35. **In the formation of its massing, the Housing Now proposal is behaving like a good for-profit development.** There are no proposed built-form deviations from what we might expect. **The primary means by which the scheme can be differentiated from a typical residential development occurs in its programming.**

The site planning and base building programming includes significant areas of public space. A transit park on the north portion of the property has a strong connection to the adjacent transit entrance. A community patio located in the south corner is intended to be used by the public facility located within the build, see figure 41. The area indicated in yellow, described as a drop-off and pick-up area, has the possibility of being more than a driveway. Adjacent to this space, within the building, are community or commercial programs which could be used to activate this driveway, transforming it into something more than a place for cars. This area is given the label forecourt; suggesting there are greater ambitions for this space. Could it become another public patio or porch within the development? Could it host a farmer’s market?

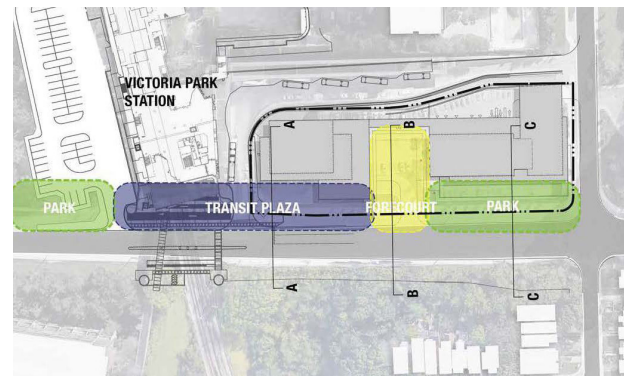


Figure 41. Public Parks, CreateTO Design Brief, 2019

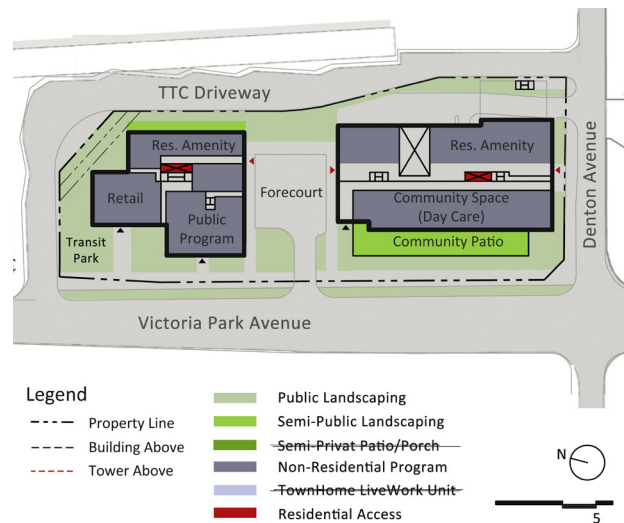


Figure 42. Ground Floor Plan, Housing Now Proposal

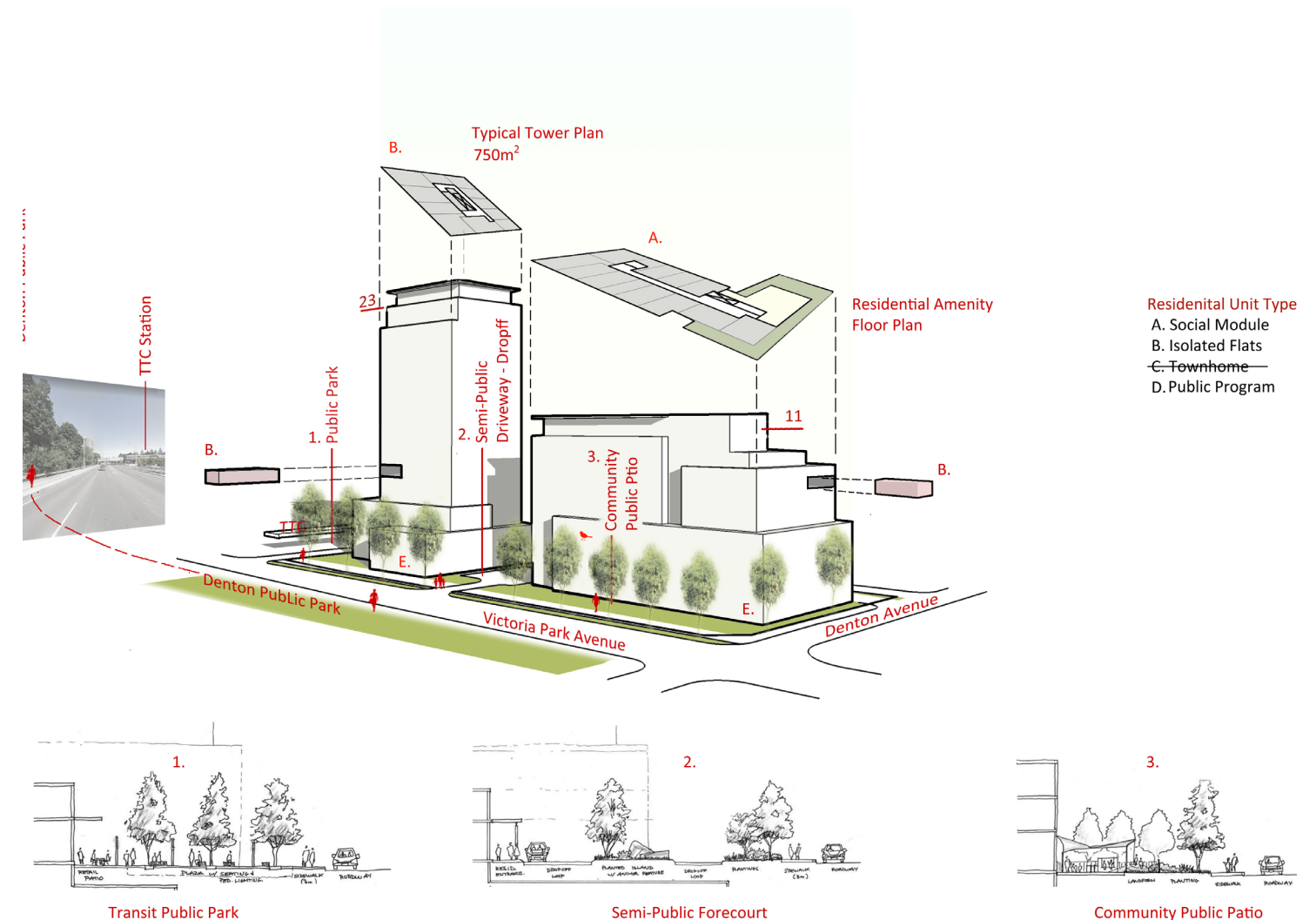


Figure 43. Massing with Unit Type Distribution, Housing Now Proposal, 777 Victoria Park Avenue

The inclusion of these public parks and the community program within the base of the building is an important first step in differentiating the proposal from the typical for-profit development. In this regard, the project is fulfilling the Housing Now mandate to provide a public benefit within its development. However, as we have seen in our low-rise examples, the public is one layer of space. The semi-public and semi-private are essential layers which connect public and private.

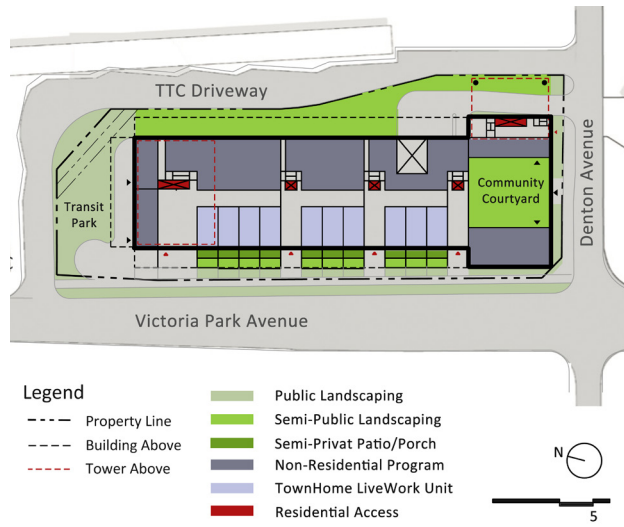


Figure 44. Ground Floor Plan, Counter Proposal, Retain Public Program Includes Semi-Public Semi-Private Space

