Transitioning in Place:

Designing a Co-operative Development for Homeless Families in Ottawa

by
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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

It is no secret that Canada is experiencing a housing crisis where people are becoming increasingly excluded from home ownership and rental housing due to the rapid escalation of real estate prices. The unaffordability of market-rate housing has pushed an increasing number of families into precarious housing situations while concurrently increasing barriers for the homeless population to access housing. Within urban city centres such as Toronto and Ottawa, the critical supply of affordable and market-rate rental housing is being eroded by the commodification of housing through processes such as "renovictions", "demovictions" and online short-term rental platforms. This thesis explores a synthesis of non-profit cooperative housing and transitional housing to create a new affordable rental housing model for homeless families in Ottawa which operates outside of the private, profit-driven real estate market. While current models of transitional housing provide support services to help the homeless relocate to affordable housing elsewhere, the process of relocation uproots an individual from their established networks and severs personal relationships to their community that are vital in their recovery towards societal reintegration. An alternative method of "transitioning in place" creates a non-profit co-operative rental housing model that ensures housing stability for its residents who can remain indefinitely due to a shared-ownership governance structure and affordable at-cost rents, creating opportunities for long-lasting relationships that form a thriving community over time. Temporary support services such as at-home daycares, family services, counselling services, and employment services transition out of the building when they are no longer needed, allowing families to expand their personal living spaces as their spatial needs grow. Research conducted through case study documentation, site visits and interviews from co-operative and transitional housing projects strengthens the findings gathered from Ottawa's homelessness reports to produce a design proposal for a site in Heatherington, a neighbourhood south-west of Ottawa's downtown. The culminating final design is informed by community input, current market statistics, and proposed government action to produce a project that re-imagines community-centred rental housing that is affordable and transitional in nature, with analysis on how it can be financially realized and ultimately explores the potentials for quality housing solutions to directly challenge the deeper systemic issues of Ottawa's housing crisis.

Acknowledgments

I respectfully acknowledge that the University of Waterloo is situated on the Haldimand Tract, land granted to the Haudenosaunee of the Six Nations of the Grand River in the Haldimand Treaty of 1784. The Haldimand Tract and surrounding area, including the School of Architecture on the Cambridge campus, is the traditional territory of the Attawandaron, Anishinaabeg, and Haudenosaunee.

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Dedication

To my family and loved ones, all of what I have accomplished in the past two years is only possible with your continued love and support. Thank you God for loving me with your incredible provision throughout my life as I continue pursue your work deeper. Mom, thank you for being my number one fan and for always having the best advice. Dad, your approach to learning everything on your own through the Internet is inspiring and has greatly shaped the way I pursue my interests and passions. Ivan, thank you for being interested in my design projects even though you have a keener design eye than I do.

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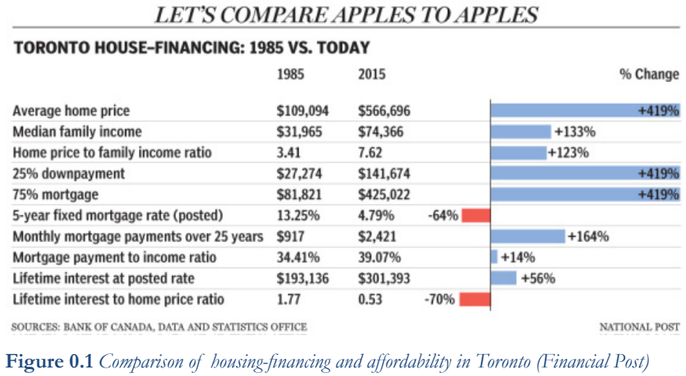


Figure 0.1 *Comparison of housing-financing and affordability in Toronto (Financial Post)*

This thesis began with the desire to understand the ways in which architecture and design can engage in complex social issues such as homelessness. As a profession that is predicated upon the notion of providing and designing homes for the masses (or the elite), this is the fundamental question that was asked; "Can architecture and design help to house the homeless?". Or has architecture become a profession where its services are only accessible for the Googles and the Apples of the world to design their mega-campuses?

In the search to answer this fundamental question, the first step in the research was to understand context of homelessness. The current narrative of housing in Canada is one of unaffordability, serving as an important backdrop to understand why the city is unable to house some of its citizens. There was a time in Canada's history where housing was affordable, and the study of housing policies, land uses, and home ownership types provides the context for how Canada has ended up here in this moment. The past eras of social housing, co-operative housing, and other public ownership types has been overrun by forces such as housing policy changes, the commodification of housing, financialization, and ultimately gentrification. Research into the stories of homeless populations in cities like Toronto and New York revealed an underrepresented and stigmatized population that is largely ignored by society. The associated trauma of being without a home, living within unsafe emergency shelter conditions, and the challenges of the current housing system for vulnerable populations make it extremely difficult to break out of the cycles of homelessness.

It is generally accepted that the principles of Housing First are an effective solution for housing the homeless. Providing a safe and secure place to call home provides an individual with a baseline level of comfort upon which they can to begin addressing the other challenges they face such as mental health or substance use. In addition to having a home, support services and networks of care create the compliment required to holistically help the homeless get back on their feet. The research continued towards understanding the housing options available to those who are homeless and precariously housed. The continuum of care represents the range of housing that is available, from emergency shelters to transitional housing to affordable housing to market-rate housing. As described earlier, the support services are critical in allowing one to transition away from the challenges associated with homelessness. Transitional housing exists within the continuum to bridge the gap between emergency shelters and affordable housing, providing support services during the residents' temporary stay. Once an individual moves from transitional housing to affordable housing, the process of relocation could result in the uprooting of an individual from their established community. In addition, there is a short supply of affordable housing and affordable housing wait lists can be many years long. As a result, the research began to focus on exploring alternative methods of creating housing and looking at different types of home ownership. The typology of housing co-ops inherently has ideas of community, shared ownership, affordability, and user agency baked into its DNA. By combining the strong elements of skills training and support services from transitional housing, a new model of housing was conceived and coined "transitioning in place". This new model is the intersection of co-operative housing and transitional housing, created as a design experiment to explore alternative ways of housing homeless and low-income populations.

Following this theoretical framework for a new housing model, the techniques of market research, site selection, site analysis, master planning, and architectural design were implemented to test the new housing model. Financial modelling and proforma analysis served as an additional layer of reality to assess the viability of the proposed design proposition. Ultimately, the thesis proposal imagines how public city land can be leveraged to produce housing that is decommodified, permanently-affordable, and adaptable for future uses.

The Formation of Canada's Housing Crisis

The tremendous growth of Canadian home prices and mortgage debt experienced today started in the 1990s where an economic environment of low interest rates made real estate financing cheap to access. The catalyst was provided in 1993 by the policy change of the federal government led by Brian Mulroney, ceasing all federal funding for new social housing construction. This came as an abrupt ending to the previous decades of support for social housing where the federal government funded public housing in the 1970s and non-profit and co-operative housing in the 1980s.[1] The Ontario provincial government led Mike Harris followed suit in cancelling future funding for social housing, downloading the responsibilities to each municipality.[2] The Canadian Mortgage and Housing Corporation (CMHC) saw a similar retraction from the construction of social housing to becoming a mortgage insurer. After the global financial crisis of 2007-2008,

[1] Rozworski, Michal. "Are We Addicted to Debt." The Monitor, November-December 2018 Vol 25, no. 04, August 01, 2019.
[2] Shapcott, Michael. Tech. Made-in-Ontario Housing Crisis, May, 2001.

the Bank of Canada needed to maintain low interest rates and other post-crisis monetary policies to provide stimulus to the economy. This fed into the housing market boom as lower interest rates caused investors globally to place their wealth into assets such as stocks and housing, causing asset inflation. Canadian real estate was viewed as a stable investment with relatively high returns and continues to be viewed in this light as it attracts domestic and international investors alike.[3] As escalating real estate values and rents outstripped the growth of household incomes, the wealth inequality between homeowners and renters continued to grow. From 1982 to 2010, the income of the top 10% of Canada's population increased by 75% while the remaining 90% of the population saw a growth of merely 2%. This tremendous growth of income inequality income was observed almost entirely within major cities in Canada including Toronto, Vancouver, and Calgary. During these years, the average house price in Canada grew exponentially from $150,000 to $500,000. The rental market reflected a similar growth as the average rental price for a two-bedroom apartment rose from $568 to $962 in 2016. While it is seen that increasing house prices increases income inequality, further studies are necessary to understand this relationship.[4]

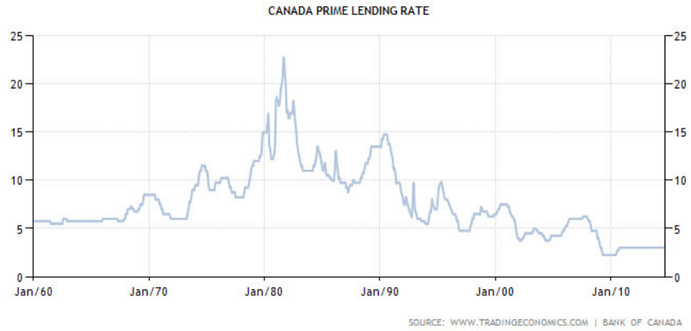


Figure 0.2 *Canada's prime interest rate from 1960 to 2015 (Credit Cards Canada)*

[3] Rozworski, Michal. "Are We Addicted to Debt." The Monitor, November-December 2018 Vol 25, no. 04, August 01, 2019.

[4] Sopchokchai, Duangsuda, and Chenggang Zhou. Rep. House Price and Income Inequality in Canada: the Instrumental Variable Approach Housing Research Report. August, 2020.

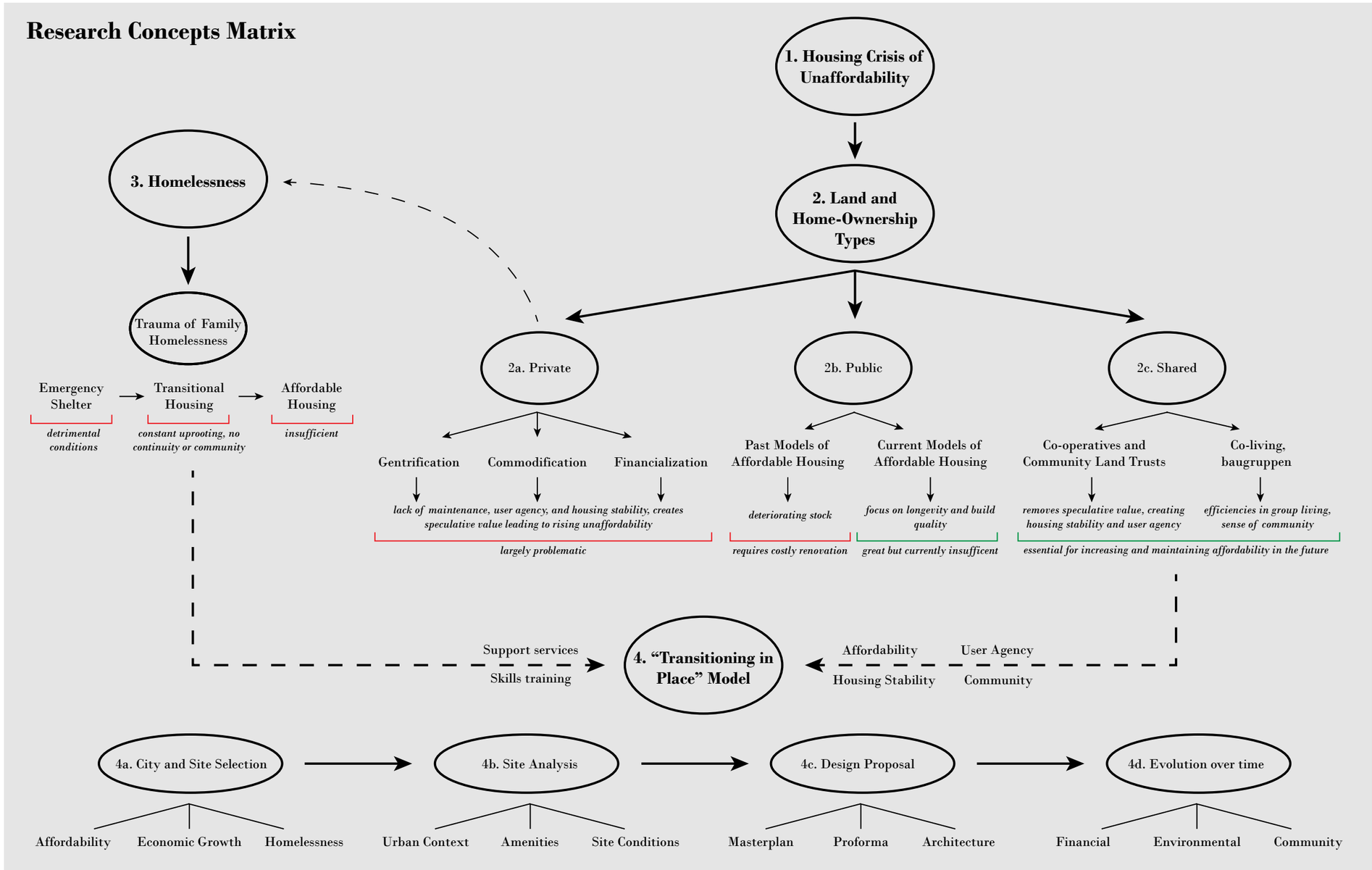


Figure 0.3 *The research concepts matrix outlines the relationships between concepts explored within the thesis. The sequencing of chapters begin with the context of the housing crisis and homelessness, framing the synthesis of the new housing model, which is ultimately tested and explored through the development and design proposal.*

Chapter 1

Land and Home-Ownership Types

Private Land Use: Commodification, Financialization and Gentrification

The housing crisis in Canada is attributed to a multitude of economic and political factors including a lack of supply, increasing demand through immigration and investors, a continued rise in the costs of construction and land, escalation in housing valuations and market rent, and delays in development approvals process to work through "red tape" and administration.[5] Increasing the supply of market rate housing can be easily understood as the mandate of developers who look to generate profits for their efforts. On the other hand, increasing the supply of affordable housing requires the collaboration of non-profit entities, governments of all levels, developers, and the community. Despite the difficult challenge of creating this crucial supply, affordable housing is under attack by forces including the commodification of housing, financialization of housing, and gentrification.

Canadian wealth is comprised largely of asset values in real estate, and for most Canadians, the house is their greatest financial asset. Similarly, companies such as Real Estate Investment Funds (REITs), pension funds, and other financial institutions rely on real estate assets to generate rent and appreciate in market value to ensure their financial viability. The home has become a commodity. Commodification is the process of converting something from its original use into an object of trade with economic value.[6] This process stems from a capitalist economic framework, actively exacerbating the housing crisis in Canada's urban cities. The home is seen by retail and corporate investors as a financial instrument for accruing wealth. With a limited stock of housing in the city, the financialization of housing creates further affordability issues as corporate landlords seek to maximize their profits through rent escalation according to the current market prices. Financialization is defined as the increasing influence of financial players, markets, and practices in non-financial sectors, with the goal of maximizing profits to shareholders at the cost of opposing priorities. In the case of housing, financialization diminishes the use value of a home as an affordable shelter and prioritizes the exchange value of the home as a

5 Dingman, Shane. "Ontario Looks to Cut Red Tape in Housing Development." The Globe and Mail, January 8, 2019. https://www.theglobeandmail.com/real-estate/toronto/article-ontario-looks-to-cut-red-tape-in-housing-development/.

6 Arjun Appadurai, "Introduction: commodities and the politics of value," in Arjun Appadurai (ed.), The Social Life of Things: Commodities in a Cultural Perspective, Cambridge University Press, 1986, p. 3.

profitable commodity. This is evident in the business practices of many large corporate landlords such as REITs and pension funds who make a return on their investment by purchasing run-down rental apartment buildings with low rents, evicting the current tenants from their below-market-rate units, and renovating the old units to be rented out for market rate. They look for new tenants who can pay the market-rate rents to match the renovated quality of the new unit. This "flip" is extremely profitable as it provides these institutions with a steady cashflow from the increased rents, at the cost of evicting low-income individuals and families from their home and contributing to the problem of homelessness. An example of this is the Heron Gate neighbourhood in Ottawa. These extractive companies effectively privatize and eat away at the affordable rental housing stock of aging apartment towers, pushing low-income populations out of their homes to fend for themselves. These financial players receive funds to acquire new properties through a financial process called securitization, which takes illiquid assets such as housing and bundles them into interest-bearing securities that are easily traded on public and international markets. Akin to the bundling of mortgages as interest-producing bonds during the global financial crisis, the securitized multi-family rental properties are sold as shares of the company and rental profits are paid out as dividends to investors. This process of selling securities to investors on publicly-traded markets gives financial players access to additional capital, allowing them to acquire more properties to flip. Some financial players choose to capitalize on the appreciation of housing units alone and leave the units empty to allow for the flexibility to quickly trade or sell these units.[7] By forgoing the rental income, an empty unit offers the flexibility for the owner to sell the unit without the complications of evicting the tenant first. This leads to the paradoxical phenomenon of empty housing units in condominium buildings in a city where demand for housing greatly exceeds the available supply.[8]

Perhaps the most widely known term used by those opposing redevelopment of an area is gentrification, defined as the successive rebuilding of an area that displaces low-income residents and replace them with higher-paying residents. Gentrification is occurring across the country

7 Gertten, Fredrik, Margarete Jangård, and Erik Wall Bäfving. PUSH. Push The Film. WG Film AB, 2019. https://www.pushthefilm.com/about/.

8 August, Martine, and Alan Walks. "Gentrification, Suburban Decline, and the Financialization of Multi-Family Rental Housing: The Case of Toronto." Geoforum 89 (2018): 124–36.

Figure 1.1 *Isometric 3D view of the current Heron Gate neighbourhood*

Figure 1.2 *Isometric 3D view of the proposed density for the redevelopment of Heron Gate (Heron Gate Village Planning Rationale Report & Urban Design Study - 2019)*

in growing cities and further adds to the homelessness crisis. Regent Park in Toronto is argued by researchers as an example of gentrification. A current strategy by the city for addressing the housing crisis involves redeveloping low-income areas such as Regent Park through the introduction of mixed-income and mixed-use development. By investigating the modernist utopic ideas of Toronto's plans for public housing in the 1960's, history shows that top-down strategies neglect the involvement of the end-users in any forms of discussion and thus are unsuccessful. Regent Park is an example of housing built in this era, famously named as Canada's largest and oldest public housing project. Proposed as a design solution to increase the public housing stock, it promised rejuvenation in low-income communities that were viewed as slums in the southern part of Cabbagetown. During the 1930's, this area was considered one of the worst slums in Toronto by the city planners, who sought to undertake a "grand urban renewal". In the 1950s, the area south of Gerrard street was included in the redevelopment as well and named Regent Park South. The unit mix of the new housing units included bachelor suites all the way up to five-bedroom semi-detached houses.[9] However, the plans for a grand urban renewal ended in failure and was retrospectively deemed as a colossal mistake as the degradation of the building structure and other architectural elements resulted in an eventual creation of a new slum that took the place of the old. Giancarlo de Carlo critiques the modernist movement as "distancing itself from the real context of society and its most concrete environmental needs, the elite attitude of the Modern Movement just accentuated the superfluity of architecture".[10] As a movement dedicated to the pursuance of form and the utopic ideals of architecture, the buildings were prescribed by the architects for the people as towers in the park, without truly addressing the needs of the society, the community, and the residents. The plan for the project was designed such that the buildings faced inwards and were fully programed to be residential spaces, effectively isolating the residents from the surrounding context.

Regent Park is currently undergoing a second "revitalization" with ideas of multi-use and multi-income users. During the demolition and construction phases, residents have been temporary relocated out of Regent

9 "Regent Park: A Look Back through the Years at Canada's Oldest Social Housing Project." The Globe and Mail, January 13, 2016. https://www.theglobeandmail.com/news/toronto/regent-park-a-look-back-through-the-years-at-canadas-oldest-social-housing-project/article27612426/.

10 Giancarlo De Carlo, 'Architecture's Public', in *Architecture and Participation*, ed. by Peter Blundell Jones, Doina Petrescu and Jeremy Till (Abingdon: Spon Press, 2007), p. 7.

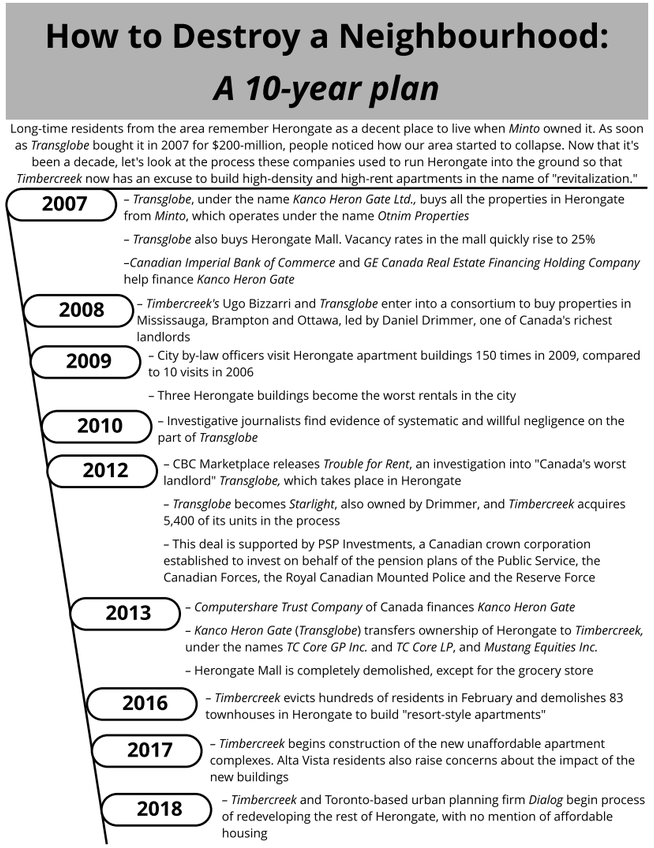


Figure 1.3 *The history of Heron Gate's landlords over a decade and its subsequent decay (Heatherington Land Trust)*

Figure 1.4 *"A slum dies in Regent Park South to make way for new housing in Toronto on St. David Place St., July 17, 1956" - Harold Robinson*

Figure 1.5 *"View of Regent Park Housing development in Toronto from the corner of Parliament and Gerrard, April 12, 1954." - Harold Robinson*

Figure 1.6 *"Children from Regent Park North housing development play hockey inToronto February 1, 1965" - Harry McLorinan*

Park. Not only is the relocation process forcing individuals and families to uproot their lives as their homes are demolished, the replacement unit lottery system through Toronto Community Housing (TCH) offers units in their portfolio across Toronto, which can be located far away from Regent Park. A resident described the panic and negative impacts to their life as she had to remove her children from school in the middle of the term as a result of the relocation. Although new housing is being constructed, many of the residents will have to wait years before they can move back into Regent Park after the revitalization phases are completed. Furthermore, residents that are capable of returning have voiced concerns that their priorities are being drowned out by the concerns of the stakeholders being able to sell the 5,400 new condo units that are slated to be constructed. This current strategy that the municipality of Toronto is implementing to combat the housing crisis is brutally evicting and displacing a lower income population to make way for a middle-to-upper class population through the process of gentrification.[11] This falls in line with Toronto's Street Needs Assessment report, revealing that "the primary reported causes of homelessness are migration, inability to pay the cost of housing, and eviction".[12] Relying on the strategies of mixing different income classes and different uses of space, this idealized vision for the project once again promising rejuvenation, invoking similar messages back to the modernist utopic ideals of the 1940's. Studies on almost 200 international precedents indicate that similar mixed-used redevelopments fall short of their imagined ideals.[13] Despite this knowledge, the city of Toronto seems adamant on prioritizing partnerships through private development to produce affordable housing units that are 80% of market rate and still beyond the reach of many low-income renters who require rents to be expressed as a percentage of their monthly income.

The city's recent response to the housing crisis is the ten-year HousingTO action plan, which aims to create 40,000 new affordable rental units. Within this action plan, an initiative called "Housing Now" leases 11 city-owned public lands to private developers in order to create more

11 August, Martine. "How 'revitalization' is Leading to Displacement in Regent Park," https://www.thestar.com/opinion/commentary/2014/05/05/how_revitalization_is_leading_to_displacement_in_regent_park.html (accessed Oct 12, 2019).

12 City of Toronto. 2018. "Toronto Street Needs Assessment 2018 Results Report," 64. https://www.toronto.ca/wp-content/uploads/2018/11/99be-2018-SNA-Results-Report.pdf.

13 August, Martine. "How 'revitalization' is Leading to Displacement in Regent Park," https://www.thestar.com/opinion/commentary/2014/05/05/how_revitalization_is_leading_to_displacement_in_regent_park.html (accessed Oct 12, 2019).

Figure 1.7 *"Regent Park housing development in Toronto, June 3, 1988" - John McNeill*

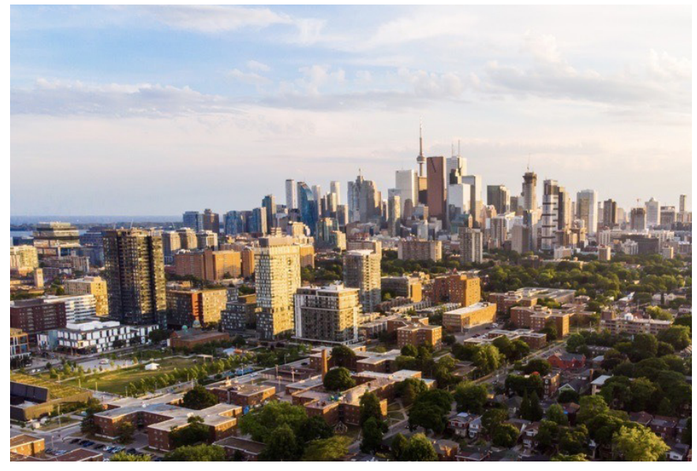


Figure 1.8 *Regent Park housing development in Toronto, 2020 (Storeys)*

affordable housing units.[14] These municipal strategies work within the capitalist system that still operates on the home as a commodified object and is unable to address the issue of speculative value which inevitably causes affordability issues and resident being priced-out of their current units in future years. On a federal level, Canada has initiated the National Housing Strategy to use $55 billion to "strengthen the middle class, cut chronic homelessness in half, and building 125,000 new homes over the next ten years.[15] It is clear that simply building more affordable housing units will not solve the homelessness crisis, as paralleled by the first-hand accounts of those in the shelter system speaking against the quantitative addition of shelter beds without addressing the deeper qualitative issues. Affordable housing as defined by the City is 80-100% of market rate, while "deeply affordable" housing is 40% of market rate or rent-geared-to-income to not exceed 30% of a household's monthly income.[16] Furthermore, the ownership of affordable housing makes it impossible for the unit to remain affordable once it is sold again due to the rise in speculative value. A hopeful response to the housing crisis came at the end of 2019, where the federal government finally passed legislation declaring housing as a fundamental human right.[17] Over the next decade from 2020 to 2030, an influx of funding and attention has been planned by the various levels of Canadian government to address the housing crisis. This forms an exciting testbed for innovative thinking and design to question the current models of private housing and to reimagine other methods of ownership that can create further affordability.

Public Ownership: Models of Affordable Housing

To address the current methods of producing public affordable housing, it is important to first review and understand the past models that Canada has implemented. Canada's social housing policy and development

14 "Housing Now."https://www.toronto.ca/community-people/community-partners/affordable-housing-partners/housing-now/ (accessed Oct 14, 2019).
15 "GuidePage-Strategy." GuidePage-Strategy. Accessed February 12, 2020. https://www.cmhc-schl.gc.ca/en/nhs/guidepage-strategy.
16 Ruddy, Erin. "Affordable Rental Housing on National Agenda - Remi Network." REMINET, January 25, 2019. https://www.reminetwork.com/articles/affordable-rental-housing-on-national-agenda/.
17 McIsaac, Elizabeth. "Mind the (Implementation) Gap: How to Realize the Right to Housing." Maytree, December 18, 2019. https://maytree.com/publications/mind-the-implementation-gap-how-to-realize-the-right-to-housing/.

can be described through six unique turning points in history, from the early postwar period in 1949 to the beginning of the millennium. In Greg Suttor's *Still Renovating : A History of Canadian Social Housing Policy*, Suttor tracks the history of Canada's social housing policies through the lens of these six turning points. As show in his diagram that tracks the annual social housing commitments of Canada from 1954-2011, the rise and fall of Canada's social policy changed dramatically over these past six decades. The first turning point occurred during the postwar era, where most affluent Western countries viewed social rental housing as the solution to providing for the low-income populations; today, this is seen as a part of the issue. During this postwar period before 1949, the creation of CMHC and the National Housing Act (NHA) marked the first social housing program that targeted populations by income. In the early years of Canada's public housing from 1949 to 1964, there was no significant volume for creating public housing supply, accounting for approximately 1-2% of the total housing production. During the mid-1960s, the second turning point saw amendments to the NHA in 1964, resulting in the creation of provincial housing corporations and effectively setting the stage for what Suttor calls the "social housing prime period", which lasted three decades and yielded a ten-fold increase in public housing production from the previous period. During the start of the social housing prime period from 1965 to 1973, the volume of public housing production accounted for 10 percent of the total housing production, with projects specifically targeting low-income populations. The third turning point occurred in the early 1970s where the government's role in all housing sectors continued to grow, with a shift from strictly low-income projects toward mixed-income non-profit and co-operative housing. The first non-profit decade began in 1974 to 1985 where public housing production volumes maintain their previous levels, and the production of mixed-income housing models exists together with the low-income public housing model. The fourth turning point occured in the mid 1980s where the government's role in housing began to diminish as program management was downloaded from the federal level to the provinces. During this time, the federal government continued to drive the policy and funding for housing. In the second non-profit decade from 1985 to 1993, housing production levels began to diminish, and the creation of new low-income public housing was abandoned. As a result, the non-profit and co-operative housing projects took on a more income-specific approach. During the mid 1990s, the fifth turning point marked a critical point in Canada's social housing history as the federal

government ended their housing policy and ceased to provide funding for new production of social housing. This period was the beginning of the fall for Canada's social housing prime period as federal housing subsidies slowly phased out in the coming years. Named the "devolution era" by Suttor, 1994 to 2001 marked the greatest retrenchment and devolution of social housing development in Ontario. During the early 2000s, the sixth and final turning point saw the beginnings of new affordable rental housing production, with production volumes only one-fifth of the volumes seen pre-1996, before the federal policy ended. Since 2002, there has not been a significant increase in the production volume of new social housing projects. The Affordable Housing Initiative provided funding from different levels of government until 2014 to increase the production of affordable housing for low-income and homeless populations. However, with a reduction in federal-provincial grants for capital costs when compared to previous periods, combined with the lack of funding for subsidizing operating costs, the production volumes were not substantially higher.[18] In 2017, Canada created its first ever National Housing Strategy (NHS) to release funding from all levels of government over the next 10 years, representing a seventh turning point for Canada's social housing policy. This national policy seeks to address housing needs that range from struggling middle-income families, to first time home buyers, from low-income populations to the homeless and precariously housed.[19]

Through the NHS, the current model used by the government to produce affordable housing units involves providing funding through grants and loans to non-profit and private organizations and developers. Within the non-profit sector, developers such as Indwell, CAHDCO, and New Commons leverage government funding through the NHS and other funding initiatives to produce deeply affordable housing units. Another source of funding for non-profit organizations is the Strategic Innovation Fund, which offers grants and loans that can be forgiven after agreed upon conditions such as maintaining the affordability of units for a duration of 20 years.[20] Indwell, for example, is a non-profit Christian charity and residential developer that operates out of Hamilton, with projects across southern Ontario in Hamilton, Woodstock, Simcoe, Mississauga, and London. Indwell

18 Greg Suttor. Still Renovating: A History of Canadian Social Housing Policy. Montreal: McGill-Queen's University Press, 2016.
19 "Canada's First Ever National Housing Strategy." A Place to Call Home. https://www.placetocallhome.ca/.
20 "Strategic Innovation Fund." Canada.ca, August 24, 2018. https://www.canada.ca/en/innovation-science-economic-development/programs/strategic-innovation-fund.

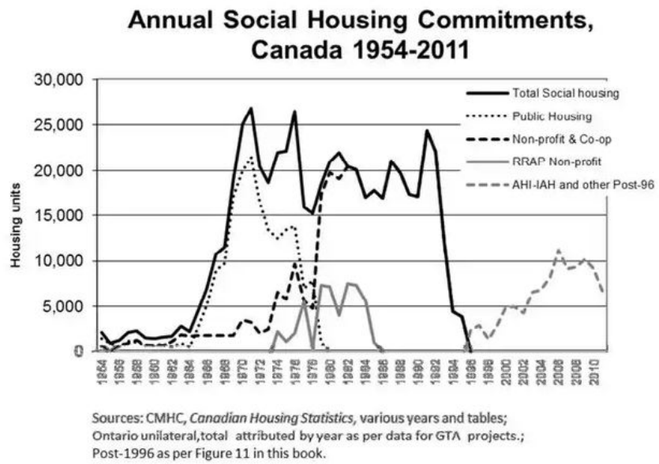


Figure 1.9 *Diagram from Greg Suttor's Still Renovating: A History of Canadian Social Housing Policy*

applies for funding through the CMHC funding initiatives, made available through the NHS and the federal government. The Co-Investment Fund is one of these initiatives, providing a combination of loans and grants with the requirement of building housing units that prioritize affordability, sustainability, and accessibility. Indwell charges rents that are deeply affordable and aimed at those who rely on the Ontario disability Support Program, which has a monthly allocation for housing and other living costs. Within the scope of sustainability, Indwell designs their rental housing to the stringent Passive House standards, allowing for a great efficiency in operating costs and reducing the environmental impacts of their buildings. They also go above and beyond the required standards for their number of accessible units provided to accommodate their tenants' mobility needs. For any given project, the Co-Investment Fund forms approximately 55% of their capital funding budget. Provincial funding, such as the Ontario Priorities Housing Initiative, accounts for 20% of the capital funding, with municipal governments contributing grants and development charge waivers or reductions, which amounts to another 10% of the capital budget. Private donations make up 15% of the capital funding, and any remaining amounts are covered by financing and loans. Through the various sources of funding, Indwell leverages every dollar from donations by a factor of almost seven times. With the operational funding, tenant rents pegged at the ODSP and other welfare program rates account for 38% of the programming costs. The Ministry of Health, grants, and private donors provide the remaining amount of the operating funding for their projects.[21]

North End Landing is a recent project completed in 2020 by Indwell and a local partner church in Hamilton. In this partnership, Janes North Baptist Church had purchased the land and Indwell provided the development expertise to build a new church building with an additional 45 units of affordable housing designed to Passive House standards. The amenities in the building include a library, community kitchen, and a recreation room. In this partnership, the church provided land for Indwell to build the units on top of the new church building.[22] James North Baptist Church owns the newly built building, and Indwell leases top three levels where the apartments are for a nominal fee of $2/year. The tenants pay a rent of $550/month for

html%3Bjsessionid%3D0001hi7ciyoic1s7wj2b7ga51h x:1sf2v7t5gu.

