

Re-Imagining Healthy Aging within an Intergenerational Community

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

There has been a demographic shift resulting in an increasing number of older people than younger people in the demographic pyramid. As a result, there is a strain on the number of resources available, such as senior specific homes, to accommodate the growing need for housing the elderly of our society. In addition, with ever-increasing prices in the real-estate market, general housing shortages, and the lack of affordable housing, low-income seniors have limited choices, in many cases, none.

Moreover, the central city as a place has today come to typically cater towards the younger generation, and especially young couples. Many families with children and older people choose to relocate to the suburbs. There are, however, more sustainable solutions as the present situation requires an overly heavy reliance on cars due to the spread of many amenities and resources in a low-density urban fabric. This thesis emphasizes a push toward more generationally shared living within the central city urban context. Options for some like the elderly are limited because in today's real estate market they can't find adequate housing to allow for healthy aging, so they are often forced to turn to senior-specific housing resulting in them being physically and socially isolated. Similarly, cities lack the space and shared affordability needed for families to grow in the urban context. Multi-generational housing set as a community hub is a potentially viable alternative choice to the current care models and existing housing. The aim of the thesis is to answer the question: how can older adults and their families fit into the urban context, and how can the young and old generations co-exist in a shared residential space?

The thesis analyzes different design and planning strategies to create an inclusive care community that supports continual aging. A design framework and strategies will be developed to propose an intergenerational community that supports healthy aging. This approach will be developed as a conceptual urban and architectural design that explores ways to facilitate care between all generations and create a shared space in the urban context of Toronto, one that encourages aging in place and social interaction between a diverse aging population and younger generations. The thesis outcome is an architectural community project that re-imagines healthcare, residential and mixed-use urban and building developments for every stage of life.



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## **Dedication**

This is dedicated to many parents and family who have been helped in so many unimaginable ways as they encouraged me throughout my process.

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# INTRODUCTION



The population of older adults in Canada, and especially in its largest city Toronto, is growing in the demographic structure of the population, and new urban design and building, policies, forms and typologies need to be provided to decrease the impact of isolation and loneliness today in aging, problems caused by inadequate existing and historical housing typologies for older adults. New design solutions must be developed which will start promoting better social interaction and feeling of community between all generations to encourage older adults to age healthier and to take a stronger part in their community to create a sense of place.

## Context

This thesis is a research and design project which analyzes how to integrate a new urban design and housing building typology on a site on an urban block at the north edge of the Christie Pits Park in central Toronto. The urban design is for a mixed community for older adults, shared with a younger generation, and one which adapts to different older adults' physical, mental and social needs. The proposed building design studies demonstrate how older adults can transition in place as they age, whether that be in a family, a shared group, or individually, and to continue to be a part of a community and support one another. Furthermore, the project incorporates amenities and healthcare services on-site to ensure that older adults have the social and health infrastructure in place to age successfully over their later years.

As people get older or start families, their first instinct is to move to the suburbs; however, they can be problematic for older adults who want to age at home. The suburbs are heavily car-dependent, making amenities inaccessible for older adults who can't or wish not to drive. Furthermore, they can be unsafe because of the wide streets and traffic, making the suburbs not an ideal location to age in place. Therefore, this thesis is located near Christie Pits Park to provide residents with access to many amenities and greenery in the city.

In addition, this project aims to encourage multi-generational interaction to foster a sense of community between all generations, unlike specific senior housing, which can impose restrictions on visitors. Christie Pits Park is an area where there are many amenities and services for all residents and generations. For example, the park itself has a baseball diamond and skating rink for kids, a pool for everyone, and areas to sit or walk around. Likewise, there are a couple of elementary schools for children and a private long-term care home on Christie Street. Finally, on Bloor Street, there is access to many restaurants, grocery stores, and healthcare facilities.

Overall, there are many considerations architects need to ponder when designing for older adults to provide more variety and flexibility to the growing needs of the older population. As a result, this thesis looks at creating a village within Toronto to offer three main housing types: individual units, family units, and double units, and a community hub for the village and neighborhood of Christie Pits. The community hub will provide programs and services for all generations, such as a daycare, healthcare services, a grocery store and cafe, and a gym and multipurpose room to promote wellness and learning. The aim will be to expand on the current program of many senior housing institutions to promote interaction and community between all generations to encourage healthy aging.

## Thesis Structure

This work is predominately a design thesis and the research on aging populations and the needs of older adults in urban settings in the early thesis chapters is intended to support and create an innovative thesis narrative for the design work which will be an urban community for older adults. The first chapter of the thesis will define aging within the context of quantitative factors such as chronological age, and qualitative aspects such as social, mental and physical function. Furthermore, the demographic and generational breakdown of Canada and Toronto will briefly be analyzed to understand the importance of creating adequate housing for older adults in Toronto as the aging population is increasing at an unprecedented rate. Finally, current challenges will be discussed to understand the issues older adults face and what the final design proposal should consider as the thesis progresses.

The second chapter of this thesis analyzes existing housing solutions in Ontario for older adults. These solutions vary on the level of support and care in place depending on the physical and mental functions of the individual. The housing typologies analyzed are aging-in-place, adult lifestyle communities, individual living, assisted living, and long-term care homes. With each living situation, the level of independence and autonomy provided decreases and the services and support provided increases. Each solution will also investigate what social services are available and the programmatic breakdown of living arrangements.

The third chapter analyzes precedents of new innovative design solutions such as intergenerational housing, cohousing, dementia villages, elderly communities and housing, and flexible and adaptable homes. Each community, housing or building typology will be defined to understand what makes it a unique and novel solution and is analyzed to determine what programmatic and design aspects make these building typologies unique.

Finally, the final chapter of this thesis looks at a proposed urban and building design solution located north of Christie Pits Park in central Toronto. The design will review nearby site amenities and surrounding housing typologies to explain why the specific site was chosen and its advantages and drawbacks. Furthermore, the design project will be broken down into scales reflecting a site, block and dwelling unit level to explain the new proposal comprehensively as it seeks to propose a new solution for daily life for older adults.

## Literature Review

Current senior housing solutions are inadequate, and there is a need for more thoughtful considerations in accommodating the aging population. Various books and articles have influenced the ideas and positioning of this thesis, contributing to the development of themes crucial in determining the design and program objectives. The following section will highlight key texts, categorizing them based on themes as follows:

### *Demographic Change*

The global population is aging, and in the next few years, it is expected that the number of older people will surpass that of younger individuals. In the book *Young-Old Urban Utopias of an Aging Society* by Deane Simpson, the different phases of old age are discussed, particularly focusing on the young-old group. The misconception that the chronological definition of age determines an individual's health and autonomy is addressed. The text introduces two subgroups, the young-old and old-old (or the third and fourth age), emphasizing variations between them. Successfully utilizing diagrams and maps, the book highlights the international impact of an aging population, comparing demographics across countries and continents. Examining urban precedents in Florida, Costa del Sol, Kyushu, and RV communities, Simpson underscores how social, economic, political, and medical factors influence senior housing.<sup>1</sup> One gap in the text, compared to other literature on age subgroups, is that Simpson does not include the middle-old. For instance, in a comparison of old age versus young-old urbanism, Simpson identifies old age as individuals who are dependent, inactive, and in need of assistance, while young-old are people who are independent, active, and seek entertainment. There is no consideration for a middle characteristic or generation that others have called the middle-old.

As the increase in the aging population is an international phenomenon, Canada and the City of Toronto are no exception. This thesis utilizes statistical data from the 2016 and 2021 Canadian Census Toronto Open Data to make site and design decisions. Supporting the argument, predicted age projections were compared to existing statistical data in Canada, Toronto, and the site neighbourhood to understand the impacts of an aging population.

### *Community and Intergenerational Interaction*

When greater care and consideration are put into senior housing design, it can enhance the physical and mental health of the residents. Numerous journal articles have associated socialization and community with an improved quality of life. In the article "A Conceptual Model for Aging Better Together Intentionally," Anne Glass and Rebecca Plaats note that, unlike traditional institutional care such as long-term care facilities, which usually promote loneliness and isolation, living arrangements fostering social networks and community can help improve mental health. The authors analyze housing typologies, such as cohousing in Denmark, and interview residents to conclude that living in intentional community housing encourages older adults to maintain their autonomy.<sup>2</sup>

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1 Simpson, *Young-Old : Urban Utopias of an Aging Society*.

2 Glass and Vander Plaats, "A Conceptual Model for Aging Better Together Intentionally."

Studies have also shown that generational disconnect has resulted in distrust, prejudice, and disrespect between generations, leading to conflicts, unsafe public domains, and age discrimination and segregation.<sup>3</sup> This was further argued in “A Tale of Two Generations: Case Study of Intergenerational Living in Residential Aged Care,” where the authors discussed the positive effects of intergenerational living on older adults. The article analyzes the intergenerational program known as Homeshare and interviews the residents, finding that the program benefits the physical and emotional health of older individuals by decreasing loneliness, fostering strong bonds, and creating genuine relationships. The article also notes how the older adults preferred interactions with the younger generations they lived with rather than volunteers because the relationship did not feel forced. Overall, the authors found that intergenerational living benefited both the older individual and the student.<sup>4</sup>

Influenced by these articles and studies, the overall design proposal in this thesis will address how generations can interact successfully to prevent isolation and loneliness in the design. Housing is not the only space that can facilitate interaction, so the design will explore additional programs, spaces, or amenities to foster intergenerational interaction and community in this project. Given the numerous programs in Canada and Toronto created over the years to foster this connection, the design will aim to implement them to provide a positive experience.

### *The Age-Friendly City*

The book *Age-Inclusive Public Space* by Dominique Hauderowicz and Kristian Ly Serena discusses how public spaces are often curated for younger and middle-aged individuals, neglecting older adults in living environments which can lead to issues such as social isolation and loneliness. Older adults benefit both physically and mentally when they can engage in the public domain. This text helps to highlight the diverse experiences of different subgroups of older adults in the city and public spaces. Since the city varies from person to person, not every public space is significant to everyone, emphasizing the importance of providing variety. The authors examine different policies and studies, including the World Health Organization’s (WHO) global Age-Friendly Cities project. The project identifies key areas to socially include older adults, such as better homes and walkable neighbourhoods, accessible public transportation, prospective employment and volunteer options, adequate income for a comfortable life, access to health and social services, easy access to information and intergenerational interaction to combat prejudice.<sup>5</sup>

Although many individuals choose to move to the suburbs to age and raise a family, cities help older adults stay active. Hauderowicz and Serena address four planning principles to encourage physical activity in older adults which are higher population density, numerous shopping options, access to public transportation and parks and green spaces within walking distance.<sup>6</sup> From the various texts and articles found, it became apparent that urban areas and cities are some of the most ideal locations for older adults to age because they promote physical and mental health. However, there are fewer facilities in comparison. The chosen site for the thesis is in Toronto because it meets the criteria laid out in the text, such as higher population density and access to transportation than areas like the suburbs. There are also many amenities along Bloor Street and Christie Pits Park adjacent to the site to provide greenery.

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3 Hauderowicz and Serena, *Age-Inclusive Public Space*.

4 Gurung et al., “A Tale of Two Generations: Case Study of Intergenerational Living in Residential Aged Care.”

5 Hauderowicz and Serena, *Age-Inclusive Public Space*.

6 Hauderowicz and Serena.

# **CHAPTER 1: AGING AND URBANIZATION**

Age and how one perceives aging is changing, therefore terminology, definitions affecting policy, and the development of urban housing are all evolving to respond to new conditions as adults, especially the large post-WW2 cohort, get older. This chapter analyzes aging to understand how the definition of that process has shifted over the years, and how a society's resources respond. In a new social order reflecting the current demographics of Canada (and Toronto), what are the challenges older adults encounter as they age, and how can solutions be developed.

## 1.1 Defining Older Adults

The definition of aging has shifted over the years. With the rise in life expectancy how one classifies older adults for policy and delivery of services, has changed. For instance, the Canadian Government classifies older adults into three sub-groups based on chronological age: pre-seniors (55-64 years old), young seniors (65-74 years old), older seniors (75-84 years old) and elderly seniors (85+ years old).<sup>1</sup> These definitions and age classifications have been defined and organized differently by other authors and researchers. For example, architect and Professor at The Royal Danish Academy of Fine Arts School of Architecture, Deane Simpson explains how the traditional life cycle of the average person is broken into three phases: childhood, adulthood, and old age. However, around the 1950s, the three-phase life cycle became a four-phase lifecycle: first age, second age, third age (young old-age) and fourth age (old old-age).<sup>2</sup> However, Chris Gilleard, who is professor of psychiatry at the University College London and is an expert in gerontology and aging, and Paul Higgs, who is professor of sociology of aging at University College London, note there are two approaches to dividing older adults which are a cohort-based approach or a generational approach. For example, baby boomers are the largest post WW2 birth cohort, although there is quite an age range between the generations, as individuals born in the 1950s, living as older children or teens in the 1960s, would be different than a late-born baby in that same period. As a result, the attitudes and behaviours of baby boomers differ over a generation even though they are part of the same assigned cohort.<sup>3</sup>

Furthermore, psychologists Paul Bates and Jacqui Smith, who study life-span orientation and age-related changes, add to these already outlined subgroups to assert that to define older adults the third and fourth ages must be further understood. When defining aging, location is an important factor because in developing countries old age starts and ends at younger numerical ages than in developed countries.<sup>4</sup> Therefore, the third and fourth ages can be defined as population-based and person-based. In the population-based definition, the third and fourth ages are the numerical ages where 50% of the age cohort is no longer living and are based on an age range. Moreover, the person-based definition is based on an individual basis and is based on present-day activities and health conditions.<sup>5</sup> In this case, the third age and fourth ages are not related to a particular age group but rather observable traits. The third age or young-old group are individuals who have the ability to control and take care of themselves during any health-related losses. Although their health might be declining, they can still adapt to the spaces around them to live comfortably without assistance. Moreover, the fourth age or the oldest-old brings many negative implications as adults begin to experience a decrease in physical and mental health such as dementia. This results in a decline in intentionality, independence and autonomy.<sup>6</sup>

Another definition provided by architects, Dominique Hauderowicz and Kristian Ly Serena look at age in relation to the city. For example, they divide older adults into three subgroups: the city for the autonomous,

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1 SE Health, "The Periodic Table of Housing Models for Aging Canadians."

2 Simpson, *Young-Old : Urban Utopias of an Aging Society*.

3 Gilleard and Higgs, "The Third Age and the Baby Boomers: Two Approaches to the Social Structuring of Later Life."

4 Baltes and Smith, "New Frontiers in the Future of Aging: From Successful Aging of the Young Old to the Dilemmas of the Fourth Age."

5 Baltes and Smith.

6 Baltes and Smith.



the city for the semi-autonomous, and the city for the institutionalized.<sup>7</sup> The city for the autonomous is described as individuals who live at home, and public space is easily accessible to them, whether it be streets, squares, or parks. They can drive and reach farther destinations or use public transportation. This subgroup has the autonomy to choose their dwelling, which is often private.<sup>8</sup> The second subgroup, the city for the semi-autonomous, includes older adults who either continue to live at home and age in place or reside in senior-specific housing such as senior apartments but will need to receive some care at home. Public space for these residents is limited, often within their neighbourhood or areas defined by physical barriers. This subgroup has less mobility, which means local parks, backyards, or courtyards are critical.<sup>9</sup> Finally, the last subgroup the authors refer to as the city for the institutionalized includes older adults who live in care institutions, and their city is extremely limited and designated by the facility. These areas can be garden areas or other sites that are close to the care facility, and public encounters only happen in the institution.

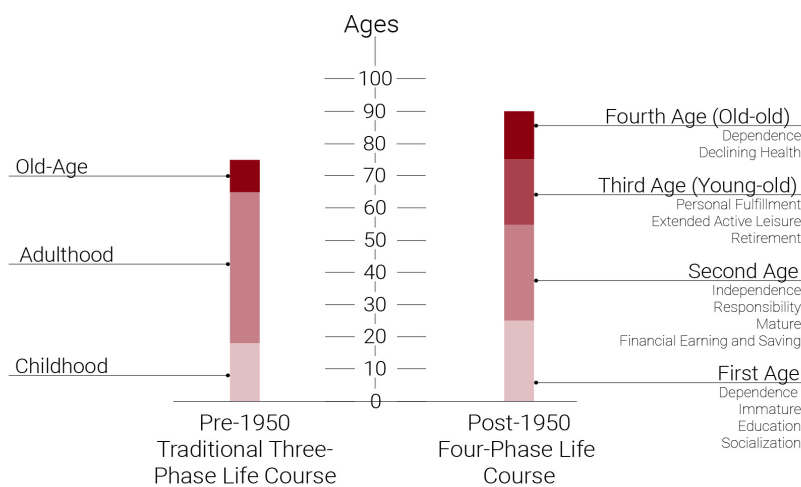


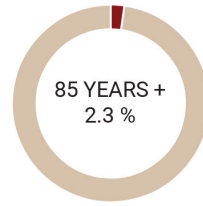
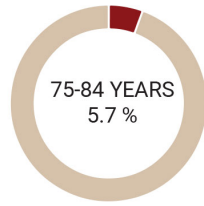
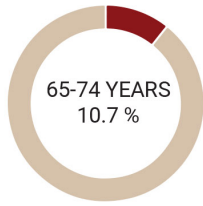
Figure 1.1. A comparison of the traditional three-phase life course to the four phase life course. As life expectancy increases the traditional definition of aging changes to add young-old and old-old life stages.

Therefore, for the purpose of this thesis, the term ‘older adults’ refers to individuals over the age of 65. Likewise, this thesis will mainly consider qualitative factors of aging rather than quantitative ages between the groups. Young-old describes older adults who do not require extra support or care and have higher levels of physical, mental or social function to have more individual autonomy. Based on the age groups by the Canadian government, this would typically fall under young seniors between the ages of 65 and 74. The middle-old describes older adults who require minimal support and care and have moderate levels of physical, mental or social function. These individuals can remain independent but still require occasional support whether that be on-site or weekly check-ins. The age of these individuals will typically be older seniors who are between the ages of 75 to 84, based on the Canadian subgroups. Finally, the oldest-old describes older adults who require support and care 24 hours and have low levels of physical, mental or social function. These individuals are interdependent and will require constant supervision and support. These individuals are elderly seniors who are 85 years old or older when considering Canada’s breakdown.