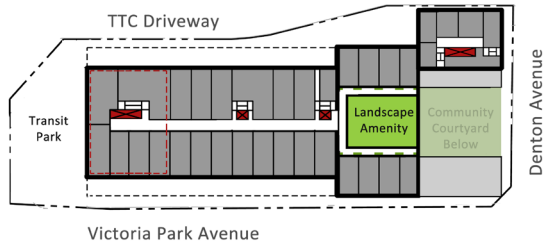


Figure 45. 4th-6th Floors, Counter Proposal, Housing Module Includes Semi-Public Semi-Private Space

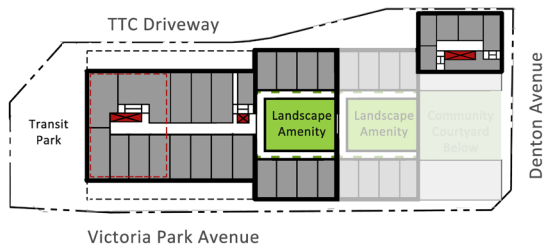


Figure 46. 7th-9th Floors, Counter Proposal, Housing Module Includes Semi-Public Semi-Private Space



Figure 47. 10th-12th Floors, Counter Proposal, Housing Module Includes Semi-Public Semi-Private Space

Figure 43 includes urban sections of the three park spaces within the development. These public spaces are indirectly associated with the residential above. While the residential occupants are close to this public amenity, they do not have any semi-private connection to it. Residents are unlikely to have a visual connection to these space from their unit. The ease of going inside and outside, from a child's perspective, is not possible. The child is dependent on an adult to take them to a space where they might encounter a play-mate. Environmental psychological research has confirmed, this dependency diminishes their face-to-face play. In the Housing Now proposal, the only floor that does not follow a conventional pattern of isolated units is the 9th floor residential amenity level. This floor includes a green roof and indoor amenity which, on its own, is not unusual. The addition of residential units on this level creates the possibility of social grouping. Although the amenity space is accessible to all units within the building, the likelihood is the households living on this floor will make the most use of the amenity space. Figure 48 illustrates how we might create several more floors that benefit from being grouped with a semi-public landscape.