21 "Financial Integrity and Sustainability." Indwell. Accessed July 18, 2020. https://indwell.ca/finances/.

22 Mann, Ken. "Indwell Opens Newest Affordable Housing Community in Hamilton

Figure 1.10 *Indwell's North End Landing project in Hamilton (Indwell)*

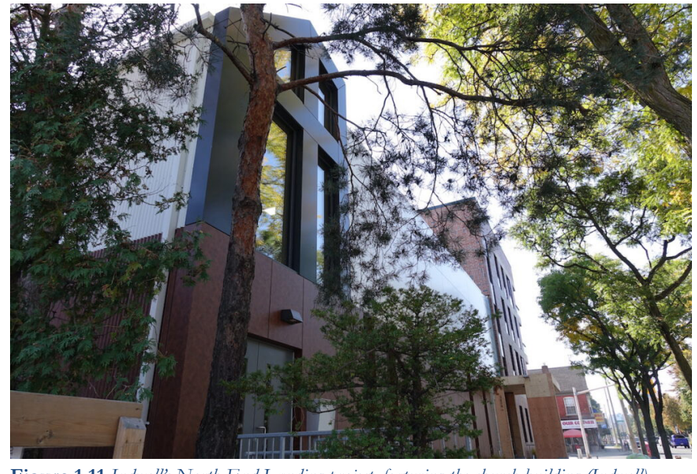


Figure 1.11 *Indwell's North End Landing project, featuring the church building (Indwell)*

a 450 sf apartment, based on their monthly ODSP housing allowance. This translates to 67% of the average rental rate in the area. With the building designed to Passive house, this project uses 80-90% less energy than a typical building and the absence of gas heating results in a sustainable building with no carbon emissions.[23] With limited funding from government sources and private donors, the quality and sustainability of this deeply affordable housing project raises some questions for what the private-sector developers are producing in comparison to the funding they have access to.

Within the NHS funding initiatives, a popular choice of government funding for the private-sector developers is called the Rental Construction Financing Initiative (RCFI). This initiative was created by CMHC to encourage the private sector to create sustainably built rental supply in the market. Through the RCFI, private developers have access to low interest rate loans during the construction phase of the project, which represents the riskiest phase of the development process.[24] These are enticing as they offer interest rates ranging from 1.5% to 3%, which is between 100 to 300 basis points (or 1-3%) lower than conventional construction loans. Furthermore, this loan has the lowered rate fixed for a 10 year term, amortized over 50 years to reduce the annual interest-only debt service even further. The demand for the RCFI has been so great that the government is planning to increase the total available funding to $14 billion within the next decade, up significantly from the $2.5 billion funding pool that was available in 2017 when it was first launched.[25]

- Hamilton." Global News, September 23, 2020. https://globalnews.ca/news/7352794/indwell-housing-hamilton/.

23 Bron, Sebastian. "Hamilton Housing Crisis Gets Boost with 45 Affordable Units in North End." The Hamilton Spectator, September 23, 2020. https://www.thespec.com/news/hamilton-region/2020/09/23/hamilton-housing-crisis-gets-boost-with-45-affordable-units-in-north-end.html.

24 "Rental Construction Financing Initiative." CMHC, July 20, 2020. https://www.cmhc-schl.gc.ca/en/professionals/project-funding-and-mortgage-financing/funding-programs/all-funding-programs/rental-construction-financing-initiative.

25 Wong, Natalie. "Developers Can't Get Enough of Canada's New Loans to Build Rental Housing." Financial Post. Bloomberg News, August 9, 2019. https://financialpost.com/real-estate/property-post/developers-cant-get-enough-of-canadas-new-loans-to-build-rental-housing.

Funding Opportunities (2018-2019)

Federal

National Housing Strategy
A $40-billion plan to help ensure that Canadians have access to housing that meets their needs and that they can afford.

National Housing Co-investment Fund
Low-cost loans and capital contributions to build new affordable housing, shelters, transitional and supportive housing grants.

Rental Construction Financing Initiative
Low-cost loans to encourage the construction of sustainable rental apartment projects across Canada.

Federal Lands Initiative
Surplus federal lands and buildings to create affordable, sustainable, accessible and socially inclusive developments.

Reaching Home
Canada's Homelessness Strategy aims to support communities' efforts to prevent and reduce homelessness.

Provincial

Community Housing (new) Renewal Strategy
A strategy to help protect, sustain, repair and grow the community housing system.

Ontario Priorities Housing Initiative (OPHI) – April 2019 (new)
Targets new affordable housing supply, community housing repairs and retrofits, rental assistance (rent supplements and housing allowances), tenant supports, affordable home ownership.

Canada Ontario Community Housing Initiative (COCHI) – April 2019 (new)
Targets community housing repairs and retrofits, re-development, operating subsidies, rent supplements and portable housing allowances.

Canada Ontario Housing Benefit – April 2020 (new)
Targets low income households in the greatest need, who reside in all types of rental housing, with portable housing subsidies to provide housing affordability.

Figure 1.12 *Funding programs for producing additional housing units (Ottawa 10-Year Housing and Homelessness Plan: 2018 Progress Report)*

Shared Ownership: The Decommodification of Housing

An alternative housing model that operates on the decommodification of housing is the co-operative housing model. Housing co-operatives have been explored largely in European countries such as Switzerland, Austria, Denmark, Germany, as well as Japan, the US, and Canada. In Ethel Barona Pohl's essay *Cooperative housing as a means more than an end*, she describes the La Borda project of Catalonia saying "it is a project neither for rent nor for purchase. We rely on a model of non-speculative holding that focuses on its inhabitants. This highlights the difference between value and cost, and between investing in a community, in this case the cooperative, rather than in a product."[26] Often operating based on donated or leased land, the non-profit model of this housing method is self-governed and run by the residents. The landlord, who conventionally acted as an external profit-seeker, is effectively removed from the picture. The entire building is owned by an organization formed by every resident; no single unit is owned privately by an individual. The organization owns the building and the resident owns shares of the organization that represents their portion of the building. When a resident decides to leave and move out of their space, their inflation-adjusted equity share is returned to the resident and the shares of the organization are made available for the next resident to purchase. This economy of shares allows housing units to change hands without the introduction of market speculation or personal profit, thus making it possible for housing to provided at a below-market rate and remain affordable as time progresses. The power to control the price of housing and the right-to-remain is retained within the community of residents in the building. Through the removal of speculation, the housing unit is thus decommodified; from a form of financial investment to its initial purpose as a basic human right. A Community Land Trust (CLT) operates under the same notion of affordability where the land is held by a community organization so that it cannot be sold for speculative gains. Within a cooperative, resources and responsibilities are shared by individuals whose ideals are to live together with others to create a living community. The collective ownership towards one's housing unit creates an environment that fosters ideas of sharing, made possible through the multitude of different communal amenities that could be offered. By taking on an approach to

26 Pohl, Ethel Barona, "Cooperative Housing as a Means More Than an End", Together! The New Architecture of the Collective. Weil am Rhein, Vitra Design Museum, 2017, 344–348.

shared ownership, the residents have access to more square footage as part of the community, then they would have if every unit was siloed and privatized. These amenities, which could take the form of community gardens, shared kitchens, public restaurants, gymnasiums, or medical clinics, encourage community engagement among residents within the building and extends as a public interface to serve the neighbourhood community at large.

An example of this is the project in Tokyo, Japan by Naka Architects' Studio that combines five residential/home office units in the upper floors with a small restaurant on the ground floor. This public area serves as the communal living room to the residents, offering them specific discounts. The ease of access and affordability for the residents symbiotically reciprocates the cafe with a loyal customer base founded in the community. The cafe serves as the connection between the larger neighbourhood community and the residents. [27]

A prominent example of co-operative housing in Toronto is a project called 60 Richmond Street East (commonly referred to as 60 Richmond). Built in 2010, it is recognized as the most recent purpose-built co-operative housing project since the 1980's. The project sits on government-leased land and was funded by Toronto Community Housing and grants from the Affordable Housing Program.[28] The project costed $22.3 million CAD, producing 81,806 sf of residential space and 2,852 sf of commercial space at a cost of $236 per sf. The result is an infill development that provides 85 residential units (containing a mix of subsidized and non-subsidized units) to house displaced Regent Park residents and Unite HERE hospitality workers. Teeple Architects created an ambitious 9 story atrium through the centre of the building that provides daylight to every unit in the building while also creating opportunities to take advantage of passive ventilation and cooling strategies. Amenities include an outdoor community garden displaying urban permaculture, a flexible training centre, resident-run restaurant, and a training kitchen.[29]

A feasibility report conducted by the Centre for Research and Education in Human Services analysed the benefits of a housing co-

27 Mateo Kries et al., *Together! The New Architecture of the Collective*
28 "Celebrating 60 Richmond St. East: A 'Place of Opportunity.'" HOSPITALITY WORKERS TRAINING CENTRE, May 6, 2015. https://hospitalitytrainingcentre.com/co-op-housing-places-of-opportunity/.
29 Mateo Kries et al., *Together! The New Architecture of the Collective*

Figure 1.13 *Co-operative housing with small restaurant: Restaurant interior (Naka Architects' Studio)*

Figure 1.14 *Co-operative housing with small restaurant: Public exterior presence (Naka Architects' Studio)*

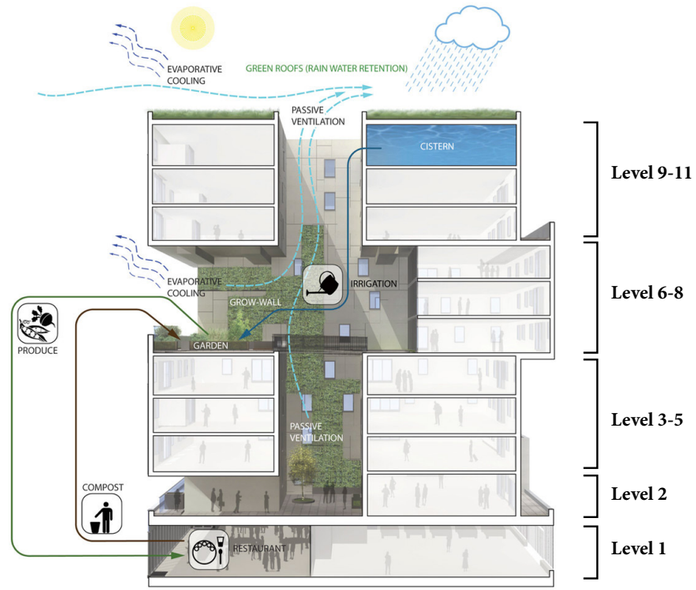


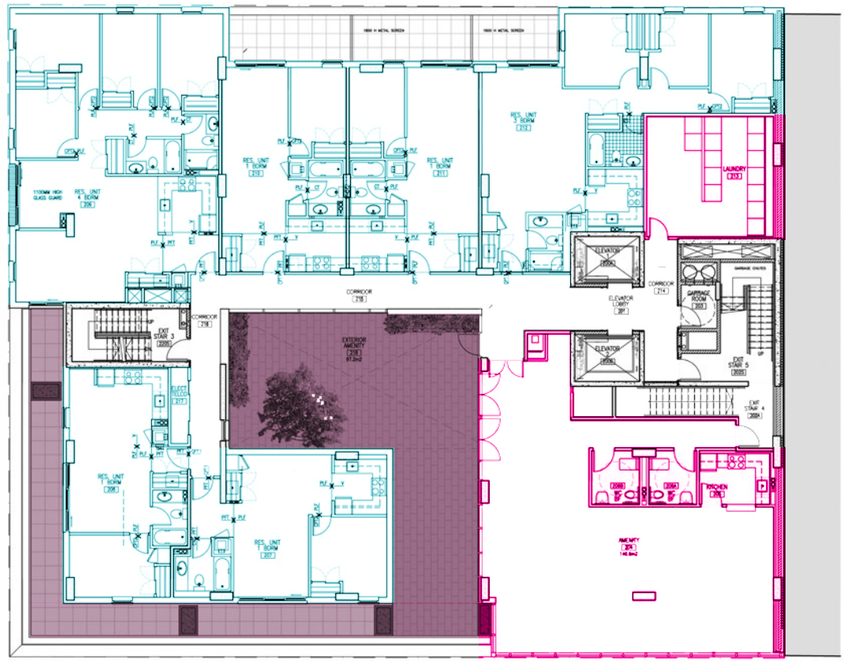
Figure 1.15 *60 Richmond: Building section featuring the 9 story atrium. (Teeple Architects)*

Residential

Office

Communal/
Public

Ground Floor Plan



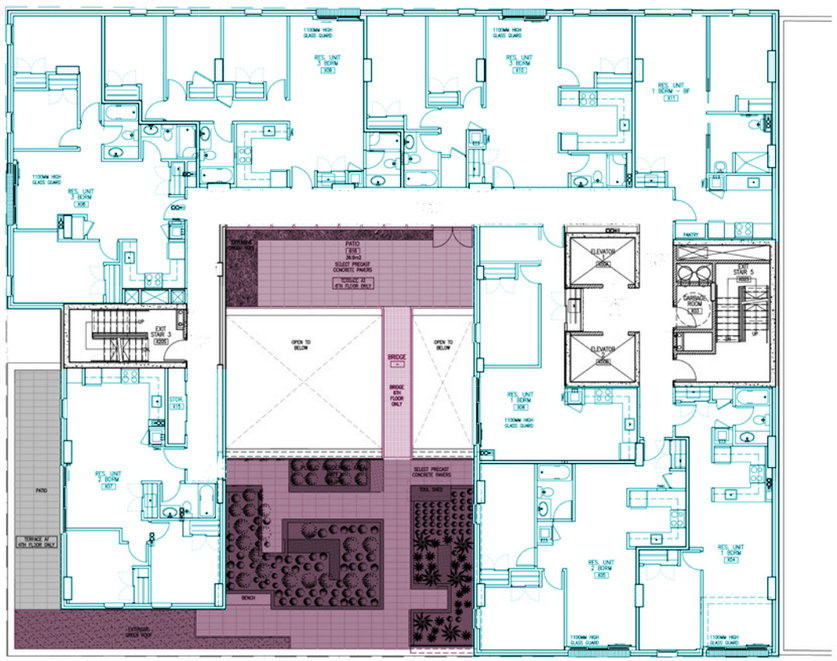
Second Floor Plan

Figure 1.16 *60 Richmond: Floor plans highlighting residential, office, and communal program ratios in the building. (base drawing by Teeple Architects)*

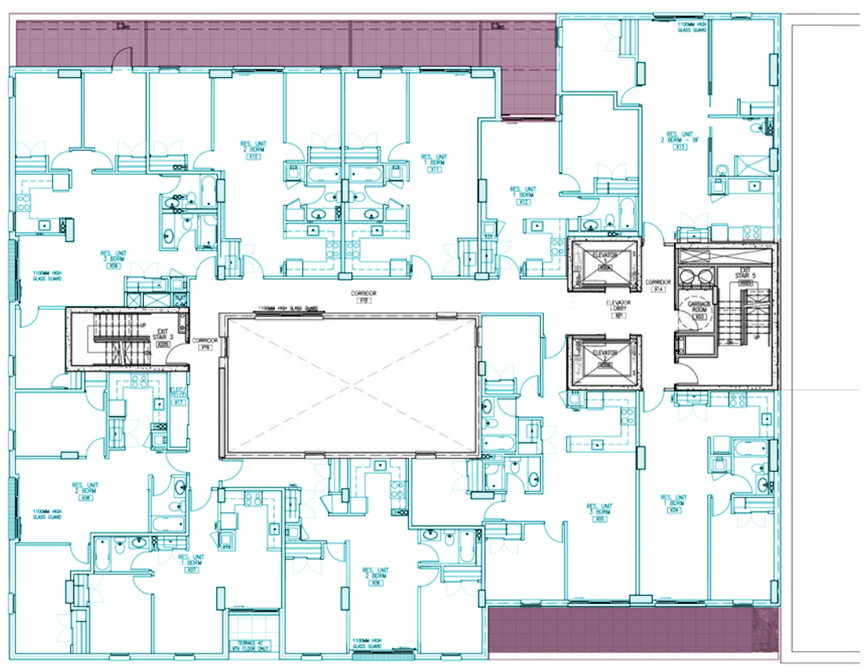
Residential

Office

Communal/ Public



Sixth to Eighth Floor Plans

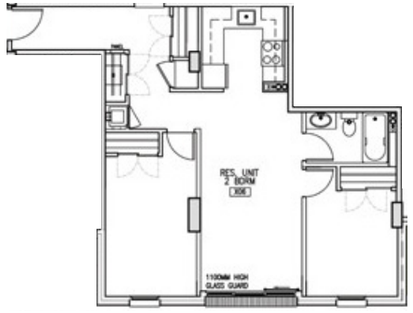


Ninth to Eleventh Floor Plan

Figure 1.17 *60 Richmond: Floor plans highlighting residential, office, and communal program ratios in the building. (base drawing by Teeple Architects)*

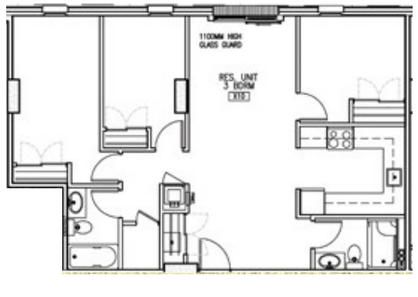
One Bedroom Unit:
(1-2 person capacity)

33 x room count



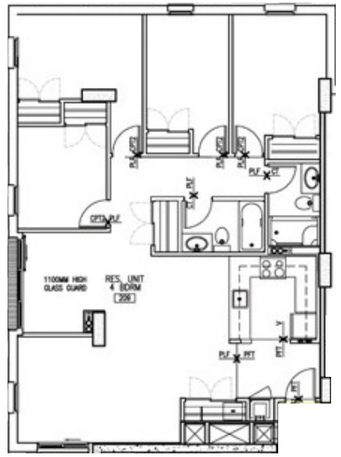
Two Bedroom Unit:
(2-4 person capacity)

24 x room count



Three Bedroom Unit:
(3-6 person capacity)

24 x room count



Four Bedroom Unit:
(4-8 person capacity)

4 x room count

Figure 1.18 *60 Richmond: Index of unit floor plans of various sizes. (Teeple Architects)*

operative environment for the mentally vulnerable. It concluded "housing co-ops therefore do not only provide stable, safe and affordable housing for people who are vulnerable to housing difficulties, they also provide them with opportunities for active and meaningful involvement, which has a positive impact on the recovery process for people with mental health issues".[30] There is an unexplored potential to implement the affordability strategy of removing speculation and the invaluable creation of community within co-operative housing towards the marginalized homeless population who could greatly benefit from a safe and affordable place to call home. A home allows one to rebuild within the context of a support network and community comprised of individuals struggling through similar conditions on the streets.

30 Ontario Trillium Foundation, Centre for Research and Education in Human Services (Kitchener, Ont), Hamilton Addiction and Mental, Health Network, Developing a Consumer-Run Housing Co-Op in Hamilton : A Feasibility Study, Final Report (Beaconsfield, Quebec: Centre for Research and Education in Human Services : Ontario Trillium Foundation, 2014).

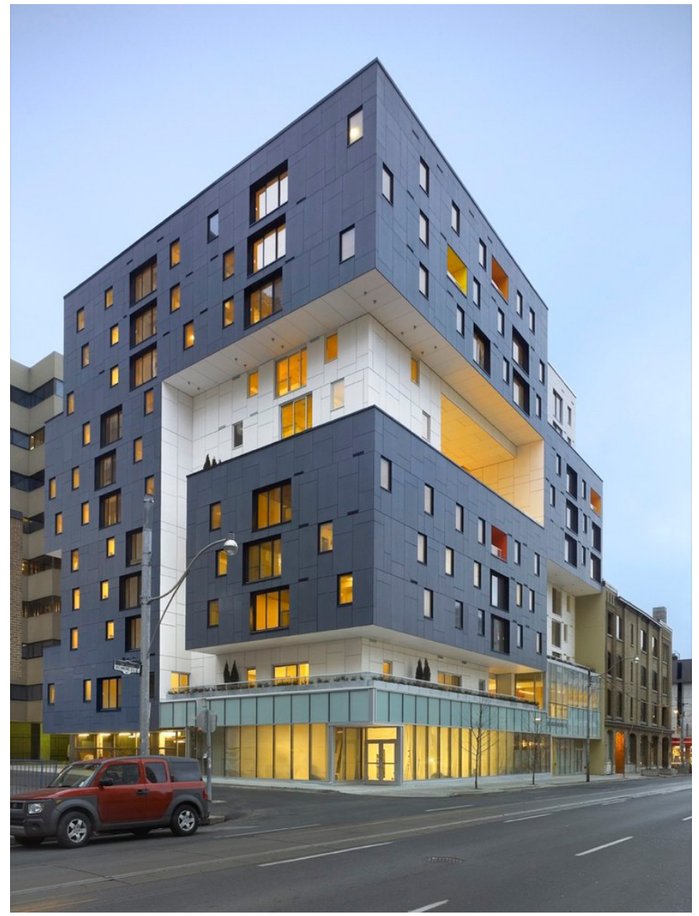


Figure 1.19 *Exterior massing and facade of 60 Richmond (Teeply Architects)*

Chapter 2

Context of Homelessness

Trauma of Homelessness: Toronto

To understand what it means to be homeless, the concept of a home must first be defined: "Home is a safe and secure place to call your own, where freedom, comforts, and needs are met".[31] The essence of a home is the security of having one's own place to be free within. As such, an emergency shelter is just that: a temporary physical shelter from the elements. A shelter cannot be seen as a solution for providing a home to the homeless. Martha Rosler describes in her work *If You Lived Here* "to be without a home is to be cut off from the rest of the world. 'A place to live' means exactly that – a place to be alive in, a place to be a real person in, a place to connect one to a larger human community... homelessness batters the people who are exposed to it in much the same way as catastrophe... and the frames of mind that it produces can be clearly recognized as the symptoms of trauma"[32] The psychology of being without a home points clearly to the traumatic effects on the mental health of an individual. The state of being without a home is a cause for mental illness and continued mental degradation within the homeless population. In 2018, "almost half of all respondents report being homeless for six months or more. A further 36% of respondents reported being homeless for more than one year" in Toronto.[33] It is thus enormously important to act with a sense of urgency to alleviate an individual or family facing homelessness from such an environment to minimize the associated trauma that inevitably grows as a result of delayed intervention.

Interviews conducted by The Globe revealed through multiple user accounts that the living conditions within Toronto's emergency shelter locations are appalling and perilous. These users tell stories of verbal and physical altercations that have resulted in being sent to the hospital; a doorless bathroom with three toilets and one sink shared between all the residents of the shelter, drug use, theft, abuse, and unsanitary conditions that are degrading to one's sense of dignity. The municipal discussions surrounding

31 Expert Advisory Panel on Homelessness. 2015. "A Place to Call Home: Report of the Expert Advisory Panel on Homelessness." *New York Amsterdam News*, 1–69. http://www.mah.gov.on.ca/AssetFactory.aspx?did=11038.

32 Martha Rosler et al., *If You Lived here : The City, Theory, and Social Activism* (Seattle: Seattle : Bay Press, 1991)73.

33 City of Toronto. 2018. "Toronto Street Needs Assessment 2018 Results Report," 64. https://www.toronto.ca/ wp-content/upload s/2018/11/99be- 2018-SNA-Results-Report.pdf.

shelters have largely been focused on increasing the quantity of beds, but it is clear from the users that there is a more important factor to address: the qualitative nature of the temporary shelter accommodations. During a recent night of record-low temperatures, many of the outdoor homeless expressed that they would rather suffer the external elements than risk staying in the dangerous conditions of the indoor shelters. Some individuals are forced to choose the outdoor conditions that can yield potential frostbite within a brief window of thirty minutes, as indoor conditions in the emergency shelters are even more likely to result in a form of assault on their personal safety. The immediacy of meaningful action cannot be overstated and must be treated as priority. The "band-aid" response of creating additional beds in unsafe and saturated shelter system is deeply problematic as a long-term solution. It is evident that those in the emergency shelter system are provided with a temporary means of shelter and not a home.[34] While emergency shelters serve a purpose within the continuum of care, they should only be used during emergency situations instead of the current use as a form of permanent tenure. This thesis proposes to use Housing First principles to divert families from the shelter system by providing transitional and affordable housing.

In 2006, Malcolm Gladwell wrote an article in the New Yorker called *Million Dollar Murry*. The article follows a homeless man named Murray, tracking his hospital, jail-related and emergency service expenses which added up to $1,000,000 over a span of 10 years. Gladwell found that it is much more expensive to ignore the homeless and have them end up in the emergency system of shelters and hospitals, rather than to provide them with social housing. In other words, it may be easier, more cost effective and more humane to solve homelessness rather than managing it.[35]

Toronto's 2018 Street Needs Assessment is city-wide survey count of the homeless population, conducted on the evening of April 26, 2018 to capture a snapshot of Toronto's homeless demographic and needs. Among other findings, the report revealed that "94% of those experiencing homelessness indicated a desire to get into permanent housing".[36] For the majority of the homeless population who desire a

34 Winter, Jesse. "It's Safer Out Here," https://www.theglobeandmail.com/news/toronto/torontos-homeless-brave-the-cold-rather-than-stay-in-dangerousshelters/article37601534/ (accessed Oct 25, 2019).
35 Gladwell, Malcolm. "Million-Dollar Murray." The New Yorker, February 13, 2006, Vol. 82, Issue 1.
36 City of Toronto. 2018. "Toronto Street Needs Assessment 2018 Results Report," 64.

home, it is necessary that they are provided housing that goes beyond a physical shelter. The provision of housing should create an environment of support that fosters community, safety, and recovery on a personal level.

Family Homelessness: Ottawa

Exploring the context of homelessness in Canada's capital city reveals a similar perspective of the housing crisis as experienced in other large urban cities in Canada. Ottawa has a great housing need with over 55,000 low income households who are struggling to uphold adequate housing, representing 13% of Ottawa's total population. With rents escalating each year, scarcity in housing supply and low vacancy rates, the demand for emergency shelter beds has been increasing.[37] On January 29, 2020, Ottawa became the first city in Canada to declare a state of emergency for housing and homelessness. While this is a significant step towards underlining the importance of the issue, Ottawa's councillor Catherine McKenney says that "we've been [unofficially] calling this a crisis for 15 years and nothing has changed". [38] As of 2018, the city spends $18 million every year towards combatting homelessness and has expressed the need for more funding and support from the provincial and federal levels of government.[39] Recalling the financial argument presented by Gladwell's *Million Dollar Murray*, the city needs to explore additional methods to increase the supply of affordable housing to address homelessness in a responsible manner from a fiscal and humanitarian perspective. Randall Bartlett, a chief economist at the Institute of Fiscal Studies and Democracy of the University of Ottawa summarizes "emergency shelters are one of the least effective ways to help chronically and episodically homeless in our community, and it's also the most expensive way of helping those people… Housing first is significantly more effective — and significantly cheaper as well". As such, it is unsurprising that the Salvation Army's proposal for a 350 bed shelter and community hub in the low income

37 City of Ottawa. 2018. "10-Year Housing and Homelessness Plan Progress Report: 2014 to 2017".
38 Osman, Laura. "City Declares Housing Emergency | CBC News." CBCnews. CBC/Radio Canada, February 3, 2020. https://www.cbc.ca/news/canada/ottawa/homeless-emergency-ottawa-1.5444246.
39 Osman, Laura. "Can Ottawa Really End Homelessness? | CBC News." CBCnews. CBC/Radio Canada, March 25, 2018. https://www.cbc.ca/news/canada/ottawa/ottawa-homeless-strategy-mid-term-1.4586691.

Figure 2.1 *The costs of homelessness (Homeless Hub)*

Figure 2.2 *Toronto Homeless Shelter: Interior conditions (CBC News)*

Figure 2.3 (above) and 2.4 (below) *St. Felix Centre: On of the three temporary respite centres built to house 100 people every night. Each weather-proof and insulated dome is constructed from modular aluminum frames with a fabric and fibreglass covering, costing $2.5M each. (The Star)*

neighbourhood of Vanier was met with opposition from housing advocates, experts, and residents who favoured a Housing First approach over building a large shelter to address homelessness.[40] However, the Tribunal has dismissed an appeal for the development, allowing for zoning changes to place the project on the urban main street of Montreal Road.[41]

The city has explored housing first principles, such as its housing first program called The Landlord Partnership Program (LPP) that matches landlords who have vacant rental units with those experiencing chronic homelessness. The city and the Salvation army provide landlords with rental subsidies and tenants are to receive support services such as case worker visits, life skills support and connections to community resources.[42] While there has been some success with the program, a landlord participating in the program in 2017 found his rental unit trashed with garbage, feces, and maggots. Tim Richter, CEO of the Canadian Alliance to End Homelessness, states that this is a rare case of extreme failure that unfortunately caused thousands of dollars of damage for the landlord. Dahlia Namian, professor of social work at the University of Ottawa, argues that the blame should be placed on the Housing First model. She reasons that by selecting the chronically homeless population as tenants and relocating them to a unit on their own, feelings of isolation from their established supports and communities can ultimately set them up for failure.[43] While the Housing First model has its merits in getting people off the streets as soon as possible, the lack of perceived community and support makes it difficult for the formerly homeless to thrive.

The 2018 Progress Report for Ottawa's 10-Year Housing and Homelessness Plan Progress provided an interim assessment of the city's progress in their goal to eliminate chronic homelessness by 2024. The report highlights trends in three demographic groups; youth, families, and Indigenous people. First, youth shelters and transitional housing were identified as limited in capacity. As a result, 612 youth utilized adult shelters for services in 2017, with only 190 youth receiving services in youth-specific

40 "'Housing First' Model Pitched as Alternative to Vanier Homeless Shelter | CBC News." CBCnews. CBC/Radio Canada, September 19, 2017. https://www.cbc.ca/news/canada/ottawa/housing-first-symposium-vanier-shelter-salvation-army-1.4294492.
41 "Salvation Army Gets Green Light to Proceed with Shelter Complex in Vanier." Ottawa, June 22, 2020. https://ottawa.ctvnews.ca/salvation-army-gets-green-light-to-proceed-with-shelter-complex-in-vanier-1.4992481.
42 City of Ottawa. "City of Ottawa's Housing First Program".
43 "'Exceedingly Rare' Case of Trashed Rental Unit Preventable, Homeless Advocate Says | CBC News." CBCnews. CBC/Radio Canada, October 26, 2017. https://www.cbc.ca/news/canada/ottawa/housing-first-failure-preventable-ottawa-1.4371999.

shelters. The report also revealed that families have seen a substantial growth in occupancy within off-site motels, up 97.8% (90 families) since a year ago in 2016, reaching a total of 182 families in 2017. These off-site motels are meant to be a temporary accommodation but have become the norm for these families as they wait on social housing. Furthermore, chronic homelessness in families has risen at an alarming rate of 171.3% (from 87 families in 2016 to 236 families in 2017), resulting in a 33% increase of shelter usage from families. This staggering growth is attributed to asylum seekers, refugees, and newcomers.[44] Families have become Ottawa's fastest-growing demographic within the city's homeless population.

In November of 2018, one of the two family shelters closed its operations making Carling Family Shelter the only operational shelter in Ottawa designated for families. Alex Polillo, a postdoctoral fellow at the Centre for Addiction and Mental Health, has been conducting research on family homelessness within Canada for her PhD work at the University of Ottawa. She states that there is a little research on the topic in Canada and the prevalence of family homelessness is unbeknownst to most as it is rare to see a homeless family out on the streets. While homeless individuals can accept communal living accommodations, families require privacy and larger spaces that are costly to obtain. Much of the affordable and deeply affordable housing stock underway are studio and one-bedroom apartments, making the two-bedroom and three-bedroom apartments that families need very difficult to find and afford. Another unique difficulty that families encounter is the expense of child care, which can be greater than rent. In order for low-income parents to attend their shift-work, weekend and evening child care is necessary but can quickly eat up their earned wages. Polillo's research suggest that if housed and stabilized, a family is less likely to experience future homelessness due to the familial bonds and relationships vital to their determination to keep fighting for their future.[45] Finally, the progress report also confirms the overrepresentation of Indigenous people experiencing homelessness in Ottawa, as reported by cities all across Ontario.[46]

44 City of Ottawa. 2018. "10-Year Housing and Homelessness Plan Progress report: 2014 to 2017".
45 Bulowski, Natasha. "Out in the Cold: Pandemic Reveals Soaring Number of Families among Ottawa's 'Hidden Homeless'." Capital Current, March 26, 2020. https://capitalcurrent.ca/out-in-the-cold-pandemic-reveals-soaring-number-of-families-among-ottawas-hidden-homeless/.
46 City of Ottawa. 2018. "10-Year Housing and Homelessness Plan Progress report: 2014 to 2017".