7 Hauderowicz and Serena, *Age-Inclusive Public Space*.

8 Hauderowicz and Serena.

9 Hauderowicz and Serena.



SOMEWHAT RETIRED

MAJORITY RETIRED

RETIRED OR IN CARE FACILITIES

18.6% HOMEOWNERS  
51% RENTERS

18.5% HOMEOWNERS  
57% RENTER

21.5% HOMEOWNERS  
63.5% RENTER

LIFESTYLE MOVE

PLANNED MOVE

CRISIS MOVE

PUBLIC SPACE IS ACCESSIBLE

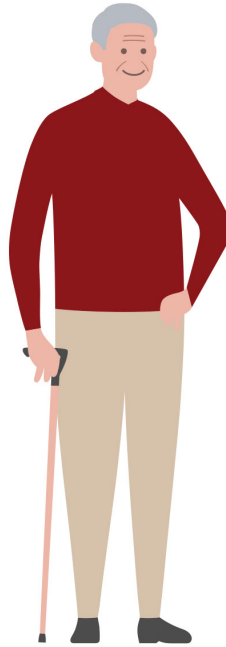
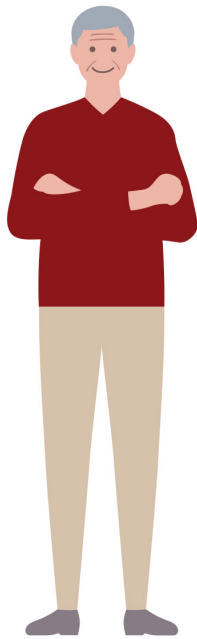
PUBLIC SPACE IS LIMITED  
URBANITY

PUBLIC SPACE IS EXTREMELY  
LIMITED URBANITY

ACTIVE RETIREMENT COMMUNITY  
AGING IN PLACE

ACTIVE RETIREMENT COMMUNITY  
RETIREMENT HOME  
MULTIGENERATIONAL HOUSING  
SENIOR SPECIFIC HOUSING

RETIREMENT HOME  
INSTITUTIONALIZED CARE



**YOUNG - OLD**  
- full autonomy  
- active

- no extra support or care required  
- high levels of physical, mental  
or social function

**MIDDLE - OLD**  
- some autonomy  
- somewhat active

- minimal support or care required  
- moderate levels of physical, mental  
or social function

**OLDEST - OLD**  
- interdependent  
- unactive

- require 24 hours support and care  
- low levels of physical, mental  
or social function

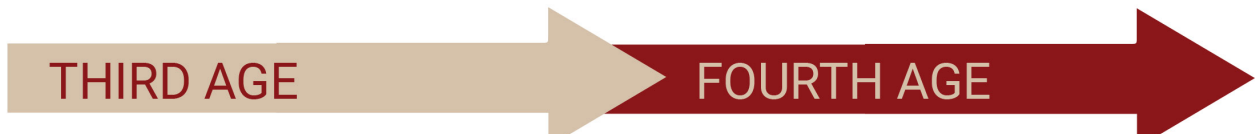


Figure 1.2. Older adults can be divided into three groups: young-old, middle-old and oldest-old based on qualitative factors.

## 1.2 Demographics and Generational Breakdown

As already noted, the Canadian population is predicted to see an unprecedented number of older adults in the near future. In the 2021 Canadian census, it was reported that there are over 861,000 people over the age of 85, which is twice the value from 2001, making this age group the fastest-growing cohort as 2.3% of the population is over the age of 85. Furthermore, the number of people aged 85 and over are expected to triple to 2.5 million people by 2046.<sup>10</sup> As a result, this trend will see the number of older adults surpassing the amount of younger people in the population pyramid. The number of Canadians aged 85 and older have increased by 12% since 2016, making them the fastest-growing age group in the country.<sup>11</sup> In the past year of 2023, baby boomers who turned 76 will most likely want to live independently which makes, policy developers, officials and researchers wonder who will care for all these older adults and where will they live?<sup>12</sup>

Even though many older adults aged 85 and over have significant health issues and limited physical functions, only one-quarter (3 in 10 people) reside in a collective dwelling like a long-term care home or seniors' home where care is readily available. There are only circa 100,000 older adults who are 85 years old and over living in a collective residence or nursing home in Canada, and this number increases with age.<sup>13</sup> As a result, there is a waitlist for long-term care beds that spans years, and there are currently only ten long-term care homes in Toronto. This limited number cannot accommodate the growing needs of the older population. Therefore, many older adults requiring care, resort to staying in hospitals and waiting (creating backups for all hospital care in general) or relying on families to take care of them in their homes.<sup>14</sup>

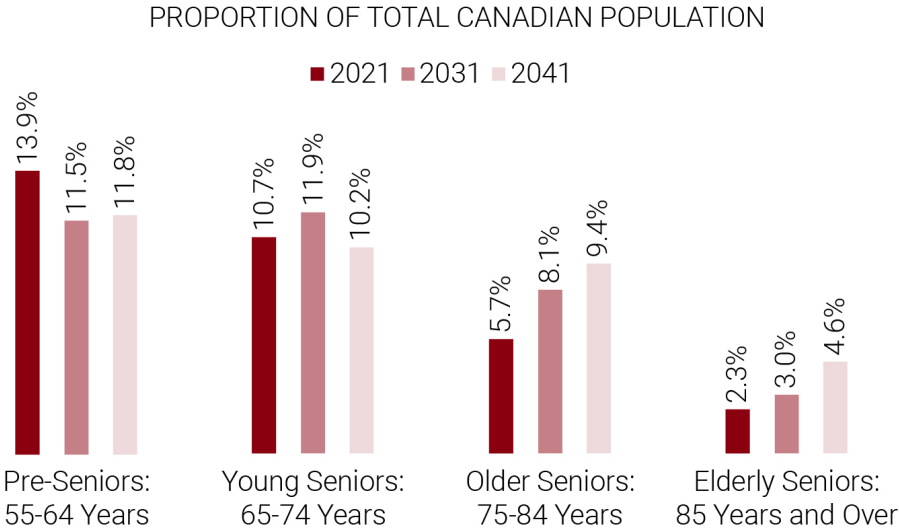


Figure 1.3. The proportion of Canadian senior population from 2021 to 2041.

10 Government of Canada, "A Portrait of Canada's Growing Population Aged 85 and Older from the 2021 Census."  
 11 Osman, "It's Going to Affect Everyone."  
 12 Osman.  
 13 Government of Canada, "A Portrait of Canada's Growing Population Aged 85 and Older from the 2021 Census."  
 14 Osman, "It's Going to Affect Everyone."

There is also a higher percentage of older adults living in downtown cores than in the broader neighbourhoods and communities of large urban centres because of the easier access to more health services and amenities. For large urban centres, there are about 2.3% of adults over 85 years old, compared to 2.5% living in the rest of the country. In Toronto, the proportion of older adults aged 85 and older is 2.1%.<sup>15</sup> Toronto currently has the highest number of residents aged 65 and older compared to other cities in the Greater Toronto Area (GTA) like Brampton, Mississauga, and Hamilton with 476 990 people 65 and older living in Toronto. The City of Toronto has 71 860 people aged 85 and older.<sup>16</sup> There is a great likelihood that Toronto and the broader GTA will experience difficulty in the future housing the many elderly looking for homes that can accommodate them. Therefore, more options need to be made available, the easiest and most socially beneficial being able to positively age in place

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15 Government of Canada, "A Portrait of Canada's Growing Population Aged 85 and Older from the 2021 Census."

16 Government of Canada, "Profile Table, Census Profile, 2021 Census of Population - Toronto, City (C) [Census Subdivision], Ontario."

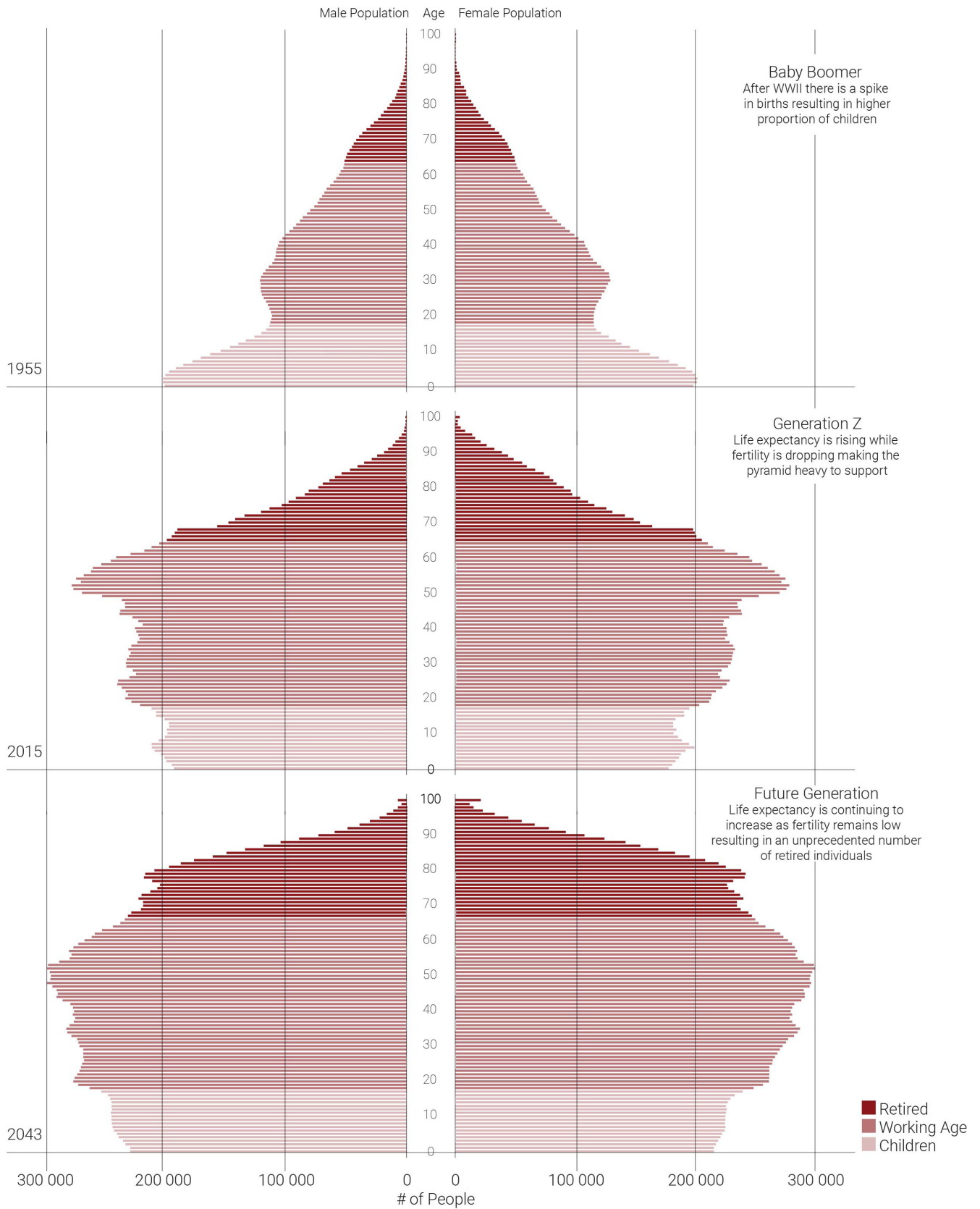


Figure 1.4. The Canadian population pyramid from 1950 to 1943 demonstrate the how the proportion between retired individuals and children is changing due to increase in life expectancy and lower fertility rates.

## 1.3 Challenges

Older adults face a variety of complex challenges. For example, the COVID-19 pandemic of 2019 to the present, has been one of the most common concerns for older adults. The pandemic highlighted older adults' vulnerabilities and exposed the precariousness of care in collective homes. Many of the casualties from COVID-19 were from the older population, therefore, there needs to be a call to improve the standards and procedures in communities of older adults to make it safer.<sup>17</sup> The pandemic also exposed, and continues to outline, how vulnerable and ill-equipped the healthcare system is to handle mass admissions to hospitals and clinics. In the early pandemic years, for instance, there was a surge of patients being placed in hallways and conference rooms due to overcrowding of emergency rooms and wards.<sup>18</sup>

Housing services and aging are related because older adults spend the majority of their time at home. For housing to promote active aging it must encourage physical and mental health and sociability, which must be performed with ease.<sup>19</sup> However, for older adults who have a higher vulnerability to environmental changes this can become a challenge. Many older adults face a number of barriers in their homes and the range and intensity of accessibility problems are related to healthy aging. Older adults who live in accessible homes view their home as more useful and purposeful because no one is responsible for their living arrangements and they are more independent, achieve better well-being and suffer less from depression.<sup>20</sup> However, housing adaptations for older adults can be challenging because of the economic burden, especially how low-income individuals.<sup>21</sup>

Affordability is another example that is an issue for older adults. Housing in most of Canada's urban centres has become expensive with many people not being able to afford to buy homes or the cost of rent in cities like Toronto or Vancouver, two of the largest and most desirable cities in Canada. Although this crisis is also not exclusive to Toronto, many families all over Ontario's urban centres are opting to live together to split the cost of living. Oftentimes, the older generations (the grandparents) will buy the home (or already own the home) and the middle generations (parents) will be the ones working to provide for the family and pay the mortgage.<sup>22</sup> There has, therefore, been a shift in family dynamics in countries like Canada and the United States of America, especially where there are an increasing number of multi-generational households because of immigrants and their different cultures. This situation will also continue to change, as Canada accepts more immigrants and newcomers, people who will need to live in multi-generational homes to, first, be able to afford the home, and secondly, reflecting what is customary in their culture. Within many ethnic families, the grandparents will continue to live with their children, and the children will care for their parents rather than putting them in an older adult care home.<sup>23</sup>

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17 Malek, "Seniors' Care Was in Crisis before COVID-19."

18 Crawley, "How Ontario's 'hallway Medicine' Problem Has Become an Everyday Reality | CBC News."

19 van Bronswijk, "Healthy Housing for Active Aging."

20 Oswald et al., "Relationships Between Housing and Healthy Aging in Very Old Age."

21 Yang and Fu, "Physical Attributes of Housing and Elderly Health: A New Dynamic Perspective."

22 Sisson, "Boomers Are Poised to Change the Housing Market."

23 Deschamps, "Roommates, Multi-Generational Homes Rising amid Increasing Costs, Immigration."

Another growing concern for older adults, is the mental health of many such older Canadians. The National Institute on Aging reported that managing social isolation, loneliness, stress and depression is essential to healthy aging.<sup>24</sup> Due to the decline in hearing, vision, memory and physical ability and the loss of family and friends, it can become harder to maintain social relationships which results in older adults feeling lonely or socially isolated. This can make older adults more susceptible to health risks such as heart disease, depression or cognitive decline. For example, a 2021 study by Jesse Hu and colleagues, collected data from around 11,000 adults older than 70 years old and found that loneliness can result in a greater risk of heart disease. Likewise, another study by Lindsay Kobayashi, Andrew Steptoe related social isolation in older adults to chronic lung conditions and depression symptoms compared to other aging adults who had social support. Research shows that older adults who are more socially active can improve physical and psychological well-being.<sup>25</sup>

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24 National Institute on Aging, "What Do We Know About Healthy Aging."

25 National Institute on Aging, "What Do We Know About Healthy Aging."


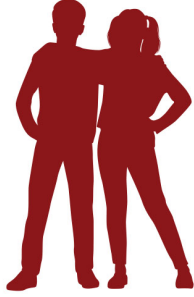
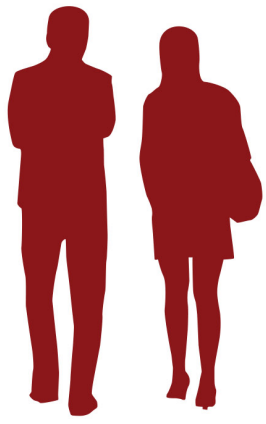
	 <b>FIRST AGE (CHILDREN)</b>	 <b>FIRST AGE (TEENAGER)</b>	
<b>STRENGTHS</b>	<ul style="list-style-type: none"> <li>- Hopeful and trustful</li> <li>- Enthusiastic and curious</li> </ul>	<ul style="list-style-type: none"> <li>- Competent with daily tasks</li> <li>- Technological skills</li> <li>- Energy</li> </ul>	<ul style="list-style-type: none"> <li>- Work</li> <li>- develop</li> <li>- Independ</li> <li>- Matur</li> <li>- Finan</li> </ul>
<b>CHALLENGES</b>	<ul style="list-style-type: none"> <li>- Full dependency on others</li> <li>- Immature</li> <li>- Focus on growth and development</li> </ul>	<ul style="list-style-type: none"> <li>- Some dependency on others</li> <li>- Developing sense of identity</li> <li>- Soft skills</li> </ul>	<ul style="list-style-type: none"> <li>- Main</li> <li>- functio</li> <li>- Main</li> <li>- Fami</li> <li>- Daily</li> <li>- cleanin</li> </ul>
<b>NEEDS</b>	<ul style="list-style-type: none"> <li>- Care</li> <li>- Assistance with feeding, bathing, clothing</li> <li>- Continual Supervision</li> <li>- Space to play and run around</li> <li>- Socialization</li> <li>- Education</li> </ul>	<ul style="list-style-type: none"> <li>- Role model</li> <li>- Mentoring and guidance</li> <li>- Stimulation</li> <li>- Education</li> <li>- Socialization</li> </ul>	<ul style="list-style-type: none"> <li>- Child</li> <li>- Relax</li> <li>- Assis</li> <li>- respon</li> </ul>

Figure 1.5. Highlights the challen





SECOND AGE	THIRD AGE	FOURTH AGE
<p>Young age (career focus and development)            Independent            Financial earning and saving</p>	<ul style="list-style-type: none"> <li>- Financial freedom</li> <li>- Free time</li> <li>- Life experience</li> <li>- Start of retirement</li> <li>- Mental and emotional stability</li> </ul>	<ul style="list-style-type: none"> <li>- Wisdom</li> <li>- Emotional stability</li> <li>- Lifestyle stability</li> <li>- Focus on enjoying the present-day</li> </ul>
<p>Maintaining highest level of health and energy            Maintaining busy lifestyle            Family responsibility            Household responsibilities (eating, cleaning, etc.)</p>	<ul style="list-style-type: none"> <li>- Maintaining independence and preventing disability</li> </ul>	<ul style="list-style-type: none"> <li>- Declining health</li> <li>- Risk of loneliness</li> <li>- Risk of social isolation</li> <li>- Greater risk of mental illnesses</li> <li>- Maintaining personal welfare</li> </ul>
<p>Need for care services            Maximization and down-time            Assistance managing household responsibilities</p>	<ul style="list-style-type: none"> <li>- Personal fulfillment</li> <li>- Social interaction</li> <li>- Leisure and activity</li> <li>- Hobbies and recreation</li> </ul>	<ul style="list-style-type: none"> <li>- Continual supervision</li> <li>- Accessibility needs ex. wheelchair needs, less stairs, walk-in showers, etc.</li> <li>- Care and assistance to perform daily tasks</li> </ul>

Addresses the needs of all generations.