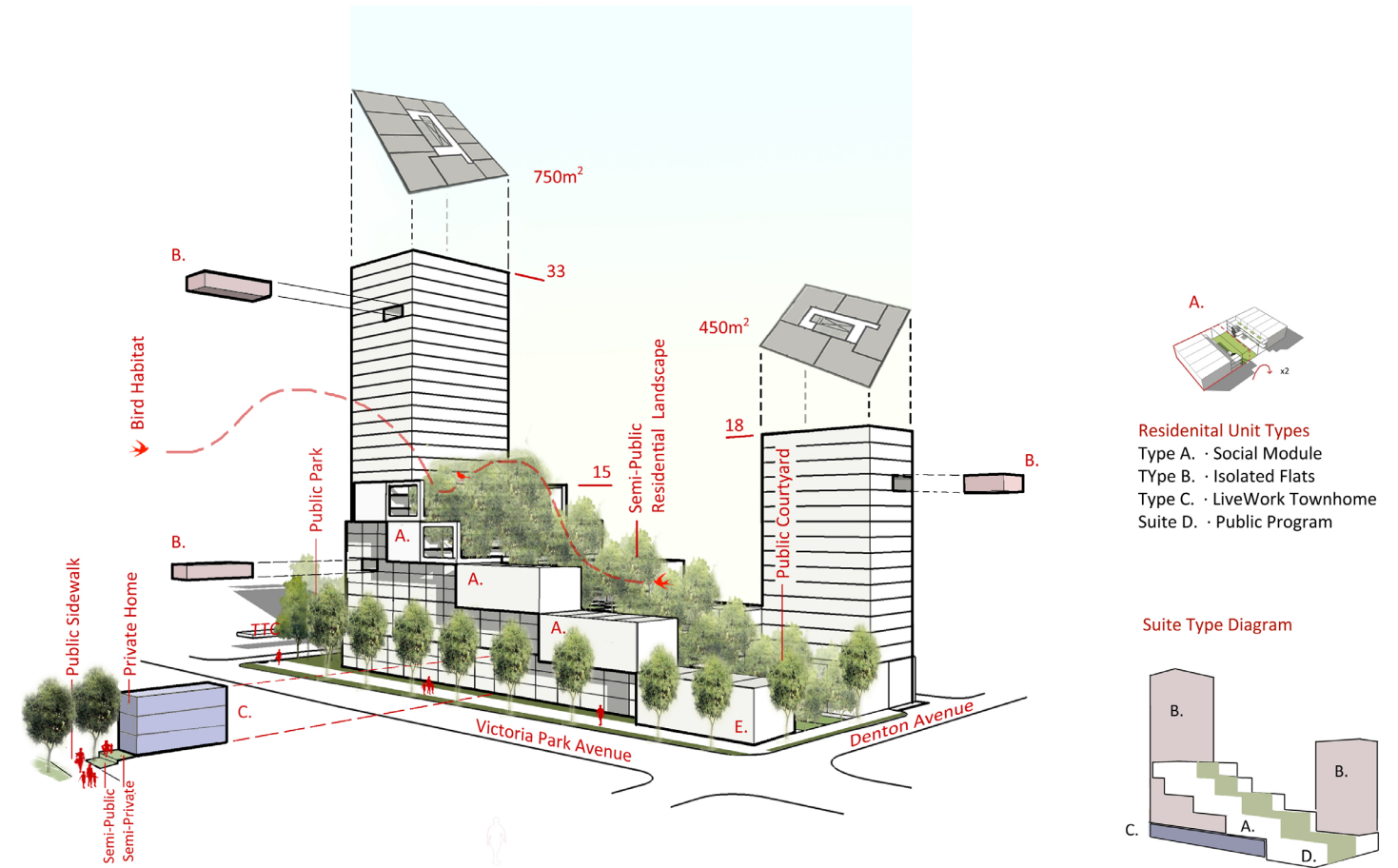


Figure 48. Massing with Unit Type Distribution, Counter-Proposal, 777 Victoria Park Avenue

The counterproposal retains the contemplated parks. The transit park is unchanged. The forecourt is positioned in the same location, but the Victoria Park driveway is removed. The forecourt can better act as a porch to the interior community spaces if the vehicle access is from within the development through the service lane. The third public space is captured within a courtyard. This will provide a better outdoor room for a Day Care program which was considered in the original Housing Now proposal. The towers, positioned north and south within the development, are conventional double loaded corridor floors with isolated units (Type B shown in figure 48).

At grade are townhome live-work units (Type C) with semi-public and semi-private front-yards facing Victoria Park Avenue. These mixed-use units will benefit from the extensive street planting which formed part of The Housing Now proposal. Essentially, the counterproposal adopts the public spaces proposed in the Housing Now scheme with some minor alterations. It is **the podium** that is **reimagined**. Unit Type A are social modules. Groups of three floors are accessed from an interior elevator, see figures 44-47. The semi-public landscape is bookended by the units. Each step in the podium creates another social group. Similar to courtyard and cul-de-sac typologies, the units have semi-private patios adjacent to the shared social space.