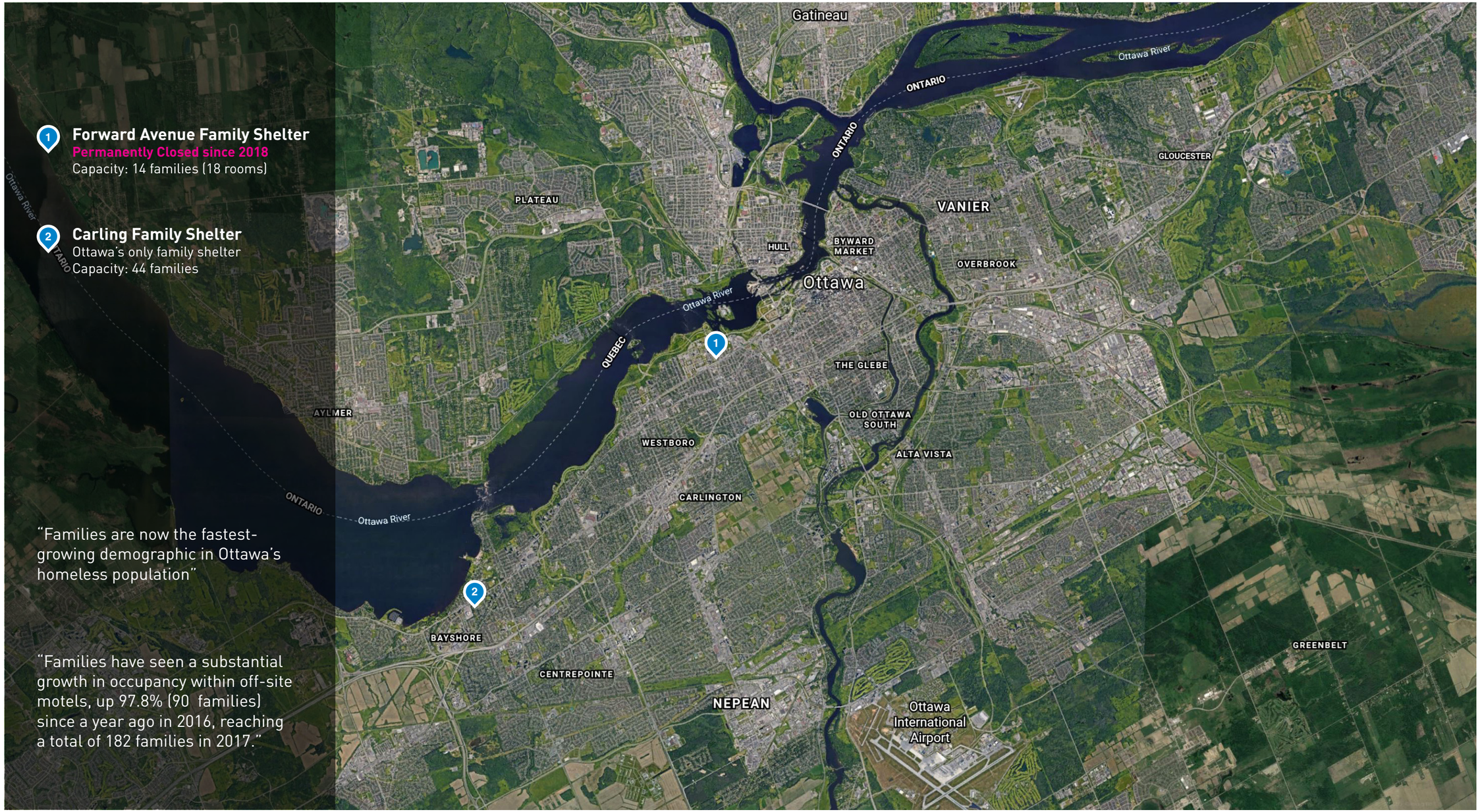


Figure 2.5 *Map of Ottawa's two dedicated family shelters*

Transitional Housing: Providing Supports and Services Together with Housing

To understand how to effectively provide housing to the homeless, the current existing models of housing are understood within the housing continuum. The housing continuum is a spectrum of living accommodations book-ended by emergency shelters on the one end and owner-occupied housing on the other. This spectrum of housing is organized in order of least independence for residents to most independence; emergency shelters, transitional housing, supportive housing, public/deeply affordable housing, assisted housing, rental housing, and owner-occupied housing. The homeless population in emergency shelters work their way through the housing continuum as they progressively become more independent and less reliant on social services and supports.[47] Transitional housing is the first step towards leaving the often unhealthy and detrimental environment of the shelter system, as explored in the previous section. Transitional housing is "conceptualized as an intermediate step between emergency crisis shelter and permanent housing. It is more long-term, service-intensive, and private than emergency shelters, yet remains time-limited to stays of three months to three years. It is meant to provide a safe, supportive environment where residents can overcome trauma, begin to address the issues that led to homelessness or kept them homeless, and begin to rebuild their support network".[48] Typically built as low to mid-rise apartment buildings including single room occupancy (SRO) and individual studio units, transitional housing can also take the form of a boarding house or other share residence types. Residents have a limited ability to pay for housing, usually through government payments for disability, unemployment, or rent subsidies. Social support is tied to the housing as it is required by the housing program, but it is not always located directly in the building. Residents within transitional housing have the opportunity for exposure in skill-building through hands-on workshops such as woodshops, printshops, digital fabrication labs. The education of life skills is facilitated through courses on personal finance, budgeting, cooking. Interpersonal social skills can be built through volunteering experiences, community events and informal interactions in communal amenities. These diverse social services serve as integral building blocks in the foundation for a formerly homeless

47 Davis, Sam. Designing for the Homeless: Architecture that Works (Berkeley, CA: Univ of California Press, 2004).

48 Gaetz, Stephen. Coming of Age: Reimagining the Response to Youth Homelessness in Canada. Canadian Observatory on Homelessness Press.

Emergency and Short Term Housing	Supportive Housing	Social Housing	Affordable Rental Housing	Affordable Home Ownership	Market Rental and Ownership Housing
Housing Programs					
Street outreach programs Diversion services Emergency shelters Day programs/drop-ins	Housing First Supportive housing Social housing (rent-geared-to-income) Rent supplements and housing allowances		Affordable housing capital funding and land acquisition Home ownership down payment assistance Low-income home owner repair/renovation funding		Household can support market housing costs
Income Level					
$0 to $14,000	$14,001 to $25,000		$25,001 to $85,000		$85,001 and up
System Capacity					
Street outreach **16 hrs/ 7 days a week** **943** permanent shelter beds **431** overflow shelter beds **190** permanent transitional housing beds **15** day programs/drop-ins	**14,957** rent-geared-to-income units **2,600** market units in social housing **3,798** housing subsidies **2,300** supportive/ supported units		**1,849** affordable housing units created since 2003 **205** home ownership grants issued since 2007 **251** home renovation grants issued since 2014 **567** secondary suites and coach houses created since 2014		**23,489** new dwellings created since 2014: - **19,909** ownership - **3,580** rental
Housing Loss Prevention Supports					

Figure 2.6 *The housing continuum with all forms of housing with various levels of support (10-Year Housing and Homelessness Plan: Progress Report 2014 to 2017)*

individual to start rebuilding their lives in community with others.

Perhaps one of the most well-known transitional housing projects in Toronto is Eva's Phoenix, completed by LGA Architectural Partners in 2016. Brought to fruition through public and private partnerships, the cost of the project was $11.2 million CAD, producing 41,200 sf of transitional housing and employment training facility at a cost of $272 per sf. LGA implemented a strategy of adaptive re-use to restore and renovate an existing 1932 Art Deco waterworks warehouse building for a new residential function. Eva's Phoenix has the capacity to provide housing for 50 youth residents at a time and space for 30 staff to carry out daily functions of support. The housing units are organized into 10 discrete "internal townhouses" that span two floors and share a common interior street that is flooded with natural light from the 30-foot-high atrium topped with skylights. Amenities include a demonstration kitchen, computer lab, classrooms, counselling space and a commercial print shop and business that provides youth with access to skill-training opportunities. Other on-site skill-training programs include construction and property management training and a tools workshop. Despite a temporary staying period of up to one year, a sense of user agency is reported by the youth at Eva's Phoenix. Residents are required to do weekly chores to care for the space, and residents also participated in the design and construction of the space, from paint color selection in the townhouses to construction work of interior elements. The youth are expected to work during their stay and one third of their earnings are stored safely with the agency, to be returned to the youth once they leave.[49]

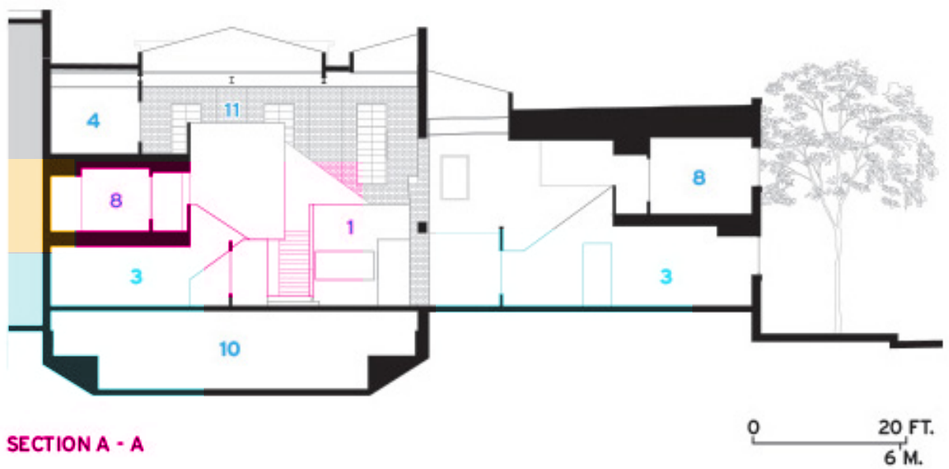
Instability of Transitional Housing

While the length of occupancy in transitional housing can be up to three years, the temporary nature of this housing model becomes problematic once the individual is required to transition towards affordable housing. While they can take their newly developed skills and belongings with them as they move out, they must leave behind the community and social networks that they have built up during their occupancy. The individual must once again build up this community and support network on their own within

49 Minutillo, Josephine. "Fresh Start.(townhouse design)(Eva's Phoenix / Toronto / LGA Architectural Partners)." Architectural Record 205, no. 2 (February 1, 2017): 86–88.

Figure 2.7 *Eva's Phoenix: Interior street between two rows of 'townhouses' (LGA Architectural Partners)*

Figure 2.8 *Eva's Phoenix: Floor plans highlighting residential, office, and communal program ratios in the building. It is worth mentioning that the office spaces in the building take up very little percentage of the overall floorplate. (base drawing by LGA Architectural Partners)*



1	ATRIUM	4	OFFICE	8	BEDROOM
2	FRONT DESK	5	TEACHING KITCHEN	9	CLASSROOM
3	LIVING/KITCHEN (WITHIN UNITS)	6	LAUNDRY	10	PRINT SHOP
		7	WORKSHOP	11	OPEN MEETING AREA

Figure 2.9 *Eva's Phoenix: Building section highlighting residential, office, and communal program ratios in the building (base drawing by LGA Architectural Partners)*

their new affordable housing complex. This may be difficult given the nature of the isolated living conditions that are common in these affordable housing apartment blocks. Transitional housing does not help to establish a continuity in community and relationships once the individual has moved to the next form of housing within the continuum. This is greatly problematic as a support network is crucial for preventing relapse back into homelessness. The tragic story of Kevin Dickman is a recent example of an individual who fell back into homelessness after he successfully moved on from transitional housing. Coming from a troubled background growing up, Kevin had spent most of his adult life wrestling with mental illness and homelessness. Having gradually worked his way through mental health treatment, case management, and transitional housing, he had received an apartment and a support worker. Following this step into housing, his life began to turn around as he got a job as a peer worker and even started taking care of a cat. He expressed hopefulness and felt a sense of purpose in his life. However, due to his support worker switching jobs and not being able to connect with his new support worker, Kevin found himself once again on the streets. On October 5th of 2019, Kevin was found dead in the Don River one month after he lost his housing. [50] The life of Kevin Dickman is a reminder that housing itself is a basic need and is not enough on its own for these marginalized populations. The support network that accompanies the housing is equally essential in helping any individual thrive, especially those who are most vulnerable. The uprooting of an individual from their transitional housing to a new environment can be a socially isolating experience that unravels earlier progress. It is crucial to identify a method for providing community and support to these individuals as they transition to their new housing.

A larger systemic issue with this model of transition is the shortage of deeply affordable permanent housing stock, causing an extended occupancy within transitional housing. Transitional housing can only be effective if there is available stock of deeply-affordable independent housing to move to afterwards.[51] Study shows that it could take from two years to 14 years for an individual on Toronto's waitlist to receive subsidized housing.[52] If

50 Monsebraaten, Laurie. "Kevin Dickman Died a Broken Man, Homeless and Alone in a City Grappling with a Housing Crisis." thestar.com, November 9, 2019. https://www.thestar.com/news/gta/2019/11/09/kevin-dickman-died-a-broken-man-homeless-and-alone-in-a-city-grappling-with-a-housing-crisis.html.

51 Davis, Sam. Designing for the Homeless: Architecture that Works (Berkeley, CA: Univ of California Press, 2004).

52 Fox, Chris. "Changes could be Coming to Subsidized Housing Wait List in Toronto,"

Kevin Dickman died a broken man, homeless and alone in a city grappling with a housing crisis

Kevin Dickman's body was pulled from the Don River on Oct. 5, a month after he lost his housing — again. He was 62.

NEWS Nov 11, 2019 by Laurie Monsebraaten Toronto Star

Kevin Dickman, shown in 2006 on his 50th birthday, had struggled for decades with homelessness, mental illness and addiction. His body was pulled from the Don River on Oct. 5. - Paula Tookey Photo

Figure 2.10 *News article on the life of Kevin Dickman (The Star)*

there are no deeply-affordable housing units available for the individuals who are ready to transition, a blockage occurs and residents are forced stay in the transitional housing. This blockage cascades downwards within the continuum, further preventing those in the shelter system from making the step towards transitional housing. The current affordable housing stock is clearly insufficient for the levels of demand in the city. The commodification and financialization of affordable housing, as referenced earlier, further worsen the deep need for affordable accommodations. Of the new affordable housing units that are slated to be built over the next decade, not enough of the units are deeply-affordable. Thus, it is necessary to explore the affordability of co-operative housing typologies through the concept of shared-ownership, which could potentially remove the need for one to transition to affordable independent housing afterwards. Instead, this allows one to affordably stay in the community they have created and invested in. The design of this thesis will explore the synthesis of co-operative housing and transitional housing to create a new typology that provides a home built on a foundational support network of community, support services and skills training for those families in Ottawa experiencing homelessness.

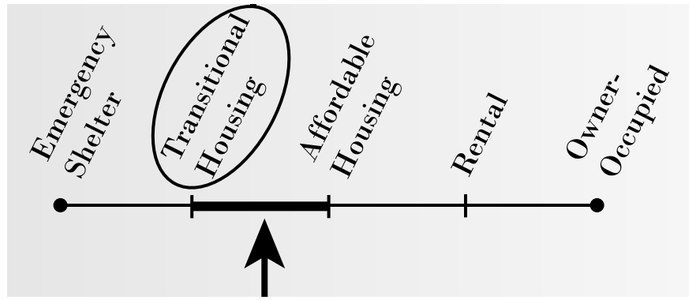


Figure 2.11 *Blockage in the housing continuum*

https://toronto.ctvnews.ca/changes-could-be-coming-to-subsidized-housing-wait-list-in-toronto-1.4511496 (accessed Nov 05, 2019).

Chapter 3

Transitioning in Place

The combined transitional and co-operative housing model of shared-ownership could be the key to alleviating the bottle-necking condition found within the housing continuum located between the transitional and affordable housing stages. By offering a model of housing that operates outside of the capitalist structure of commodified housing, true affordability is offered to the residents even as time progresses; the possibility for being priced-out of their home due to speculative value is effectively eliminated. By giving residents the possibility of remaining for as long as they wish, this addresses the critique of transitional housing which can uproot and individual from their established community and supports. If transitional housing were built on the model of co-operative housing, this would allow the individual to stay in place as they transition. By implementing the concept of Housing First and prioritizing housing as a basic human right, this new typology allows an individual to live through their transitional process with a community of similar individuals, building an invaluable base for a support network that grows and stays with the residents.

Furthering the idea of a transitional housing, the programmatic elements of the building could also "transition" and change with the residents as time progresses. "Transitioning in place" is a term I use to describe a non-profit co-operative housing model where residents remain as the support services associated with transitional housing change and eventually move out of the building. Transitional housing offers essential support services, but these services are only needed for a finite period. This thesis explores a design in which the necessary transitional services and office spaces inhabit the building temporarily. Once the services are no longer needed, the services themselves transition out of the building to the next affordable housing residence. This flexibility allows families to stay in place as they transition, building a community of support where earlier residents can transfer their embodied knowledge to the newer residents. The building's structure and layout are designed with the foresight for repurposing these vacant support service spaces. These will become new community areas for the families as their needs evolve over time. As the service and support needs of the residents evolve, the building and its flexible programmatic elements facilitate a space that grows with the residents. The current staircase model moves the

homeless from one form of housing to the next and is contingent upon perceived readiness (Figure 3.1). While the current model reacts to those who have become homeless, transitioning in place is preventative; it keeps families from ending up on the streets by providing them permanent housing and temporary supports. These are the two ingredients to form a safe foundation from which to build up a life.

Just as the program of Eva's Phoenix creates a sense of user agency in the building, it is necessary for residents to be able to have a say in the design, changes, and adaptations in the building. Giancarlo de Carlo argues that "user participation needs to transform architectural planning from the authoritarian act which it has been up to now, into a process. This process begins with the discovery of the users' needs, passing through the creation of formal and organisational hypotheses before entering the phase of use. Here, instead of reaching its usual full stop, the process must be reopened in a continuous alternation of controls and reformulations, feeding back into the earlier phases. The three phases - discovery of needs, formulation of hypotheses, and actual use - not only follow sequentially but also have a cyclical relationship."[53] The existing power structure of capitalism puts the user at the receiving end of the desires of the client and the decisions of the architect(ure). A user-based feedback loop structure must be adopted, allowing the user to continually be part of the process, as the needs and purposes of spaces change over time. The idea of this new housing typology begins by drawing from the aspects of community and affordability present within cooperative housing. By combining these elements with the transitional housing typology which serves a crucial role in the housing continuum to help the homeless population grow and develop through support services and skills training, a new model of housing is created (Figure 3.2). The resulting architecture must also be able to transition as the needs of the residents change over time. Architectural elements that can explore the idea of flexibility and "growing in place" will be the subject of further development for this typology.

53 Giancarlo De Carlo, 'Architecture's Public', p. 16-17.

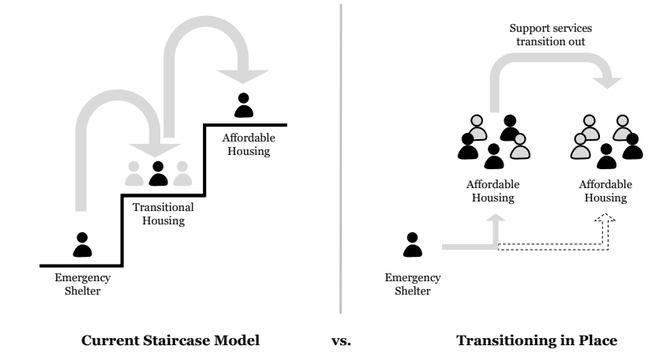


Figure 3.1 *Original diagram comparing the existing housing continuum with the stepped model to the proposed model of transitioning in place that creates true community and support without constant relocation.*

Figure 3.2 *Transitioning in place theoretical model*

Research and Design Methodologies

This research and design project begins by understanding the existing co-operative housing and transitional housing projects to inform the synthesis of these two typologies. Research was conducted through case study documentation, analysis and site visits for co-operative and transitional housing projects in Toronto, a study of international examples of co-operative housing, analyzing city reports and data on housing and homelessness, and reviewing news articles for recent events. The culminating final design produces a project that re-imagines decommodified affordable housing, how it can financially and politically be realized, and the potentials for quality housing solutions to directly challenge the deeper systemic issues of Ottawa's housing crisis.

Case study documentation contains drawings that provide documentation and analysis on existing projects and conditions. Projects of interest include Eva's Phoenix, 60 Richmond, and Bishop Tutu Blvd in Toronto. A co-operative housing development in Zurich called Mehr Als Wohnen brings insight to how a co-operative can operate on the scale of a neighbourhood. Zurich is known for the encouraged use of non-profit housing over the past 100 years, endorsing co-operative housing as a way of providing housing that is affordable to its citizens and is also equally accepted by its residents. In fact, 25% of Zurich's 210,000 apartments are non-profit, belonging to the city and to housing collectives instead of private developers. Despite Zurich being the world's second most expensive city to live in, Zurich has been able to provide affordable housing for its residents.

The design is informed by current government affordable housing plans, zoning, funding and affordable housing design strategies. The objective of the thesis is to produce a design that questions what non-profit housing can look like. In addition to the design drawings set, a financial analysis for budget, land cost and funding streams adds an additional layer of consideration and reality to the project. Financial analysis of costs, potential funding subsidies, and deeply affordable rent prices anchor the project within the financial constraints and business cases for any architectural project. This financial analysis serves to understand the implications of the chosen construction methods, material choice, and site selection. This is a facet of architecture that is not often explored in architecture school. Through this thesis, an understanding is gained for what non-profit housing could look like and how it can be financially realized, allowing me to carry this knowledge forward into my future endeavours.

City and Site Selection

Large metropolitan cities such as Toronto, Vancouver and Ottawa are known to have a large homeless population. However, research shows that there are many other cities in Southern Ontario with a similar story of housing affordability issues. In fact, the Federal Government of Canada coordinated the survey called "Everyone Counts: The 2018 Coordinated Point-in-Time Count of Homelessness in Canadian Communities", providing around $3 million to support communities interested in understanding the scope and needs of their respective homeless populations. A total of 61 communities across Canada participated in this point-in-time survey, capturing important information, statistics, demographics, and understanding for those experiencing homelessness in the community.[54]

To find a city that allowed me to test the idea of transitioning in place, three key ingredients were identified which the city must possess: affordability, economic growth, and homelessness. First, the city must be affordable to allow for land acquisition, development, and construction to occur. Furthermore, the cost of living must be manageable for the transitioned residents. Second, the city must have strong economic growth to allow transitioned individuals the opportunity to move into permanent jobs in the workforce. Finally, the city must have a certain degree of homelessness which forms a significant portion of the resident base in the proposed development.

I devised a quantifiable strategy for evaluating suitable cities using statistics and market data. I began with the BMO Regional Labour Market Report of January 2020, which ranks cities in Canada based upon their economic growth. I created a shortlist of 16 cities in Ontario to begin my selection process. Criteria were established for the ideal city to test the idea of transitioning in place. Market data was collected for each criteria to quantify

54 Canada, Employment and Social Development. "Government of Canada." Canada.ca. / Gouvernement du Canada, August 31, 2020. https://www.canada.ca/en/employment-social-development/programs/homelessness/reports/highlights-2018-point-in-time-count.html.

the cities. A weighted-average method was used to produce a final comparable score that was used to select the city. The higher the score, the more ideal the city for transitioning in place.

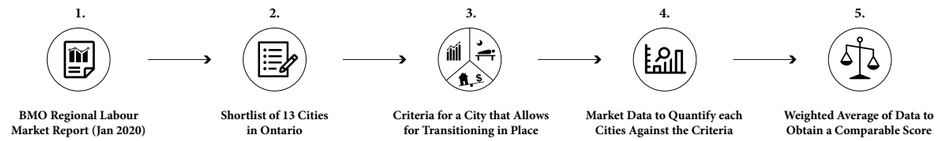


Figure 3.3 *Parti Diagram of City Selection Process*

Each of these three criteria relies on market data to quantify a city within each category. Affordability is measured by comparing the average residential sale price of 2019 for each city. Economic growth is defined by three metrics; average population growth (from Jan 2018 to Jan 2020), unemployment rate (Jan 2020), and average employment growth (from Jan 2018 to Jan 2020). Severity of homelessness is determined by expressing the number of each city's homeless population as a percentage of the total city population.

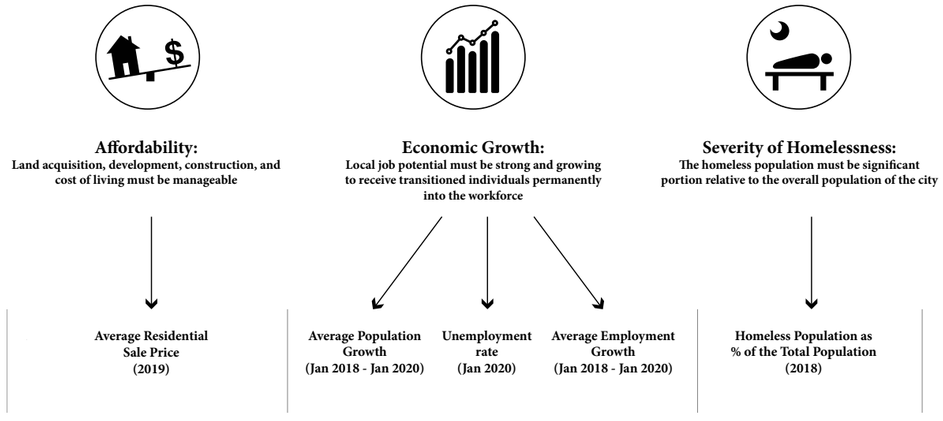


Figure 3.4 *Three Criteria for City Selection Process with Market Data as Metrics*

Once the data for each city was collected for the three criteria, it was necessary to convert the units to a comparable value that could be added up together to rank the cities. I called this process creating the "weighted score" for each criterion. To do this, the singular data entry for each city was reflected as a portion of the total data in that category. For example, let us say the average residential sale price of Toronto was $1,000,000, and the total sum of all the residential sale prices for all cities was $10,000,000. Toronto's weighted score would be $1,000,000 / $10,000,000 = 0.1. By adding up the weighted scores for each of the three categories, this would give a true ranking of how Toronto compares to the other cities, based on the specified criteria.

Weighted Score = entry criteria per city / total sum of entry criteria for all cities

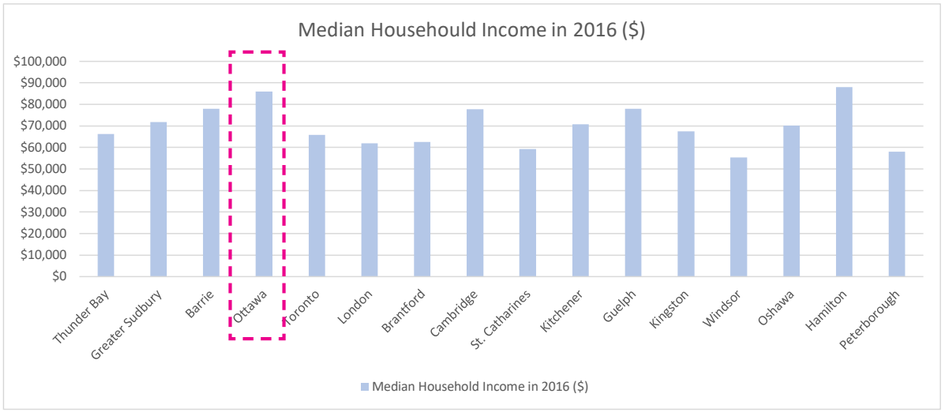
The weighted score calculation for economic growth was a bit more complicated as there were three entry columns (population growth, unemployment rate, and employment growth). Thus, to ensure that economic growth did not have 3x the weighting compared to affordability and homelessness, the weighted score calculation for each entry column was divided by 3.

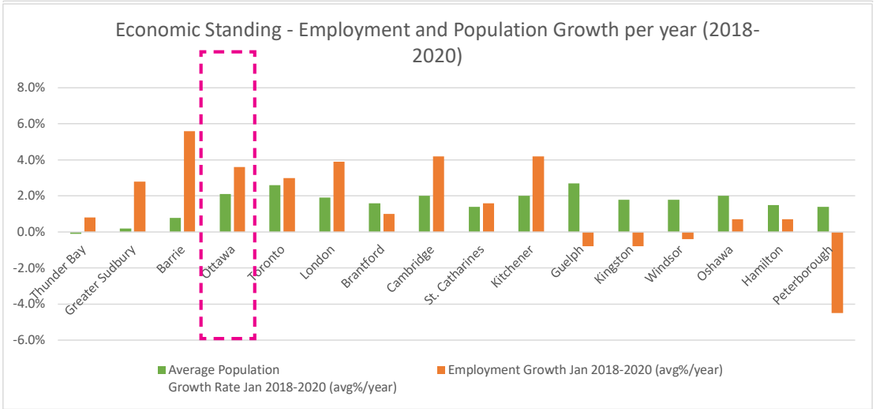
Wtd Economic Growth Score = (wtd. score of pop. growth/3) + (wtd. score of unemp/3) + (wtd. score of emp. growth/3)

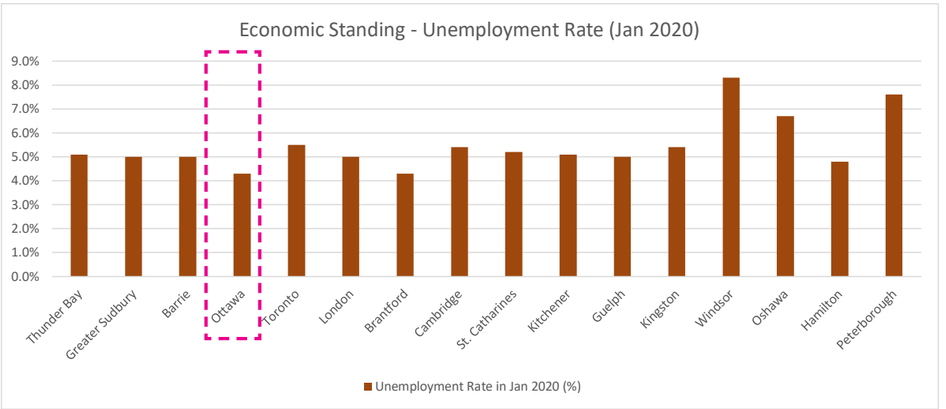
In the affordability criteria, the lower the average residential price the better. This is the same for the unemployment rate entry column for economic growth. However, the opposite is true for homelessness, population growth, and employment growth. The larger the values, the greater the chance for the city being a good choice. To account for this in the summation of the total weighted score, the criteria in which a lower value was preferred had the weighted score multiplied by -1 such that the value would be detrimental in nature to the overall score. The more expensive the residential price, the larger the value of the negative weighted score, and thus the more it lowered the total weighted score.

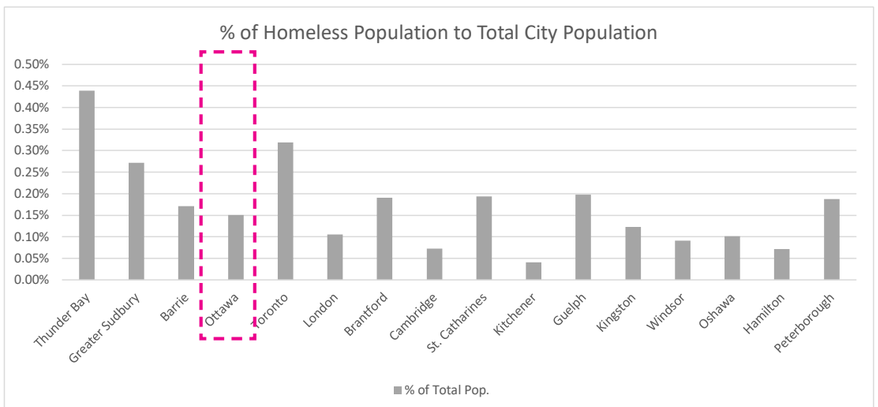
Total Weighted Score = (wtd. economic growth score) + ([wtd. affordability score] x -1) + (wtd. homelessness score)

Market Data Comparison









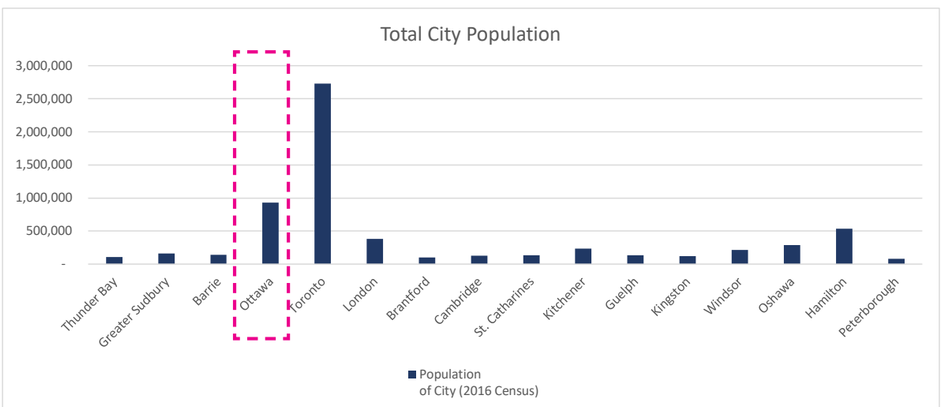
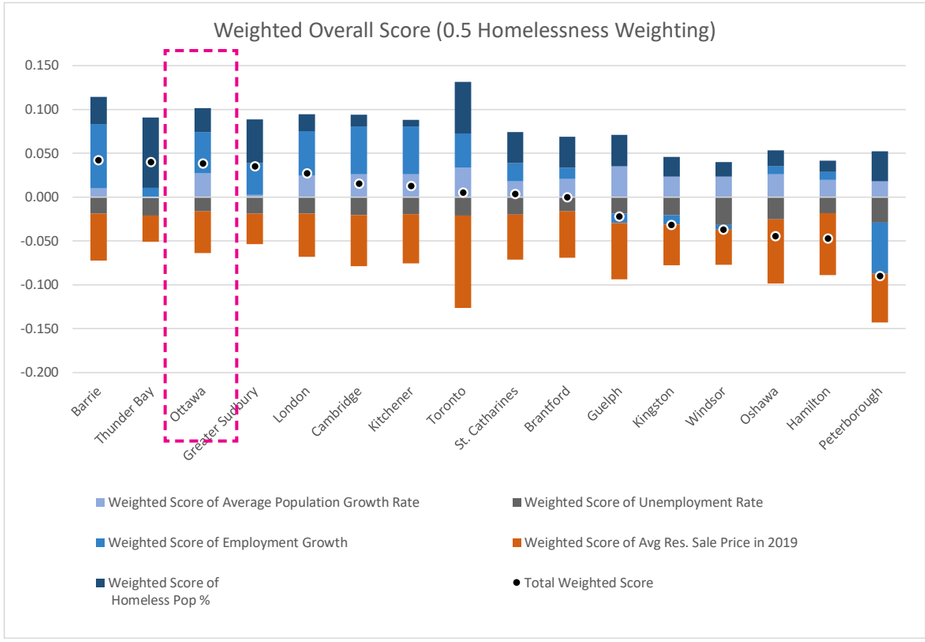


Figure 3.5 *Market Data Comparison between the 16 cities*

Weighted Overall Score Comparison

At the end of the city analysis process, the cities were ordered according to their Weighted Overall Score. While Barrie and Thunder Bay ranked 1st and 2nd respectively, I decided to select the third city as the scale of Ottawa yielded a greater access to impactful government initiatives. As I began the early research progress with Barrie, it was difficult to find traction in city funding for affordable housing.

Thunder Bay was not chosen because the weighted score of the homeless population percentage skewed its placement within the rankings, despite the homelessness metric being reduced by a factor of 0.5.