## **CHAPTER 2: EXISTING HOUSING**

Older adults are not a homogeneous population or community, they all have different preferences and needs regarding housing. Requirements for such housing are often qualitative and based on individual characteristics and aspirations such as health, socioeconomic status, education, and cultural preferences.<sup>1</sup> These variable qualities result in different housing typologies being built to satisfy a range of preferences and needs for older adults. In Ontario, such housing typologies can be broken down into seven options:

1. Home and Community Care: Designed to allow people to live in their own homes independently by providing on-site personal support services (also referred to as aging in place).
2. Provide independent residences for retirees and semi-retirees which include townhouses, small homes or cottages, or condominiums in bigger buildings.
3. Life Lease Housing: Individuals do not have ownership of a property but rather hold an “interest” in it, making units more affordable.
4. Rent-Geared-to-Income Housing: A form of social housing developed by the government for low-income older adults where the rent is determined by an individual’s income, often a pension, retirement savings or related annuity.
5. Co-operative Housing: Non-profit housing where residents pay a housing fee, do not own their homes but have a collective say in how the community is run.
6. Retirement Homes: Owned by private businesses that sell various levels of accommodations and health services to older adults with private income and provide options for independent living and assisted living as part of public/private cost sharing with government funding (depending on care level).
7. Long-Term Care Homes: Provide 24-hour nursing care and supervision for adults who need help with daily tasks and supported by government funding in public/private cost sharing.<sup>2</sup>

This chapter will look at each of the five typologies which are: aging in place, adult lifestyle communities, senior apartments, assisted living and long-term care. The 2016 Canadian census found that single-detached homes remain the most common housing typology for Canadian seniors the percentages decreasing with age: 61% of seniors aged 55 to 64, 58.3% between 65 to 74 and 52.1% aged 75 and older. That proportion of older adults choosing to live in single-detached houses decreases with age as some choose to downsize and also enter retirement homes due to health concerns.<sup>3</sup>

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1 SE Health, “The Periodic Table of Housing Models for Aging Canadians.”

2 Government of Ontario, “Guide to Programs and Services for Seniors in Ontario.”

3 Canada Mortgage and Housing Corporation, “Housing for Older Canadians: The Definitive Guide to the Over-55 Market - Understanding the Market.”

## 2.1 Aging in Place

The first housing typology discussed will be aging in place, a dwelling solution which tends to be the preferred method of housing for many older Canadians. Aging in place means individuals have the required health and social support and services they need in their home or community to allow them to live safely and independently for as long as they want. According to the 2016 Canadian census, older adults, between the ages of 55 to 64, 99% of women and 98.6% of men preferred to live in private households, compared to 0.5% of women and 0.7% of men choosing to live in special care facilities such as nursing homes, seniors' residences or group homes. As Canadians get older, between the ages of 65 to 74, 98% of women and 98.1% of men continued to live in private households compared to 1.6% of women and 1.4% of men choosing to move to special care facilities. Finally, when looking at Canadians 75 and older, 81.2% of women and 89.4% of men continued to live in private households compared to 17.6% of women and 9.8% of men choosing to move to more special care facilities.<sup>4</sup>

Overall, the 2016 statistics reveal that as older Canadians age some might choose to move into special care facilities as their needs for specific support and services increase, but the majority of Canadians continue to live at home and age in place. This trend is stable in time and it can be noted that between 2006 and 2016 for Canadians 75 and older, the percentage of women increased from 14.5% to 17.6% and men increased from 8% to 9.8%. Even as health and mobility based needs increased over that time the majority of older Canadians continued to choose to live in private households.<sup>5</sup> From the 2016 census, the second most preferred dwelling type is apartments in buildings with less than five storeys, with 14.7% of adults between the ages of 55 to 64, 15.8% of adults between 64 to 74 and 18% of adults 75 and older choosing to live in such apartment dwellings. The trend between each age group demonstrates how many older adults prefer to downsize their dwelling as they grow older preceding an eventual move into retirement homes. Furthermore, this trend is demonstrated by the proportion of home ownership to aging, the highest number of homeowners in 2016 were adults between 55 to 64 with 76.2% and adults 65 to 74 with 76.1% owning a home. Although, this decreases with adults 75 and older with only 72.1% owning a home. This suggests that many older adults prefer to rent and move into apartments and then into (or immediately into) retirement homes, reflecting the dwelling type statistics.<sup>6</sup>

Aging in place, despite its advantages of autonomy and individual agency, has many challenges such as risk of isolation, crime, and the tasks associated with property ownership. Many homes also need to be renovated or adapted to accommodate older adults' needs, increasing the cost of living. In homes located in the suburbs, issues of car-reliance or lack of transportation can also make it difficult for older adults to integrate into the community, meaning they are at risk of facing isolation and loneliness. The lesson here is that to successfully age in place, individuals need to continually participate in their home and community, and this can be challenging if, for example, neighbours or friends move thereby changing the social environment and support of the community at large.<sup>7</sup>

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4 Canada Mortgage and Housing Corporation, "Housing for Older Canadians: The Definitive Guide to the Over-55 Market - Understanding the Market."

5 Canada Mortgage and Housing Corporation.

6 Canada Mortgage and Housing Corporation.

7 Bosman, "Boomer Housing Preferences: Active Adult Lifestyle Communities versus Aging in Place."



**Bathroom**

- only one located on second floor
- no grab bars in bathtub
- bathtub instead of walk-in shower (harder to access)
- very narrow (no room for turning radius)
- no wheelchair room under sink for access



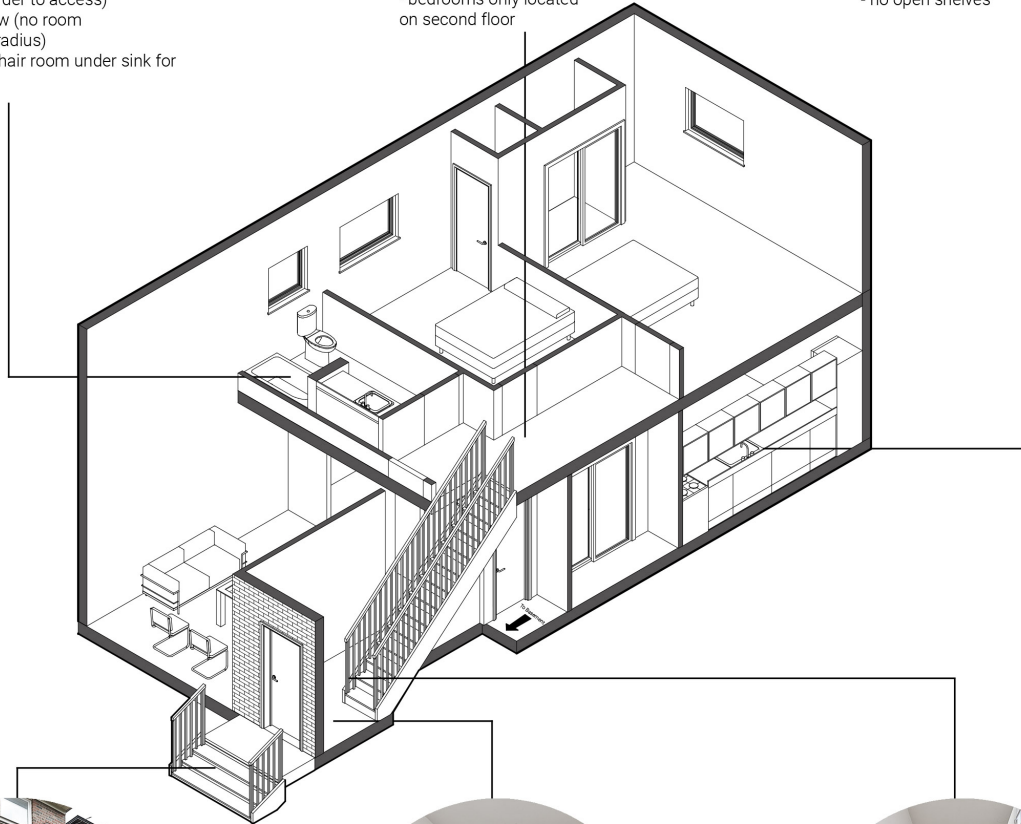
**Second Floor Corridor**

- very narrow (no room for turning radius)
- walk straight into stairs
- bedrooms only located on second floor



**Kitchen**

- appliances far from each other
- no wheelchair room under sink for access
- no open shelves



**Exterior Entrance**

- raised main entrance, which required stairs for access



**Interior Entrance**

- entrance very narrow (no room for turning radius)
- Walk straight into stairs



**First Floor Corridor**

- very narrow (no room for turning radius) and rooms are divided
- narrow treads and steep risers
- reliance on stairs to move vertically

Figure 2.1. An axonometric of a typical Toronto single-family home and the problems that exist when older adults want to age in place.

## 2.2 Adult Lifestyle Communities

Adult lifestyle communities, or independent living communities, are age-restricted communities that create a suburban environment for retirees or semi-retirees. Often, in the wealthier communities, they are also gated communities with limits to outside access. The dwellings can include bungalows, townhouses, single-detached homes or condominiums and allow older adults the benefits of home ownership while also having access to shared on-site recreational and community activities.<sup>8</sup> Many older adults choose to move to an adult lifestyle community because they can continue living independently while also being in an environment with support services.<sup>9</sup> Adult lifestyle communities are age-restricted for adults between 55 to 74 and provide an alternative to aging in place, while also explicitly offering, as part of their package of amenities, an opportunity to be connected to a community.<sup>10</sup>

Such communities are designed to encourage older adults to be active and live healthier lifestyles. Some provide walkable routes in the community between dwellings to the common areas to promote and increase walking. In addition, they could also have a variety of formal and informal communal areas such as gardens, clubhouses, swimming pools and outdoor areas, in some cases even a golf course. These amenities are private for the community to ensure the safety and security of the residents. In addition, the layout of streets and green spaces is simplified with limited outside access to ensure easy wayfinding and movement.<sup>11</sup> Overall, adult lifestyle communities provide a strong sense of community and architecture that already meets the needs and requirements of older adults. Furthermore, many adults who integrate themselves into these communities report having higher self-esteem and lower depression. In addition, the communities encourage older adults to live healthier and engage in healthier habits to increase their quality of life.<sup>12</sup>

Even if they could afford the community, some older adults choose not to live in adult lifestyle communities because of visitor restrictions. Adult lifestyle communities are not open to the public and many older adults would rather choose to age in place because they cannot have family or friends visit often or stay overnight in these communities. Although they form a community, they also restrict other forms of social interaction with outsiders due to stringent rules.<sup>13</sup>

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8 Government of Ontario, "Guide to Programs and Services for Seniors in Ontario."

9 Rossen and Knafl, "Women's Well-Being After Relocation to Independent Living Communities."

10 Bosman, "Boomer Housing Preferences: Active Adult Lifestyle Communities versus Aging in Place."

11 Bosman.

12 Rossen and Knafl, "Women's Well-Being After Relocation to Independent Living Communities."

13 Bosman, "Boomer Housing Preferences: Active Adult Lifestyle Communities versus Aging in Place."

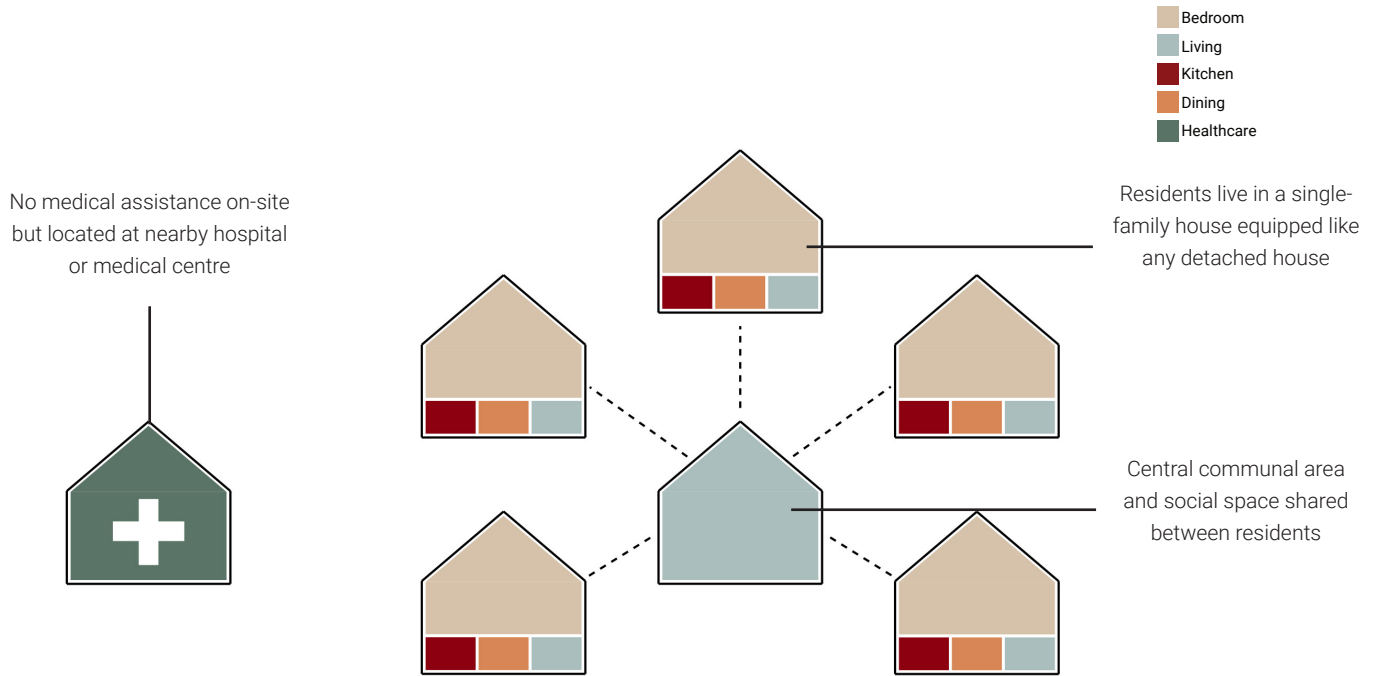


Figure 2.2. The image shows diagrammatic relationship of an adult lifestyle community and the related buildings.

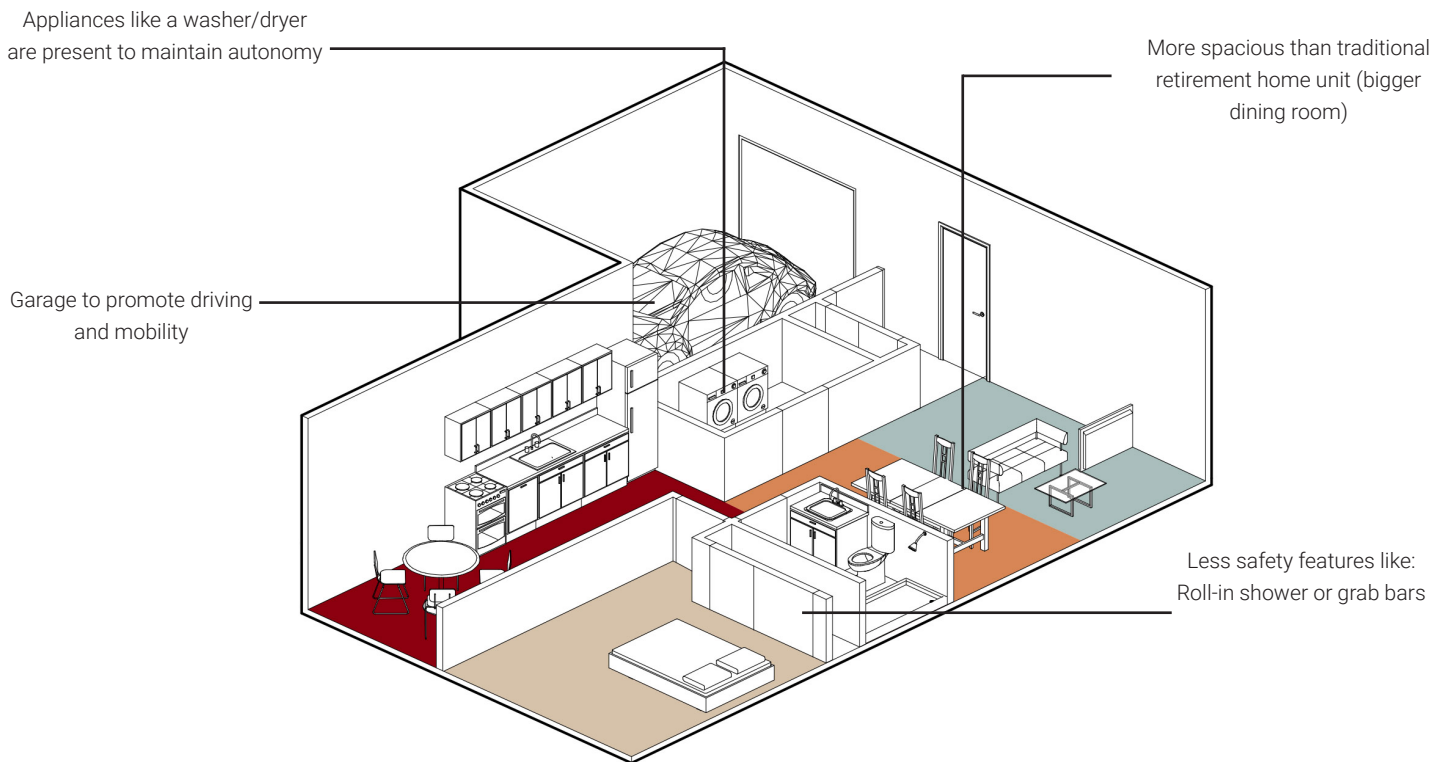


Figure 2.3. The image shows a diagrammatic breakdown of an adult lifestyle community unit.