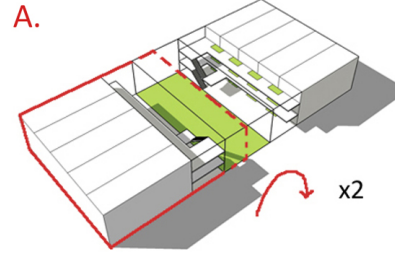


Figure 49. "Facing Modules" Semi-Public Landscape Amenity

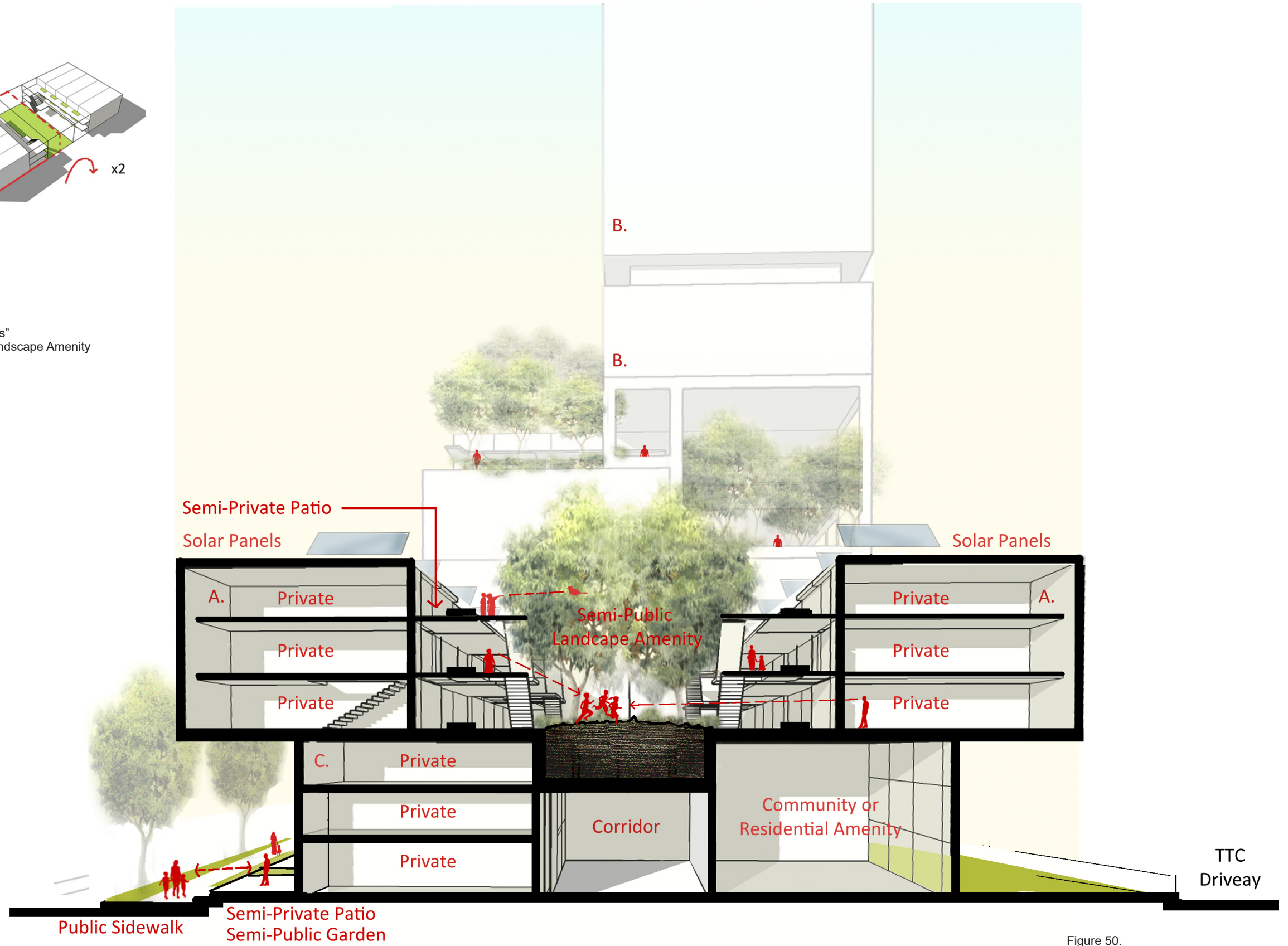


Figure 50. Building Section, Massing with Unit Type Distribution, Counter-Proposal, 777 Victoria Park Avenue

Design Principals and Conclusions

Conventional multi-residential housing units rely on a series of choices that has produced social isolation. The corridor is like a local street in a low-rise neighbour insofar that it provides access to the dwelling unit. That is where the similarity ends. Each unit has no visual or auditory connection to other units. Unlike a nursing home, the corridor has no role as a social space within multi-residential buildings. The expectation is that care providers will overcome the building design and take their dependent child to a place where they might find a playmate. This task can be made easier when the play area is within a short walk. This seems like a reasonable solution to a building typology that does not have an alternative.