CITY NAME	MARKET FUNDAMENTALS	ECONOMIC GROWTH							AFFORDABILITY			CITY SIZE	HOMELESSNESS			WEIGHTED SCORE
	Vacancy Rate	Average Population Growth Rate Jan 2018-2020 (avg%/year)	Weighted Score of Average Population Growth Rate	Unemployment Rate in Jan 2020 (%)	Weighted Score of Unemployment Rate	Employment Growth Jan 2018-2020 (avg%/year)	Weighted Score of Employment Growth	Employment Rate Growth Jan 2018-2020 (avg%/year)	Median Household Income in 2016 ($)	Average Residential Sale Price in 2019 ($)	Weighted Score of Avg Res. Sale Price in 2019	Population of City (2016 Census)	Point in Time Enumeration Count in 2018	% of Total Pop.	Weighted Score of Homeless Pop %	Total Weighted Score
Barrie	3.30%	0.8%	0.010	5.0%	-0.019	5.6%	0.073	0.1%	$77,904	$445,100	-0.053	141,434	242	0.17%	0.031	**0.042**
Thunder Bay	3.30%	-0.1%	-0.001	5.1%	-0.019	0.8%	0.010	0.6%	$66,163	$253,948	-0.030	107,909	474	0.44%	0.080	**0.040**
Ottawa	1.80%	2.1%	0.027	4.3%	-0.016	3.6%	0.047	0.9%	$85,981	$393,977	-0.047	932,243	1400	0.15%	0.028	**0.038**
Greater Sudbury	2.20%	0.2%	0.003	5.0%	-0.019	2.8%	0.036	1.5%	$71,805	$289,500	-0.035	161,531	438	0.27%	0.050	**0.035**
London	1.70%	1.9%	0.025	5.0%	-0.019	3.9%	0.051	1.0%	$62,011	$408,417	-0.049	383,822	406	0.11%	0.019	**0.027**
Cambridge	2.10%	2.0%	0.026	5.4%	-0.021	4.2%	0.055	1.3%	$77,757	$484,941	-0.058	129,920	94	0.07%	0.013	0.015
Kitchener	2.10%	2.0%	0.026	5.1%	-0.019	4.2%	0.055	1.3%	$70,774	$466,357	-0.056	233,222	94	0.04%	0.007	0.013
Toronto	1.50%	2.6%	0.034	5.5%	-0.021	3.0%	0.039	0.3%	$65,829	$880,841	-0.106	2,731,571	8715	0.32%	0.058	0.005
St. Catharines	2.10%	1.4%	0.018	5.2%	-0.020	1.6%	0.021	0.2%	$59,256	$427,487	-0.051	133,113	258	0.19%	0.035	0.003
Brantford	2.10%	1.6%	0.021	4.3%	-0.016	1.0%	0.013	-0.4%	$62,640	$438,888	-0.053	97,496	186	0.19%	0.035	0.000
Guelph	1.90%	2.7%	0.035	5.0%	-0.019	-0.8%	-0.010	-2.2%	$77,984	$535,000	-0.064	131,794	261	0.20%	0.036	-0.022
Kingston	1.60%	1.8%	0.023	5.4%	-0.021	-0.8%	-0.010	-1.5%	$67,485	$391,023	-0.047	123,798	152	0.12%	0.022	-0.032
Windsor	2.60%	1.8%	0.023	8.3%	-0.032	-0.4%	-0.005	-1.2%	$55,450	$335,548	-0.040	217,188	197	0.09%	0.017	-0.037
Oshawa	2.30%	2.0%	0.026	6.7%	-0.025	0.7%	0.009	-0.8%	$70,211	$609,628	-0.073	287,835	291	0.10%	0.019	-0.045
Hamilton	3.90%	1.5%	0.019	4.8%	-0.018	0.7%	0.009	-0.5%	$88,124	$591,481	-0.071	536,917	386	0.07%	0.013	-0.047
Peterborough	2.00%	1.4%	0.018	7.6%	-0.029	-4.5%	-0.059	-3.4%	$58,127	$462,585	-0.055	81,032	152	0.19%	0.034	-0.090
		25.7%		87.7%		25.6%				$8,347,335				2.73%		

Figure 3.6 *Weighted Overall Score with the highlighted chosen city of Ottawa*

Ottawa's Homelessness Reports – Findings

Once the city of Ottawa was chosen by the conducting the city selection process, I used the city of Ottawa's homelessness reports seen here to learn about the trends and demographics of Ottawa's homeless population. The 2018 homelessness progress report found that the increase of homelessness from 2017-2018 continues to be driven by families, mainly due to immigration and migration. One can only imagine the trauma sustained by homeless families and their children who grow up in precarious housing situations. Homelessness is thought to be experienced most by individuals but families account for 46% of Ottawa's homeless. With Carling Family Shelter as the only operational family-specific shelter is Ottawa, its capacity of 44 families cannot be expected to service all the entire city.

A Point in Time Count is a 24-hour canvassing survey conducted every 2 years to get a snapshot of demographics and to learn more about the homeless population at shelters and on the streets. The report tells us several important findings: first, each family surveyed has 2 or more children. Second, most of the families are female-led. This report further confirms the previous findings that immigrants and refugees constitute the majority of these homeless families, and thus are in need of settling services and legal assistance. Black/African Canadian was the most common ethnic identity, followed by White/European Canadian. The most common income source was Ontario Works, a welfare program. Following behind that is child and family tax benefits, and then employment. This is important in developing the financial model for the rental housing to be designed. Another important finding is that 73% of the families surveyed indicated no health conditions, which reflects a relatively healthy population with the potential to work, given the opportunity to live in an affordable home from which to build up their lives and provide for their children.[55] The next step was to determine a site in the chosen city.

55 City of Ottawa. 2018. "Everyone Counts: Ottawa's 2018 Point-In-Time Count"

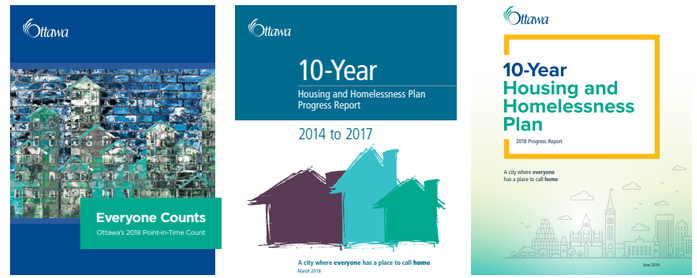


Figure 3.7 *Three homelessness reports published by the City of Ottawa that informed the design proposal*

Demand for emergency shelter beds continues to increase, with a 6.5% increase from 2017 to 2018. The main driver of the increase continues to be families, primarily due to immigration and migration from other cities and provinces. The number of youth (18 & under) accessing emergency shelters has continued to decrease in 2018, while all other sectors have increased.

Total number of people using an overnight emergency shelter in Ottawa

	2014	2015	2016	2017	2018	Change	
Total People	6,438	6,763	7,118	7,453	7,937	**6.5%**	**(484)**
Single Men	3,013	2,939	3,082	3,182	3,228	**1.4%**	**(46)**
Single Women	904	913	958	885	934	**5.5%**	**(49)**
Single Youth (18 & under)*	374	380	286	254	222	**-12.6%**	**(-32)**
Family Units	696	772	874	975	1,078	**10.6%**	**(103)**
Individual Family Members	2,253	2,616	2,850	3,217	3,640	**13.1%**	**(423)**
Total Nights	504,106	500,140	525,796	655,703	716,947	**9.3%**	**(61,244)**

*Includes stays in designated youth shelters and off-site motel placements.

Figure 3.8 *The growth of families using Ottawa's emergency shelters in 2018 (Everyone Counts: Ottawa's 2018 Point-In-Time Count)*

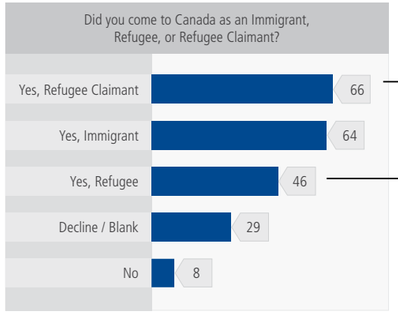
Household Composition

Families:	211
Children:	515
Adults Interviewed:	213

Gender of Parent

Female:	165 (78%)
Male:	47 (22%)
Trans:	1 (0%)

"To be considered a family household, there was at least one head of household and one or more dependent children under the age of 18 years."



(Compared to the 24% of all survey respondents, immigrants and refugees make up significantly more of the family respondents)

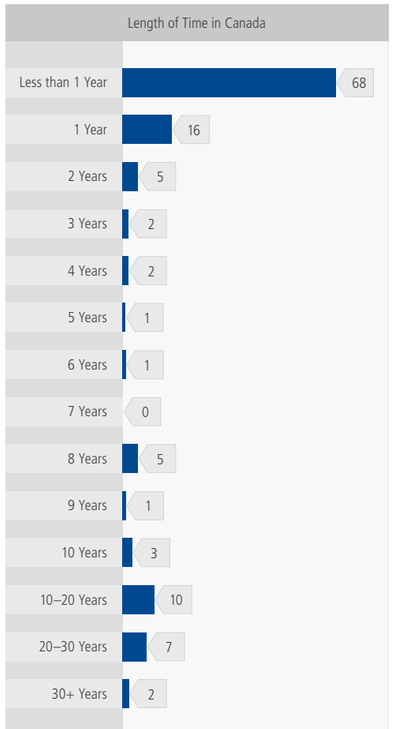
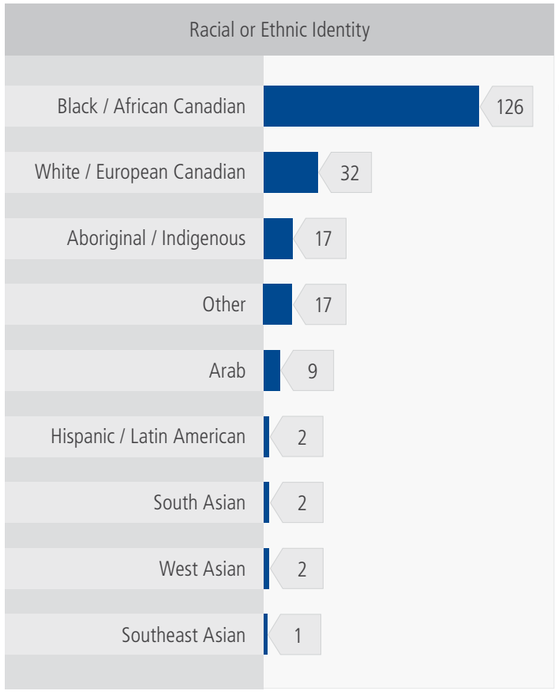


Figure 3.9 *Survey results for immigration and length of time in Canada (Everyone Counts: Ottawa's 2018 Point-In-Time Count)*

This finding indicates that many families currently experiencing homelessness in Ottawa may need **programs and services that can help them stabilize and settle** in a new country as well as **legal assistance** for those that arrived as refugee claimants."



(59%)

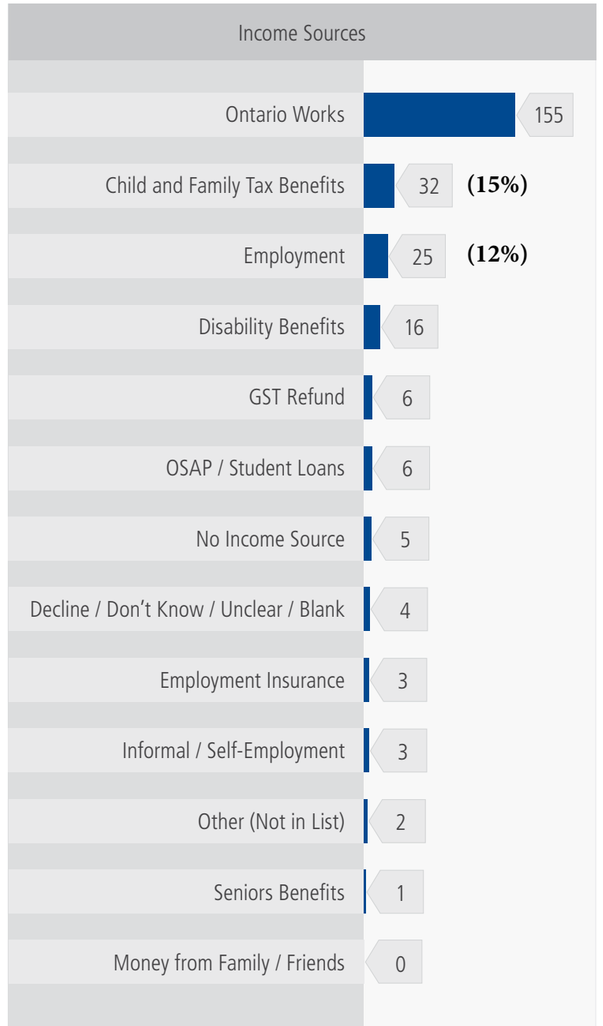
Figure 3.10 *Survey results for racial or ethnic identity (Everyone Counts: Ottawa's 2018 Point-In-Time Count)*

Language to Best Express Oneself

English: 96 (45%)
French: 65 (31%)
No preference: 10 (5%)
Other: 39 (18%)

(Compared to all other survey respondants, of which **71%** preferred English.)

"Given the diversity of language preferences, it may be important to continue to build capacity to **provide homelessness and housing stability services in languages other than French and English** in the future."



(73%) **(15%)** **(12%)**

Figure 3.11 *Survey results for income sources (Everyone Counts: Ottawa's 2018 Point-In-Time Count)*

"Less than one out of every five families reported having more than one source of income (18%)."

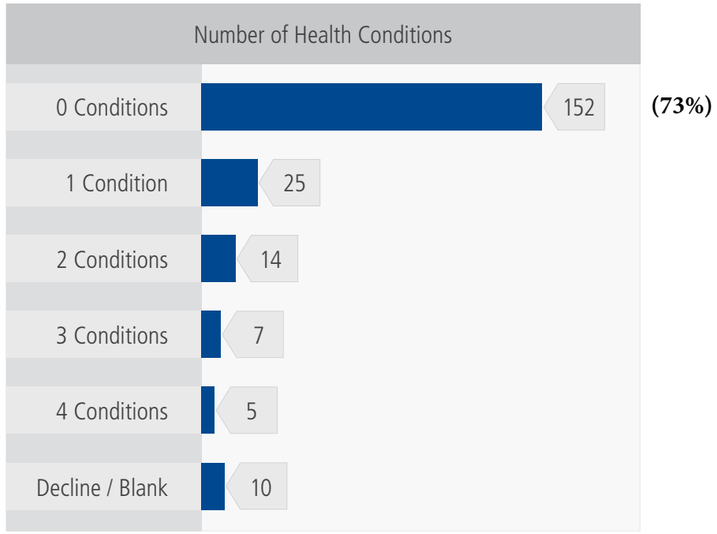


Figure 3.12 *Survey results for number of health conditions (Everyone Counts: Ottawa's 2018 Point-In-Time Count)*

"There was a very good response rate for the series of health and wellness questions. However, with the large number of refugee claimants and refugees going through the immigration process, **identifying with even one of the conditions could have been perceived as jeopardizing their immigration claim chances**, even though the surveys were anonymous and cannot be tied back to one particular individual or family"

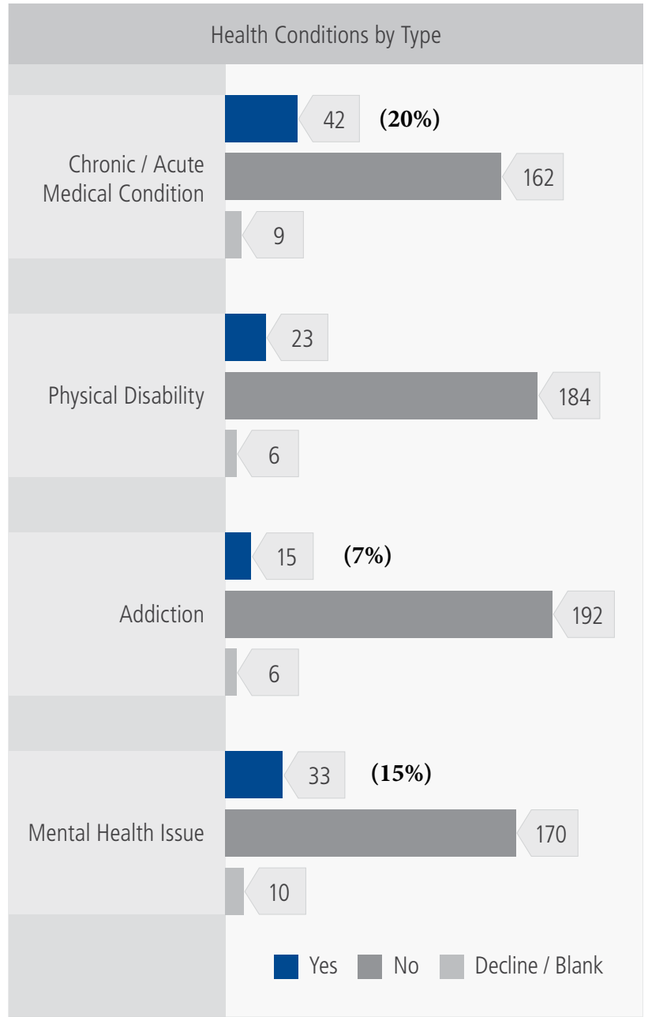


Figure 3.13 *Survey results for health conditions by type (Everyone Counts: Ottawa's 2018 Point-In-Time Count)*

Building Better Revitalized Neighbourhoods

The Building Better Revitalized Neighbourhoods Initiative (BBRN) is a city initiative that looks to revitalize low-income neighbourhoods with new infrastructure, housing and services. The initiative was started by the City with two neighbourhoods in question: Vanier and Heatherington. This provided me a start to identify a low-income neighbourhood where the proposed affordable housing development could be financially viable and have access to an inflow of city funding and support. Vanier boasts proximity and transportation connections to the downtown core of Ottawa, complete with a high density of homeless and other social services. However, the concentration of homeless populations in an area already saturated with homeless services does little to improve the overall quality of living in the neighbourhood, as found by the work city staff conducted in 2008.[56] Furthermore, Vanier is an area that is already experiencing gentrifying forces and escalating real estate prices due to its proximity to the downtown. With the focus of addressing family homelessness, the choice became evident to propose a project in Heatherington. The neighbourhood boasts a focus on existing and future youth programs, making it an effective use of existing social resources. Furthermore, there is existing strength in the community established through shared amenities such as a community kitchen and a potential future garden tower. The Albion-Heatherington Recreation Centre is a beloved community resource. Furthermore, existing neighbourhood social services include the City's Social Service Centre south office (located in the neighbourhood at 2020 Walkley Road) and the Somali Centre for family services.

The site is a 3.2 hectare parcel of government-owned land that used to be a public works yard until 2012; it currently lies vacant. 1770 Heatherington Rd is the piece of land that sparked the creation of the Building Better Revitalized Neighbourhoods Initiative, spearheaded by City Councillor Diane Deans. Co-operative forces exist already in the form of a community land trust for the site, currently in its planning stages, as well as various housing co-operatives in the immediate neighbourhood around the site. There are also gentrifying forces in place across Walkley Road in

56 "'Housing First' Model Pitched as Alternative to Vanier Homeless Shelter | CBC News." CBCnews. CBC/Radio Canada, September 19, 2017. https://www.cbc.ca/news/canada/ottawa/housing-first-symposium-vanier-shelter-salvation-army-1.4294492.

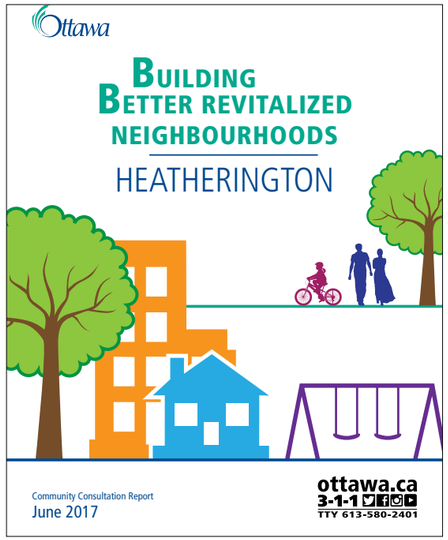


Figure 3.14 *Building Better Revitalized Neighbourhoods consultation and strategy reports*

the form of a housing project owned by Timbercreek called Heron Gate Redevelopment. This redevelopment is an example of institutional investors such as REITs, eroding the affordable housing supply and commodifying housing through "renovictions". The landlords purposefully neglected upkeep of the housing stock until it was deemed beyond repair. They proceeded to evict hundreds of low-income tenants to demolish the old affordable townhomes to make room for new luxury apartments to attract higher-paying tenants. The location of 1770 Heatherington Rd serves as an important model to provide high-quality non-profit housing in the face of such unequitable forms of housing.

The BBRN initiative was used as a method to involve the community desires at the inception of the design proposal. Understanding the limits of a Masters thesis and unable to hold lengthy and extensive community meetings, there needed to be a simpler way to hear the voice of the community. The Community Consultation Report provided such an opportunity. As part of the BBRN initiative, the City spent extensive resources and efforts to engage the neighbourhood communities to understand what sorts of programs and uses needed to be met. This report provided a starting point for the design process to ensure that the proposal was in line with community needs. The Consultation Report highlighted the community sentiment for what should be on the proposed site, and the overwhelming majority wanted a multi-purpose site with housing that was affordable, social services, and community amenities. This response serves as the list of programming to be incorporated into the design of the proposed development.

When asked what residents thought should be developed at 1770 Heatherington Road, the overwhelming majority replied that it should be a multipurpose, multi-use site. In order of overall priority, those suggestions were:

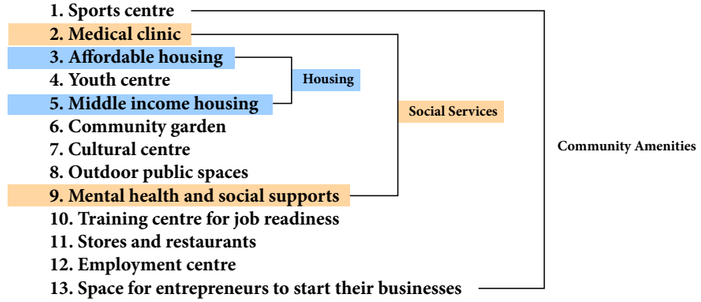


Figure 3.15 *Community-Desired Programs for 1770 Heatherington from the BBRN Consultation Report*

Low-income Neighbourhoods - BBRN Initiative

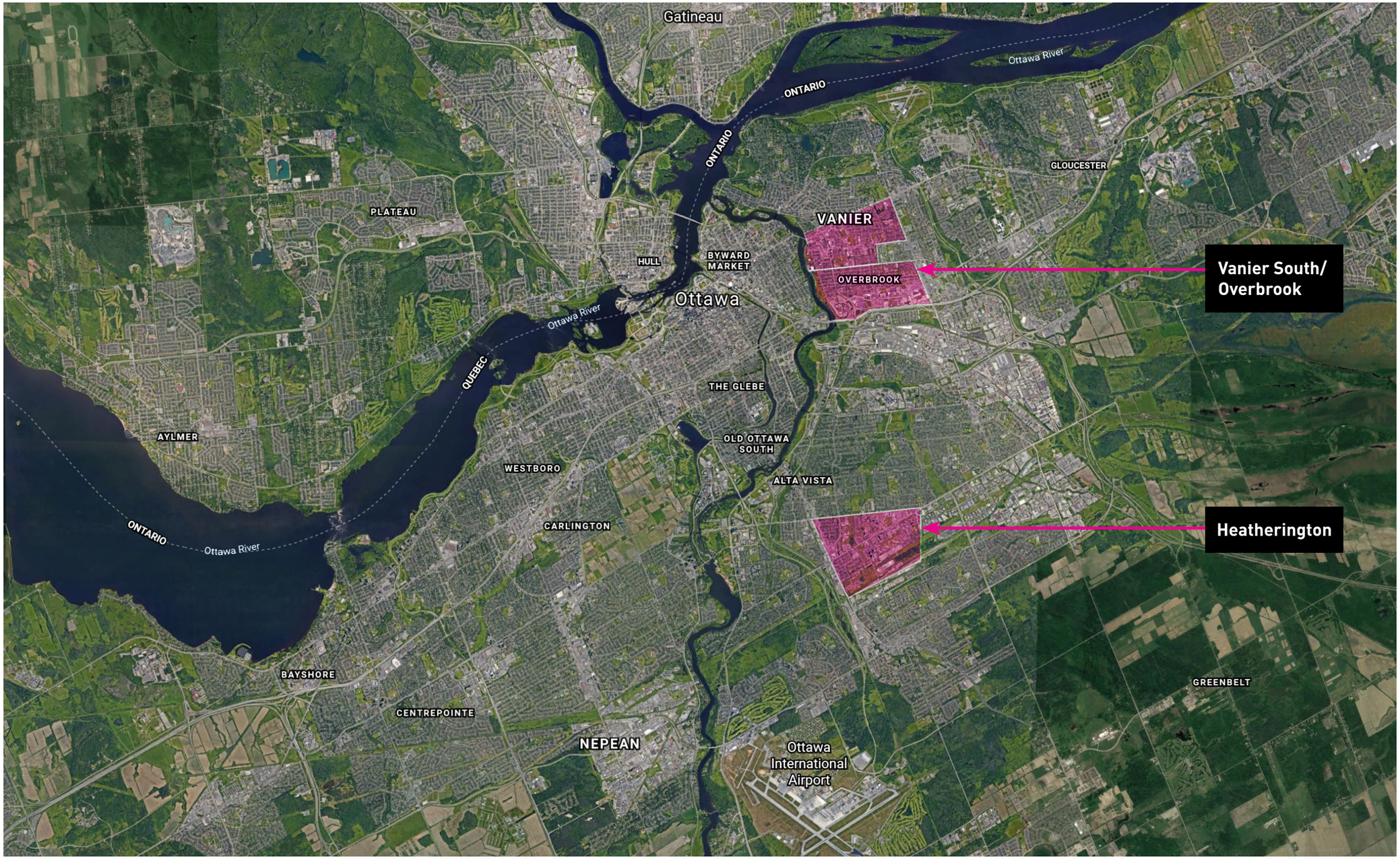


Figure 3.16 *Location of the two low-income neighbourhoods identified by the BBRN initiative*

Site Selection - 1770 Heatherington Road

Figure 3.17 *Site context axonometric*

Co-operative Forces

Figure 3.18 *Potential Community Land Trust in the making (Heatherington Land Trust)*

Figure 3.19 *Fairlea Park Housing Co-op (93 market rate 2BR - 4BR townhouses)*

Gentrifying Forces

Figure 3.20 *Heron Gate Redevelopment by Timbercreek - Plan (Heron Gate Village Planning Rationale Report & Urban Design Study, 2019)*

Figure 3.21 *Heron Gate Redevelopment by Timbercreek - Massing diagram (Heron Gate Village Planning Rationale Report & Urban Design Study, 2019)*

Site Analysis

With the chosen site, analysis was conducted to assess its surrounding context. The following maps plot out the various amenities offered by the neighbourhood within a 15 minute and 30 minute walking radius. Support service amenities include social, employment, family, and immigration services. Community amenities include a commercial plazas and malls, community centres and a food bank. Transit connections around the site include bus, train and a future LRT station. A hydro corridor exists to the south of the site and railroad tracks lie beyond that. A nolli figure-ground plan shows the density of the ground floor plane, which seems to be fairly open and spaced out with perhaps green spaces. However, an overlay of a satellite image reveals that these open spaces are dominated by vehicular use, whether it be a street or surface parking. From an urban planning perspective, this car-dominated ground plane makes it very difficult to create a pedestrian-friendly community that encourages social interaction.

Site photos acquired from Google Maps street view were collected to understand the surrounding context to the site. To the north of the site, a retail strip plaza contains the Iman Ali Masjid Mosque and some small shops. Across the street is the Herongate Square, a large shopping plaza with grocery stores and other common retailers. To the east is a 6 story rental apartment with 2 story townhomes below. The south backs onto more 2 story townhomes and a bit further lies the Prince of Peace Catholic School. An energy station connected to the rail roads exist beyond the school. South-west is Heatherington Park and the Heatherington-Albion community centre. Finally, to the West is an MTO Drive Test site. Photos show views of the mosque and the site boundary conditions with the strip mall and MTO site. On Heatherington road, 2 story townhomes exist to the east and south of the site. Within the townhome development to the south of the site, a "pocket-park" exists in-between the backyard of the townhouse community, providing a safe place for children to play that protected from cars

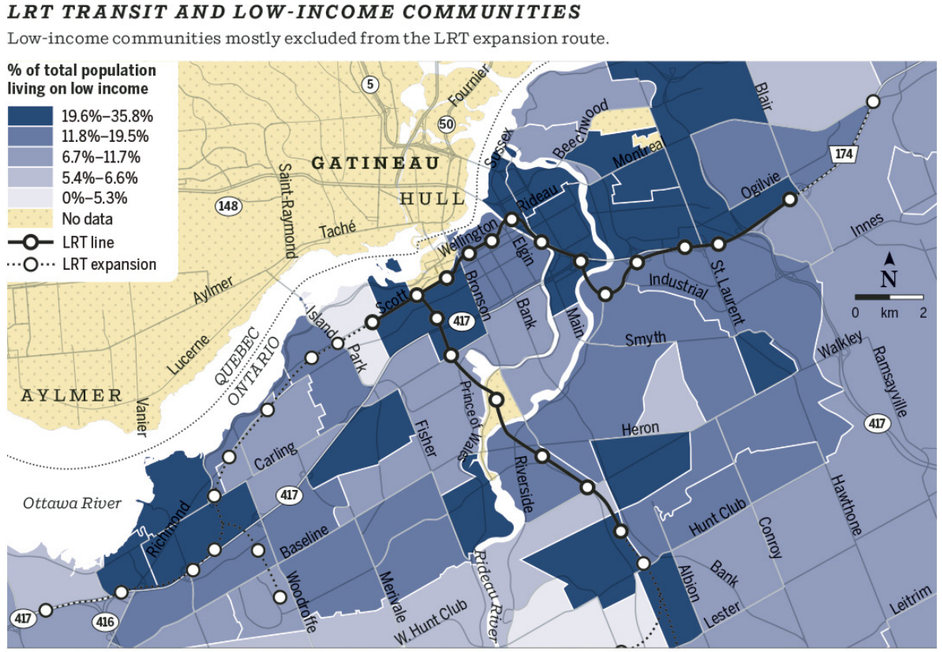


Figure 3.22 *Future LRT Expansion overlaid onto a map showing low-income neighbourhoods in dark blue (Dennis Leung)*

Neighbourhood Amenities - Social Services

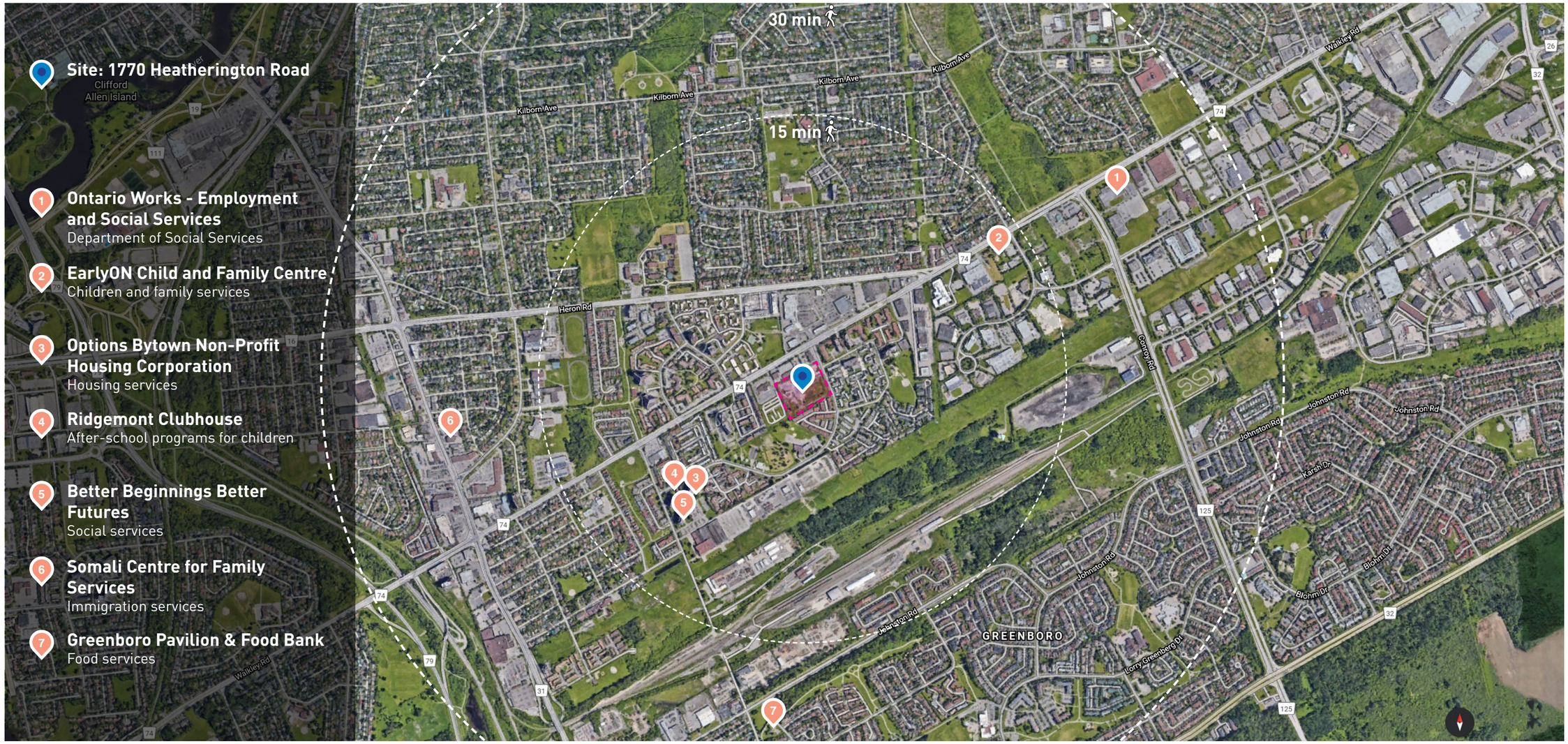


Figure 3.23 *The neighbourhood's existing social services within a 30 minute walk from the site*