## 2.3 Independent Living

Independent living facilities offer a housing solution for older adults who are independent and do not require much care or support. However, independent living differs from adult lifestyle communities because the facilities will provide residents services and amenities such as social and recreational programming, cleaning services, food preparation and 24-hour on-site healthcare if required.<sup>14</sup> As a result, independent living allows residents to delegate daily activities such as cooking and cleaning while remaining active and social.<sup>15</sup>

Independent living is typically situated in a mixed building typology of mid-rise apartment buildings, townhouses and bungalow cottages, this depending on the degree and density of urban development in the town or city in which they are situated. Despite its desirable independence, independent living and assisted living (which follows in this chapter) are usually offered in the same retirement home with varying accommodations and levels of care.<sup>16</sup> Typical suites of independent living facilities in a building can vary between one bedroom, or two bedrooms and all suites are furnished with kitchens for individual meal preparations. For a larger community, non-street front townhouses and other housing types are also available, and they usually include garden patios or garages as well.<sup>17</sup>

Independent living is unique because it allows individuals to enjoy their time as they wish and live independently within a community while still providing them with the knowledge there is 24-hour care in case of emergencies.<sup>18</sup> Furthermore, independent living provides access to additional personal services such as dressing, bathing, grooming or medication.<sup>19</sup>

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14 Seasons Retirement Communities, "Independent Living Ontario."

15 AMICA, "Public vs Private Senior Living in Ontario - Amica Senior Living."

16 AMICA.

17 Seasons Retirement Communities, "Independent Living Ontario."

18 Seasons Retirement Communities.

19 ORCA - Ontario Retirement Communities Association, "Types of Care."



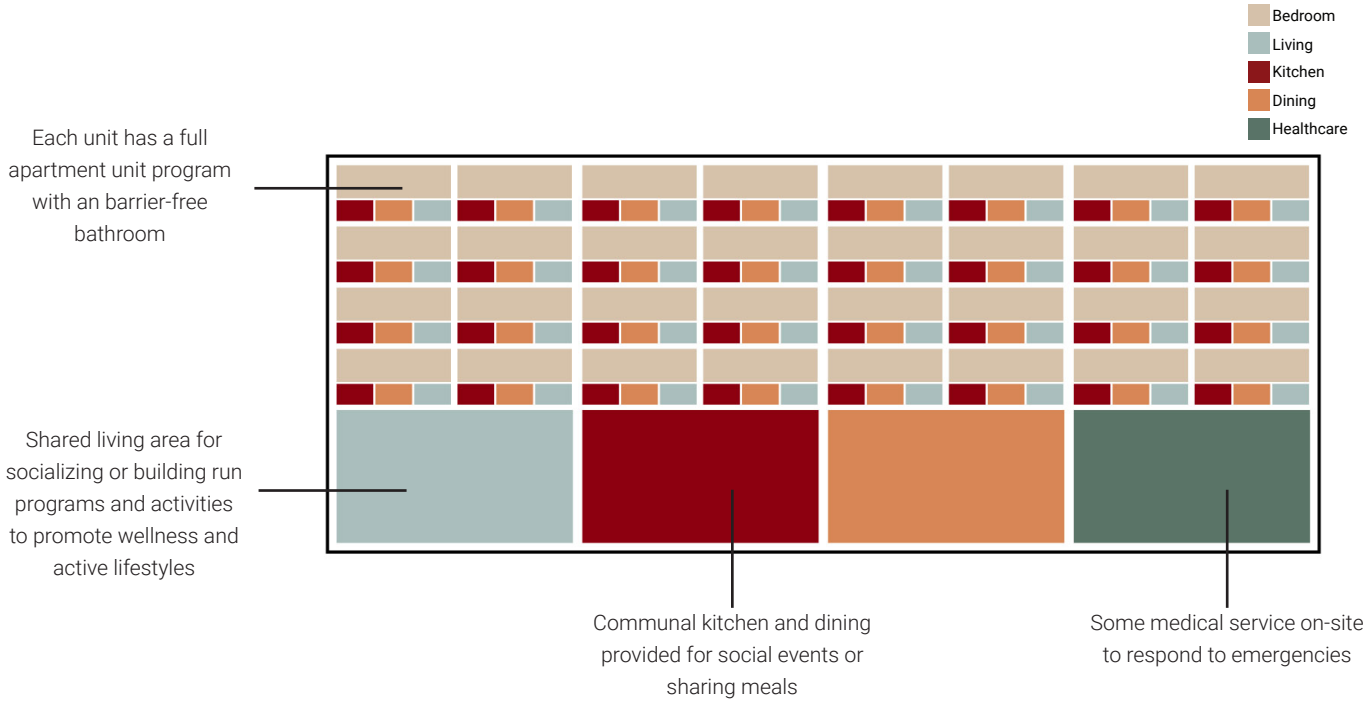


Figure 2.4. The image shows diagrammatic section of a possible independent living solution.

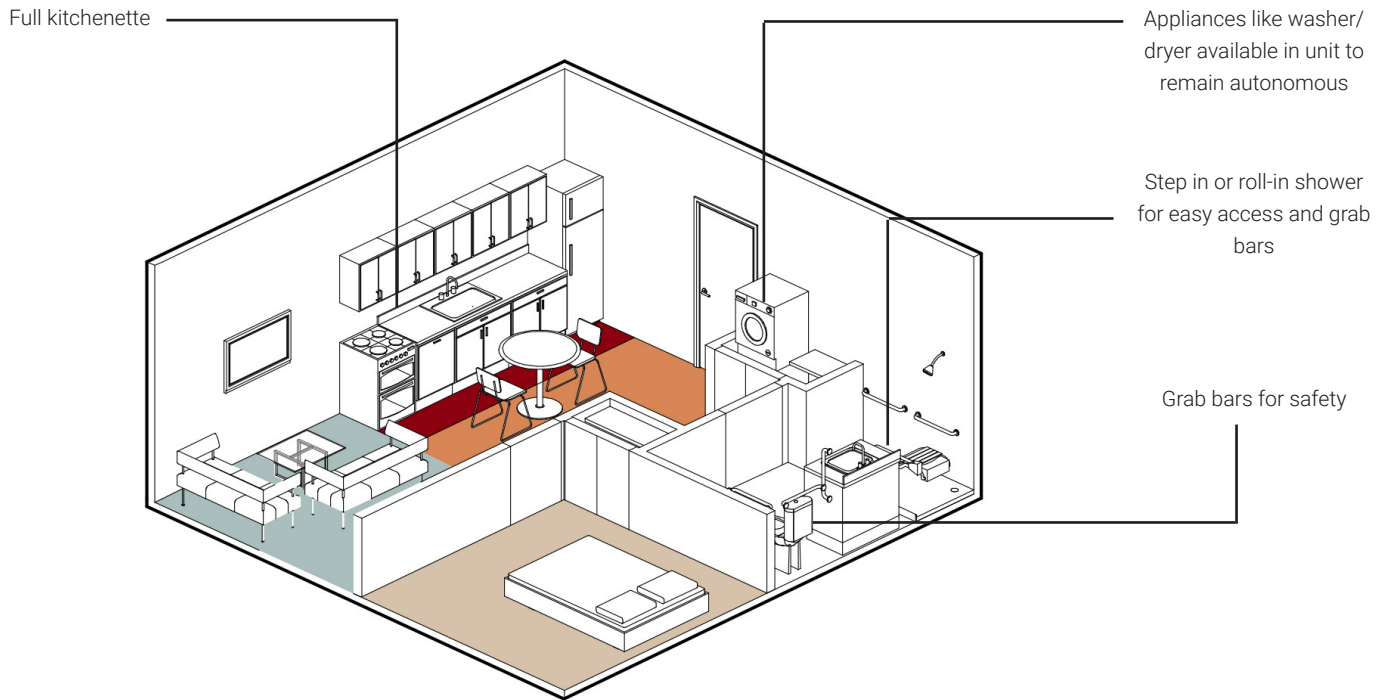


Figure 2.5. The image shows a diagrammatic breakdown of an independent living unit.

## 2.4 Assisted Living

Due to challenges such as health concerns, spousal deaths, and preparation for future needs, many older adults are relocating to supportive housing alternatives because their own homes, and even independent living, often do not have the required support in place to allow them to age in place. Assisted living facilities are ideal for older adults who require assistance with daily activities such as nursing oversight, living, meals, and cleaning services because they provide 24-hour round-the-clock on-site care.<sup>20</sup> Although assisted living facilities provide more assistance than adult lifestyle communities or independent living, they are seen as an alternative for older adults who can still live independently but need moderate health and daily life care to maintain their autonomy, privacy and comfort. They differ from the more hospital-like long-term care homes or nursing homes because they are known to have a more home-like design, personalized services and independence and privacy for the residents.<sup>21</sup>

There are many important considerations older adults must make when deciding to move into assisted living such as amenities, proximity to family, and social opportunities in the home.<sup>22</sup> For example, in order for assisted living to feel more comfortable and home-like, planned activities are an important factor for residents because the residents are able to engage in hobbies and activities to encourage socialization and a community.<sup>23</sup> Furthermore, another contributing factor to moving to assisted living is safety, many residents felt safer because of the staff on-site and the services provided.<sup>24</sup>

It has been reported, however, that relocating to assisted living facilities can still be stressful for older adults with the onset of awareness of their fading abilities. Some have experienced a consequent decrease in their mental health, morbidity and quality of life.<sup>25</sup> Transitioning into an assisted living facility has negative implications such as depression, anxiety, loneliness and psychological and physical implications. Furthermore, assisted living facilities can potentially mis-identify residents on their health and functionality status by being labelled as a “wanderer” which can limit their sense of independence and autonomy in the facility due to fears for their cognitive decline.<sup>26</sup>

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20 Marshall, Duarte, and Tran, “The Who, Why, Where, and How of Moving into Assisted Living: Older Adults’ Decision-Making Process for Relocation.”

21 Lewinson, Robinson-Dooley, and Grant, “Exploring ‘Home’ Through Residents’ Lenses: Assisted Living Facility Residents Identify Homelike Characteristics Using Photovoice.”

22 Marshall, Duarte, and Tran, “The Who, Why, Where, and How of Moving into Assisted Living: Older Adults’ Decision-Making Process for Relocation.”

23 Lewinson, Robinson-Dooley, and Grant, “Exploring ‘Home’ Through Residents’ Lenses: Assisted Living Facility Residents Identify Homelike Characteristics Using Photovoice.”

24 Koehn, Mahmood, and Stott-Eveneshen, “Quality of Life for Diverse Older Adults in Assisted Living: The Centrality of Control.”

25 Marshall, Duarte, and Tran, “The Who, Why, Where, and How of Moving into Assisted Living: Older Adults’ Decision-Making Process for Relocation.”

26 Lewinson, Robinson-Dooley, and Grant, “Exploring ‘Home’ Through Residents’ Lenses: Assisted Living Facility Residents Identify Homelike Characteristics Using Photovoice.”

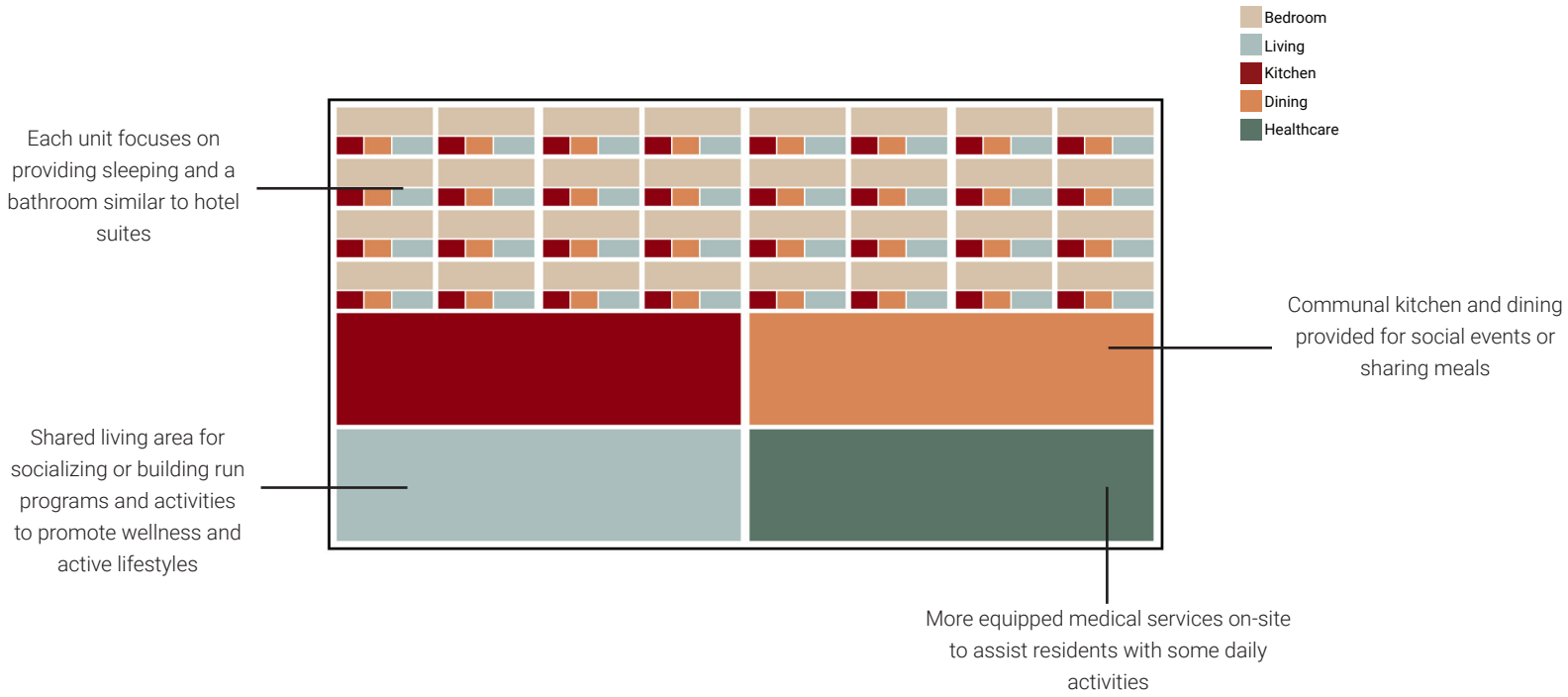


Figure 2.6. The image shows diagrammatic section of a possible assisted living solution.

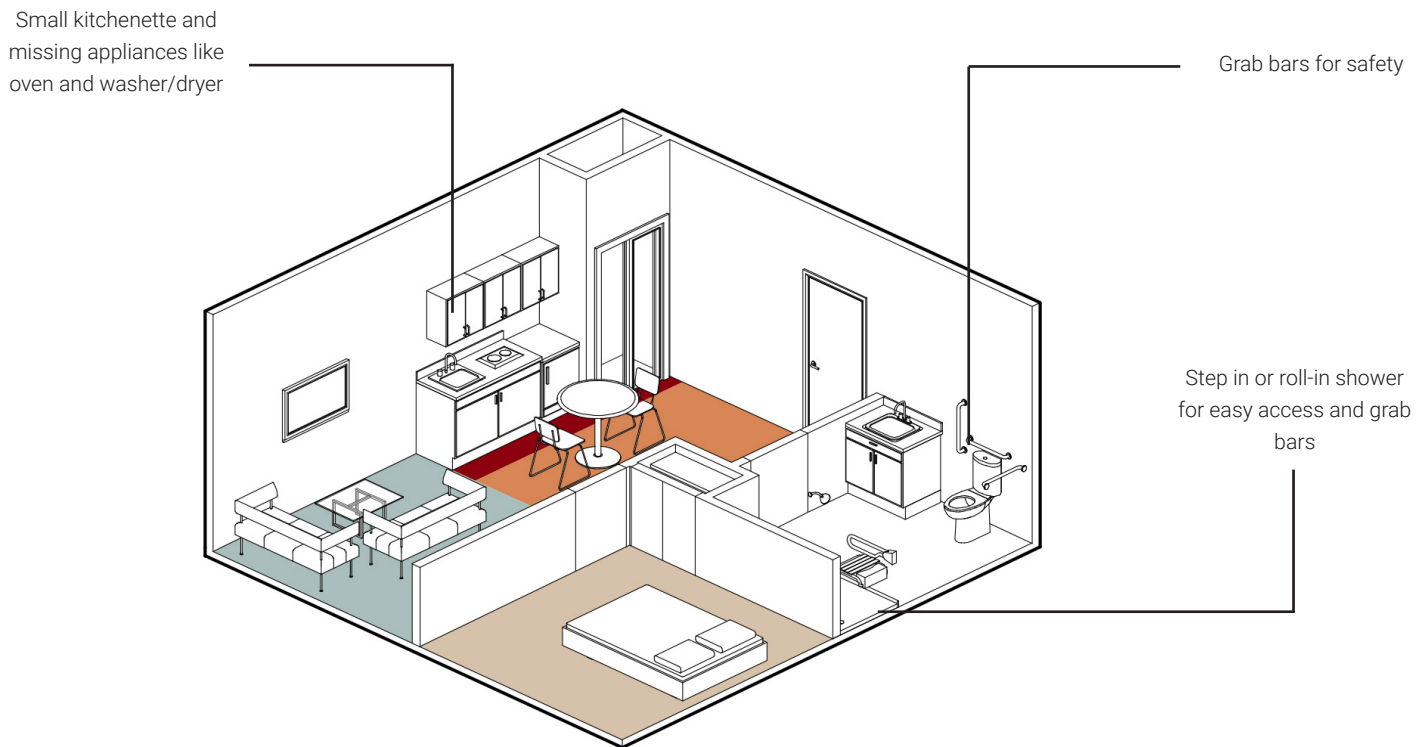


Figure 2.7. The image shows a diagrammatic breakdown of an assisted living unit.