However, the examples of courtyard and cul-de-sac housing provide clear alternatives to the organization of dwelling units. When units are set adjacent to a social space children gain independence. The environmental psychology research confirms that children living in this form of dwelling will play more frequently with benefits to improved well-being.^[20]

The research proposes a housing module derived from the examination of the courtyard and cul-de-sac typologies. The site at 777 Victoria Park was used as a test case for the feasibility of the module. Feasibility

in the context of the research refers to architecture and urban design issues. The region between private (architecture) and the public (urban design) has been the subject of examination. The semi-private and semi-public is the space of socialization for those with limited mobility. While our investigation has focused on children, much of what has been proposed applies to other demography groups like seniors.



Figure 51.
Recently Built Towers,
Fort York Neighbourhood, Toronto

²⁰ Fullan, Josh, ed, *The Role of Play and Outdoor Space*, 2021.

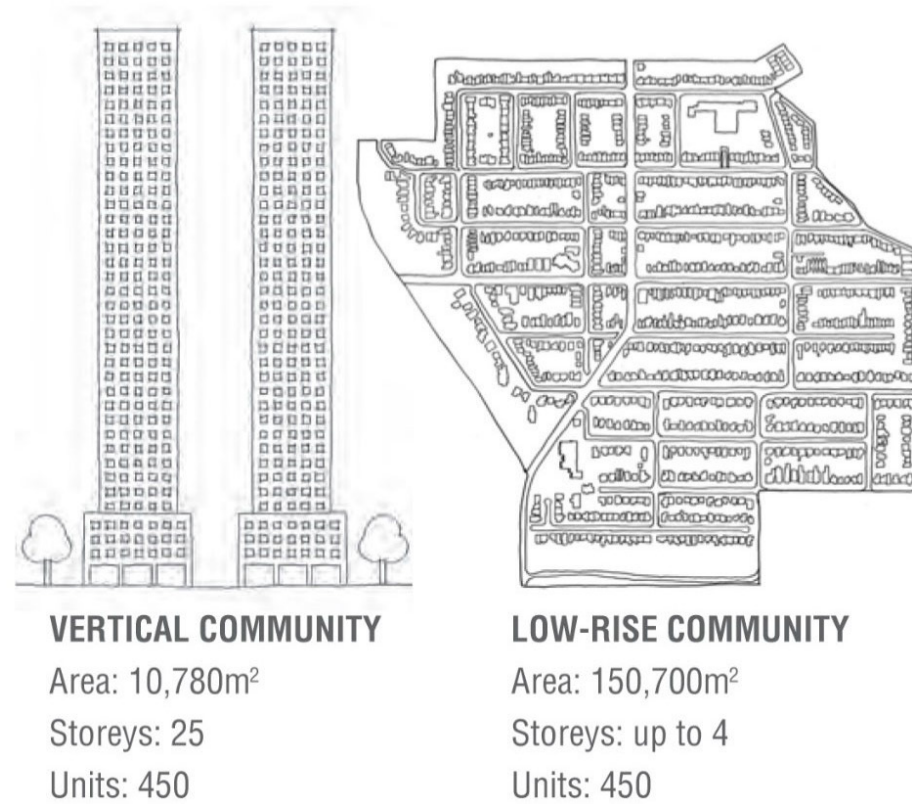


Figure 52.
Growing Up Design Guidelines,
City of Toronto, 2020

The Housing Now proposal for the Victoria Park site offers public benefits in the form of community programming at the base of the building. The majority of the residential units above this level are conventional isolated units. The counterproposal uses a social housing module to create a series of landscaped amenities. The bylaw required indoor and outdoor amenity which totals 4m²/unit is not applied to a fitness or recreation room and an adjacent terrace as is common with the conventional podium-tower massing. Instead, the mandated area is dedicated entirely to a landscape amenity. Even with this approach, the shared landscape area would fall short of what is suggested by the research which favours a range of 5-12m²/unit.