Neighbourhood Amenities - Community Amenities

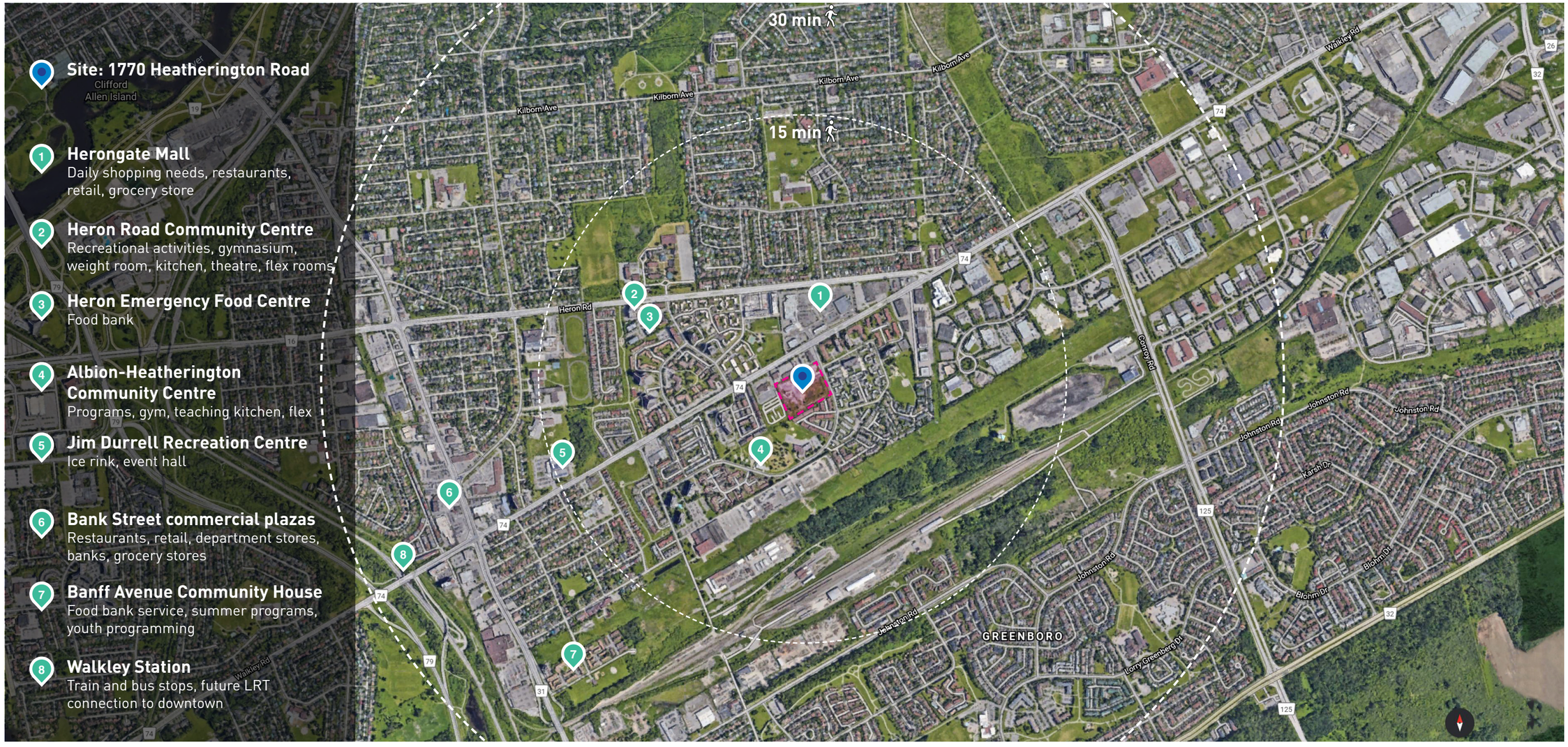


Figure 3.24 *The neighbourhood's existing community amenities within a 30 minute walk from the site*

Neighbourhood Amenities - Transit Network

Site: 1770 Heatherington Road

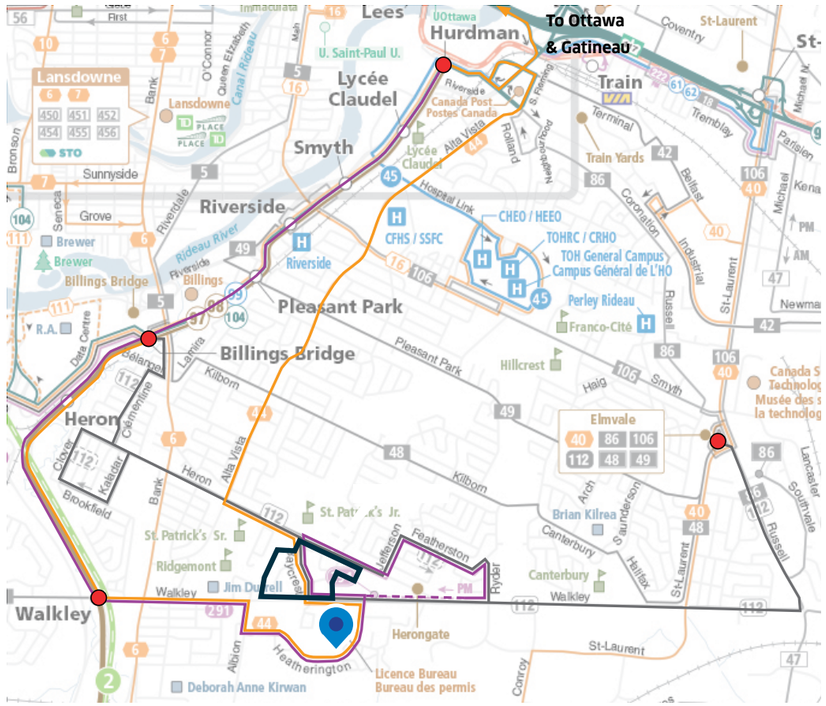


Figure 3.25 *The neighbourhood's existing transit network (Heron Gate Village Planning Rationale Report & Urban Design Study, 2019)*

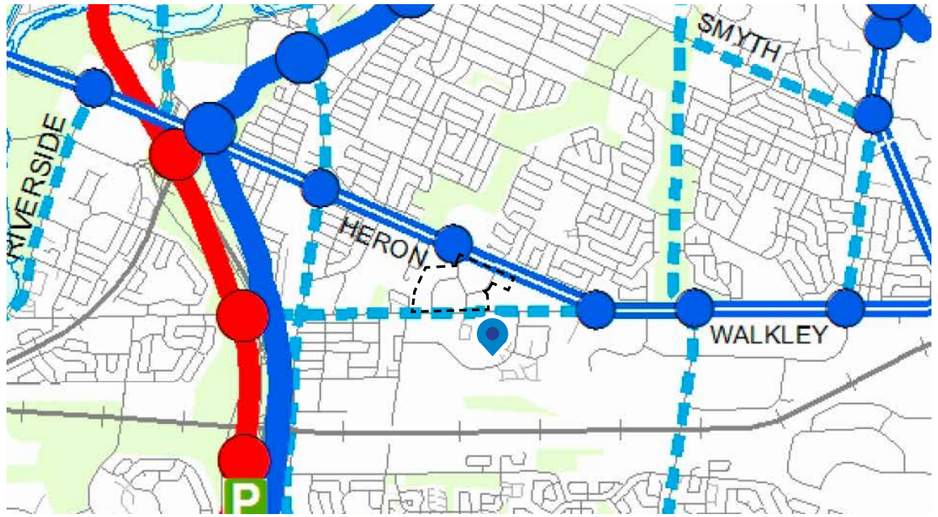


Fig. 61. Excerpt from the OP Transit Network Plan

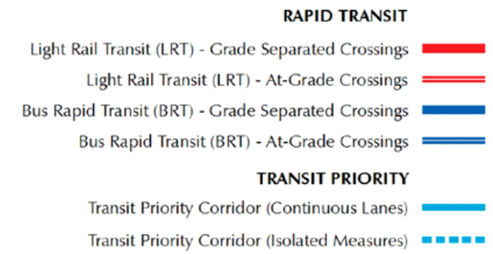


Figure 3.26 *The neighbourhood's proposed LRT Transite line (OP Transit Network plan)*

Nolli Figure Ground - Site Map

Figure 3.27 *Site context map drawn as a nolli figure plan*

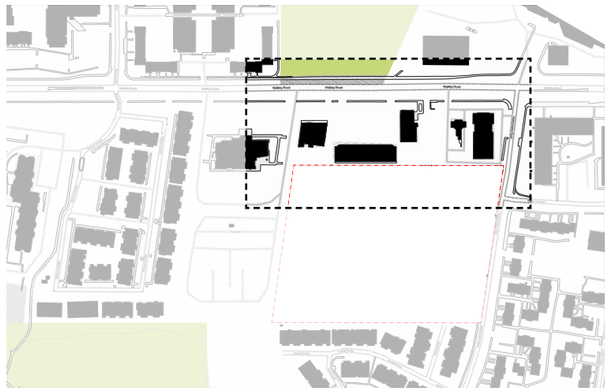
Existing Urban Fabric - Vehicular Dominance

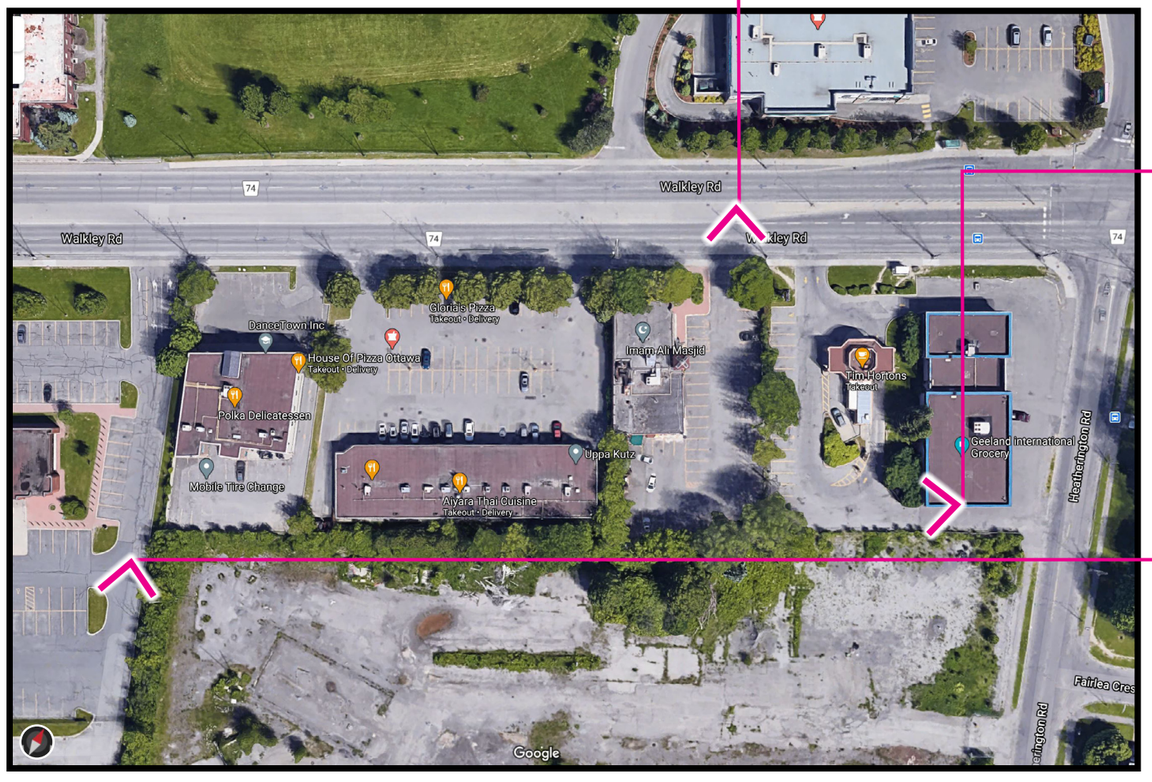
Figure 3.28 *The vehicular spaces within the open space of the nolli plan, coded in pink to demonstrate the dominance of vehicles*

Site Context

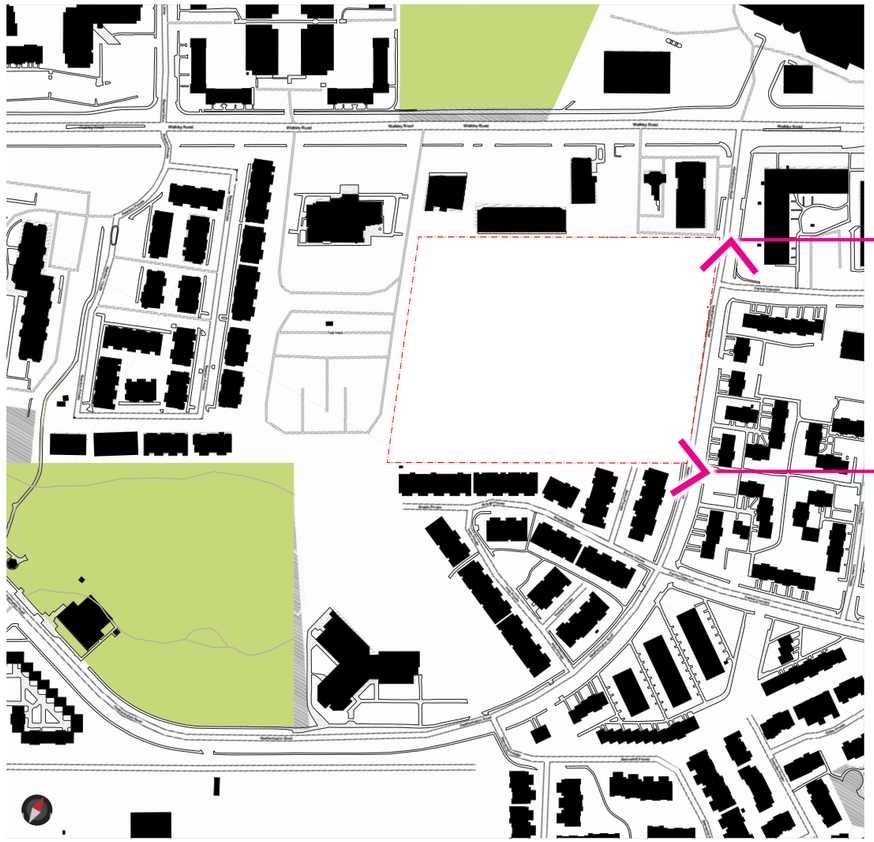
Figure 3.29 *Site context axonometric with annotations*

Existing Site Conditions - Walkey Road Commercial, Retail Plaza and Drive Test Centre





Existing Site Conditions - 2 Story Townhouses to the East and South



Existing Site Conditions - 2 Storey Townhouse Playground

Chapter 4

Design and Development Proposal

Precedent Projects

The site selection and analysis process presented 1770 Heatherington Road as an opportune location for the desired development. Within a network of existing streets, contextual connections, and community amenities, an empty parcel of land was ready to take on another form that could revitalize and benefit the existing and future community in a sensitive manner. To inform the initial design process for the masterplan, precedents were chosen to learn from the different scales of developments that had yielded success in providing a family-friendly community environment. It was important to draw from existing urban models and typologies of development to guide the choice for the scale, density, building form, and housing typologies of the masterplan design proposal. The first precedent is a project in Toronto located on Bishop Tutu Blvd.

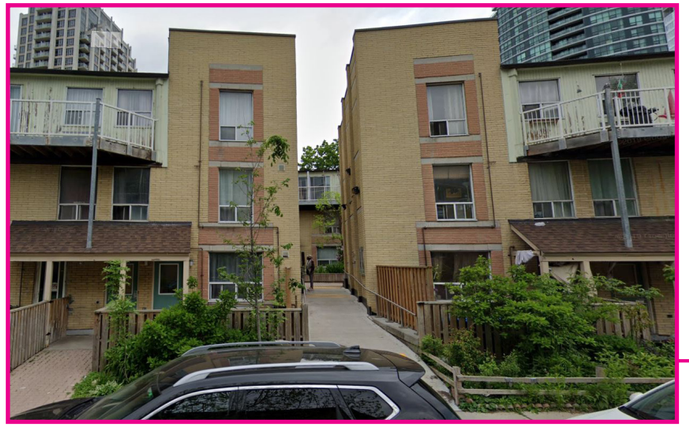
Bishop Tutu Blvd

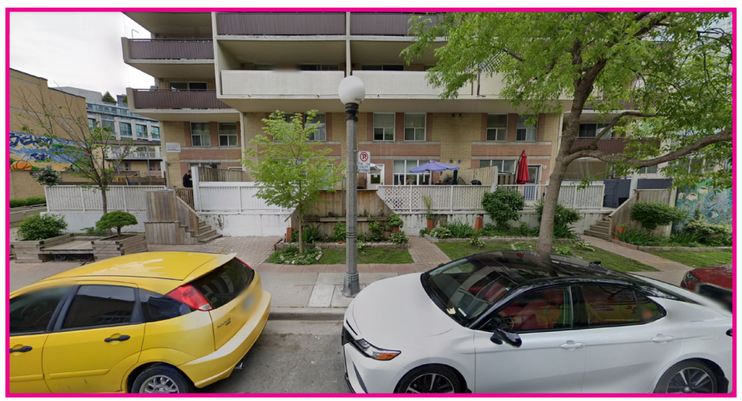
The development of social housing and cooperative housing on Bishop Tutu Blvd in Toronto served as a precedent for the desired scale of development. This typology of housing consisted of mostly townhouses formed around a central courtyard, bookended by two buildings of greater density at 10 and 12 stories. The provision of a secure public courtyard space for all the residents was balanced well with the density achieved on the site. Breaks in the townhouse blocks allows for discrete openings to slip into the courtyard space, providing a pocket park condition that is safe for families and children to occupy. The townhouses provided a transition between the vehicular traffic on the street and the shared public space in the centre of the block. The density on the two long ends of the block provided opportunities to hold other community amenities and shops for the neighbourhood.

Mehr als Wohnen

Another precedent that was studied was Mehr Als Wohnen, a co-operative development located in a town outside of Zurich called Hunziker Areal, which won the World Habitat Award in 2016. This development was the result of an international competition commissioned by the City of

Precedent Site Photos - Bishop Tutu Blvd





Zurich, calling designers, planners, and architects from around the world to imagine the future of not-for-profit housing. This was a response to address the housing crisis within the inner city of Zurich. The masterplan that won the competition belonged to Futurafrosh and Duplex Architekten, who then drew upon the expertise of other architects including Müller Sigrist, Miroslav Šik, Pool Architekten, and landscape designers Müller Illien. The completed development transformed a piece of industrial land was released by the city for the competition, creating an innovative catalyst that contained thirteen residential buildings, retail spaces, and green amenities which house 1,400 residents.[57]

Switzerland has a rental-heavy housing sector, comprising of 67% of its housing stock.[58] Zurich is well known for being one of the world's most expensive places for housing. Combined with having an extremely low vacancy rate at 0.15%, housing is made affordable by non-profit suppliers.[59] Zurich is also known for the encouraged use of non-profit housing over the past 100 years, endorsing co-operative housing as a way of providing housing that is affordable to its citizens and is also equally accepted by its residents.[60] The principle of co-operative housing is not the same as social housing as co-operative housing is not subsidized by the state or government. The rental price in non-profit co-operative housing is meant to cover the base expenses of the building including mortgage payments, the operating and maintenance expenses; ultimately with no intent of generating additional profit. This is how housing can be made to be on average 30% less than market price charged by private landlords.[61] In fact, 25% of Zurich's 210,000 apartments are non-profit and operate outside the speculative market models, belonging to the

57 "More than Housing - Baugenossenschaft Mehr Als Wohnen." Cooperative Housing. Accessed January 17, 2020. https://www.housinginternational.coop/resources/housing-baugenossenschaft-mehr-als-wohnen/.

58 Baranzini, Andrea, Caroline Schaerer, José V. Ramirez, and Philippe Thalmann. "Do Foreigners Pay Higher Rents for the Same Quality of Housing in Geneva and Zurich?" Swiss Journal of Economics and Statistics 144, no. 4 (2008): 703–30. https://doi.org/10.1007/bf03399272.

59 Banfi, Silvia, Massimo Filippini, and Andrea Horehájová. "Valuation of Environmental Goods in Profit and Non-Profit Housing Sectors: Evidence from the Rental Market in the City of Zurich." Swiss Journal of Economics and Statistics 144, no. 4 (2008): 631–54. https://doi.org/10.1007/bf03399269.

60 "More than Housing - Baugenossenschaft Mehr Als Wohnen." Cooperative Housing. Accessed January 17, 2020. https://www.housinginternational.coop/resources/housing-baugenossenschaft-mehr-als-wohnen/.

61 Glaser, Marie. "The Situation of Social Housing in Switzerland." Critical Housing Analysis 4, no. 1 (2017): 72–80. https://doi.org/10.13060/23362839.2017.4.1.326.

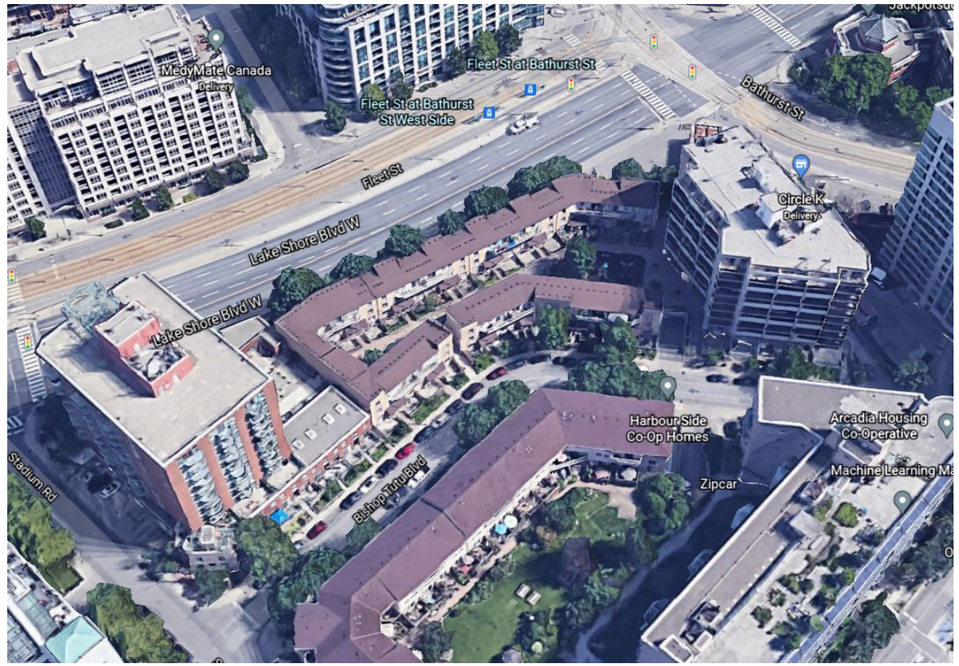


Figure 4.1 *An aerial of a housing development at Bishop Tutu Blvd, Toronto*

city and to housing collectives instead of private developers.[62] In addition to financial benefits of living in co-operative housing, the community that is created in these democratic volunteer-based constructs reflects a civil society "en miniature", a microcosm of the outside world where a tight-knit community is formed.[63] Zurich has dedicated a housing policy with the objective of achieving 33% of total housing stock as non-profit housing by 2050. With the majority cooperatives in Switzerland being non-profit, this reality demonstrates that despite a Neoliberal economy, where the state has withdrawn its role of policies, there can still be a proliferation of decommodified forms of housing, unlike the Neoliberal economies of North America which produce Capitalist forms of commodified housing.[64] The material city reflects who is in power, and in Switzerland it is seen that non-profit housing and ideals to house every citizen are at the forefront of policy and governments. As a result of this reputation in housing, it is to no surprise that 50 different housing co-operatives came together to develop this masterplan together, effectively spreading the risk of the experimental project. The scale and complexity of this development makes it a very intriguing and meaningful case study to pursue. Another significance of the project from a planning level is found in the extreme sustainability realized through build materials and operation requirements of the constructed buildings, which are kept to a minimum standard such that the energy consumed by each individual is 2000 watts/day. In addition to the sustainability aspects of this masterplan development, the project boasts a tremendous quantity of amenities for the community with public spaces, parks, retail, shared workspaces and community rooms, care facilities, and more. The fact that affordable housing can be the core of a vibrant community of thriving individuals is a shining beacon for how architecture, design, planning, urbanism, and community involvement can all play a part in creating a last impact on the lives of those in need of assistance. It is no longer about this perspective of "me" and "them" (the poor or financially unstable), but simply "us" within this thriving collective.

62 "More than Housing - Baugenossenschaft Mehr Als Wohnen." Cooperative Housing. Accessed January 17, 2020. https://www.housinginternational.coop/resources/housing-baugenossenschaft-mehr-als-wohnen/.

63 Suter, Peter, and Markus Gmür. "Volunteer Engagement in Housing Co-Operatives: Civil Society 'En Miniature.'" VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations 29, no. 4 (2018): 770–89. https://doi.org/10.1007/s11266-018-9959-0.

64 Balmer, Ivo, and Jean-David Gerber. "Why Are Housing Cooperatives Successful? Insights from Swiss Affordable Housing Policy." Housing Studies 33, no. 3 (2017): 361–85. https://doi.org/10.1080/02673037.2017.1344958.

The master plan of the buildings is organized in such a way that their form, plan layout, scale, and shape are all varied and read as distinct clusters, while sharing similarities as a cohesive development. Housing layouts and programs have been experimented with and yield successful results in the way that people live in this development. The logistical feat of collaboration and working with so many stakeholders, professionals, community members, and residents is a greater reason to understand the political, economic, and social lessons that can be found in this example of an incredible development.[65] In the face of current trends of gentrification and redevelopment of land for capitalistic gains, it is crucial to address the housing needs of the individual without the thought for profit. This project is living testament to the great potential that co-operative housing could yield in a North American context, and that it is indeed a scalable solution to the housing crisis that plagues so many cities in the world, which is proliferated by capitalism and neoliberal practices.

In describing the architecture and design intent of the project, Duplex Architekten explains the concept of Mehr Als Wohnen as a vision to create a development that acts as a part of the larger urban fabric, instead of a closed-off self-contained project. The masterplan of the project represents this public-oriented vision with thirteen moderately sized mid-rise buildings that are organized to be independent of each other, connected by a network of outdoor amenities such as parks, plazas and pathways that tie the separate buildings together. This pattern of loosely spaced buildings with connective tissue for public space contrasts greatly with the Modernist method of oppressive monolithic tower blocks that repeat across the site in a sea of unusable green space. The shared spaces on the ground floor are surrounded by residential workspaces, while retail and community rooms all work together to activate the ground floor experience to create a lively and diverse neighbourhood. There are a total of 395 dwellings that house 1200 residents, complete with communal care and community amenities. There are an additional 35 retail spaces that employ 150 residents within the development.

The masterplan also serves to prescribe the aesthetic principles for the exterior treatment of the buildings on site. Two closely-located "brother"

65 "More than Housing - Baugenossenschaft Mehr Als Wohnen." Cooperative Housing. Accessed January 17, 2020. https://www.housinginternational.coop/resources/housing-baugenossenschaft-mehr-als-wohnen/.

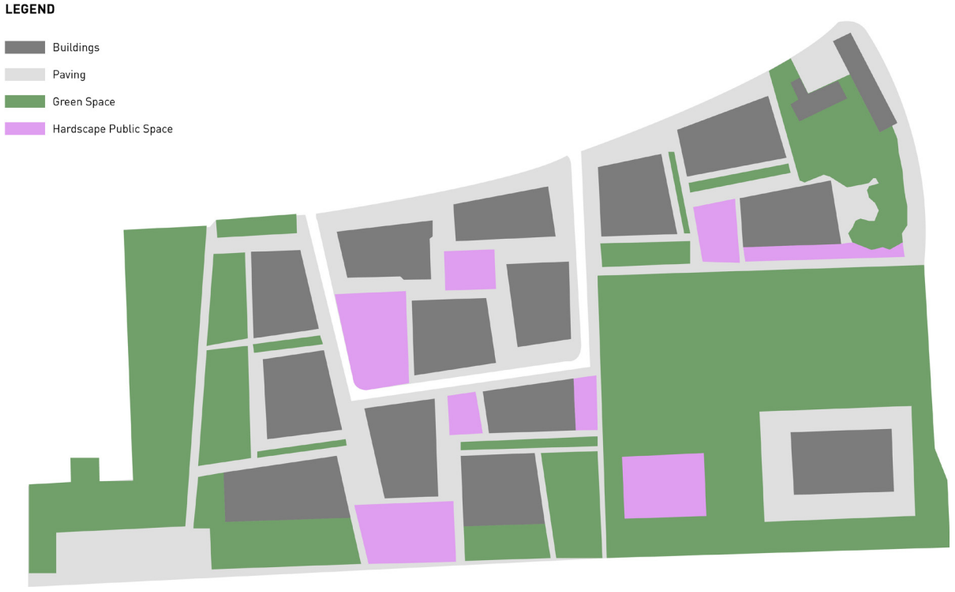


Fig. 4.2 *A diagram to show the positive and negative spaces on the site, and the different types of negative spaces*

Fig. 4.3 *The master plan of the Mehr Als Wohnen development. The urban fabric weaves together built form with open outdoor spaces and public paths (Hugentobler, Hofer, & Simmendinger, 2016).*

Mehr Als Wohnen - Co-operative Development

Figure 4.4 *Satellite site plan of Mehr Als Wohnen*

buildings should be treated aesthetically similarly, while a third "cousin" building on the opposite side of the development should complete the trio and be treated to a similar degree but not identically. This principle allows the development to have an overall character that strikes a harmonious balance with the aesthetic language that is at once complimentary yet varied, without seeming to have a homogenous treatment. The overall architectural treatment is fairly subdued such that the activities of live and the community's livelihood serve as the embellishment to the space. In contrast to the quite exterior, the interior treatment of the buildings is often distinct and spectacular, as seen in Pool Architekten's House G.

The architects of Mehr Als Wohnen were exploratory in the way that they organized and planned spaces within the building to facilitate co-operative living. House A by Duplex Architekten is a cluster house that takes the pattern evident in the urban fabric of the development and re-introduces it on the architectural scale. Individual housing units are arranged around a communal public space within the building that is shared, increasing the spectrum of public and private spaces within the building.[66] To combat the housing crisis of 1920, Germany had developed a concept called Existenzminimum (minimum dwelling) towards the creation of affordable public housing. The emphasis was to maximize space efficiency and minimize the quality standards.[67] However, through participatory design methods, the idea of top-down strategies is no longer the only method to create housing. Instead, bottom-up grass-roots initiatives are allowing users to experiment and participate in co-production of their own living spaces, as demonstrated in the design of House A and its flexible interior.[68]

Mehr Als Wohnen began as a project in 2007 that included participatory design all the way up to construction in 2012. Taking the ideas and desires of the residents, the community, and a sociologist (named Corinna Heye), certain public spaces were left unfinished such that the tenants who moved in could re-appropriate the space to their own needs and liking. In this manner, the residents played an integral role in designing

66 "Mehr Als Wohnen – Danish Architecture Centre." DAC. Accessed January 17, 2020. https://dac.dk/en/knowledgebase/architecture/mehr-als-wohnen/.
67 Brysch, Sara. "Reinterpreting Existenzminimum in Contemporary Affordable Housing Solutions." Urban Planning 4, no. 3 (2019): 326–45. https://doi.org/10.17645/up.v4i3.2121.
68 "Minimum ALS Experiment – Ein GESPRÄCH Mit Pool Architekten Aus Zürich / Minimisation as an Experiment? – in Conversation with Pool Architekten from Zurich." best of DETAIL: Urbanes Wohnen/Urban Housing, 2017, 58–62. https://doi.org/10.11129/9783955533601-012.

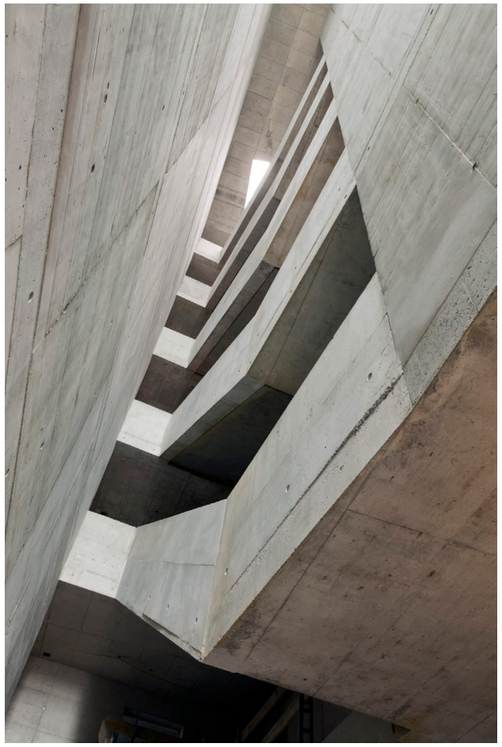


Figure 4.5 (above) and 4.6 (below) *The exterior of Pool Architekten's House G is very modest when compared to its spectacular interior (Divisare, 2016) (Danish Architecture Centre, 2016)*

the neighbourhood they would soon inhabit. An additional annual budget of USD $83,000 was provided to the residents from a solidarity fund (comprised of contributions from residents) to run community initiatives, including a grocery shop, community gardens, cafes, and recreational classes. The sheer complexity of the development yielded tremendous difficulty when trying to gather funding initially, especially under the status of a newly formed co-operative. However, the knowledge and assistance of larger and established co-operatives in Zurich helped to provide credibility to the concept of this innovative development. Furthermore, the connections of these established co-operatives with banks and the City allowed Mehr Als Wohnen to secure loans with low interest rates, greatly assisting in the success and realization of the project. The knowledge extends beyond the project, as Mehr Als Wohnen acted as an urban catalyst for transformation as it jumpstarted the development of Northern Zurich from an industrial abandoned land into a sustainable district of the city. New projects in the area are being constructed from the knowledge which proved to be successful through results and the social character of knowledge. These projects include the City of Zurich's Leutschenbach Mitte and Thurgauerstrasse West, a joint project between the City and other co-operatives.

Mehr Als Wohnen was contingent on municipal policies that took place in 2011 where the city voted for the goal of increasing the amount of non-profit housing in the city up to 33% by 2050. To help reach this goal, the city released a few city-owned sites to develop low-cost housing. One of these sites that was released is the four-hectare site of Hunziker Areal, where Mehr Als Wohnen is located. Originally used for industrial waste adjacent to a recycling plant, this site had a great deal of risk attributed to its development. Since the risk was too much for one individual co-operative to bear, the strategy was to spread the risk by allowing 50 co-operatives to join together to form Mehr Als Wohnen. Without the risky context of the industrial site, there would not have been the need for such a large consortium of co-operatives to work together, thus resulting in a project that arguable would have been less innovative and complex. It is evident that Mehr Als Wohnen demonstrates a great deal of experimentation. The complexity and scale of the development makes it one of the most innovative and ambitious co-operative developments in Europe. Going beyond this, the project adds another layer of sustainability to the development that surpasses the requirements by the city. Mehr Als Wohnen is the largest 2000 Watt neighbourhood and acts as a testing-ground for how to live sustainably through reducing the carbon

Figure 4.7 *Photo of the interior quality in a unit (Danish Architecture Centre, 2016)*

Figure 4.8 *Photo of the participatory design process (Danish Architecture Centre, 2016)*

footprint of buildings and occupation. The experimentation extended beyond the built form to impact housing policies as well.