## 2.5 Long-Term Care Homes

Long-term care homes, also referred to as nursing homes, are facilities that provide 24-hour supervision and care for adults who need assistance with everyday activities. Within Ontario, they are public institutions that are funded by the Ministry of Long-Term Care and meet provincial standards of care, services and resident fees.<sup>27</sup> Retirement homes, as noted previously, differ because they are communities of older adults who live together and focus on providing independence and autonomy while still providing some on-site services and care.<sup>28</sup> Additionally, retirement homes are usually privately owned, that require residents to rent a room or suite (affordability is an issue to determine who gets what), and the level of care varies on individual needs. Individuals living in long-term care homes, however, require increased on-site supervision because the residents have complex care and healthcare needs.<sup>29</sup>

In Ontario, it is estimated that one in five adults over the age of 80 require long-term care due to having such complex needs. As a result, around 40,000 people today are on the waitlist to be accepted into a long-term care home, and that number is expected to increase, adding 1,000 individuals every year to reach 48,000 people by 2029. Across Ontario, there are 627 long term care facilities, resulting in only 76,000 beds which are all at full capacity so the average aging adult waits about six months to move into a long-term care home. To meet current demands, Ontario needs to introduce 30,000 new beds to serve the number of people on the waiting list.<sup>30</sup> Furthermore, almost half of Ontario's long-term care facilities must be redeveloped, whether renovated or rebuilt, affecting about 20,000 residents residing in these homes.<sup>31</sup> In the City of Toronto, there are 10 long-term care facilities operating and currently, the city is in the process of implementing the Capital Renewal Plan, which looks to redevelop 5 of its existing long-term care homes to modernize and improve the facilities, and possibly expand.<sup>32</sup>

The COVID-19 pandemic of 2019 to 2022 exposed the physical problems and operational issues with long-term care homes. There was an enormous increase in COVID cases at many long-term care homes because older adults are more vulnerable and it was difficult to implement pandemic isolation protocols. Often the building design was a key factor in supporting or failing the need for isolation of the patients. For example, residences with individual rooms helped to contain the virus better than homes with shared rooms.<sup>33</sup> As many homes were struggling due to the COVID outbreak the Canadian Military was called in to help some Ontario and Quebec homes. On review, the military medical personnel reported situations where residents were being drugged, bullied, improperly fed and left for long periods of time in soiled bedding. Furthermore, the housing conditions were not adequate with cockroaches, flies and rotten food smells present.<sup>34</sup> They also claimed that two dozen residents died of dehydration before their arrival at a Toronto long-term care home during the first COVID-19 wave. Overall, many long-term care facilities were scrutinized during the pandemic and more care and considerations need to be taken, and often building HVAC systems and spaces need to be overhauled from top to bottom.

27 Government of Ontario, "Guide to Programs and Services for Seniors in Ontario," 2022.

28 Revera, "Retirement Living vs Long Term Care | Revera."

29 Government of Ontario, "Supportive Housing Options | Ontario.Ca."

30 OLTCA, "The Data: Long-Term Care in Ontario."

31 OLTCA, "Building and Redevelopment."

32 City of Toronto, "About City-Operated Long-Term Care Homes."

33 Luck, "What the Design of Long-Term Care Homes Can and Can't Do."

34 Brewster and News , "Military Alleges Horrific Conditions, Abuse in Pandemic-Hit Ontario Nursing Homes."

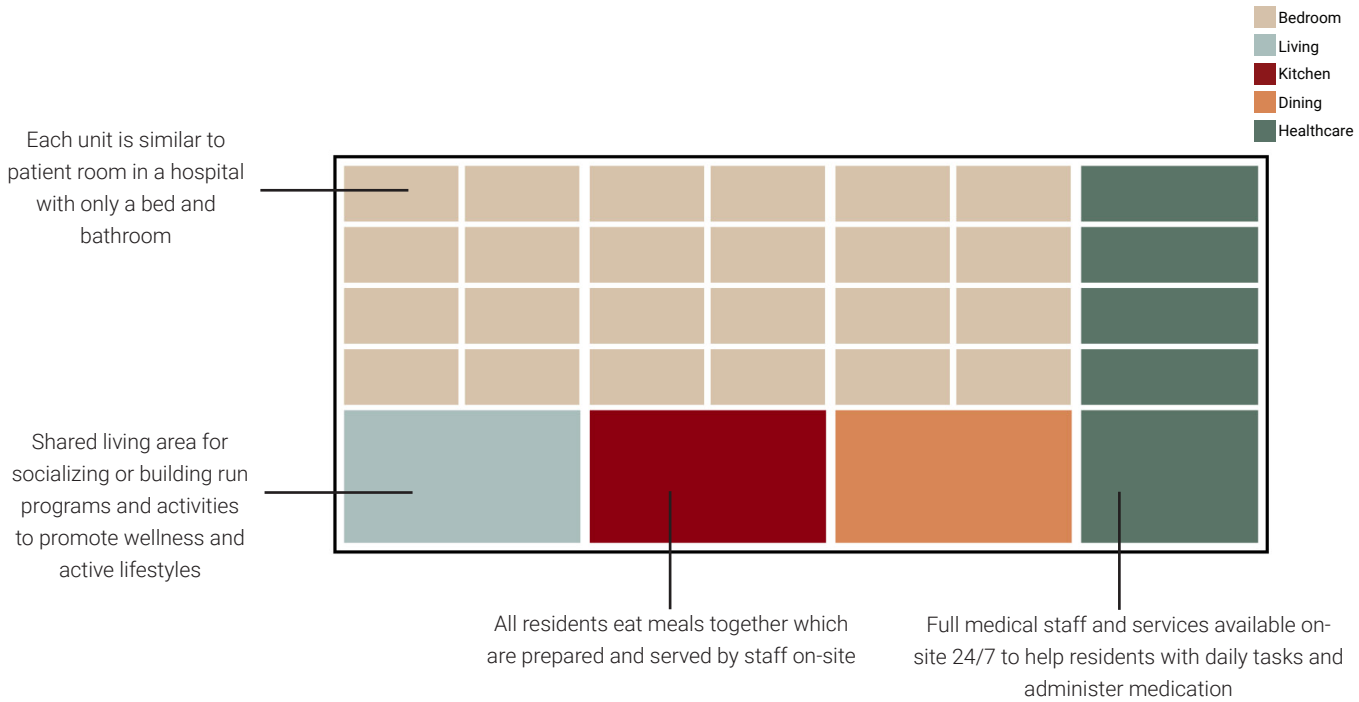


Figure 2.8. The image shows diagrammatic section of a long-term care home.

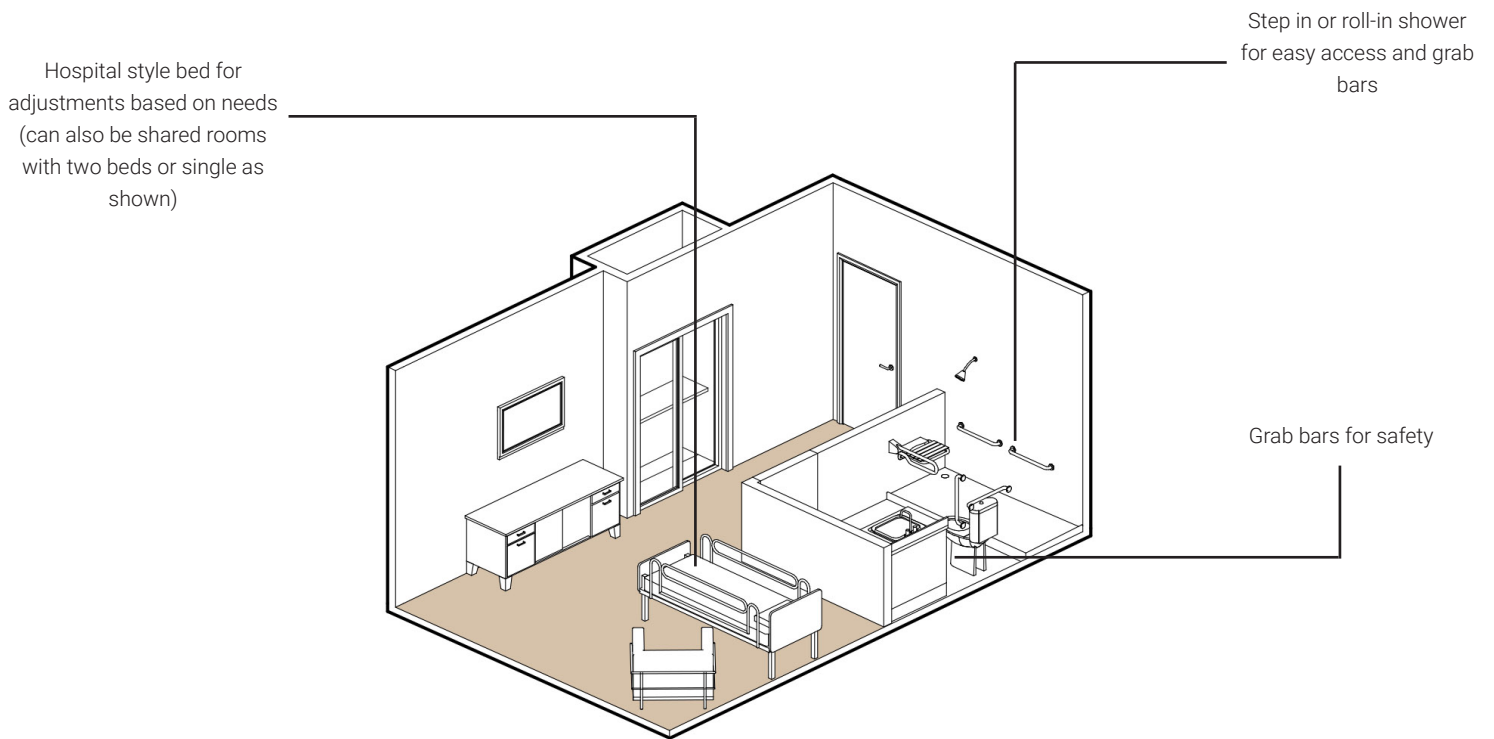


Figure 2.9. The image shows a diagrammatic breakdown of a long-term care home unit.


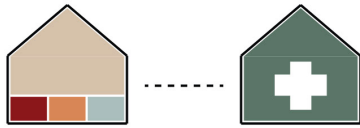
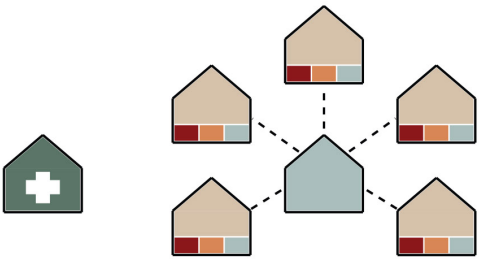
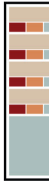
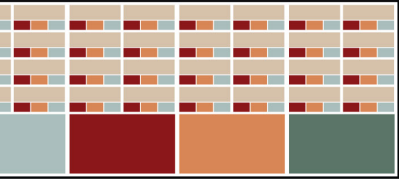
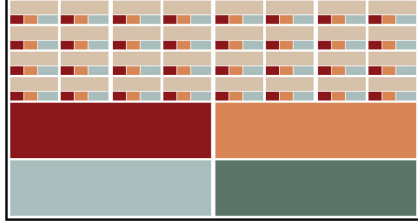
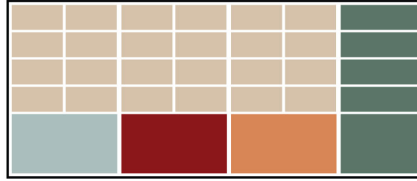
			
NAME	Aging in Place	Adult Lifestyle Communities	
ALTERNATIVE NAME	Home Care Community Care	55+ Communities Retirement Communities Retirement Villages Independent Living Community	
DESCRIPTION	An older adult chooses to continue to live in their privately owned home; with an adapted environment and personal care	Adults aged 55+ who privately own their home to create a community focused on recreational activities	An ap olde
BUILDING SCALE	Single Family House Apartment Unit	A Neighbourhood/Village with: Bungalow Townhouse Single Family Home Apartment Unit	L
OWNERSHIP	Private	Private	
LEVEL OF CARE	Off-site care (care provided as needed)	Off-site Care	
AUTONOMY	Independent and do not require much care or support	Independent and do not require much care or support	Inde
ACCESS	Unrestricted	Partially Restricted	

Figure 2.10. The image summarizes the differences

		
Independent Living	Assisted Living	Long-Term Care Home
Senior Housing Elderly Apartments	Retirement Home Continuing Care Personal Care Home	Nursing Home Memory Care Dementia Care Convalescent Care Senior Home
A low-rise apartment building catered towards older adults with shared communal areas and on-site healthcare	A building with privately owned units for older adults who require 24-hour on-site care and has communal areas	A building with sleeping units and 24-hour supervision for adults who need assistance with tasks
Low-Rise to Mid-Rise Building	Low-Rise to Mid-Rise Building	Low-Rise to Mid-Rise Building
Private	Private	Private Organizations (For-profit) Municipal Government (Not-for-profit) Not-for-profit Organizations
Little to no Healthcare	On-site medical assistance	24-hour On-site Care and Supervision
Independent and do not require much care or support	Interdependent and provide some assistance with daily activities	Interdependent on support for all daily activities; 24-hour help
Unrestricted	Partially Restricted	Heavily Restricted

and similarities of the housing solutions available.

# **CHAPTER 3: DESIGN SOLUTIONS**



There have been many innovative design solutions to best develop strategies for how to house older adults in the broader community. This chapter analyzes relevant precedents and case studies to understand different building typologies that exist and determine what building characteristics are successful for the aging population. The precedents which follow are organized by social organization and not building types: intergenerational housing, co-housing, dementia villages, intentional elderly communities, and flexible and adaptable homes.

### 3.1 Intergenerational Housing

Intergenerational housing still meets older adults' housing needs. Residents are given the opportunity to live with younger people who largely do not need support services, or if they do, need a different more generationally appropriate form.<sup>1</sup> This means that intergenerational housing can take on two forms: non-purpose-built, or purpose-built. Non-purpose-built is where community organizations will set up older adults with younger individuals such as the Homeshare program, a choice of living where older adults will choose to share their homes with younger individuals such as students. The two unrelated individuals reside in the same dwelling much like roommates. Studies reported that many older adults are interested in the idea of home sharing for companionship, financial assistance, help with daily tasks and a sense of security.<sup>2</sup> Home sharing helps older adults stay in their communities longer, and encourages them to maintain or even increase their independence and functional capabilities.<sup>3</sup> Purpose-built intergenerational housing, as a second alternative, exists in many different forms and schemes and the level of care available varies based on individuals' needs however, the home is still located in a multigenerational community.<sup>4</sup> Overall, intergenerational housing promotes health, physical function and cognition to benefit older adults and it can also improve societies. Furthermore, studies show that pairing older adults with younger individuals results in an increased sense of trust and social interaction to foster communities and helps decrease loneliness and isolation.<sup>5</sup>

The 2021 Canadian census reported that there are 442,000 multi-generational households accounting for 2.9% of all private households in Canada and were home to 2.4 million people or 6.4% of the total population.<sup>6</sup> Overall, multi-generation households increased by 50% since 2001 and in 2021. Furthermore, 9% of children aged 14 and under (around 517,000 of the population) live with at least one grandparent, meaning that 93% of these children are living in multi-generational households. This is an increase from 2017, when the General Social Survey reported that 5% of grandparents lived in the same household as their grandchildren, itself an increase from 3.3% in 2001.<sup>7</sup>

Moreover, Indigenous people and newcomers to Canada tend to live in more multi-generational households. This is due to several factors such as available choice and context, financial sharing strategies, a lack of sufficient housing, and cultural preferences.<sup>8</sup> As Canada accepts more immigrants, the culture and family dynamics of the standard 'North American nuclear family' can be expected to change, and especially how housing types are adapted to the new rules. The generalized cookie-cutter homes found in the Canada's suburbs will no longer be the ideal household building for families, as multi-generational households continue to increase due to the crisis of affordability of housing as well. To accommodate these rising numbers and social and economic pressures, more general strategies need to be determined to provide families with affordable and adaptable homes.

1 Suleman and Bhatia, "Intergenerational Housing as a Model for Improving Older-Adult Health."

2 Martínez et al., "More Than Just a Room: A Scoping Review of the Impact of Homesharing for Older Adults."

3 Gurung et al., "A Tale of Two Generations: Case Study of Intergenerational Living in Residential Aged Care."

4 Suleman and Bhatia, "Intergenerational Housing as a Model for Improving Older-Adult Health."

5 Suleman and Bhatia.

6 Government of Canada, "Profile Table, Census Profile, 2021 Census of Population - Toronto, City (C) [Census Subdivision], Ontario."

7 Government of Canada.

8 Battams, "Sharing a Roof: Multigenerational Homes in Canada."

Name of Project: *zwei+plus Intergenerational Housing*

Architect: *trans\_city TC*

Location: *Wien, Austria*

Year of Completion: *2018*

The *zwei+plus* Viennese social housing project consists of four L-shaped buildings to create a new concept for intergenerational living where the dwelling units are paired into two households, which can be family, friends or roommates. The paired units are separated to preserve privacy while still being near each other to ensure interaction and support. The residents are required to move in concurrently to assist each other and encourage cooperation between generations to create social support networks.<sup>9</sup> These paired units - also referred to as “tandem” - offer a variety of floor plan options from self-contained apartments to “all-smart” units that are more flexible. For instance, the dwellings can house two single parents who have their own space and share a common living area or a nuclear family who can have a separate accessible studio added for an elderly occupant.<sup>10</sup> The overall buildings program consists of collective spaces on the ground floor such as a cafe, a playroom and kindergarten, and an assisted living centre for seniors to allow for different forms of interaction between generations. For example, a cooperating partnership sees the elderly residents assist with the preschoolers.<sup>11</sup>

This project is unique because rather than most co-housing projects that only consider how people interact and the spaces needed, this project goes further to also consider the social narratives and the people living in the spaces. It stands out as one of the few projects that considers different generations and their specific needs, aiming to create a building that not only encourages interaction but also fosters meaningful connections between the residents. The buildings also provide unique and considerate methods to acquire and build units depending on a family or group of people’s needs.

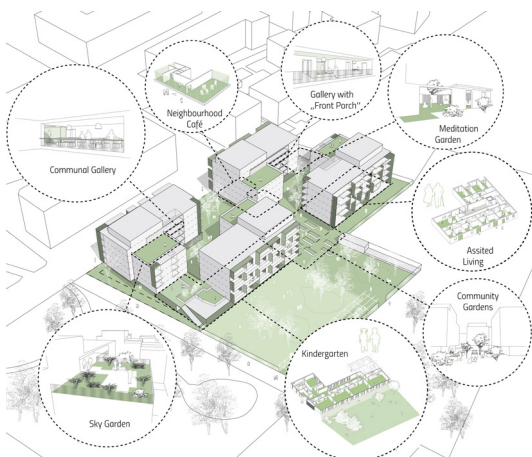


Figure 3.1. Axonometric view. Copyright *trans\_city TC*.



Figure 3.2. Unit analysis. Copyright *trans\_city TC*.

9 ArchDaily, “STA | *Zwei+plus Intergenerational Housing* / *Trans\_city TC*.”

10 Architizer, “STA | *Zwei+plus Intergenerational Living* by *Trans\_city Architecture* / *Christian Aulinger, Mark Gilbert*.”