This value compared to low-rise housing is not excessive. Figure 52 contrasts a low-rise neighbourhood with two towers, both typologies are home to 450 units. When we consider the average right-of-way for a local street, the low-rise dwellings have approximately 142m²/unit. These units also receive public funds in the form of maintenance for street trees and local roads. These are public streets but are used as semi-public spaces by the adjacent dwellings as we have seen in the cul-de-sac example. We have justified the public benefit based on one criteria, access. Forestry has a private tree bylaw because all trees are a public benefit. In the counterproposal, could we call the layers of landscape with its trees a public benefit? When the landscape provides habitat for nesting birds, could we think of the increased urban biodiversity as a public benefit? If the city is going to accommodate children, who overwhelmingly will live in multi-residential buildings, then we need to take a different approach to our housing design. The research suggest that we can apply some design principals to our decisions when considering the needs of children.



Figure 53.
Growing Up Design
Guidelines,
City of Toronto, 2020

DESIGN PRINCIPALS

1. Begin with a Small Grouping of Units (10-25),
2. Provide Semi-Private Space for Each Unit (Porch, Patio, or Balcony),
3. Adjacent to a Semi-Public Space (easy access, visual & auditory connections),
4. Large enough to accommodate a variety of uses (5-12m²/child),
5. Designed with Landscaped Areas (Biophilic & Increased Biodiversity),
6. Ensure there is Sustainable Maintenance Funding

Appendix A



- 1. 140 The Esplanade, Toronto
- 2. 2795 Bathurst Street, North York
- 3. 2777 Kipling Avenue, Etobicoke
- 4. 777 Victoria Park Avenue, Scarborough
- 5. 2156 Danforth Avenue, East York
- 6. 3,4,7 West Don Lands, Toronto
- 7. 55 Yonge Street, Toronto
- 8. 55 Lake Shore Blvd East, Toronto
- 9. 34-50 King Street East, Toronto
- 10. 55 Fieldway Road, Etobicoke
- 11. 985 Woodbine Avenue, East York
- 12. 215 Lake Shore Blvd East, Toronto
- 13. 1 Glen Watford Drive, Scarborough
- 14. 23 Glen Watford Drive, Scarborough
- 15. 20 Stonehill Court, Scarborough
- 16. 177 Front Street East, Toronto
- 17. 125 George St and 231 Richmond, Toronto

Building information has been taken from Toronto's Online Development Applications Centre <http://app.toronto.ca/WIC/index.do>

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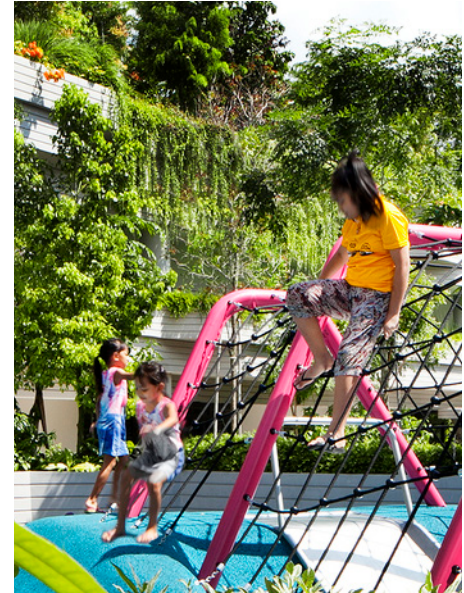
02



03



04



05



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07



08



9



10

- 01 Toronto's Vernacular Multi-Residential
The Next Generation of Multi-Residential
- 02 Guizhou Mountain Forest Hotel, China
- 03 Prado Condorde, France, 2019
- 04 Habitat 2.0, Toronto
- 05 Kampung Admiralty, Singapore, 2017
- 06 Eden Tower, Singapore, 2020
- 07 Home Condo, Toronto, 2006
- 08 Milan Vertical Forest, Italy, 2013
- 09 Eden Tower, Singapore, 2020
- 10 Kampung Admiralty, Singapore, 2017

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