Through the intentions of Mehr Als Wohnen to include people from all social levels and demographics, the concept of pluralism is clearly demonstrated. There was an innovative policy created to ensure that there was social diversity in the population that inhabited the project. This meant that the housing provided also reflected this policy, providing for a whole spectrum of dwelling units, from bachelor units to communal cluster units with 15 rooms. Instead of conventional for-profit housing models where units were produced and sold based on what sold best on the market and thereby maximizing profits, the development reached out to marginalized groups and sought to assist them in finding housing within the project. Despite rents that were already below market rate, 80 out of 370 apartments were further subsidized by 20% with government assistance. A tenth of the apartment stock was reserved for non-profit groups that helped house populations with disabilities, and immigrant and struggling families. The development sought to explore how to make housing for everyone, instead of just those who are most capable to pay market rent, exemplifying the concept of pluralism.[69]

Mehr Als Wohnen provides a shining example for what a housing development can provide to the city and to its residents. From a dilapidated waste land, it became a catalyst for urban revival in the area while simultaneously providing quality housing and amenities to over a thousand people. There is clearly a lot that can be taken from this project and applied elsewhere, and governments around the world should take on the same sense of responsibility for housing their citizens in a glorified and responsible way. Mehr Als Wohnen frames an evocative perspective for the future of affordable housing in Canada. Zurich provides an example of how the actions of the state resulted in the creation of more non-profit housing. As Singapore begins to position itself on the international scale, policies and landscape transformations reduce the efficiency of housing development that Singapore is known for.[70] When we look at Canada and its new housing policies for this new decade, it possible to imagine there are ways in which non-profit housing can be developed by the government and

69 "More than Housing." World Habitat, May 8, 2018. https://www.world-habitat.org/world-habitat-awards/winners-and-finalists/more-than-housing/#award-content.

70 Goh, Robbie B. "Ideologies of `Upgrading' in Singapore Public Housing: Post-Modern Style, Globalisation and Class Construction in the Built Environment." Urban Studies 38, no. 9 (2001): 1589–1604. https://doi.org/10.1080/00420980120076821.

Fig. 4.9 *The floorplan of House A by Duplex Architekten, showing a cluster house building that draws from the planning strategies of the development and implements a similar pattern of built form and connective spaces within the building itself. The social shared spaces highlighted in yellow to illustrate the private-public relationship of the floor plan (Brysch, 2019).*

non-profit co-operatives in order to provide truly affordable housing to the marginalized populations. Canada's National Housing Strategy may be the start of this movement, with an investment of $55 billion over the course of 10 years elevate families from their precarious housing situation and to reduce chronic homelessness by 50%.[71] If there was a way in which policy, funding, community, and design could come together to create co-operative developments that use Mehr Als Wohnen as example, the landscape of affordable housing in Canada would look radically different a decade later.

Figure 4.10 *Balcony Appropriation (Danish Architecture Centre, 2016)*

Figure 4.11 *Coworking Spaces (Danish Architecture Centre, 2016)*

Figure 4.12 *Public Circulation Spaces (Danish Architecture Centre, 2016)*

71 "What Is the Strategy?" CMHC. Accessed February 1, 2020. https://www.cmhc-schl.gc.ca/en/nhs/guidepage-strategy.

Masterplan

Through the study of the two precedents Bishop Tutu Blvd and Mehr Als Wohnen, lessons were gleaned pertaining to density, urban patterns of public and natural spaces between buildings, as well as programmatic elements. Borrowing from the heights and densities of the two precedents, a typology of 4 storey stacked townhouses served as a baseline for gentle density on the site. Areas that were suitable for additional massing were densified with 6 storey midrise timber buildings. The design of the master plan began with categorizing the design considerations into urban, social, and economic factors. Economic factors included the decision to bury the parking below grade. Despite the added costs, this is integral to improving the social quality of the development. As a result, a central community hub and park space was created in the centre, with additional parks dispersed between buildings including one in the SW corner that connects to the school and community centre. Urban factors included designating areas for density with a sensitivity to the heights of neighbouring buildings, connecting to the mosque with a park, and linking to an existing road to reduce the number of intersections. The massing of the development consists of 6-story timber midrise residential buildings with public-programmed ground floors, and 4 storey stacked townhouses backing onto a shared park space between the 4 and 6-storey buildings. The community hub in the centre of the development includes recreational activities and a drop-in youth centre, and the NE corner features a job centre and medical clinic. The large size of this development means that the project would have to be carried out in 3 phases, where each phase aims to tackle the needs of the existing residents in the community in order of priority. This also divides up the funding required, making it easier to get the project off the ground from a financial and political perspective. Phase 1 brings online the most important priorities which are the sports centre, medical clinic, youth centre, cultural centre, and employment centre, along with affordable and middle-income housing. Phase 2 contains more housing, outdoor public spaces, stores, and restaurants. Phase 3 includes spaces for entrepreneurs to work, a bakery and café, a community garden, parks, and more housing.

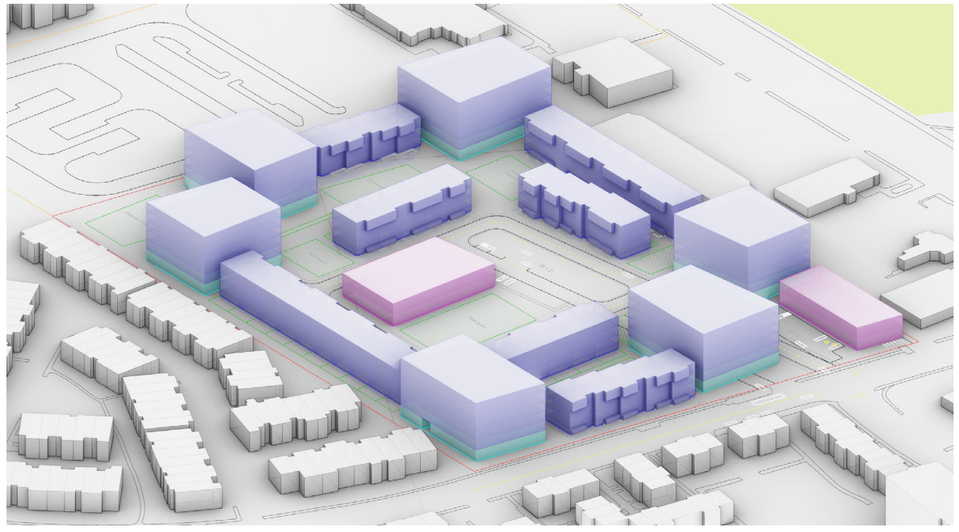


Fig. 4.13 *Isometric view of the master plan massing on 1770 Heatherington Road. Dark blue is residential, light blue is ground floor public program and pink is community amenities.*

Master planning Considerations - Urban, Social, and Economic Factors

As this is a priority neighbourhood, the City will ensure that for any sites that are greater than 4000 m², 10% of the land is secured for public parkland through the Development Review process.

Fig. 4.14 *Masterplanning considerations, categorized into urban, social, and economic factors*

Program Massing - Phase 1

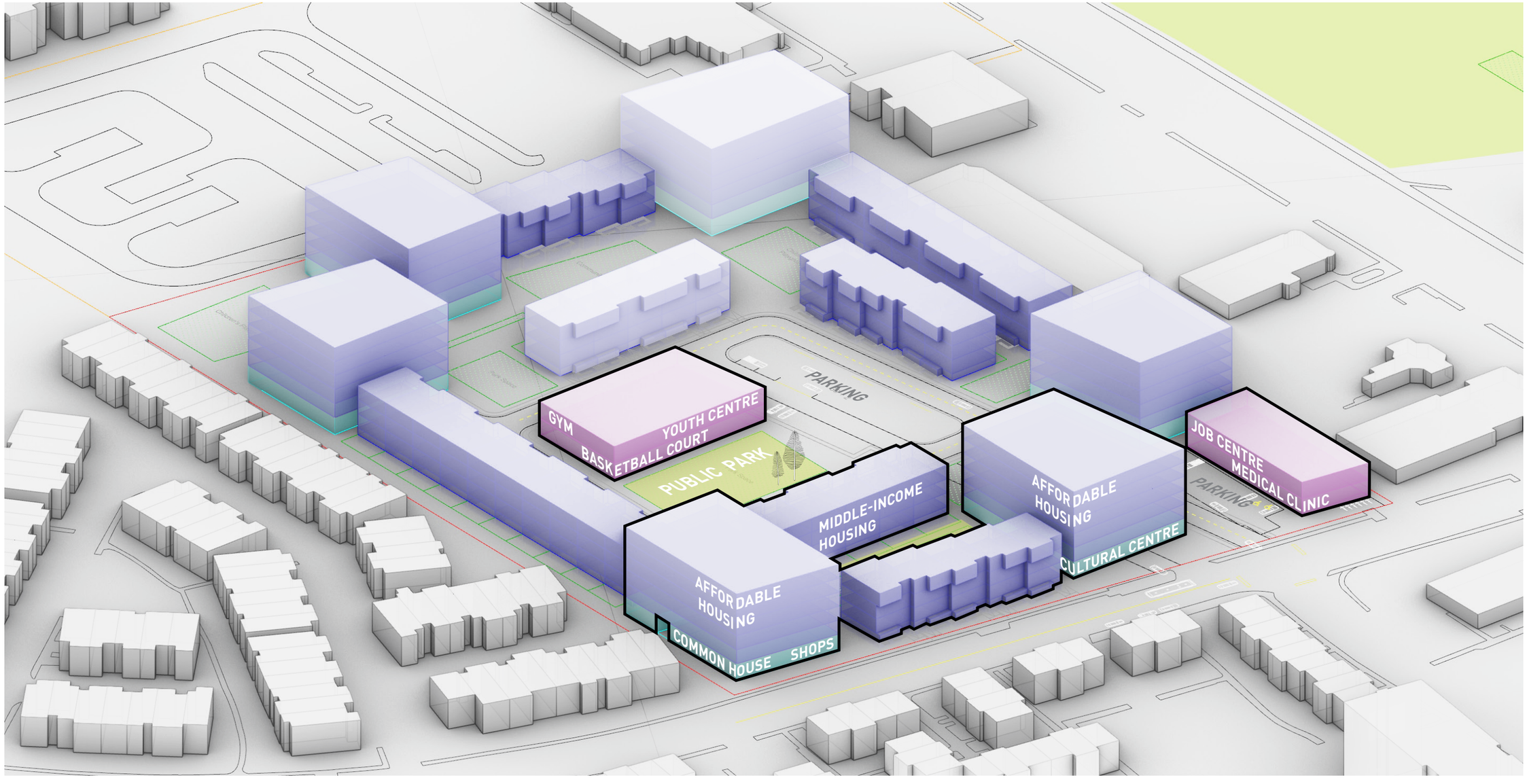


Fig. 4.15 *Massing diagram highlighting the programming for Phase 1*

Phasing Timeline

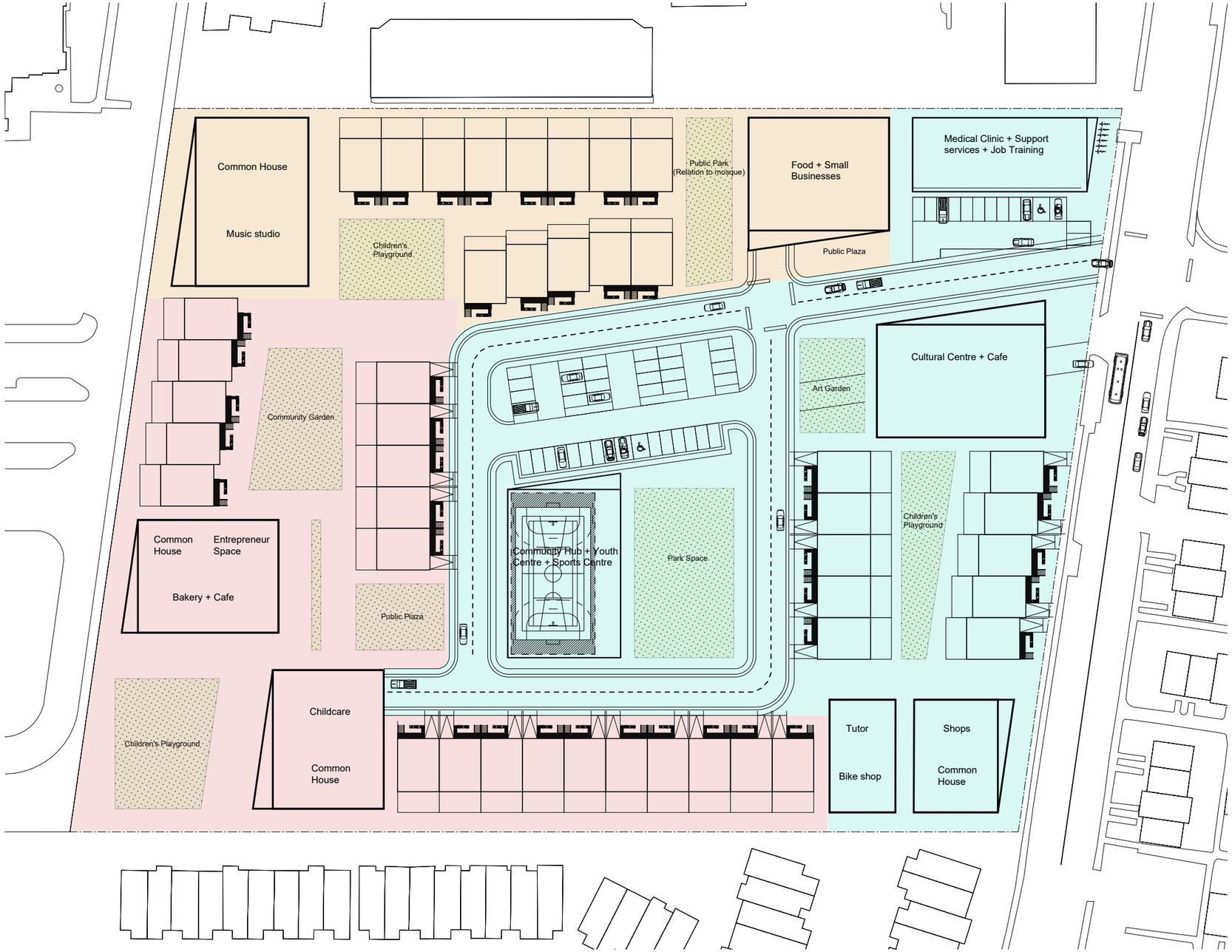


Fig. 4.16 *Masterplan showing the timeline for phasing the development*

Community Priorities

1. Sports centre
2. Medical clinic
3. Affordable housing
4. Youth centre
5. Middle income housing
6. Community garden
7. Cultural centre
8. Outdoor public spaces
9. Mental health and social supports
10. Training centre for job readiness
11. Stores and restaurants
12. Employment centre
13. Space for entrepreneurs to start their businesses

Phase 1

Phase 2

Phase 3

Phasing Timeline - Phase 1

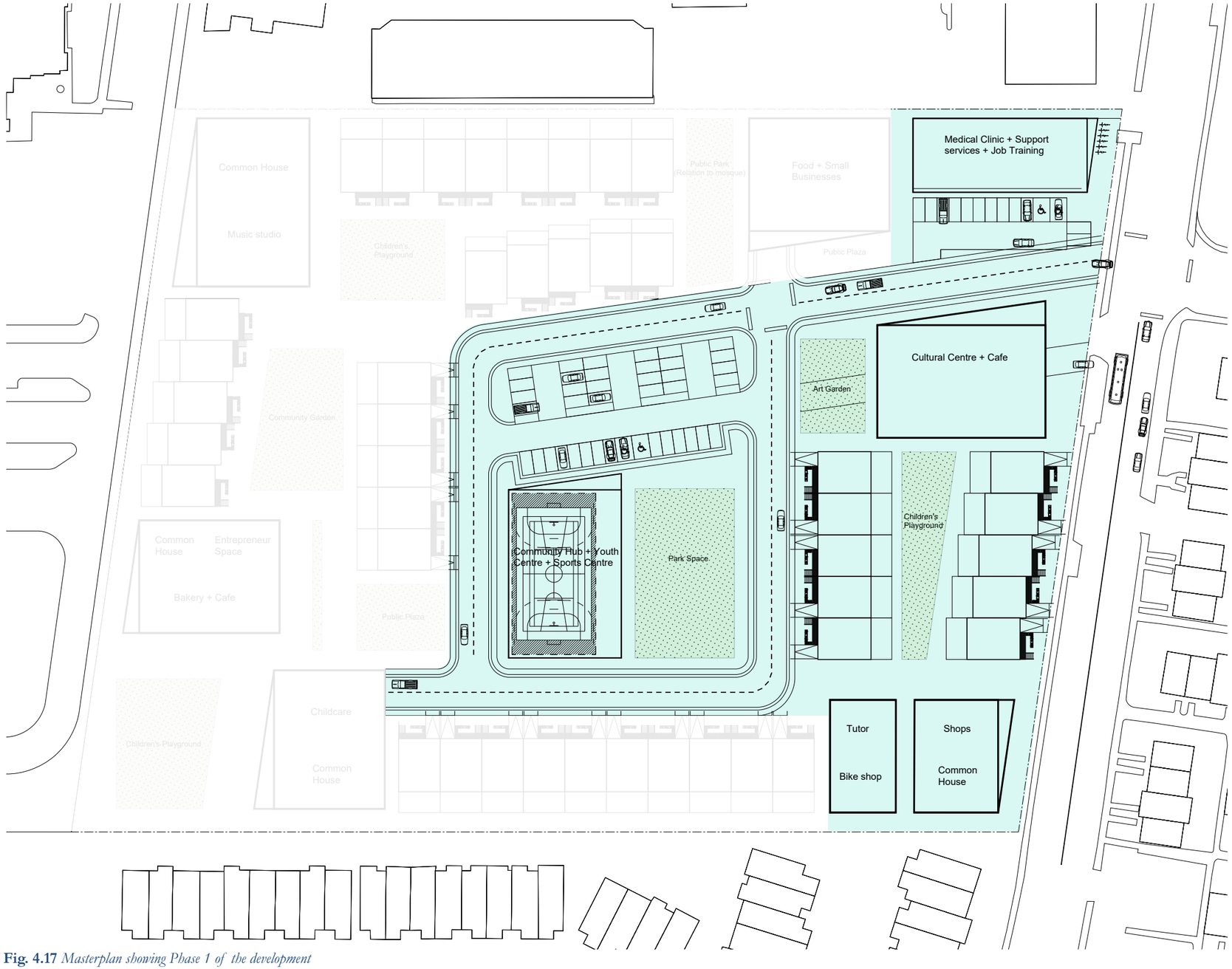


Fig. 4.17 *Masterplan showing Phase 1 of the development*

Community Priorities

1. Sports centre
2. Medical clinic
3. Affordable housing
4. Youth centre
5. Middle income housing
6. Community garden
7. Cultural centre
8. Outdoor public spaces
9. Mental health and social supports
10. Training centre for job readiness
11. Stores and restaurants
12. Employment centre
13. Space for entrepreneurs to start their businesses

Phasing Timeline - Phase 2

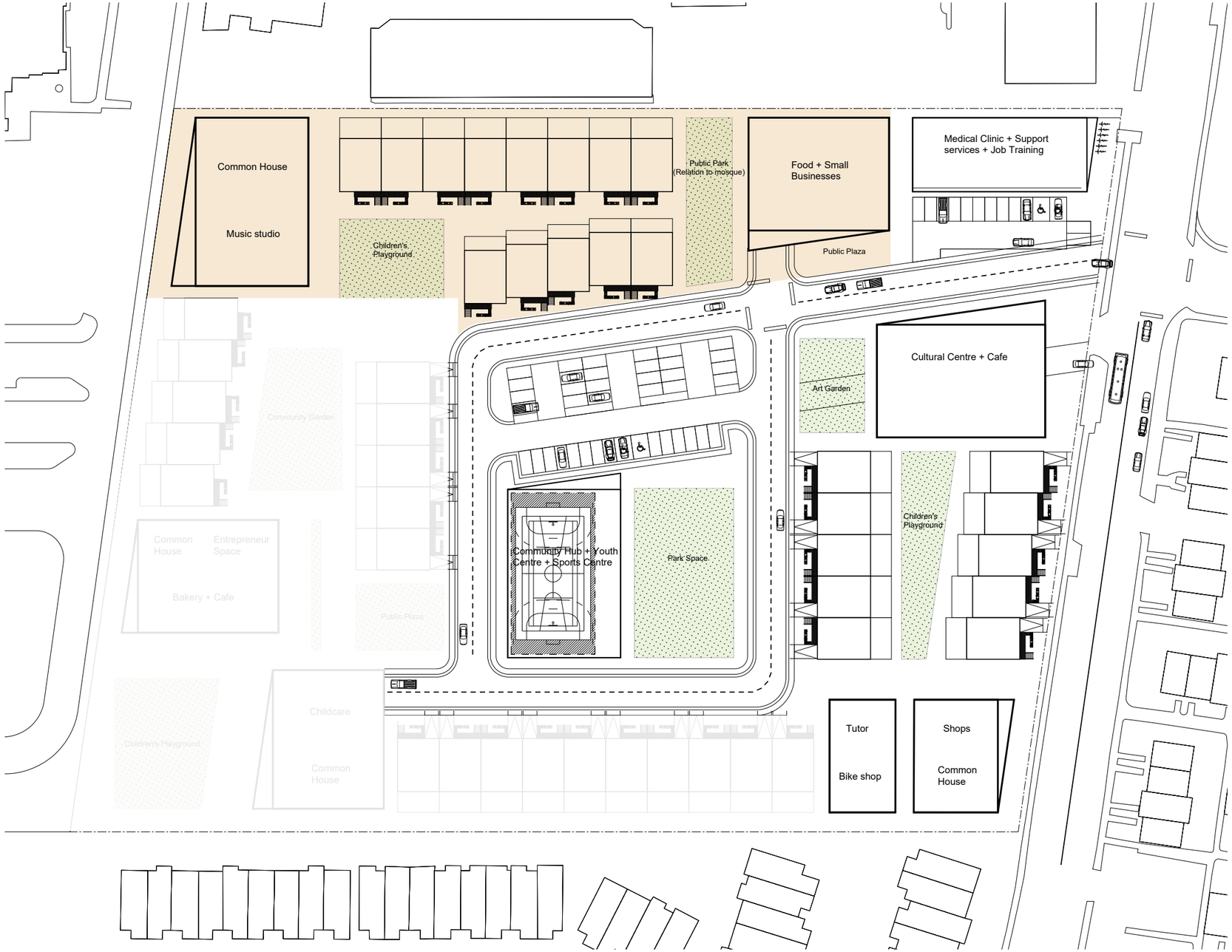


Fig. 4.18 *Masterplan showing Phase 2 of the development*

Community Priorities

1. Sports centre
2. Medical clinic
3. Affordable housing
4. Youth centre
5. Middle income housing
6. Community garden
7. Cultural centre
8. Outdoor public spaces
9. Mental health and social supports
10. Training centre for job readiness
11. Stores and restaurants
12. Employment centre
13. Space for entrepreneurs to start their businesses

Phasing Timeline - Phase 3

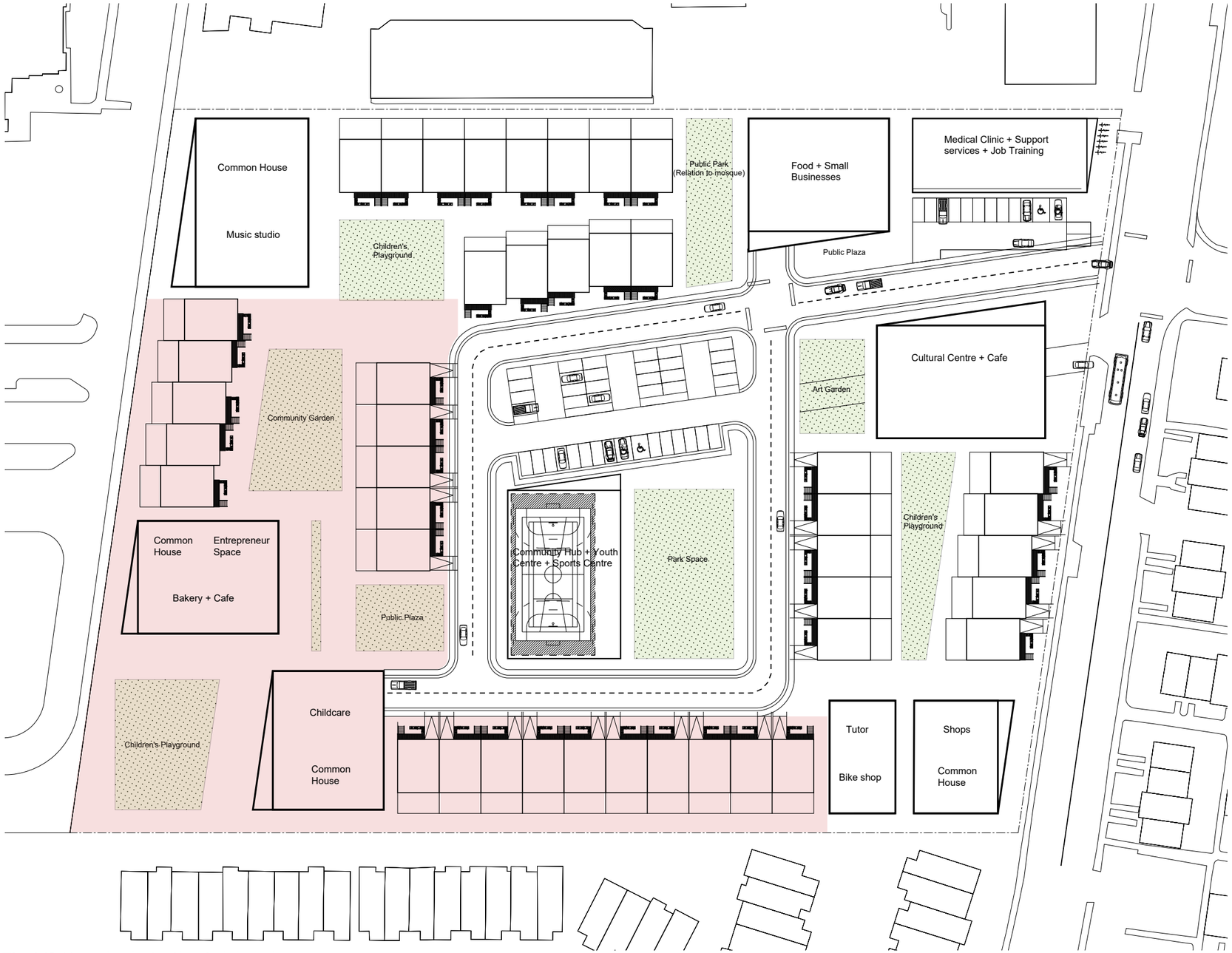


Fig. 4.19 *Masterplan showing Phase 3 of the development*

Community Priorities

1. Sports centre
2. Medical clinic
3. Affordable housing
4. Youth centre
5. Middle income housing
6. Community garden
7. Cultural centre
8. Outdoor public spaces
9. Mental health and social supports
10. Training centre for job readiness
11. Stores and restaurants
12. Employment centre
13. Space for entrepreneurs to start their businesses

FSI Comparison

The following spread compares the statistics of the propose development with the proposal for the Heron Gate Development, located across the street. The comparison of the two FSI metrics makes it clear which model prioritizes the quality of space being designed, versus the model that prioritizes density and maximizing profit.

MASTER PLAN STATISTICS		
Total Site Area	32,101	sq.m
Total Building Footprints	10,433	sq.m
Lot Coverage	33%	
Total GFA (excl. parking)	46,445	sq.m
Floor Space Index (total GFA/total site area)	1.45	
Total open space	12,175	sq.m
% of Site as open space	38%	

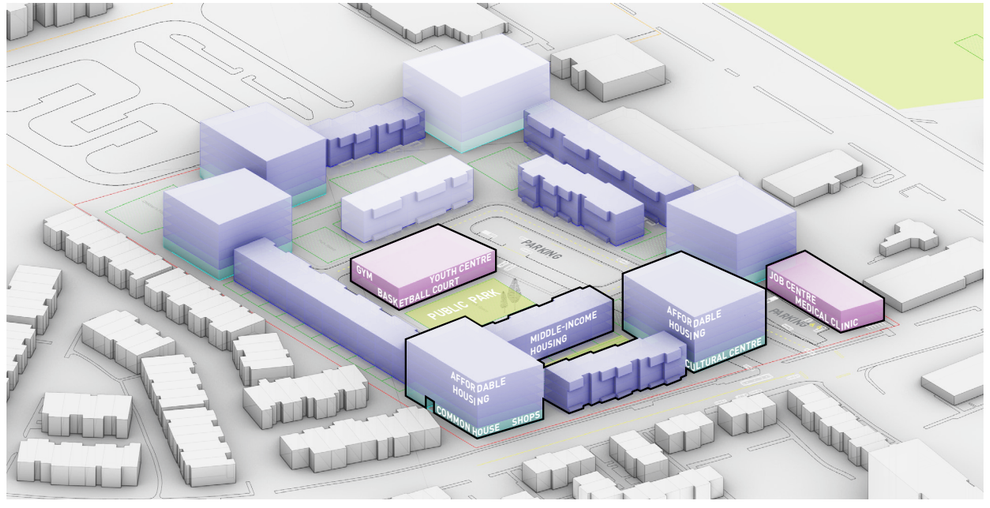


Fig. 4.20 *Statistics for the proposed masterplan development*

HERON GATE DEVELOPMENT	
Demonstration Plan Statistics	
TOTAL BLOCK AREA (SQ. M)	
A	16,433
B	57,251
C	61,025
D	33,834
E	19,775
TOTAL AREA	**188,318**
Total building footprints (lot coverage %, sq.m)	
New, including structured parking	65,570
Existing	8,700
TOTAL	**74,270**
Lot Coverage	**39%**
Total GFA (sq.m) (includes service and mechanical and excludes parking)	**544,604**
Floor Space Index (total GFA / total lot area)	**2.89**
Total new proposed open space (sq.m)	
Public	15,913
Private	14,050
TOTAL	**29,963**

Fig. 4.21 *Statistics for the proposed Heron Gate development (Heron Gate Village Planning Rationale Report & Urban Design Study, 2019)*

Economic Model

The 6 story buildings are built as affordable and cooperative housing buildings that charge below-market rates on a monthly basis. The tenant mix includes formerly homeless families, low-income, and middle-income families who are all struggling to pay market rent. For residents on Ontario Works or other welfare programs, rents are scaled to accommodate their monthly shelter allowance. This results in rents at 30-40% of market rate. Rental subsidies through government funding allow the cooperative to break even on financing costs and operating expenses. With rental subsidies, low-income families can be provided housing at rent-geared-to-income (RGI) rates which is 30% of the family's total monthly income before taxes. For the middle-income families, rents will be targeted at 80% of market rate or lower, depending on construction costs and available grants. As these buildings operate on a non-equity model, no equity is built up through the monthly rent payments from families. As the buildings age and require maintenance and renovations, funding can be secured through existing government programs that provide grants for renovating existing affordable housing stock. Similar to the Mehr Als Wohnen development, a small portion of every resident's rent goes towards a collective fund for resident initiatives, programs, classes, and events.

The 4 story townhouses operate as affordable housing and each cluster of 10-13 townhouses is managed as their own separate non-profit cooperative. The shared public spaces between each cluster of townhouses are managed by each cooperative so that the amenities provided can serve the needs of each cooperative specifically. The townhomes are based on a rent-to-own equity model where a portion of the rents go towards eventually owning the unit. If the family were to move on from the development, they could exchange their shares of the cooperative with the inflation-adjusted equity of the unit. The new resident would buy the shares and effectively take over ownership of the unit. The combined equity of every family is put into a pool where the funds can be used to upgrade or maintain the buildings and shared amenities.

The financial proforma estimates the costs for the entire development to be built. Assuming the land is donated by the city and thus operating on a 99 year land lease for $1, the cost of building 302 residential units to passive house standards, underground parking for the 6 story buildings, a community hub, and a medical clinic, comes in at approximately $161M. The proforma estimates capital funding to the magnitude of $5M from various government and donor funding sources, bringing the net cost down to $156M. With a Loan-to-Value of 75% for obtaining financing, the remaining 25% of the development costs ($39M) come from equity sources in the form of a collective down payment. The non-profit developers and co-operatives would be responsible for assembling the down payment through collecting down payments from the rent-to-own residents, fundraising, and partnerships. Co-operatives could partner together with other established organizations in the area, in the same way that was done in Mehr Als Wohnen, to spread the financial risk and gain access to a larger pool of funding. Once the project has been built, the rental revenue from residential and commercial units (combined net revenue of $3.9M per year) is sufficient to cover the annual debt service for the low-interest CMHC mortgage required to build the development (annual debt service is $3.3M per year). The buffer ensures financial sustainability of the development in the future.

The cost to build the townhouse units comes in at $606,62540/unit, with at-cost rents being $2000-$2400/month. The cost of building the 6 storey midrise units comes in at $438,287/unit, with rents for a 3 bedroom being $700/month, which is the shelter allowance received from OW welfare. A report from CityHousing Hamilton reveals that the cost of building a new affordable housing unit has grown from $260,000 per unit to $475,000.[72] Fig. 3.53 and Fig. 3.54 are a comparison of the sq ft and rent prices of the new Heron Gate development across the street with the design proposal, highlighting the affordability of this proposal achieved by the land lease with the city and removing the mark-up of the developer. Within the co-operative, there is no price escalation of rents beyond inflation and operating costs as the years go by, as rents are determined by the upkeep costs and not market rates.

The cost to house a family of three for 10 years equals is the initial cost of the unit + rental coverage for 10 years, amounting to approximately $522,287. If we compare this back to the example of Million Dollar Murray, this is significantly more cost-effective for governments and mutually beneficial for the family who has a secure home to live in. Within the current market conditions, one bedroom and studio apartments are much more profitable to build due to their high demand, rents and sale prices when comparing $/sf. Developers make less profit per unit as the number of bedrooms are added. While it seems counterintuitive that two bedrooms sharing one kitchen would yield less profit than two units each with one bedroom and a kitchen, the market prices offset the construction inefficiencies of duplicating kitchens, appliances, and common spaces. Interestingly, this relationship is flipped when we consider non-profit housing as the construction efficiencies help to make the units more affordable to build, which helps to lower rents as well as carrying costs for the housing provider who maintains and pays for the mortgage of the building.

72 Craggs, Samantha. "Hamilton Looking at Modular Homes as a Quick Path to More Affordable Housing | CBC News." CBCnews. CBC/Radio Canada, September 25, 2020. https://www.cbc.ca/news/canada/hamilton/modular-homes-1.5737360.