11 ArchDaily, “STA | *Zwei+plus Intergenerational Housing* / *Trans\_city TC*.”

## 3.2 Senior Cohousing

Cohousing is a unique design solution that has gained attraction over the years and is very suitable for elderly adults. Inspired by multigeneration cohousing, the approach to living allows flexibility in the residents that live there, for instance, the homes can be intergenerational or senior-specific. Either way cohousing is an innovative housing solution that addresses issues of social isolation and promotes healthy aging in place, all to enhance quality of life.<sup>12</sup> Senior cohousing specifically focuses on healthy aging and relies on mutual support (co-care) and brings in workers hired as needed. Often there is no age limit for residents, however, some may require at least one household member to be over the age of 55 so there still is a bit of multigenerational living. With sharing and a cooperative foundation, cohouses are financially more affordable than other housing solutions, while also receiving care as required.<sup>13</sup>

Vivan Puplampu and colleagues who conducted interviews with 30 residents in a senior cohousing building, reported that older adults who have more independence and live in a community, tend to have a higher quality of life than seniors who reside in a more institutional setting. Other factors that improved older adults' mental health and quality of life included involvement in activities, and increased social interaction, demonstrating how senior cohousing can enhance older adults' quality of life to prevent loneliness.<sup>14</sup> There is a level of mutual support and codependency in senior cohousing as residents rely on their neighbours and community to take care of each other, each becoming both a caregiver and receiver.<sup>15</sup> In addition, it has been reported that senior cohousing helps older adults to save financially due to the decrease in mental health issues, there was less reliance on healthcare systems to intervene.<sup>16</sup>

A cohousing building is defined as a private living residence where older adults choose to live in order to keep their independence. Living cooperatively with shared values helps the residents to plan, develop and operate the project and they must be able to make decisions together using a consensus.<sup>17</sup> Cohousing is usually a private self-built community where members come together with shared values to initiate and develop the project using their own funding. The building is also managed by the members, and tasks and activities are divided among the members.<sup>18</sup> The residents own their own units and share common spaces such as kitchen, dining areas, meeting rooms or workshops with the other residents.<sup>19</sup>

Despite its attractiveness, cohousing is not a solution for everyone. Living in a community means that residents must make compromises in order to live harmoniously; that might not be suitable for everyone. It is important to ensure that senior cohousing does not evolve and become a nursing home, and that the two dwelling options should be differentiated because the anticipation of decreased independence and social interaction that result from institutionalization can negatively affect all of the older adults' quality of life. Unresolved here is the issue of the extent of aging in place and special care of the type provided with increased age that would be appropriate in a community of active people.<sup>20</sup>

12 Puplampu et al., "The Impact of Cohousing on Older Adults' Quality of Life."

13 Canadian Cohousing Network, "Senior Cohousing."

14 Puplampu et al., "The Impact of Cohousing on Older Adults' Quality of Life."

15 Morgan, "Why Cohousing Is Beneficial for Older Adults."

16 Puplampu et al., "The Impact of Cohousing on Older Adults' Quality of Life."

17 Kropf and Cummings, "Future of Aging: Senior Cohousing as Antidote to the Loneliness Epidemic."

18 Bowes et al., "Exploring Innovation in Housing Typologies."

19 Puplampu et al., "The Impact of Cohousing on Older Adults' Quality of Life."

20 Puplampu et al.

*Name of Project: Vindmollebakken Housing*

*Architect: Helen & Hard*

*Location: Stavanger, Norway*

*Year of Completion: 2019*

The Vindmollebakken pilot project is based on the 'Gaining by Sharing' model and the residents were a part of the design process. The building consists of 40 co-living units, 4 townhouses and 10 apartments. Using prefabricated timber elements, the housing typology successfully incorporates human, social, and environmental needs sustainably. Built to be a response to the way housing is built, the project accounts for many different people such as modern families, the elderly generation who want to age in place, people who live alone or people who want to be more sustainable to encourage the sharing of resources. There are a variety of spaces available for residents that range from rooms that encourage social interaction and others that are more private and offer retreats. The program includes a dining area, workshops, guest rooms a lounge, a library and a greenhouse on the roof. Another interesting aspect is the spatial layout of the rooms, they provide different pathways depending on how much one wishes to interact with others and provide visual connections with people and the community.<sup>21</sup>

The spatial and programmatic elements designed in the project are very interesting because the building responds and adapts to how the residents want to live. The housing complex offers a variety of social and private spaces to offer different levels of interaction, depending on the residents needs and comfort. Using the building form and layout to create pathways that foster interaction and connections in the community is very compelling because residents do not have to go out of their way to meet or see other people but rather let it happen naturally.



Figure 3.3. Exterior view into courtyard. Copyright Sindre Ellingsen.

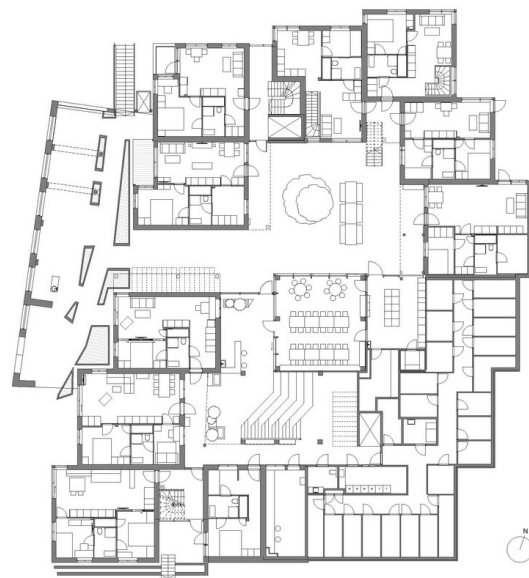


Figure 3.4. Ground floor. Copyright Helen & Hard.

21 Pintos, "Vindmøllebakken Housing / Helen & Hard."

### 3.3 Dementia Villages

As life expectancy increases, there has been an increase in mental disorders such as dementia, especially for adults in the fourth age.<sup>22</sup> The Alzheimer Society of Canada reported that Alzheimer's Disease affects 1 out of 20 Canadians over 65 and 1 in 4 Canadians over 85.<sup>23</sup> Furthermore, they reported that about 700,000 Canadians live with dementia in 2023 and that number is expected to rise to 1.7 million by 2050.<sup>24</sup> Dementia can be described as a gradual loss of fundamental human qualities<sup>25</sup> and stricken adults can suffer from memory loss, personality changes and impaired reasoning.<sup>26</sup> Architects need to step back from a purely functional approach to design, and think about a more socially-orientated care model, one that thinks about the residents first and blurs the lines between home and hospital.<sup>27</sup>

Advanced dementia is one of the main reasons older adults are institutionalized. The transition from home to institution can have many negative repercussions such as deep depression, early mortality, cognitive decline and a general decrease in quality of life.<sup>28</sup> As a result, a new innovative care model was designed to care for dementia patients to challenge what it means to live with dementia.<sup>29</sup> Dementia-friendly initiatives and dementia-friendly communities aim to maintain older adults' independence and autonomy by encouraging social interaction and completing daily activities and they want to reduce the stigma surrounding people with dementia.<sup>30</sup> An example of this is dementia villages have seen an improvement in older adults' functioning and are reducing the need for medication, because of their homelike and familiar atmosphere they help to reduce anxiety, restlessness or homesickness that can be felt as part of the condition. These villages are built by the principles of institutionalizing, transforming and normalizing care for individuals with any stage of dementia.<sup>31</sup>

However, there have been some criticisms of dementia villages, as some have claimed that this building typology is deceptive because it misleads the patients to think they are living in a 'real community'.<sup>32</sup> This becomes a problem because if residents notice that something is wrong they can become upset or paranoid, and even potentially violent. Overall, researchers argue that dementia villages consider the residents' best interest, as there are real village elements like grocery stores and barber shops to make patients feel comfortable and oriented. Some villages will even furnish their rooms and common rooms to be similar to their previous homes to adapt to the residents' needs and environment.<sup>33</sup>

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22 Baltes and Smith, "New Frontiers in the Future of Aging: From Successful Aging of the Young Old to the Dilemmas of the Fourth Age,"

23 Sagan, "Dementia Villages: Is Getting Patients to Believe a False Reality OK?"

24 Wilson, "A Care Revolution: Inside Canada's First Dementia Village."

25 Baltes and Smith, "New Frontiers in the Future of Aging: From Successful Aging of the Young Old to the Dilemmas of the Fourth Age,"

26 Adams and Chivers, "Deception and Design: The Rise of the Dementia Village."

27 Wilson, "A Care Revolution: Inside Canada's First Dementia Village."

28 Krier et al., "Evaluation of Dementia-Friendly Initiatives, Small-Scale Homelike Residential Care, and Dementia Village Models: A Scoping Review."

29 Pedro et al., "440 - Dementia Villages: Rethinking Dementia Care,"

30 Krier et al., "Evaluation of Dementia-Friendly Initiatives, Small-Scale Homelike Residential Care, and Dementia Village Models: A Scoping Review."

31 Pedro et al., "440 - Dementia Villages: Rethinking Dementia Care,"

32 Pedro et al.

33 Sagan, "Dementia Villages: Is Getting Patients to Believe a False Reality OK?"



Name of Project: *De Hogeweyk*

Architect: *Molenaar&Bol&VanDillen*

Location: *Weesp, Netherlands*

Year of Completion: *2009*

De Hogeweyk is the first dementia village ever to be built. Its goal was to create a safe community that allows residents to live an 'ordinary life' with as much independence as possible and integrate themselves into the local community.<sup>34</sup> Traditional nursing homes confuse dementia residents because they feel like a hospital, and often the paces are shared with non-dementia residents which can be difficult for them as well. In a 'village' environment, the residents with dementia are more familiar with their social memories, and can feel at home. The six principles of De Hogeweyk are: favourable surroundings, life's pleasures and meaning, health, lifestyle, staff and volunteers, and the overall organization which help to achieve the overall success of the project.<sup>35</sup> The six principles help the project to achieve two main objectives: to decrease anxiety and confusion that patients face by providing a safe environment, and secondly, it focuses on keeping residents active to maximize their quality of life.<sup>36</sup>

The average age of De Hogeweyk residents is 83, and most have advanced dementia.<sup>37</sup> Similar to other villages, the complex houses residential, commercial and public buildings such as apartment buildings, houses, cafes, grocery stores, a theatre, gardens and a pedestrian-only street. To meet the needs of different dementia patients, Hogeweyk has a range of housing typologies that correspond to different generations and social statuses such as 1950s suburbia or apartments.<sup>38</sup> There are 23 homes, each housing six or seven residents and they are encouraged to bring their own belongings and pets to make it feel like home. The daily life of residents is very different, the village uses reminiscence therapy to encourage the independence and autonomy of the residents. The focus of *De Hogeweyk* is on what the residents can do, therefore they are encouraged to walk around the village and come and go as they please. For instance, active residents are given finger food to eat while exploring.<sup>39</sup>

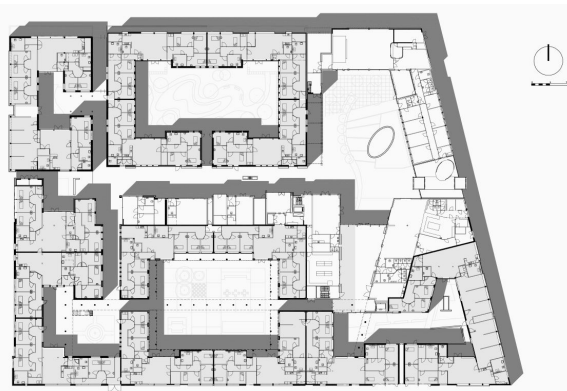


Figure 3.5. Ground floor plan. Copyright The Hogeweyk.

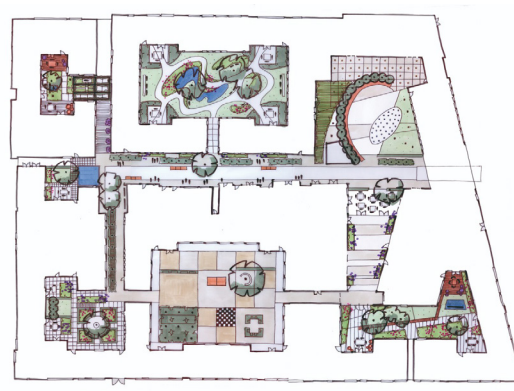


Figure 3.6. Landscaping plan. Copyright The Hogeweyk.

34 Pedro et al., "440 - Dementia Villages: Rethinking Dementia Care,"

35 CADTH, "Dementia Villages: Innovative Residential Care for People With Dementia."

36 Godwin, "Hogeweyk: A 'home from Home' in the Netherlands."

37 CADTH, "Dementia Villages: Innovative Residential Care for People With Dementia."

38 Adams and Chivers, "Deception and Design: The Rise of the Dementia Village."

39 Godwin, "Hogeweyk: A 'home from Home' in the Netherlands."

### 3.4 Intentional Elderly Communities

Intentional elderly communities are a new innovative design solution that has recently emerged as an alternative living situation to traditional senior housing solutions, such as conventional long-term care or nursing homes.<sup>40</sup> As already noted over the past few decades, it has become evident that many older adults face loneliness and isolation when they move to care homes. Therefore, it is important that older adult housing promotes strong relationships between friends and family members to encourage their well-being and mental health. As a result, designing intentional elderly communities where older adults can help one another live self-reliantly is important.<sup>41</sup> Older adults living in intentional elderly communities create living arrangements that promote their personal strengths and will continually care for and be responsible for one another to remain self-reliant.<sup>42</sup>

Intentional elderly communities differ from traditional housing solutions because they allow residents to choose how they wish to live, where they will live, and with whom, all to create a community they envision and then manage themselves. In intentional elderly communities, there is no one telling residents what to do or how to behave, the communities are self-governed by the residents.<sup>43</sup> As there is no administrator or staff, there is a strong awareness of personal responsibility and interdependence on each other. Residents help one another to serve as a safety net exemplifying how many older adults do not need skilled care, just community support.<sup>44</sup> Furthermore, due to the noninstitutional and nontraditional approach intentional elderly communities take, as residents take care of each other to encourage mutual support they also simultaneously promote independence as they get older. Likewise, it was found that older adults who provide support to others will gain more health benefits themselves than the people they helped.<sup>45</sup>

Older adults who age together intentionally benefit from mutual support, increased acceptance of aging, feelings of safety and less worry about social isolation. Living together in a community there is a belief that aging together is better than aging alone because one can share resources and information and they can work together as a community to deal with any stressors brought about by the idea of aging.<sup>46</sup> Overall, they are an innovative design solution that helps to decrease social isolation and increase social resources.<sup>47</sup> They also provide older adults the opportunity to maintain their individual autonomy at the personal level as they face large issues use as ageism and medicalization of old age.<sup>48</sup>

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40 Glass, "Aging in a Community of Mutual Support: The Emergence of an Elder Intentional Cohousing Community in the United States."

41 Glass and Vander Plaats, "A Conceptual Model for Aging Better Together Intentionally."

42 Glass, "Resident-Managed Elder Intentional Neighborhoods: Do They Promote Social Resources for Older Adults?"

43 Glass, "Aging in a Community of Mutual Support: The Emergence of an Elder Intentional Cohousing Community in the United States."

44 Glass, "Resident-Managed Elder Intentional Neighborhoods: Do They Promote Social Resources for Older Adults?"

45 Glass, "Resident-Managed Elder Intentional Neighborhoods: Do They Promote Social Resources for Older Adults?"

46 Glass and Vander Plaats, "A Conceptual Model for Aging Better Together Intentionally."

47 Glass, "Resident-Managed Elder Intentional Neighborhoods: Do They Promote Social Resources for Older Adults?"

48 Glass and Vander Plaats, "A Conceptual Model for Aging Better Together Intentionally."



Name of Project: Eltheto Housing and Healthcare Complex

Architect: 2by4-architects

Location: Rijssen, The Netherlands

Year of Completion: 2015

The Eltheto housing and healthcare complex was designed for elderly people as a response to society generally seeing older adults as a group of people that primarily require care, resulting in many buildings being designed to focus on healthcare rather than the quality of life. To go against this prejudice, the project separates housing and healthcare by creating open and social housing blocks that focus on the quality of life and sociability, with each block focusing on different human and social needs such as more independent elderly, the socially oriented elderly or the elderly that require healthcare. There are four housing blocks in the grouping to provide housing for singles, couples, people with Alzheimer's, people with somatic disabilities and mentally disabled people. The buildings are also situated around several public spaces and a centrally located healthcare centre that also provides healthcare for the entire neighbourhood. In addition, the centre provides programs such as a restaurant, a library, a grocery store, daycare, office spaces and other activities. Furthermore, the public spaces are open for the residents to use however they see fit, therefore programs can range from, communal gardening, outdoor events and meetings, playing games or just sitting under the trees to contribute to the natural healing environment. Overall, the goal of the project was to keep the older adults as part of modern society by providing the appropriate healthcare and housing that fit their needs at that moment of their life. As their needs change they can move into a different housing block to receive additional specialized healthcare.<sup>49</sup>

The project serves as an intriguing case study in neighbourhood design and sociability because it is tailored to older adults' various life phases, allowing residents to transition between different housing blocks based on their evolving needs. This approach proves beneficial as residents can seamlessly navigate through different phases of life within a single neighbourhood block, eliminating concerns about adapting to a new unit or community in the future. Sociability concerns are also addressed through non-housing-specific programs, exemplified by the integration of the healthcare complex at the center of the project to encourage physical and mental health while fostering a sense of community among the residents.



Figure 3.7. Care Service centre section. Copyright 2by4-architects.



Figure 3.8. Site plan axonometric. Copyright 2by4-architects.

49 ArchDaily, "Eltheto Housing and Healthcare Complex / 2by4-Architects."

### 3.5 Flexible and Adaptable Homes

Well-designed environments and housing need to provide flexibility for the residents to encourage healthy aging and stimulate brain health. Older adults require innovative design solutions that respond to their evolving needs to ensure their health and longevity.<sup>50</sup> Flexible and adaptable homes are important for older adults because the more challenges and needs people have, the greater the impact their environment has. As people age, there is a spectrum of varying needs that environments must respond to such as physical, sensory, and cognitive abilities. Therefore, designs must consider flexibility and adaptability to meet the varying needs of the aging population.<sup>51</sup> Creating such flexible and adaptable designs means the design of housing environments that can respond to the aging population's needs and any changes easily. Likewise, 'flexible homes' allow older adults to age in place, allowing them to remain in their own homes longer and in their communities.<sup>52</sup> To provide flexibility in design, buildings can be divided into four levels:

1. Versatility: designs with multiple functions so no physical changes are needed.
2. Modifiability: residents can change the design in an easy way to provide a greater range of use.
3. Convertibility: renovations can be done to change the building to provide a new function.
4. Scalability: buildings can grow or shrink depending on the evolving needs of residents.<sup>53</sup>

Flexible environments also provide residents with the opportunity to personalize their space and bring their own furniture and belongings to feel like they are in their homes. During the COVID-19 outbreak, flexible homes could have been useful in responding to the pandemic. With the ability to adapt, flexible homes could change as required to deal with the outbreaks, such as creating response isolation areas and creating clean transition and disinfection zones to create multiple layers of protection against the virus. Therefore, is important that architects consider flexibility at the room, dwelling unit and building scale so individuals can alter the space as required whether that be through flexible plans, interiors or furniture to ensure the environment supports the evolving needs of the aging population. Overall, when environments and housing are designed with flexibility and adaptability in mind, they provide a space to encourage healthier aging.<sup>54</sup>

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50 Engineer, Sternberg, and Najafi, "Designing Interiors to Mitigate Physical and Cognitive Deficits Related to Aging and to Promote Longevity in Older Adults: A Review."

51 Nanda and Warner, "Flexible and Enriched Environments for Senior Living and Aging-in-Place in Dense Urban Environments."

52 Ahn, Kwon, and Kang, "Supporting Aging-in-Place Well: Findings From a Cluster Analysis of the Reasons for Aging-in-Place and Perceptions of Well-Being."

53 Nanda and Warner, "Flexible and Enriched Environments for Senior Living and Aging-in-Place in Dense Urban Environments."

54 Nanda and Warner.

Name of Project: Unite(s) Experimental Housing

Architect: Sophie Delhey Architecture

Location: Dijon, France

Year of Completion: 2018

The Unite(s) Experimental Housing building contains 240 rooms that connect the residential area and the broader diverse district. The project has two wings that step back to create terraces and gently expose the building fabric to the city.<sup>55</sup> The housing project considers room orientations and designations of spaces to create a collection of identical room sizes that do not have any hierarchy and are freely programmed without a specific assignment. There are five main types of apartments (studio, 1, 2, 3, or 4 bedroom) that have the same size of rooms with no program assigned to allow the residents to adapt their homes to how they need. Each room is 13 sq. m. to allow for flexibility inside the apartment. The only fixed space is the kitchen which is centrally located and adjacent to the dining room. According to where the living room is in each unit, there are three possible schemes: crossed, diagonal or grouped.<sup>56</sup>

The Experimental Housing project considers different levels of flexibility in the residential units to provide residents with variable open-ended options depending on their needs. When providing units for different families, fuller generations and the elderly it is an important consideration how can one design the most flexibility and adaptability within a housing complex to provide the residents with options depending on their needs. While this project is specifically at unit layouts, another consideration designers can make is to look at movable walls and accessibility to allow people to grow old in these units and use them as they see fit.

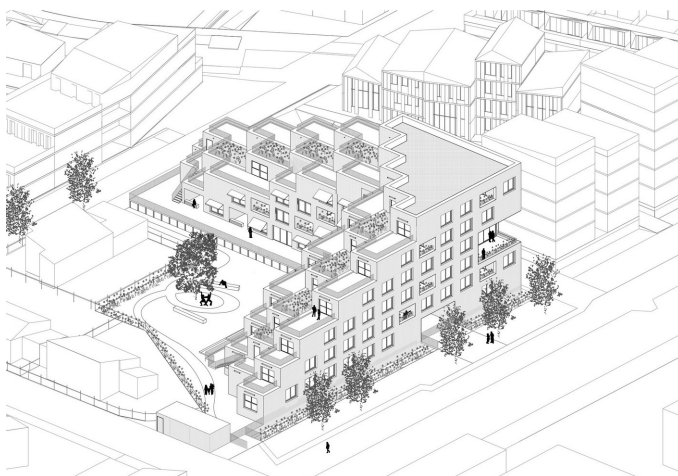


Figure 3.9. Axonometric View. Copyright Sophie Delhey Architecture.

Exemples d'appropriation possibles



Figure 3.10. Unit plan analysis. Copyright Sophie Delhey Architecture.

55 "Unité(s)+ - 40 Modular Social Dwellings."

56 "Unité(s) Experimental Housing / Sophie Delhay Architecture."














































	zwei+plus Intergenerational Housing	Vindmollebakken Housing
ISOLATED OR INTEGRATED INTO NEIGHBOURHOOD	 SOMEWHAT INTEGRATED	 SOMEWHAT INTEGRATED
OUTDOOR AMENITIES: SEATING		
OUTDOOR AMENITIES: GARDEN		
AMENITIES: PLAYSPACE		
COMMUNAL PROGRAM & LIVING + DINING		
INSTITUTION FEEL		
ACCESSIBILITY & EASY ACCESS		
FLEXIBILITY & ADAPTABILITY	 SOMEWHAT	
VARIETY OF UNIT TYPES PROVIDED		

Figure 3.11. Summary of qualitative factors of all the pr

De Hogeweyk	Eltheto Housing and Healthcare Complex	Unite(s) Experimental Housing
 ISOLATED	 INTEGRATED	 INTEGRATED
		
		
		
		
		
	 DEPENDS ON UNIT	
		
		 SAME UNIT LAYOUT BUT FLEXIBLE TO PROVIDE VAIETY

precedents and what they are lacking or doing really well.

# **CHAPTER 4: DESIGN PROPOSAL**



## 4.1 City: Central Toronto

The proposed site for this thesis design proposal is in the City of Toronto, Ontario. In 2016, adults in the City of Toronto, over the age of 65 years outnumbered children under the age of 15 for the first time.<sup>1</sup> Toronto's older adult population increased by 3.3% in 2021 from the past year, growing at a ratio of 10 to 1, compared to people between the ages of 15 to 64. In 2021, 15.7% of the people in Toronto were people 65 years old and older while in 2002, older adults only made up 11.0% of the population.<sup>2</sup> This trend is only expected to continue as the population ages and the number of older adults is predicted to increase. It is estimated that by 2041, 8.9% will be between the ages of 65-74, 7.9% will be between the ages of 75-84 and 4.4% will be 85 years old and older. Overall, Toronto's population that is 65 years and older is expected to grow by 21.1% by 2041 and it's this trend in which this thesis seeks to find a design approach suitable for improving the lives of its older citizens.<sup>3</sup>

Toronto has been working towards providing better and safer conditions for older adults in the city through plans like its Senior Strategy Plan which provides recommendations to ensure all older individuals have access to services and programs in the city that it plans, manages and delivers.<sup>4</sup> Furthermore, the Toronto HousingTO 2020-2030 Action Plan lists strategies to improve housing in the city and there are some senior-specific plans such as Strategic Action 6 look at meeting the diverse housing needs of seniors.<sup>5</sup> Furthermore, they have been introducing programs such as CareTO which they intend to implement in all city-run care homes to better the experience of the residents, staff and visitors.<sup>6</sup>

Currently, the city of Toronto operates 10 long-term care homes. However, Toronto has a renewal plan, that lists five facilities that are part of their mandatory redevelopment plan. These projects include the George Revitalization Plan that will replace Seaton House to transform the George Street neighbourhood and provide senior-specific housing. The facilities that have been slated to be redeveloped include Carefree Lodge, Castlevue Wychwood Towers, Fudger House, Lakeshore Lodge and Seven Oaks.<sup>7</sup> The most interesting for this thesis is Castlevue Wychwood Towers because it is nearby, around 1.5km from the chosen site at Christie Pits. Castlevue Wychwood Towers has 456 licensed beds and 347 people on the waiting list.<sup>8</sup> After the redevelopment plan, the number of beds is expected to increase to 512 beds by 2030 costing about \$224,5 million, which is the most expensive renovation project compared to the other homes included in the renewal plan.<sup>9</sup> However, the number of people on the waiting list remains significantly greater and will only increase with time. Therefore, the chosen sites can benefit individuals living in the long-term care facility by providing them with spaces like the community hub to connect with the neighbourhood while also providing housing options for individuals on the waiting list.

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1 City of Toronto, "Toronto Seniors Strategy 2.0."

2 Wong, "Toronto Is Turning Into A Retirement Village As The Senior Population Explodes Higher."

3 City of Toronto, "Toronto Seniors Strategy 2.0."

4 City of Toronto, "Toronto Seniors Strategy 2.0."

5 City of Toronto, "HousingTO 2020-2030 Action Plan."

6 City of Toronto, "CareTO."

7 City of Toronto, "Long-Term Care Homes & Services Capital Renewal Plan."

8 Government of Ontario, "Castlevue Wychwood Towers | Long-Term Care | Ontario.Ca."

9 Carou, "Advancing Opportunities for the Delivery of City Operated Long-Term Care Beds."



### The Population of Older Adults from 2017 to 2041

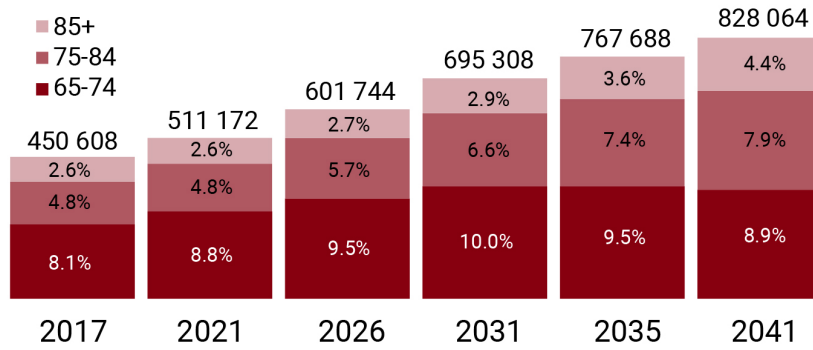


Figure 4.1. The graphs show the Toronto population that is aged 65 and over and the expected increase by 2041.

### Percent Population Change of the City of Toronto between 2016-2021

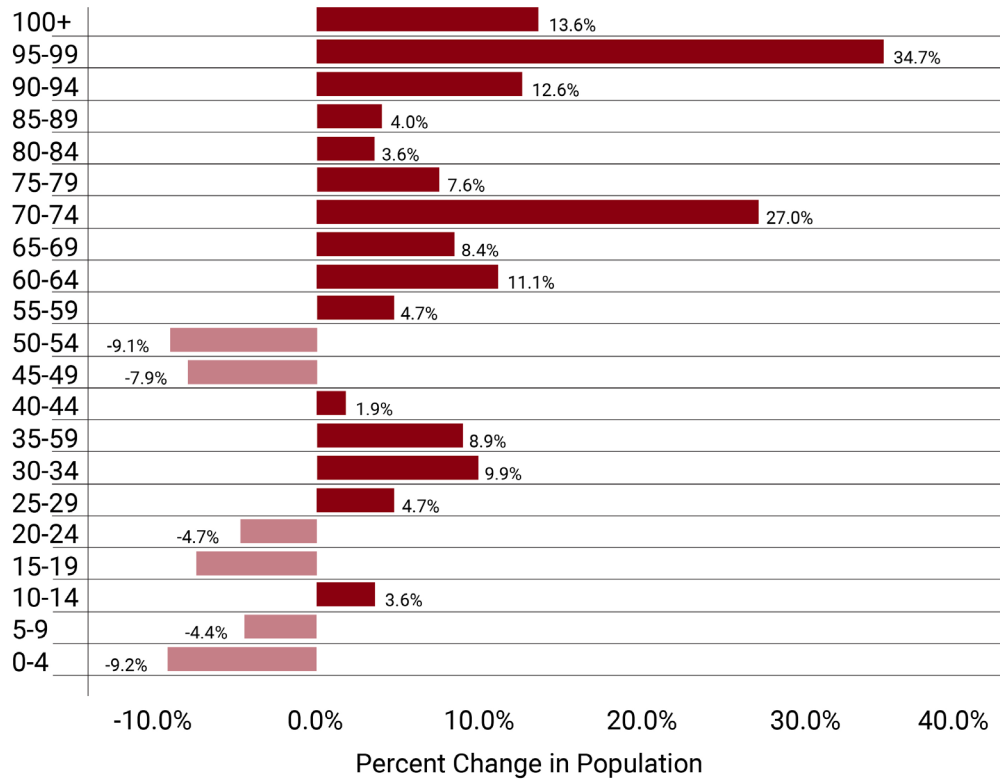


Figure 4.2. The graph shows the change in Toronto population between 2016 and 2021, where individuals aged 95-99 had the greatest increase compared to children 0-4 decreased in population.

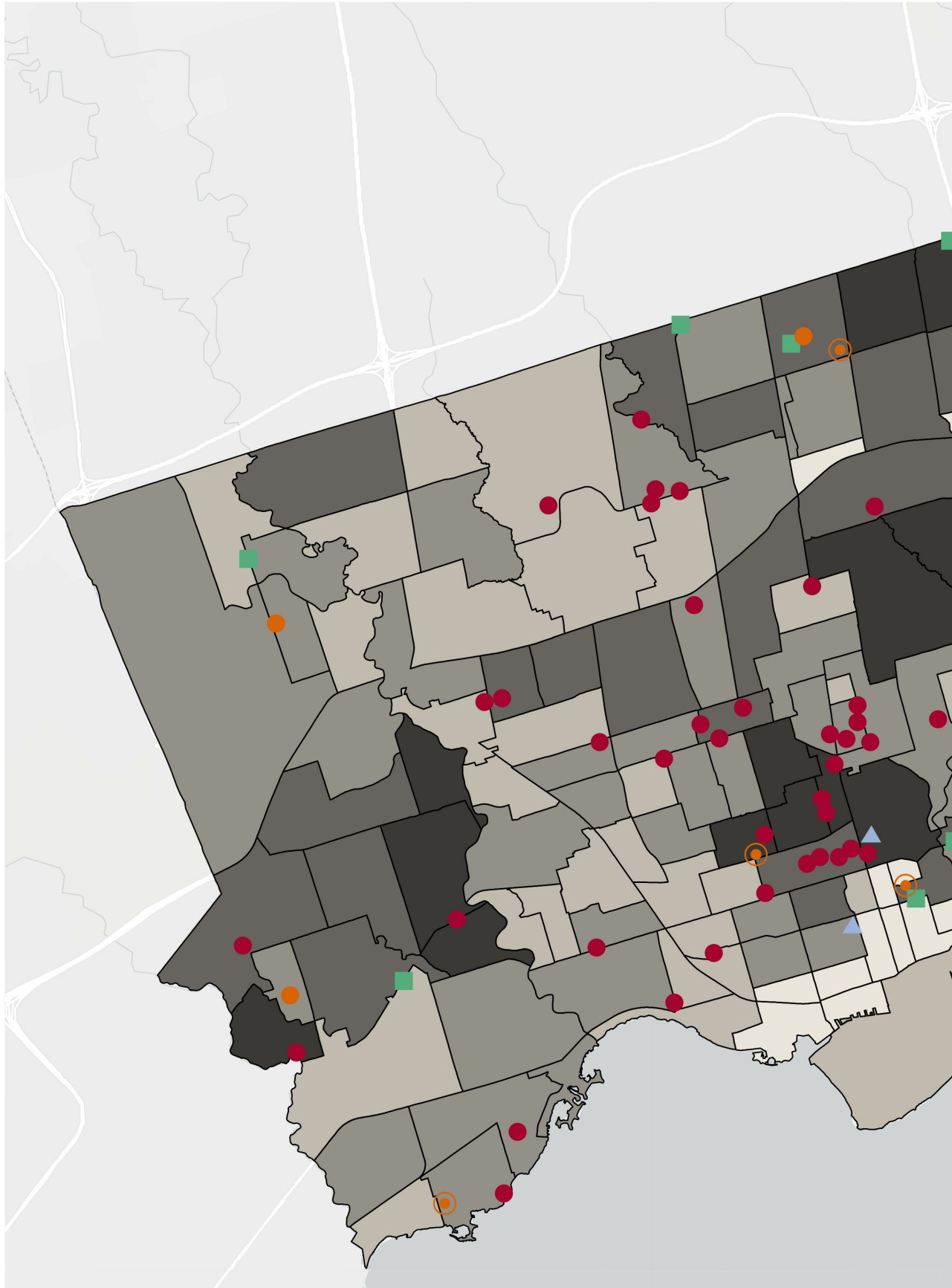
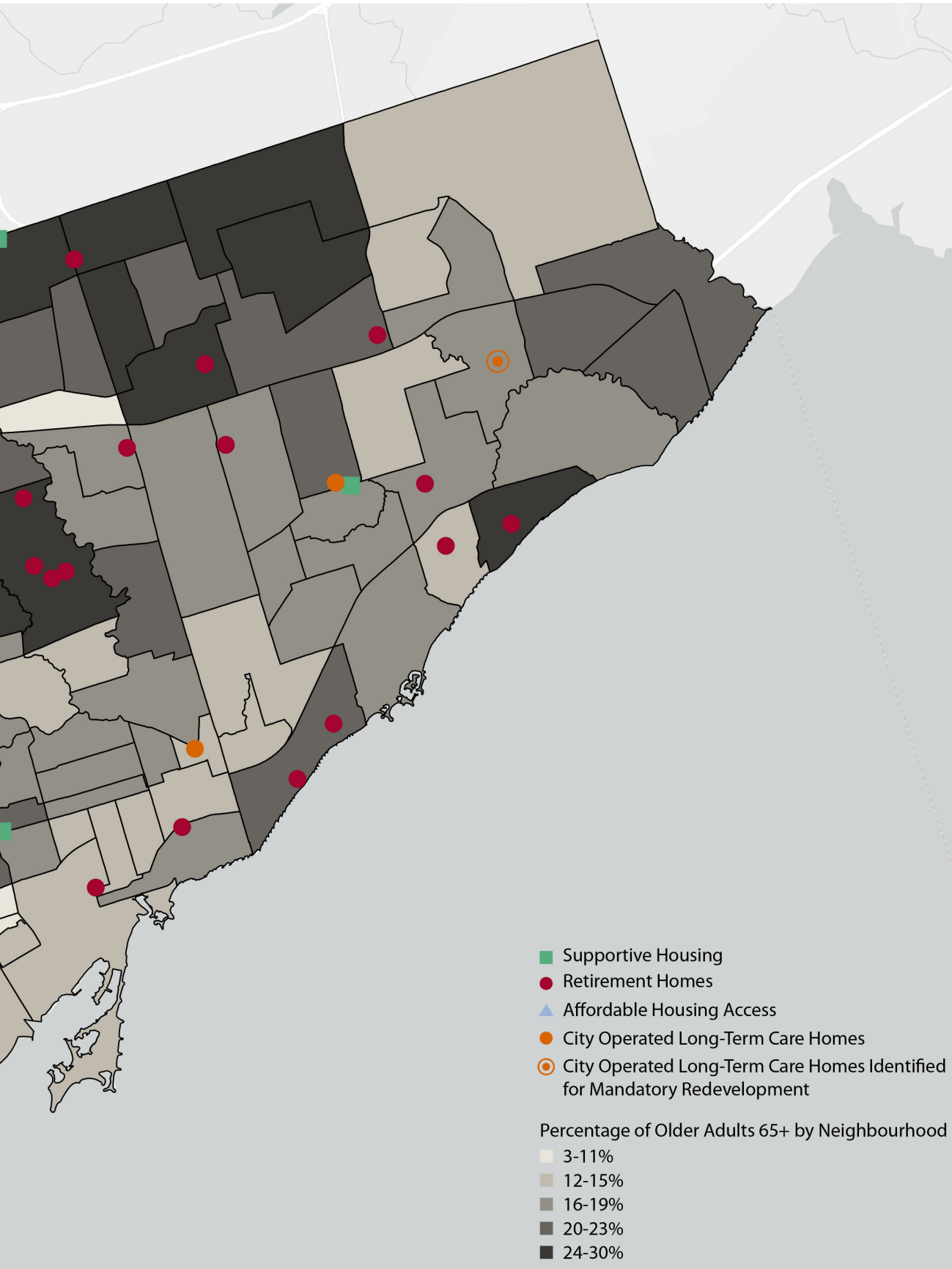


Figure 4.3. The map of Toronto highlights the percentage of older adults



Older adults in each neighbourhood and senior housing locations in the city.