Proforma

RENTAL MODEL			
Rough Estimate of Total Costs			
Land	99 yr lease for $1	$ 1	99 yr $1 lease
Hard Costs of 3 Storey Townhomes	$200/sf	$ 36,292,000	86 units (43 townhomes)
Hard Costs of 6 Storey Midrise	$220/sf	$ 65,857,398	216 units
Passive House Building Standards	15% premium	$ 15,322,410	
Hard Costs of Recreation Centre	$300/sf	$ 5,735,006	
Hard Costs of At Grade Parking (Rec Centre, Med Clinic)	$15/sf	$ 242,511	55 spots
Hard Costs of Below Grade Parking (Residential)	$115/sf	$ 5,762,880	173 spots
Soft Costs and Fees	25% of Hard Costs	$ 32,303,051	
TOTAL		**$ 161,515,256**	
Funding Sources			
City		$ 500,000	
Provincial	OPHI	$ 1,000,000	
Federal	NHS: RCFI, NHCF	$ 3,000,000	
Impact Investor / Community Donors		$ 500,000	
TOTAL FUNDING		**$ 5,000,000**	
TOTAL NET COST		**$156,515,256**	
Estimate of Residential Revenue			
Average Monthly Rental Rate	Welfare; 80% of Market	$ 1,119	
Annual Income per Unit		$ 13,425	
Estimated Number of Units		302	
Number of Residents	2-4 br units	814	
Total Annual Revenue		$ 4,054,500	
Operating Expenses (without Passive House)	30% of Revenue	$ (1,216,350)	
Passive House Savings on Operating Expenses	60% of Op. Expenses	$ 729,810	Passive House reduces energy by 60%
NET RESIDENTIAL REVENUE		**$ 3,567,960**	
Estimate of Commercial Revenue			
Annual Commercial Income per Unit	$15/sf/yr	$ 21,732	
Total Annual Commercial Revenue		$ 309,011	
Total Recreation Centre Revenue	$8/sf/yr	$ 152,933	
Operating expenses (30%)	30% of Revenue	$ (92,703)	
NET COMMERCIAL ANNUAL REVENUE		**$ 369,241**	
Annual Debt Service			
Interest Rate	CMHC - RFCI	**1.50%**	
Ammortization Period (yrs)	CMHC - RFCI	**50**	
Equity Downpayment	25% of Net Cost	**$39,128,814**	
Principal Balance	Loan-To-Value of 75%	**$117,386,442**	
ANNUAL DEBT SERVICE		**$ (3,353,928)**	
ANNUAL INTEREST-ONLY PAYMENT		**$ (1,760,797)**	Certain forgiveable loans only require interest
Financial Feasibility			
Total Net Annual Revenue		**$3,937,201**	
Annual Debt Service		**$ (3,353,928)**	
TOTAL CASH FLOW AFTER FINANCING		**$ 583,273**	
DEBT SERVICE COVERAGE RATIO (DSCR)	NOI/debt service (> 1.10)	**1.17**	

Fig. 4.22 *Proforma demonstrating financial feasibility for the proposed development*

Proforma Assumptions

SIMPLIFYING ASSUMPTIONS					
DEFINITION	**AMOUNT**		**SOURCE**		
Discount Rate Commercial	8%				
Discount Rate Residential	8%		High discount rate because of this project taking a different approach from the rest of the city's fabric and is thus riskier		
Inflation	1.95%		(In 2019) https://www.statista.com/statistics/271247/inflation-rate-in-canada/		
Residential Mortgage Rate	1.99%		https://www.huffingtonpost.ca/entry/mortgage-rates-canada-housing_ca_5ee0f6cdc5b6147d6025a7c4		
Commercial Mortgage Rate (5 Yr)	3.50%		Q1 2020 Canadian Cap Rates & Investment Insights - CBRE Report (March 2020)		
Commercial Mortgage Rate (10 Yr)	3.75%		Q1 2020 Canadian Cap Rates & Investment Insights - CBRE Report (March 2020)		
Prime Rate	2.45%		https://wowa.ca/banks/prime-rates-canada		
Construction Loan Rate	4.45%		Marg Greene (Mortgage Broker in Mississauga): prime (2.45%) plus 1.5% to 2.0%. A fee of 1% can also be charged by the Lender		
Cap Rate (Out) in London-Windsor	5% - 6.75%		Q1 2020 Canadian Cap Rates & Investment Insights - CBRE Report		
Cap Rate Out (Residential)	5%		Estimate from CBRE Report		
Cap Rate Out (Commercial)	7%		Estimate from CBRE Report		
Hard cost ($/sf)					
$/sf (3 storey wood framed stacked townhouse)	200	$/sf	(150-180) From Altus Group 2020 Canadian Costs Guideline		
$/sf (6 storey wood framed stacked townhouse)	220	$/sf	(165 - 200) From Altus Group 2020 Canadian Costs Guideline		
$/sf (Multi-use Recreation Centre)	300	$/sf	(255 - 335) From Altus Group 2020 Canadian Costs Guideline		
Surface Parking cost	$15	/sf	($6-19) From Altus Group 2020 Canadian Costs Guideline		
Underground Parking cost	$115	/sf	($95-135) From Altus Group 2020 Canadian Costs Guideline		
Program sf count					
Total 3 storey townhouse sf	181,460	sf	Rhino masterplan		
Total 6 storey midrise sf	299,352	sf	Rhino masterplan		
Total rec centre sf	19,117	sf	Rhino masterplan		
Surface parking sf	16,167	sf	Rhino masterplan (55 spots)		
Underground parking sf	50,112	sf	(Calculated estimate; sf/spot * 0.8 * #of 6 storey units)		
Ground floor program sf	20,601	sf	Rhino masterplan	290	sf/ spot
Phase 1 - SF					
Total 6 storey midrise sf	117883	sf	Rhino masterplan		
Total 3 story townhouse sf	42200	sf	Rhino masterplan		
3 storey townhouse units	86	units	Masterplan; 43 townhomes, 3.5 BR per unit, 7 per stacked townhouse	**301**	BRs
3 storey rent	$756	$/sf	Family of 4, OWorks; Ontario Works can help cover housing, health and child care costs for your children.		
Ontario Child Benefit	$121.75	/month	The Ontario Child Benefit is available to help with the cost of basic needs for your children, such as food and clothing.		
Canada Child Benefit			https://www.canada.ca/en/revenue-agency/services/child-family-benefits/canada-child-benefit-overview/canada-child-benefit-we-ca		
6 storey midrise	216	units	Masterplan; 8 units per floor (19 BRs) x 5 floors x 5.4 buildings (3 storey childcare building)	**513**	BRs
6 storey rent	$697	$/sf	Ontario works, family of 3		
Residential parking spots	173	spots	0.8 spots/unit		
Conversion					
1 sq m =	10.7639	sf	Conversion		
$/sf (Public-Museum Gallery)	390-570	$/sf	From Altus Group 2019 Canadian Costs Guideline		
Commercial Rate	$15	/sf	$10 + $5 of utilities, property taxes, maintenance, insurance (TMI), etc.	https://www.realtor.ca/real-estate/2	
Recreation Centre Rate	$8	/sf			
Rules of Thumb					
Soft Costs as % of Hard costs	25%		https://www.thebalancesmb.com/understanding-soft-costs-844542	https://recmanagement.com/featu	
Operating expenses as % of Revenue	30%		Miles Textbook (Real Estate Development Principles and Processes)		
Passive House (PH) energy reduction	60%		https://mlacanada.com/newsfeed/the-advantages-of-passive-housing		
Passive House Premium	15%		https://www.passivehousecanada.com/passive-house-faqs/		
Area of the Site	32,054	sf			
Upkeep costs/ Maintenance Fees (Commercial)	$10,000	per year			
Upkeep costs/ Maintenance Fees (Commercial + Residential)	$40,000	per year			
Competitors	-				
Water FOR COMMERCIAL	$3,500.00	per year			
Electicity FOR COMMERCIAL	$4,500.00	per year			

Fig. 4.23 *A chart documenting the assumptions and figures used in the proforma*

Unit Mix

UNIT MIX						
2 and 3 Storey Townhouses						
Unit Size	**Sq ft**	**# of Units**	**Target Demographic**	**Unit Rent Per Month**	**Total Rent Per Month**	**Total Rent Per Year**
3 + 1 Bed Townhouse	1950	43	80% of market rate	$ 2,000	$ 86,000	$ 1,032,000
4 + 1 Bed Townhouse	2110	43	80% of market rate	$ 2,200	$ 94,600	$ 1,135,200
6 Storey Midrise Apartments						
Unit A (2 Bed 1 Bath)	540	135	OW and Child Benefit allowance	$ 650	$ 87,750	$ 1,053,000
Unit AA (3 Bed 1 Bath)	840	27	OW and Child Benefit allowance	$ 700	$ 18,900	$ 226,800
Unit B (2 Bed 1 Bath)	715	27	OW and Child Benefit allowance	$ 675	$ 18,225	$ 218,700
Unit C (4 Bed 2 Bath)	1240	27	OW and Child Benefit allowance	$ 1,200	$ 32,400	$ 388,800
GRAND TOTAL		**302**			**$ 337,875**	**$ 4,054,500**
OVERALL AVERAGE PER UNIT				**$ 1,119**		

Fig. 4.24 *Unit mix to understand the quantity and nature of each proposed residential unit*

Unit Cost Comparison

COST PER UNIT			
Estimate of Costs			
Construction of 3 Storey Townhome Unit	86 units	$ 606,625	/unit
Rent for 3 BR - (2100 sf)	at-cost-rent	$2,000 - $2,400	/month
Construction of 6 Storey Midrise	216 units	$ 438,287	/unit
Rent for 2 BR - (745 sf)	subsidized rent	$ 650	/unit
Rent for 3 BR - (1165 sf)	subsidized rent	$ 700	/unit

Fig. 4.25 *Rental rates for the proposed deeply-affordable and co-operative housing development at 1770 Heatherington Road.*

Fig. 4.26 *Rental rates for Vista Local, a market-rate rental mid-rise development as part of the Heron Gate redevelopment (Vista Local)*

Vehicular Zones and Traffic Planning

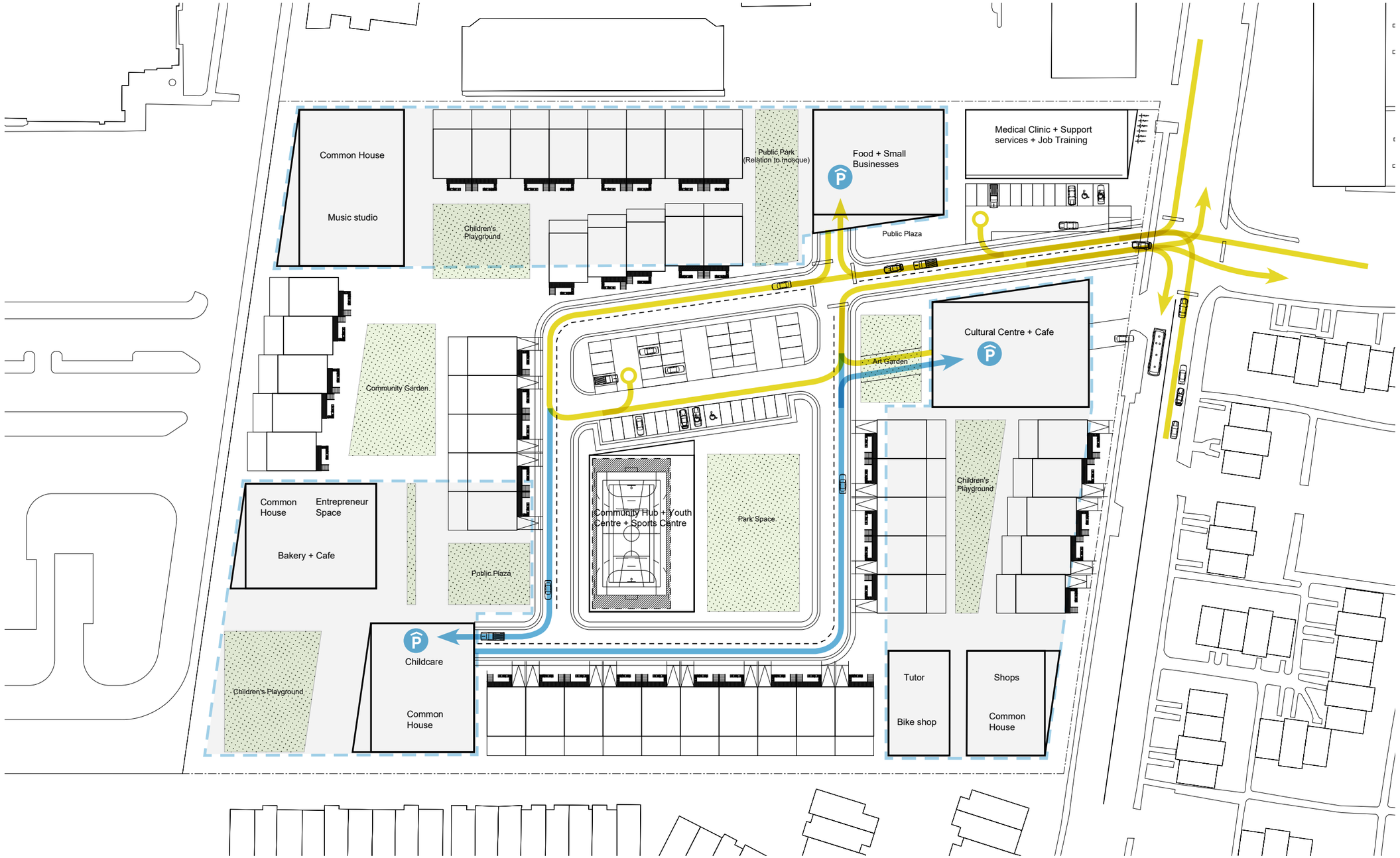


Fig. 4.27 *Parking and traffic diagram to understand the primary loop and secondary loop of traffic*

Master Plan Proposal

Fig. 4.28 *Masterplan of the proposed development*

Masterplan: Vehicular and Pedestrian Zones

The vehicular traffic on site was conceived of in two loops. The primary loop is for non-residents, who are there to visit the clinic services or the community hub, and ample surface parking is provided. The secondary loop services the parking garage entrances for the residents. By redirecting most of the traffic onto the primary loop, the houses and park spaces fronting the secondary loop can be much quieter and family-oriented.

The master plan proposes a pedestrian-friendly development with 6 storey midrise and 4 storey townhome buildings that are arranged conscientiously to frame an urban pattern of park spaces, gardens, public plazas, and childrens' playgrounds, distributed across the site. The ground floor program includes small shops and businesses that could provide job opportunities and training for the families. These low-barrier-to-entry jobs include a barbershop or hair salon, cleaning services, sewing, home maintenance, language tutoring, small restaurants to teach cooking and waitressing skills, and a bike co-op. These small shops rely on the business from the residents and the community, and in turn reciprocate help to the families by providing jobs through local employment. Families have pedestrian-access from their homes to the medical clinic and support services, to the community hub, to secure food, to safe park space, to community and employment. All these work in harmony to lay a foundation for a homeless family to transition towards societal reintegration.

Architecture

The first type of buildings are the 6-story residential midrise buildings, designed to a passive house standard for operational efficiency. The design of the residential units caters specifically to the identified demographic of homeless families, meeting specific needs such as daycare services, housing stability through affordable rents, privacy, community, and spacial flexibility over time. Throughout the building, a 6m x 6m structural timber column grid supports each floor, allowing for non-structural partition walls to be added or subtracted at any time. Three unit types were designed to account for the different types of needs.

The floorplate is designed in consideration for single-parent families or younger families who require daycare. Daycare costs make up a significant portion of their monthly budget, sometimes even more than rent. Daycare is integral for the parents to work but often is a financially unattainable service. To address this service need, an expanded double-loaded corridor typology is used to layout each residential floor of the building. At the inception of the project, each unit donates a portion of their living room space to increase the width of the corridor substantially, creating a generous light-filled common street on every floor that serves as a larger common living room. This flexible space can be regained by building out the unit partition walls to recapture the hallway space. A portion of this generous corridor serves as an on-site daycare for the children living on the floor, where a registered childcare provider comes in to provide programming for the children. Nap time and potty training happen in the common space of each floor, taking advantage of the otherwise unused spaces during the day.

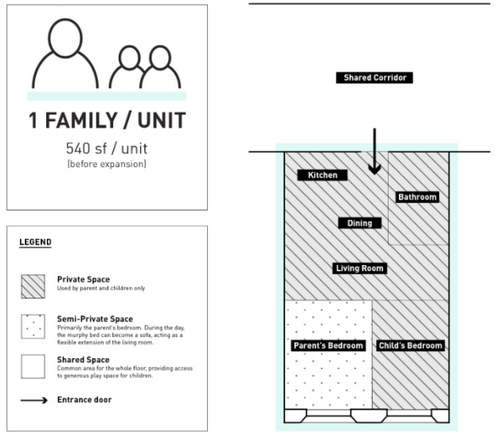
Unit A has 2BRs and 1BA, featuring a child's bedroom with a bunk bed, a living space, dining, and kitchen space. The parents bedroom acts as a semi-private space within the unit. A murphy sofa bed is combined with a large slide-able barn door that allows for a flexible expansion of the living space during the daytime. This also allows light from the bedroom to filter through to the living spaces of the unit. Unit B is the expanded model of Unit A, designed for self-sufficient families who prioritize privacy. The layout is identical to Unit A, with the exception that the space in the corridor is captured back within the unit, and the entire unit is private for the family. This extra space provides a spacious living room, or a den and working area. Unit B can be built in the initial construction phase for privacy-seeking families or can be created by modifying Unit A years down the line when the children grow up and no longer need childcare spaces. Unit C is a two-family unit with 4BR, 2BA, and shared living and cooking spaces. This unit is designed for families who enjoy or do not mind

sharing portions of their home with another family, reducing the load of housework and chores. By sharing, they avoid unnecessary duplication of kitchens, dining tables, and thus get more living space as a result. As this is a rather radical method of living, the unit is designed such that if friction arises, a partition wall can be used to separate the unit equally into two functioning units, granted a kitchen needs to be added in one of the units.

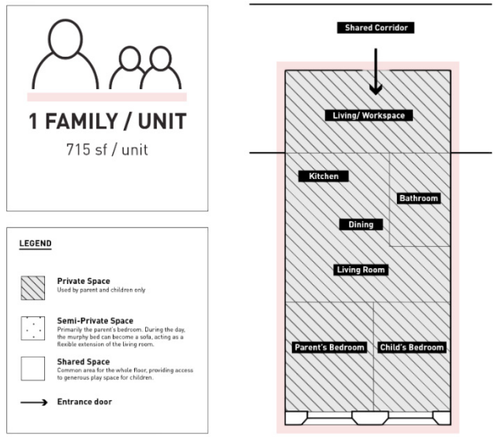
The plan diagram is a sample test-fit of a possible initial configuration of the three-unit types. The majority of the units are type A, allowing for a generous interior street, while Unit B is provided a more private corner on the floor plate. Unit C is also in a corner to maximize natural light gained from two facades. On the floor plan, a 2-story common space transforms the otherwise-mundane elevator lobby into a light-filled multi-purpose area, connecting the residents from two floors. A generously sized shared balcony passively shades the double-height glass façade from the hot summer sun from the south. This space also features an on-site counselling office for residents to have easy access to social services. As time progresses and the needs of the families change, the 6m x 6m structural grid allows interior walls to be removed and added freely, and spaces can be re-appropriated by the residents, providing the necessary space for transitioning in place. Once the daycare space is no longer necessary, units on the north side of the corridor can build out to the centre column to regain square footage within the units, effectively shrinking the corridor down to a normal width. Units on the west and east ends of the corridor can expand in a similar manner. When the counselling services no longer need to exist in the building, the offices can be converted into additional common space for the residents.

Communal spaces are provided throughout the building and the varying scales at which these spaces are shared reflects the heterogenous nature of the resident base and their needs. The largest scale of sharing is the common house which serves as a public living room on the ground floor shared by all residents in the building. This amenity includes a community kitchen for cooking lessons, tables and seating for co-operative town hall meetings, and public digital tools including computers, Wi-Fi, printers, and television. Moving down the scale of sharing, the 2-storey atrium spaces are shared amongst every two floors, while the corridor childcare space is shared with residents on the same floor, and Unit C includes shared dining and living room spaces between two families in the same unit. Communal spaces provide residents with access to much more space collectively than if they were to each have a slightly larger private unit. These shared spaces are integral in forging interpersonal relationships between everyone in the building, creating the opportunity for community and reducing social isolation. The creation of a community allows for the embodied knowledge of each resident to proliferate throughout the building, allowing experiences and lessons to be transferred organically from one resident to the next.

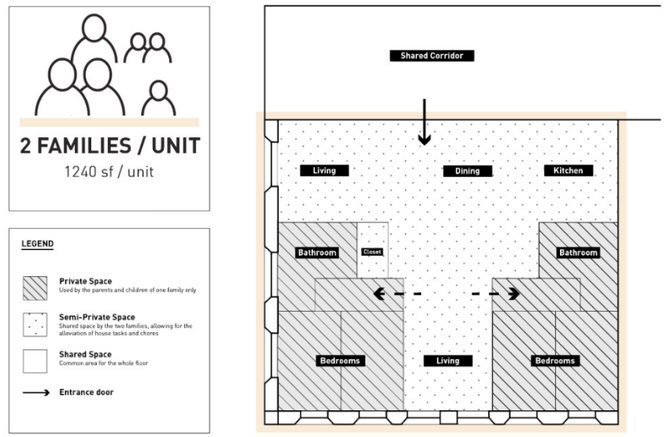
UNIT A: SINGLE PARENT / YOUNG FAMILY

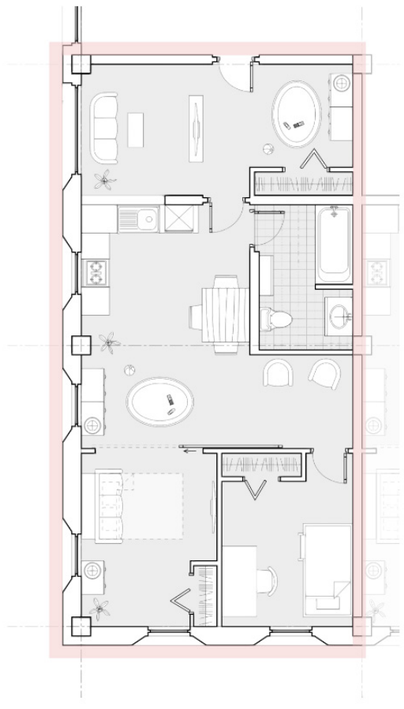


UNIT B: PRIVATE FAMILY UNIT (expanded UNIT A)



UNIT C: SHARED 2-FAMILY UNIT





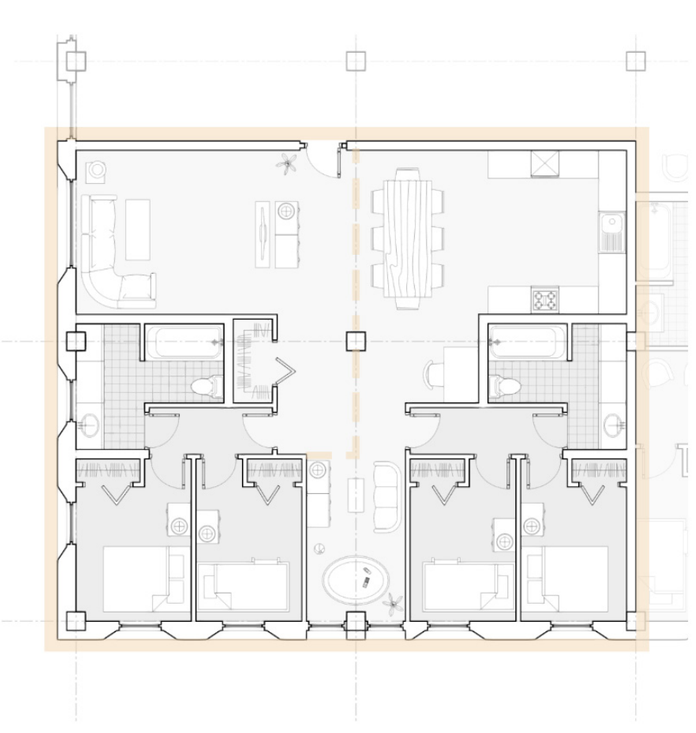


Fig. 4.29 *Unit diagrams and typical floorplans*

Fig. 4.30 *Diagram of a typical floorplate layout*

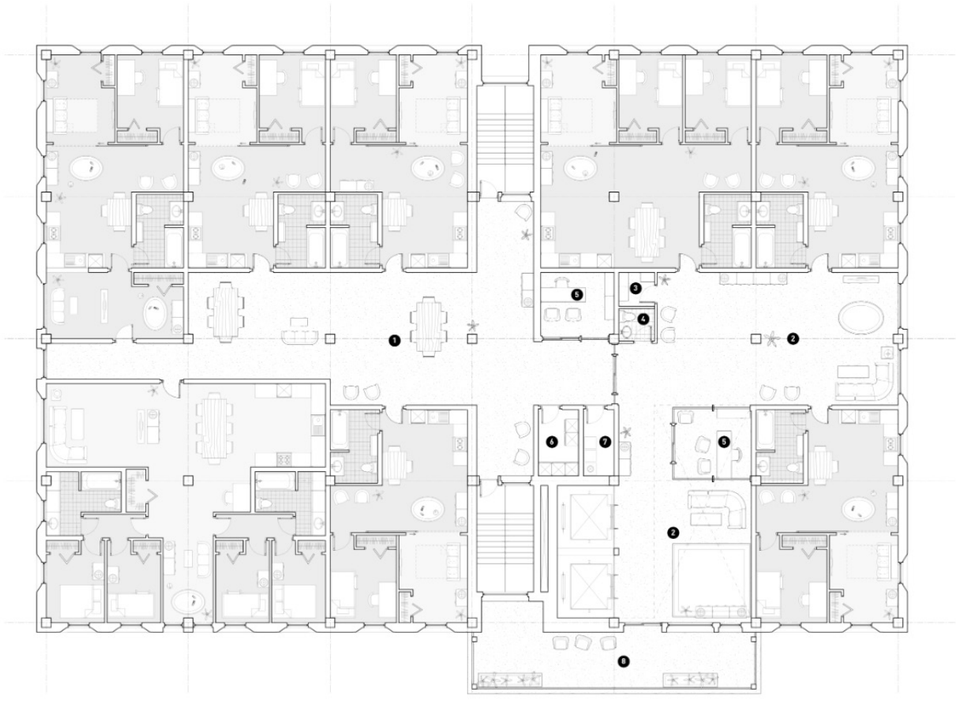


Fig. 4.31 *Typical floorplate layout*

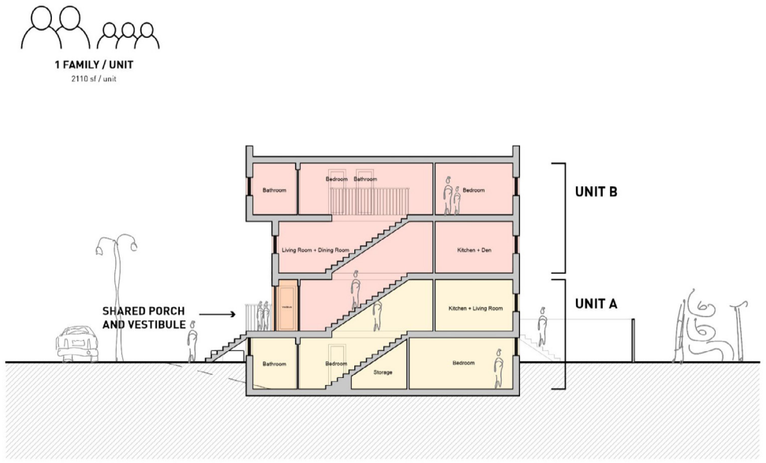


Fig. 4.32 *Diagram of the stacked townhouse units*

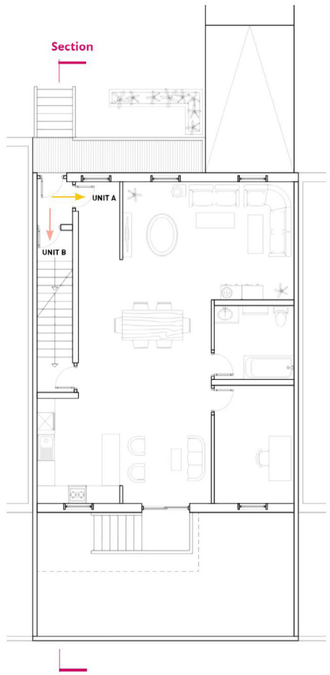


Fig. 4.33 *Diagram of entry sequence to the two stacked townhouse units*

Fig. 4.34 *Typical townhouse unit layouts*

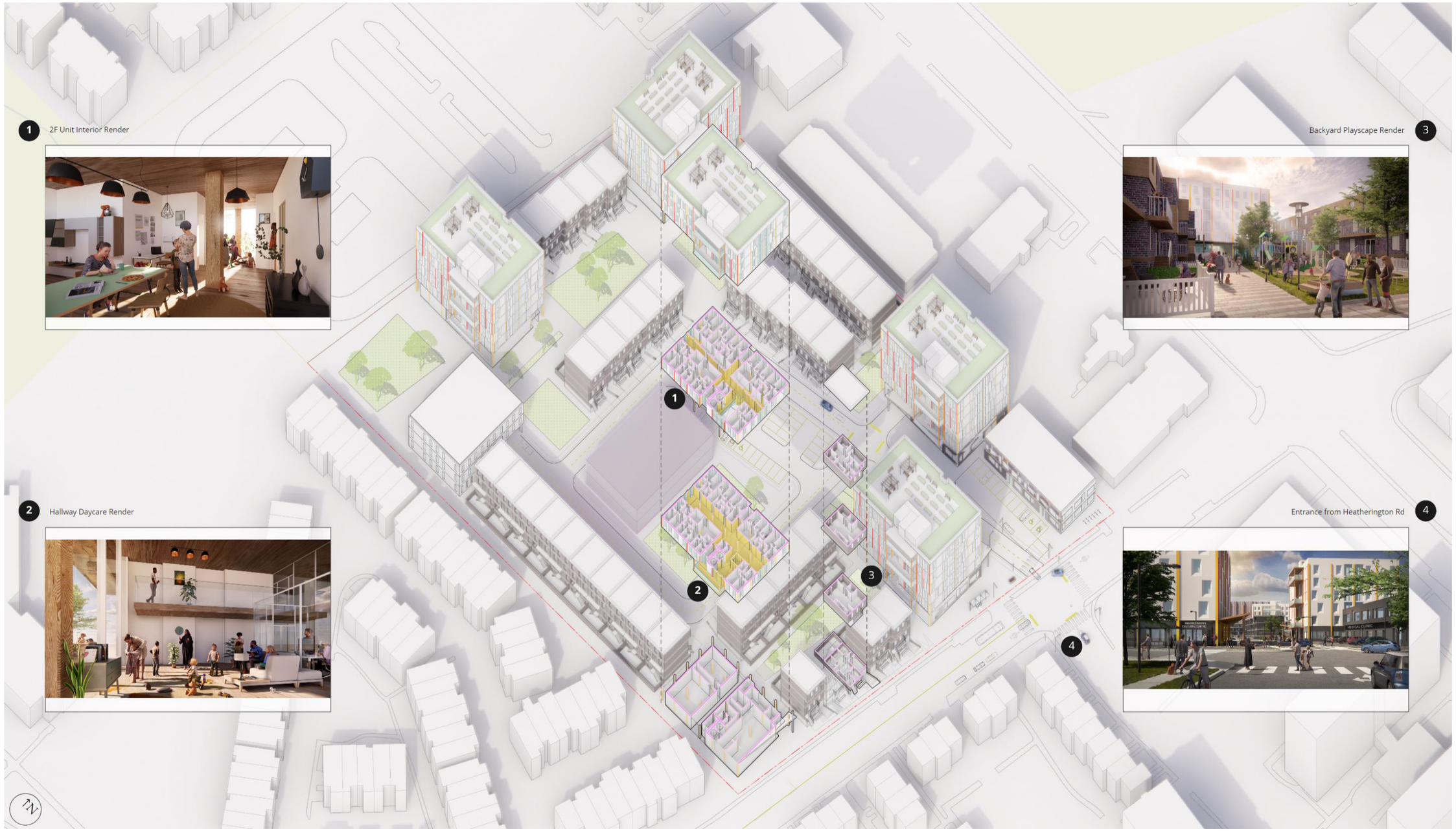


Fig. 4.35 *Exploded key axonometric of the proposed masterplan development*

Fig. 4.36 *Entrance to the development from Heatherington Road*

Fig. 4.37 *Backyard playscape inbetween clusters of townhouses*

Fig. 4.38 *Interior of shared family unit (Unit C: 4 bedroom, 2 bathroom)*

Fig. 4.39 *Double-height flexible spaces that can be used as an in-house daycare and a counselling office*

Fig. 4.40 *Perspective section through the 6 storey midrise and the 4 storey townhouses*

Conclusion: Evolution over Time

The project proposal imagines a future for the residents in the development where 5-10 years later, these formerly homeless families are fully functioning members of their neighbourhood, with increasing economic capacities as they progress in their careers and their children grow up. The growing economic capacities of the residents allows the communities to become self-sufficient as they gradually wean off government funding and can surpass the rising construction and operational costs as time progresses. The concept is that if we invest in these families and individuals, they can become a dignified and contributing member of the development and the neighbourhood.

We stand at a pivotal moment where substantial federal funding through the National Housing Strategy is available for providing affordable housing for those in need. Municipalities, provinces, developers, housing providers, communities and non-profit organizations need to collaborate in a combined effort to leverage the federal support towards social betterment and housing stability for all. Governments at the municipal and provincial level can provide development incentives such as reduced development charges and taxes, land leases for surplus land, expedited approvals, and community support for the provision of housing. Rather than continuing to adopt neoliberal practices of free-market capitalism and using publicly owned lands for private developments with a portion of affordable housing, cities and governments need to prioritize the provision of secure housing for all its citizens. The free-market has and will continue to exclude the marginalized populations who cannot keep up with the increase of market-rate housing. Rather than advocating for further deregulation and allowing the private sector to command the housing markets, governments need to re-establish their role as the dominant provider of affordable, deeply affordable, and non-profit housing. The powerful anecdote of Gladwell's *Million Dollar Murray* reveals the urgency required by all parties to solve the housing crisis through the provision of homes and appropriate support services.

One of the most important questions in residential development involves negotiating the inverse relationship between density and community. While developers have it in their best interest to maximize density to increase profits, this leads to the creation of isolated units in the sky, connected only by an elevator shaft and a common lobby. Combined with the phenomenon of absentee landlords and rental units that may sit empty, there is often no sense of community within a high-rise tower. Despite this, Toronto's Housing Now mixed-used developments with affordable housing are being criticized by grassroots groups and housing advocates for yielding insufficient density and failing to maximize the social potential of the government-owned lands.[73] Single-family homes are on the other end of the density spectrum, with copious spaces such as backyards, driveways, and front porches which allows for neighbourly interaction and a sense of community. As such, this typology of housing is by far the most desired, reflected in its high cost compared to other densities of housing. The "missing middle" and mid-rise developments appear to provide a good balance between providing density to make good use of the valuable land, while allowing opportunities and spaces for a community to form. The typology and density of the proposed development reflect this understanding to provide a scale of housing that is family-friendly and would be easier to accept by the neighbourhood. While the proposed project relies on government reports as a method of gathering second-hand knowledge of the residents and specific needs in the community, first-hand accounts and interviews would be required to ensure the design is holistic in its considerations. Due to the limitations of COVID-19, crucial first-hand research through site visits and interviews with local residents and housing groups could not be conducted. For the purposes of the proposal as an experimental proposition, the absence of the first-hand research does not detract from the overall concept. The proposal serves as a theoretical model for how a non-profit co-operative development could be economically and socially viable. The replicability of this model on other sites would require first-hand research to identify additional suitable locations, social service providers, housing partners, government support, community engagement, and participatory design. It is my hope that this thesis provides a wide coverage of the different issues, perspectives, and contexts surrounding homelessness and our housing crisis, enabling you to become inspired to take action as architects, designers, developers, and city builders to build for our future, in every sense of the word.

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Appendix

Developing the Site Selection Process: Toronto

The site selection process came about after a design experiment was conducted on a test site identified in Toronto. This site in Toronto was established through an overlay of GIS data layers; public transportation lines, rail lines, emergency shelters, community housing, census data on rental prices within neighbourhoods, and Neighbourhood Improvement Areas. The concept was to identify pockets in the city that were well connected through public transportation lines, close to the social services and existing emergency shelters and affordable housing, and also had relatively low land costs. All this was paired with the Neighbourhood Improvement Areas, which were neighbourhoods identified by the City of Toronto where investment was needed to improve the neighbourhood. The convergence of public services, affordability, and municipal resources formed the basis for site selection.

Within Toronto, an abandoned site was chosen by the railroads that provided an opportunity for a mixed-use housing community to be developed. However, once the scale of the project was measured against the cost of the land and the overall project, it did not seem like a viable proposal. Hence, the site selection process was created to identify a city where transitioning in place could be tested. The BMO's City Labour Market Performance Ranking served as a starting point to understand some of the starting criteria from which to measure the economic strength of a city. The 16 cities in Ontario from this report were selected as a starting point for the city selection process.

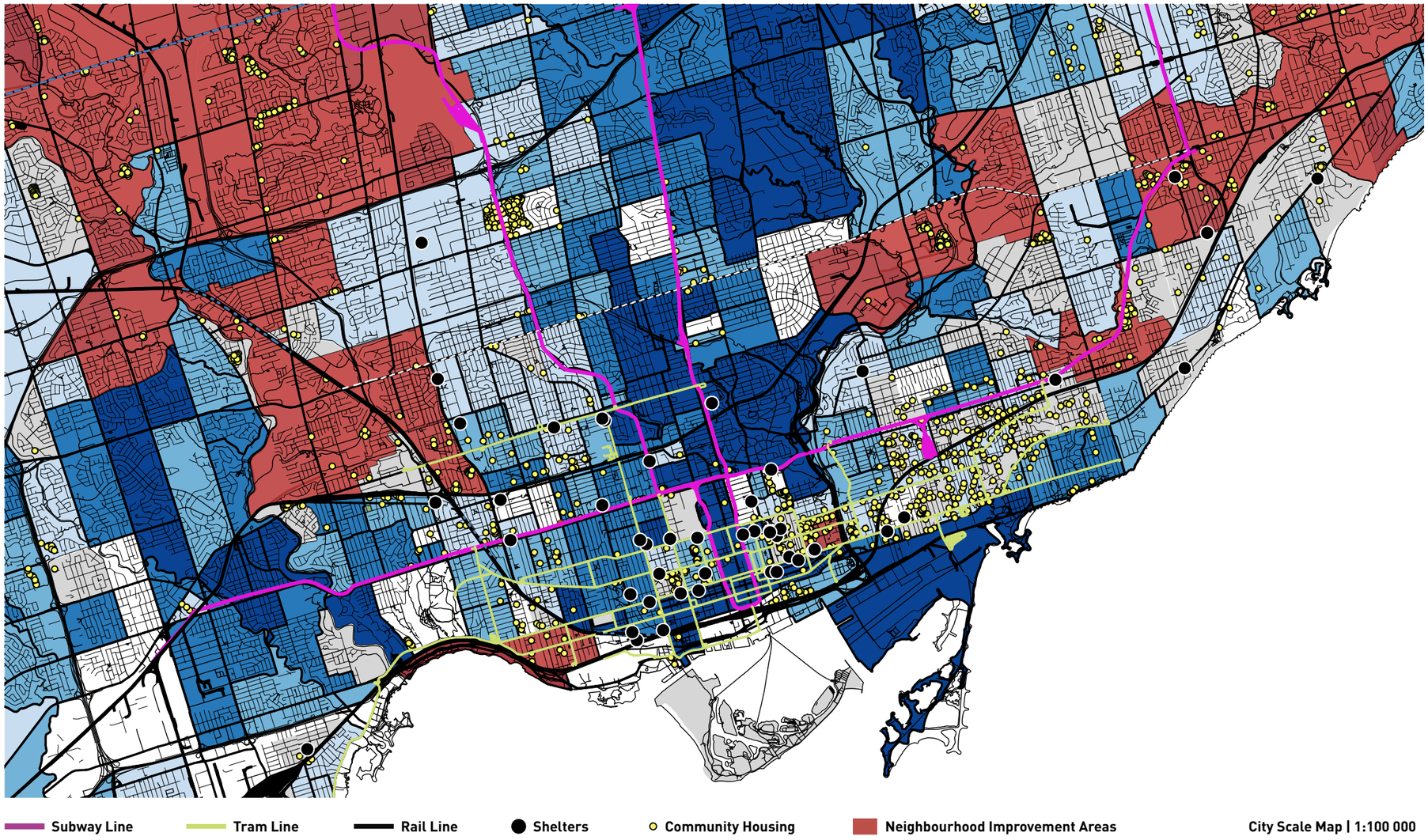


Fig. 5.1 *Toronto site selection map*

Fig. 5.2 *Toronto site selection map projected onto a 3D model of Toronto's neighbourhoods with heights based on rental rates*

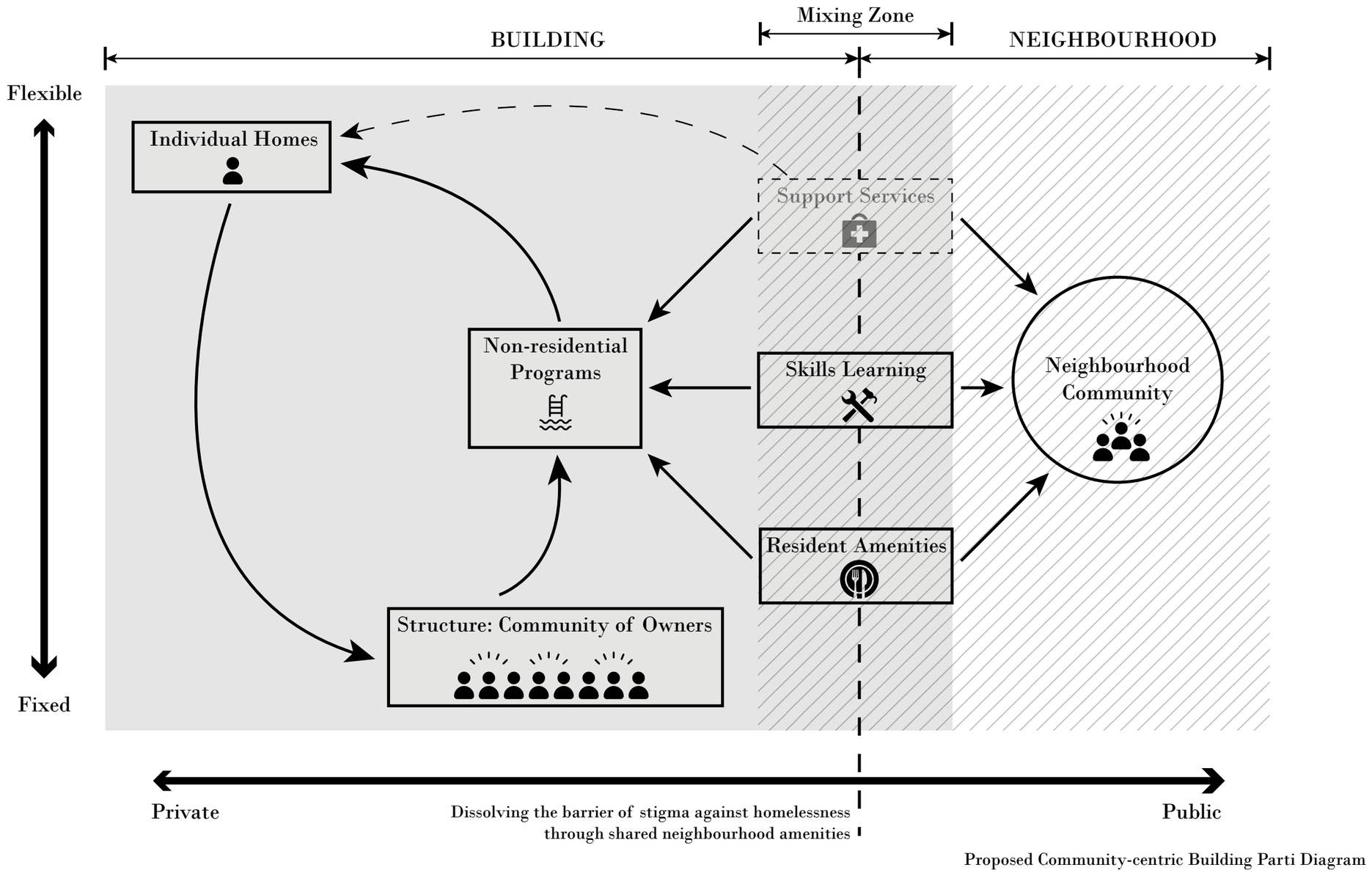


Fig. 5.3 *Original diagram to demonstrate the public-private relationship of the proposed design project, demonstrating the building's relationship with neighbourhood to address NIMBYism.*

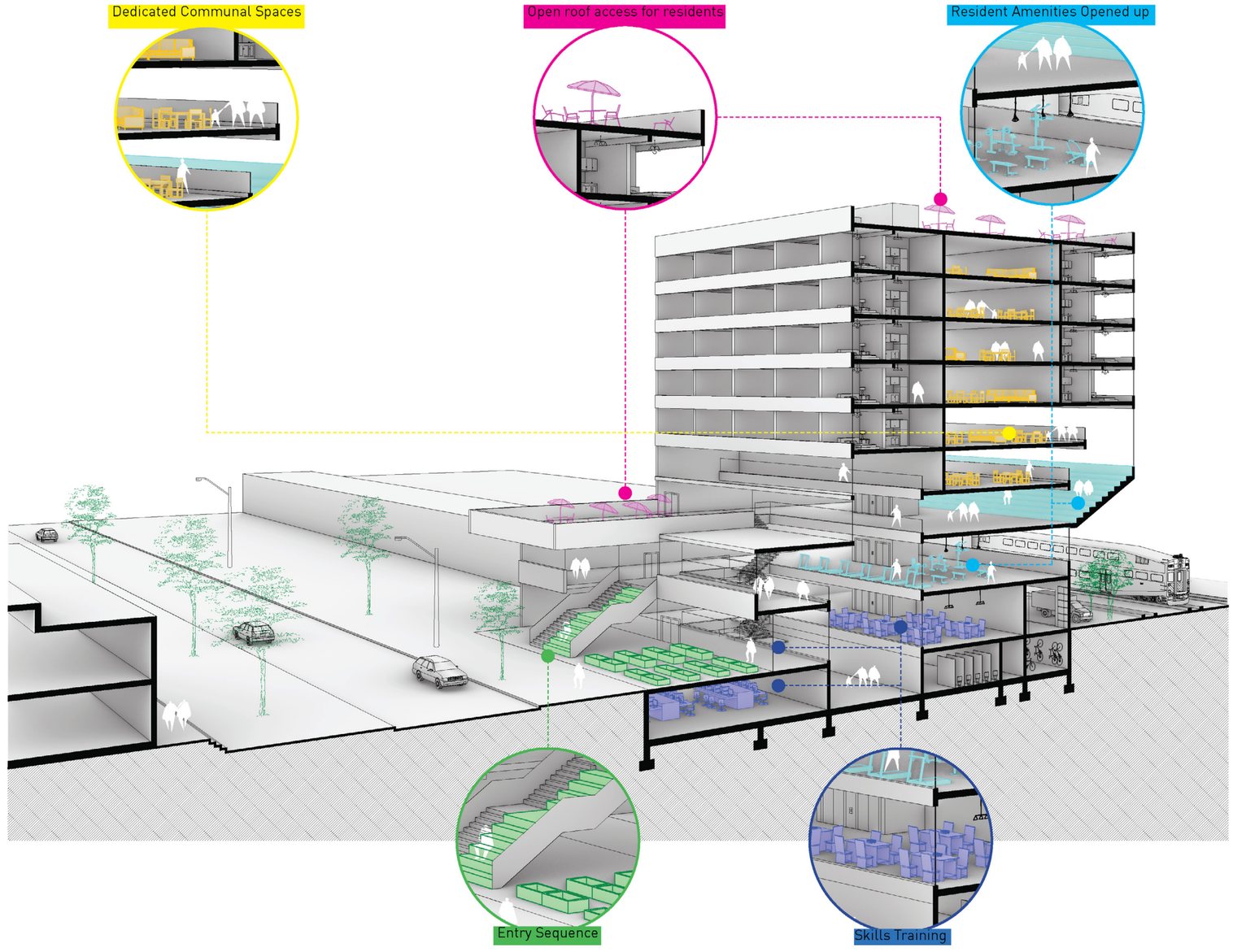
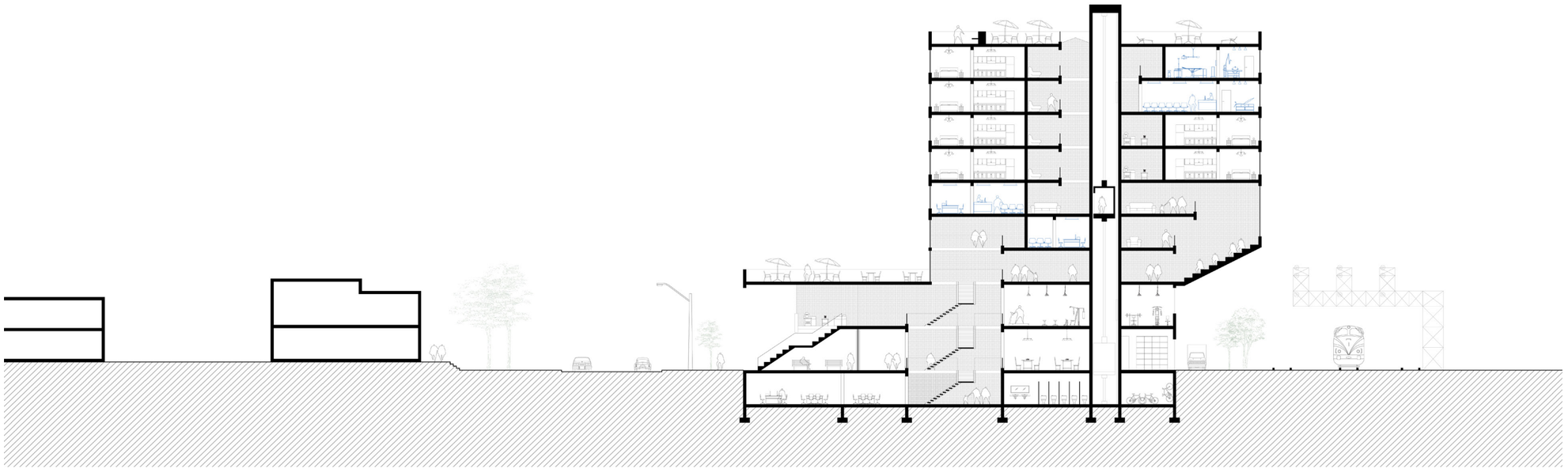
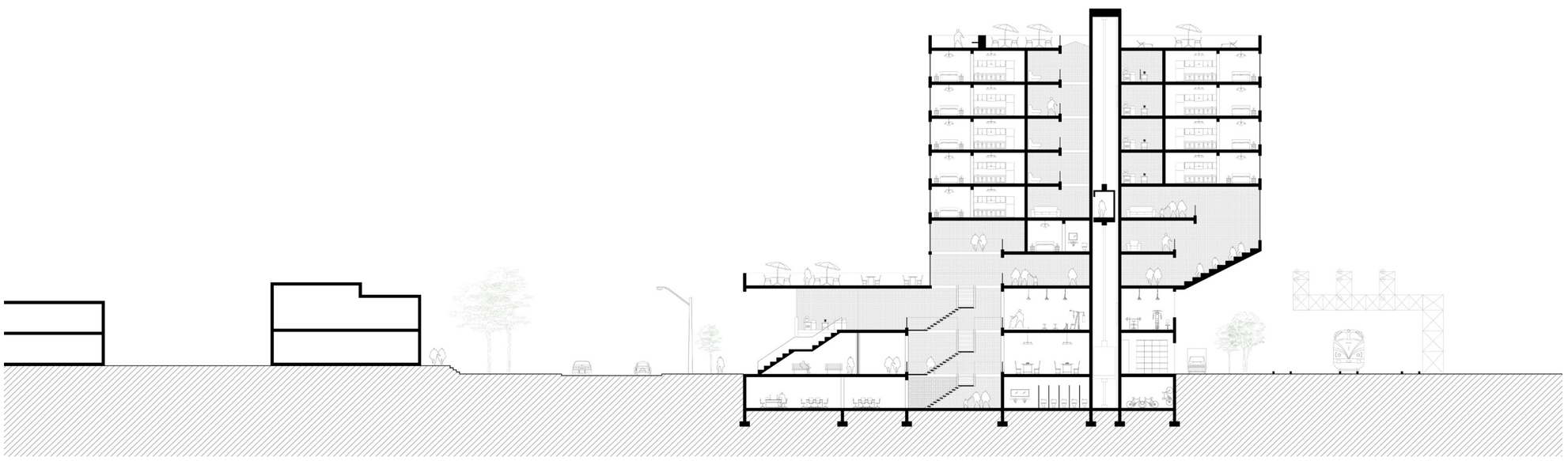


Fig. 5.4 *Perspective section identifying potential areas to design for the housing community within a design proposal for a test-site in Toronto*



TEMPORAL SECTION **| TIME OF PROPOSAL**



TEMPORAL SECTION **| TIME OF TRANSITION**

Fig. 5.5 *Sections to demonstrate the flexible change of use for spaces within the building as time progresses and the needs of residents change*

City Labour Market Performance Ranking

	Overall Rank[1]	Change (y/y)		Pop. (y/y % chng)	Emp. (y/y % chng)	Unemp. Rate (%)	(y/y chng)	Emp. Rate (%)
		Weight:		15%	30%	20%	20%	15%
Ottawa, ON	1	↑	11	2.5	11.1	4.2	-0.8	68.4
Brantford, ON	2	↑	31	1.5	9.0	3.8	-2.5	65.3
Abbotsford, BC	3	↑	3	2.8	4.7	4.9	0.4	63.9
Victoria, BC	4	↑	14	2.0	3.0	3.4	-0.2	61.3
Kitchener, ON	5		—	2.1	3.1	5.1	0.0	67.6
Toronto, ON	6	↑	13	2.6	4.5	5.7	-0.3	62.8
Sherbrooke, QC	7	↑	22	1.3	6.0	4.7	-0.7	59.6
St. Catharines, ON	8	↑	20	1.4	3.4	4.9	-2.1	57.3
Quebec City, QC	9	↑	13	0.5	1.6	3.5	-0.4	65.3
Calgary, AB	10	↑	11	2.5	3.3	7.1	-0.4	67.7
Barrie, ON	11	↑	3	2.2	-0.1	5.2	0.3	68.5
Vancouver, BC	12	↓	3	2.1	1.3	4.8	0.3	64.4
Kelowna, BC	13	↓	9	2.3	1.6	4.1	0.8	61.9
Hamilton, ON	14	↑	3	1.5	1.9	4.5	0.2	62.9
Saskatoon, SK	15	↓	13	2.4	0.9	5.7	0.1	65.1
Winnipeg, MB	16		—	1.8	0.7	5.3	-0.5	63.7
Regina, SK	17	↑	8	1.9	0.1	6.0	0.3	65.5
Kingston, ON	18	↑	12	1.9	1.4	5.7	-0.3	58.8
Halifax, NS	19	↓	12	2.4	1.5	6.5	0.9	63.6
Trois-Rivieres, QC	20	↑	11	0.5	3.9	5.1	-0.2	57.2
Moncton, NB	21	↓	10	1.9	-1.1	5.3	0.1	61.4
London, ON	22	↓	9	1.9	3.1	5.7	0.7	57.6
Montreal, QC	23	↓	3	1.5	0.0	6.0	0.0	62.4
Sudbury, ON	24	↑	3	0.3	1.3	5.5	-0.8	59.6
St. John's, NL	25	↑	1	0.4	3.7	7.0	-0.4	62.3
Thunder Bay, ON	26	↓	2	-0.1	1.4	5.0	-0.2	60.3
Oshawa, ON	27	↓	17	2.1	-3.1	6.1	0.4	61.0
Edmonton, AB	28	↓	20	2.4	-1.4	8.0	1.7	66.0
Saguenay, QC	29	↑	3	-0.5	2.8	6.2	1.1	55.7
Guelph, ON	30	↓	29	2.7	-5.4	5.6	3.3	62.1
Windsor, ON	31	↓	16	1.8	-0.1	7.5	2.2	56.2
Saint John, NB	32	↓	9	1.1	-2.0	7.8	1.5	59.7
Peterborough, ON	33	↓	30	1.5	-15.9	7.5	2.5	52.9
City Average				**1.7**	**1.4**	**5.6**	**0.2**	**62.1**

Fig. 5.6 *January 2020 BMO City Labour Market*

Toronto Housing Projects: Site Visit

A site visit in Toronto was planned to investigate and experience a cross-section of housing typologies for co-operative housing projects and low-income housing. The driving and walking tour began with the first stop at Bishop Tutu Lane, a development that I was interested in studying as a typology for a mixed-density approach to integrating town houses with additional density in the form of towers. Across the street, Arcadia Co-op is an example of housing built during the boom of co-operative housing in Canada due to the support of federal and provincial funding. The apartments at Stadium Park had an interesting approach to parking on grade in the form of a back-alley, where the second story balconies projected over the cars below to provide some shelter from the elements. The Christie Ossington Neighbourhood Centre features a protected internal courtyard with external corridors that surround the central space. Driving east along Dupont St, it was evident from the many cranes in the skyline that the former-industrial lands along the rail corridor were being snatched up by private developers to create luxury residential units. Madison Homes is an interesting new project that adds much-needed supply of affordable housing to the city in an aesthetic and contemporary language with an internal courtyard between two connected bar buildings. City Park Co-operative represents an example of the modernist concrete towers that were part of the social housing era of Canada. Regent Park was the conclusion of the day tour, as it stands currently in a half-complete state; to the north, the former beaten-down 3-storey brick buildings bide their time as they are slated to be demolished. To the south, with newly constructed mixed-income and mixed-use podium and towers shimmer as they welcome additional programming, new residents, returning residents, community amenities, and shops to the area.

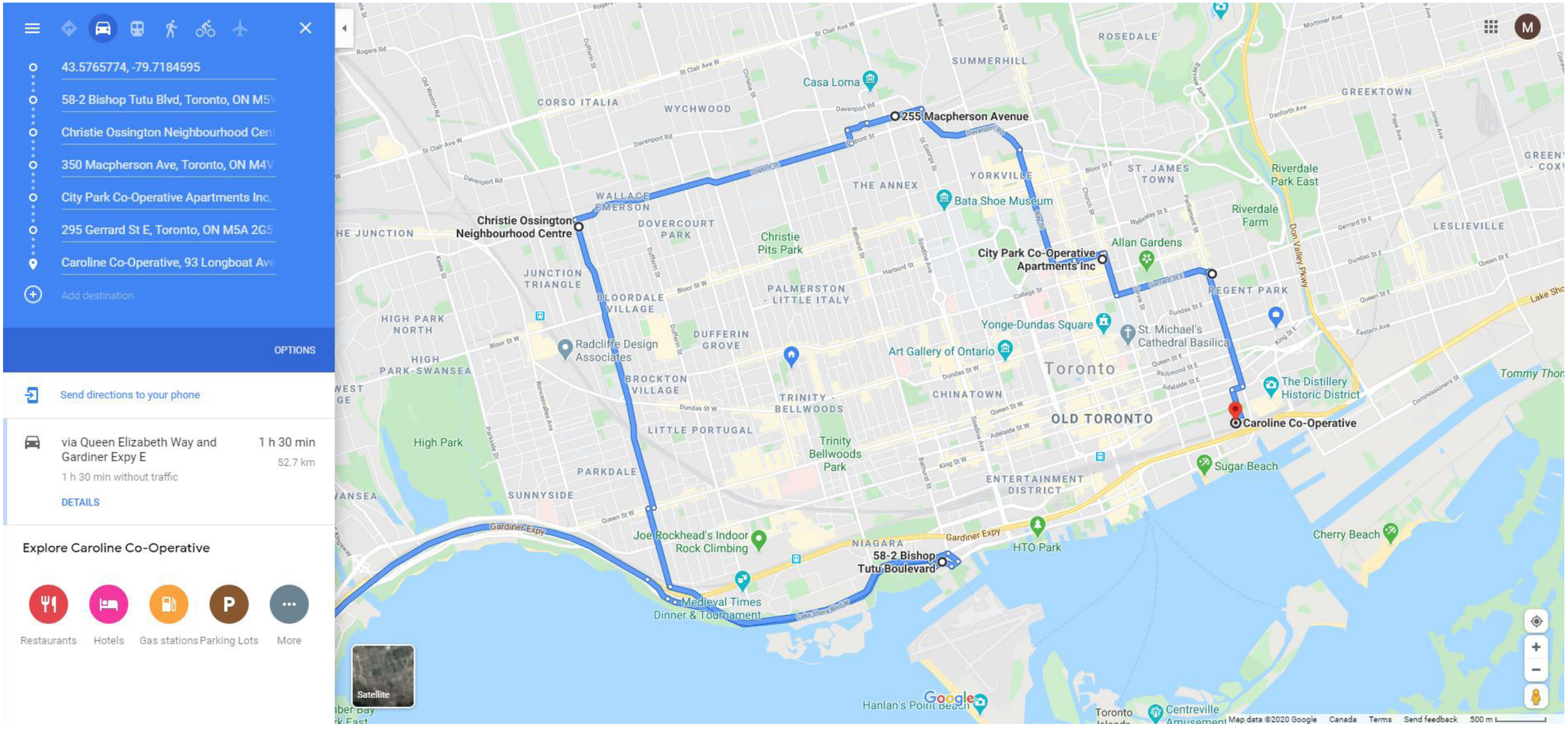


Fig. 5.7 *Travel itinerary for the Toronto Housing Projects site visit*

Fig. 5.8 *Entrance into the interior courtyard through a break in the row of townhouses*

Fig. 5.9 *Front condition of Arcadia Co-op*

Fig. 5.10 *Bishop Tutu Blvd with the front of the housing development facing the back of Arcadia Co-op*

Fig. 5.11 *Front porch condition of Arcadia Co-op*

Fig. 5.12 *Interior courtyard of Arcadia Co-op*

Fig. 5.13 *Interior courtyard of Arcadia Co-op*

Fig. 5.14 *Steps leading into the interior courtyard of Arcadia Co-op*

Fig. 5.15 *Entrance to parking garage of Arcadia Co-op, located below the courtyard*

Fig. 5.16 *Stadium Road park*

Fig. 5.17 *Gated townhouse community at Stadium Road Park*

Fig. 5.18 *Back alley to access parking for the gated townhouse community at Stadium Road Park*

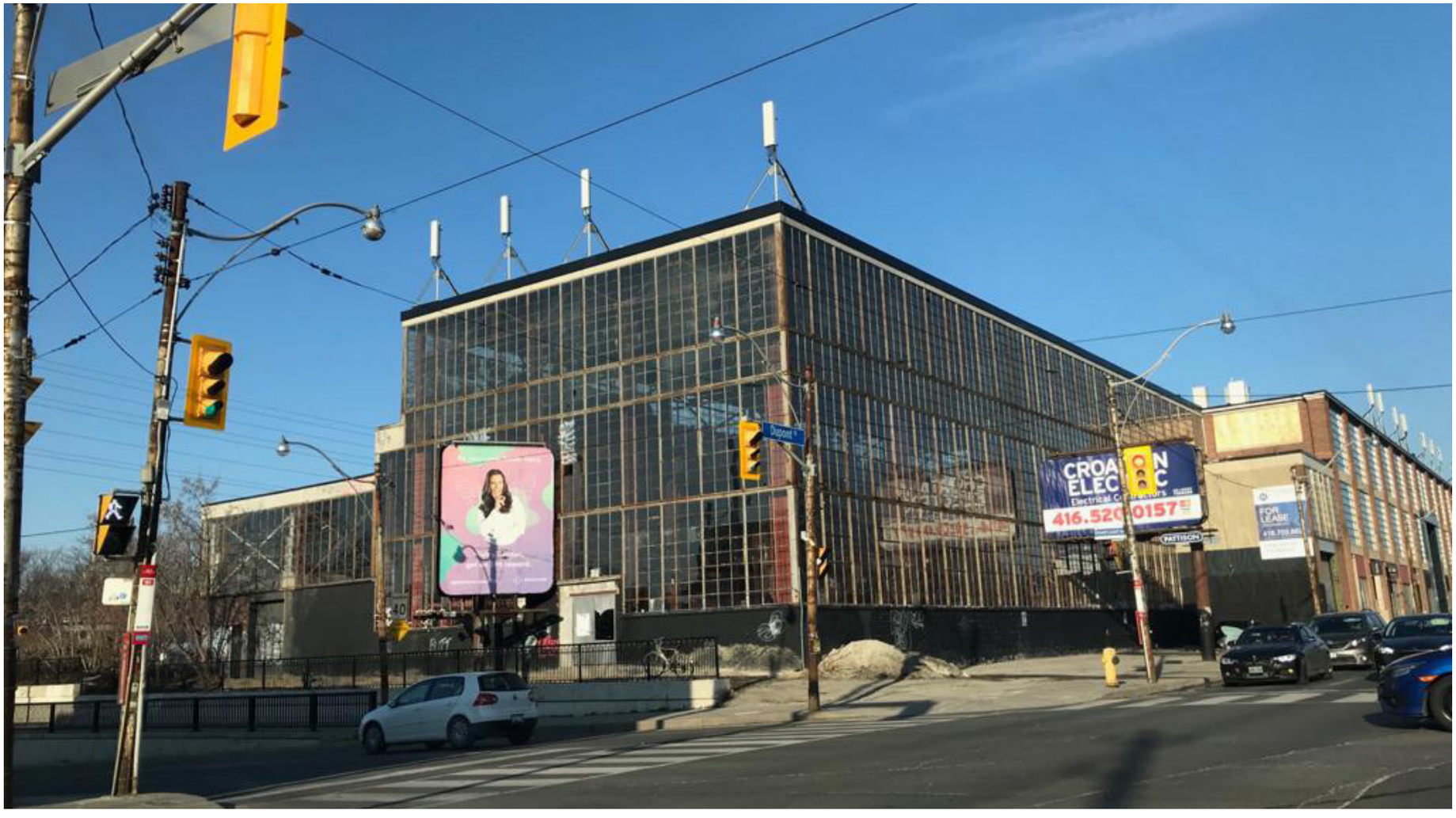
Fig. 5.19 *Pedestrian approach to the Christie Ossington Neighbourhood Centre*

Fig. 5.20 *Entrance from the street into the Christie Ossington Neighbourhood Centre*

Fig. 5.21 *Exterior circulation stairs*

Fig. 5.22 *View from the courtyard back through to the street*

Fig. 5.23 *Interior courtyard with exterior corridors and circulation*



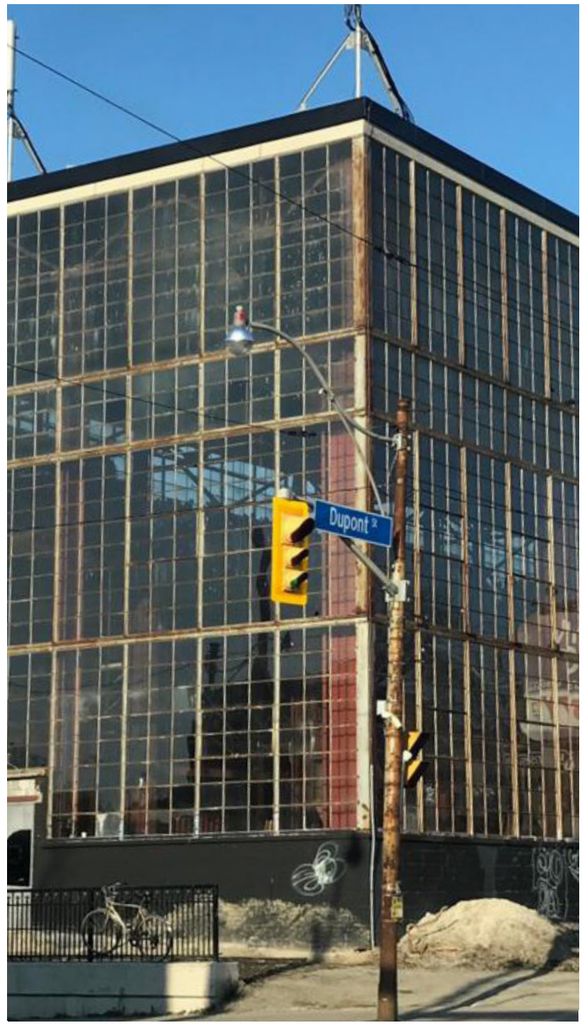


Fig. 5.24 *Abandoned warehouse building at the corner of Dupont St and Dovercourt Rd; a prime candidate for redevelopment*

Fig. 5.25 *Another industrial-use site along the Dupont rail corridor that could be seen as a redevelopment opportunity*

Fig. 5.26 *Cranes towering over the 2-story residential fabric at Dupont St and Bathurst St; a sign of the impending development*

Fig. 5.27 *Bianca - "Luxury Condominiums from $1.3M" near Dupont St and Bathurst St*

Fig. 5.28 *Litho Living - Luxury Rental Apartments at Dupont St and Christie St*

Fig. 5.29 *Madison Homes - Affordable housing on Madison Ave and Macpherson Ave*

Fig. 5.30 *Madison Homes - Affordable housing on Madison Ave and Macpherson Ave*

Fig. 5.31 *City Park Co-op, an example of the housing projects built during Canada's co-op housing era*

Fig. 5.32 *City Park Co-op, an example of the housing projects built during Canada's co-op housing era*

Fig. 5.33 *The deteriorating conditions of the housing stock at Regent Park*

Fig. 5.34 *The deteriorating conditions of the housing stock at Regent Park*

Fig. 5.35 *Regent Park: Juxtaposing the remaining housing stock of the past against with the newly built housing by the Daniels Corporation and CMHC.*

Fig. 5.36 *Regent Park: Fruit and vegetable stand*