## 4.2 Site: Christie Pits and Dovercourt Village

The site chosen for this thesis is located in the Christie Pits neighbourhood and across from the Christie Pits Park immediately to its south. When looking, however, at the official Toronto neighbourhood breakdown, the site is located in the Dovercourt Village neighbourhood. As a result, when analyzing the statistics and data of the site to understand the demographics and household type, the Dovercourt Village neighbourhood information was used.

Overall, Dovercourt Village has an almost even age range distribution. For example, there are 2725 individuals between the ages of 25 to 34 years old, 2000 people between the ages of 35 and 44 years and 1985 adults over the age of 65<sup>10</sup> who make up 15% of the population.<sup>11</sup> The age distribution in the Christie Pits/Dovercourt Village Neighborhood is important because it shows how the population is already very inter-generational with some amenities and services present to support the individuals living there, especially in the park to the south. Furthermore, when looking at the future, it can be predicted that the population will continue to age because individuals 55 and over were the only population that increased between 2016 to 2021, as people between 0 and 54 decreased in numbers.<sup>12</sup> Therefore, the chosen site fits well into the design intent to create an intergenerational community and provide housing options for families and individuals who wish to age in their neighbourhood. Finally, when looking at household types one-census household types were the most common in the neighbourhood, whereas families and multigenerational families had a smaller number of households in comparison. However, in contrast to the surrounding neighbourhoods, Dovercourt Village has the highest number of multi-generational household types with 225 households. In comparison, other neighbourhoods like the Annex have 70 households, Wychwood has 115, Junction Wallace-Emerson has 160 and Palmerston-Little Italy has 100 households. The second highest was Trinity Bellwood with around 215 households.<sup>13</sup> It's evident that there is a need and a potential market for multi-generational housing in Dovercourt Village compared to other surrounding neighbourhoods.

The chosen thesis site block is located directly to the north of Christie Pits Park and the site is bordered by Barton Ave, Pendrith Lane and St. Raymond Heights. The immediately surrounding neighbourhood mainly consists of single-family homes and there is a rowhouse grouping directly behind the site which fronts onto the Pendrith laneway. Furthermore, there is an existing basketball court off the laneway. This site was chosen because of the nearby retail street amenities on Christie Street and Bloor Street West. For instance, there is Christie subway station near the site on Bloor Street to provide easy access to transportation for the residents and there are many healthcare services, restaurants and convenience stores available. Furthermore, there is an existing nearby private long-term care facility called The O'Neill Centre Long Term Care Home, and as previously mentioned the city-run Castlevue Wychwood Towers Long Term Care Home, both of which are located on Christie Street. Due to the proximity of these long-term care homes, it is assumed older adults who need complex care services and 24-hour supervision and assistance like individuals with dementia could reside in these existing homes because they have all the necessary tools

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10 City of Toronto, "2021 Census: Age, Sex at Birth and Gender, and Type of Dwelling."

11 Social Development, Finance & Administration, "Neighbourhood Profiles."

12 Social Development, Finance & Administration.

13 Social Development, Finance & Administration.

and services in place. The intention is to focus on methods to incorporate extended families and different generations into the traditional senior housing options, therefore the thesis aims to provide the long-term care residents with places to interact through programs and buildings like the community hub incorporated into the thesis site.

When considering the four planning principles mentioned previously by Dominique Hauderowicz and Kristian Ly Serena in the book *Age-Inclusive Public Space*, the Christie Pits neighbourhood adheres to these principles, fostering an environment that encourages active aging. Situated in the urban center of Toronto, the Christie Pits neighborhood boasts a high population density that spans across different generations. Additionally, there are numerous public transit options available near the site, including Christie Station and multiple bus stops along Bloor Street and Christie Street. The abundance of retail and commercial establishments along Bloor Street provides ample opportunities. Lastly, Christie Pits Park is within walking distance of the site, offering green spaces in close nearby. Therefore, the chosen site in the Christie Pits, is an ideal location for older adults to encourage physical activity and healthy aging as they get older.

DOVERCOURT VILLAGE HOUSEHOLD TYPES in 2021

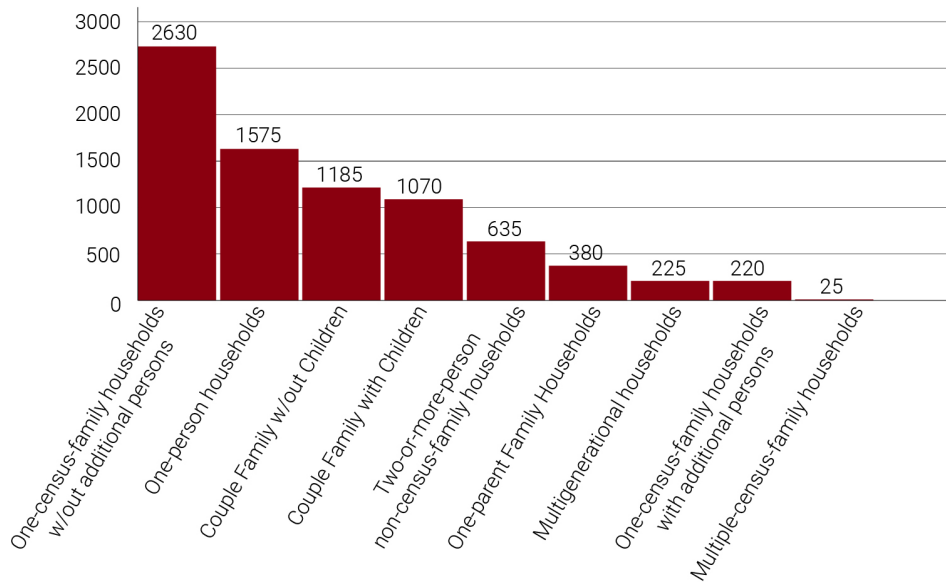


Figure 4.4. The graph shows household types in Dovercourt Village.

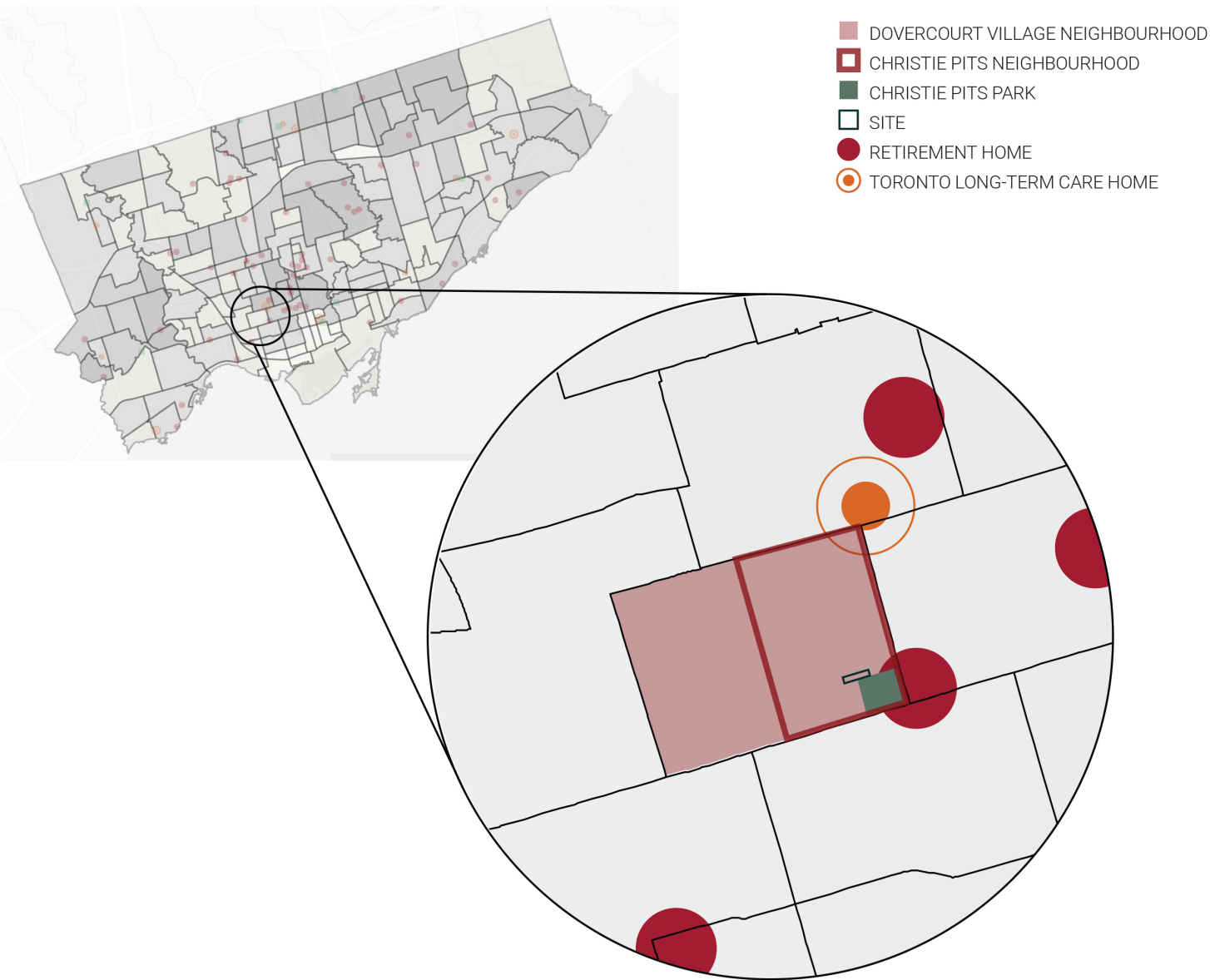


Figure 4.5. The map shows the relation between Christie Pits neighbourhood and Dovercourt Village and the location of the site.

### Dwelling Types in Dovercourt Village in 2021

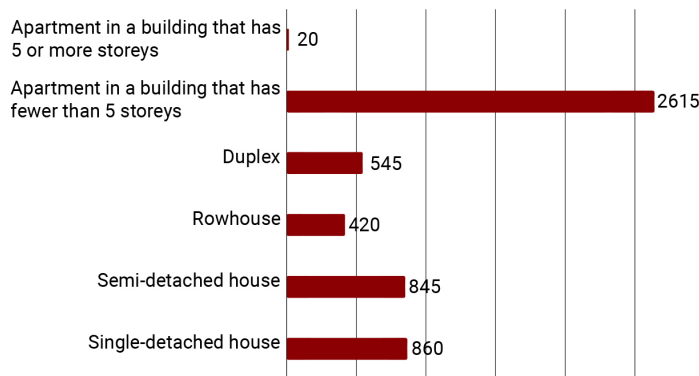


Figure 4.6. The graph shows the dwelling make up in Dovercourt Village.

DOVERCOURT VILLAGE AGE DISTRIBUTION in 2021

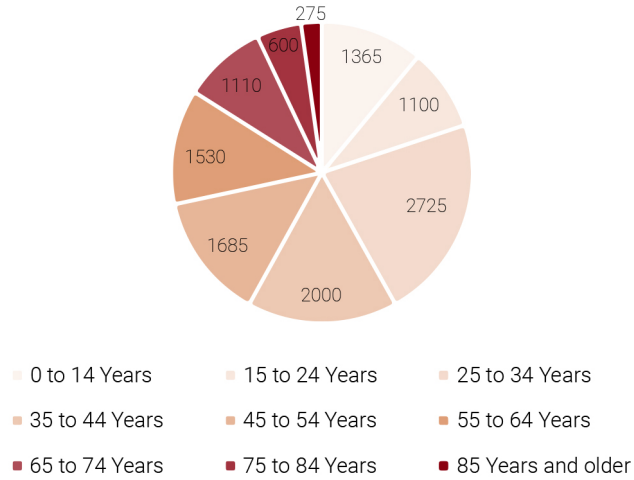


Figure 4.7. The graph shows the age distribution in Dovercourt Village.

DOVERCOURT VILLAGE POPULATION CHANGE BETWEEN 2016 TO 2021

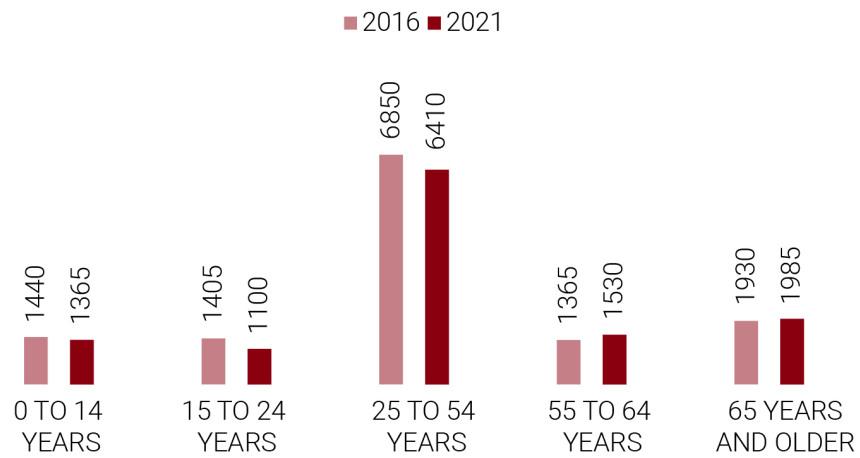


Figure 4.8. The graph shows the change in population between 2016 to 2021 in Dovercourt Village.



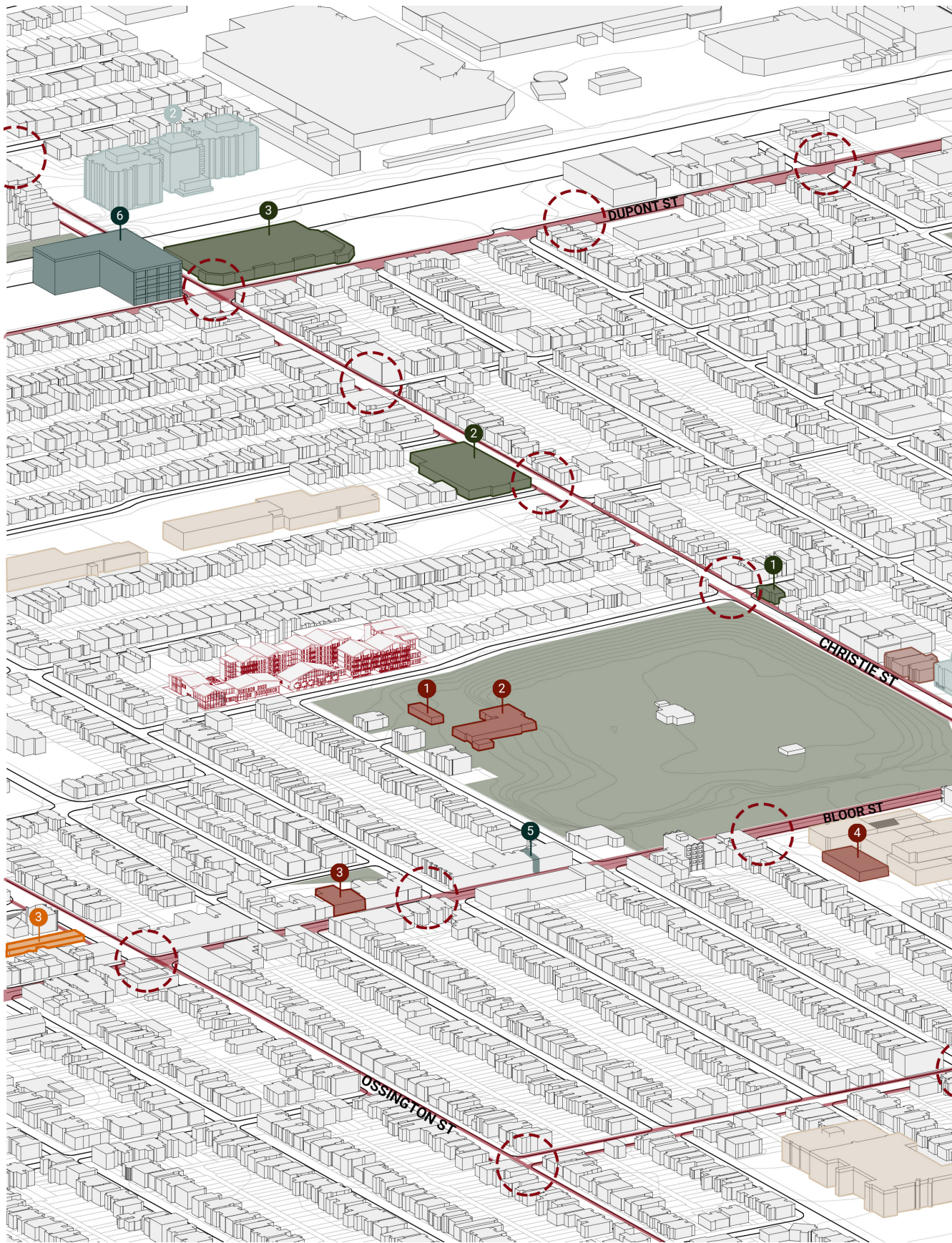
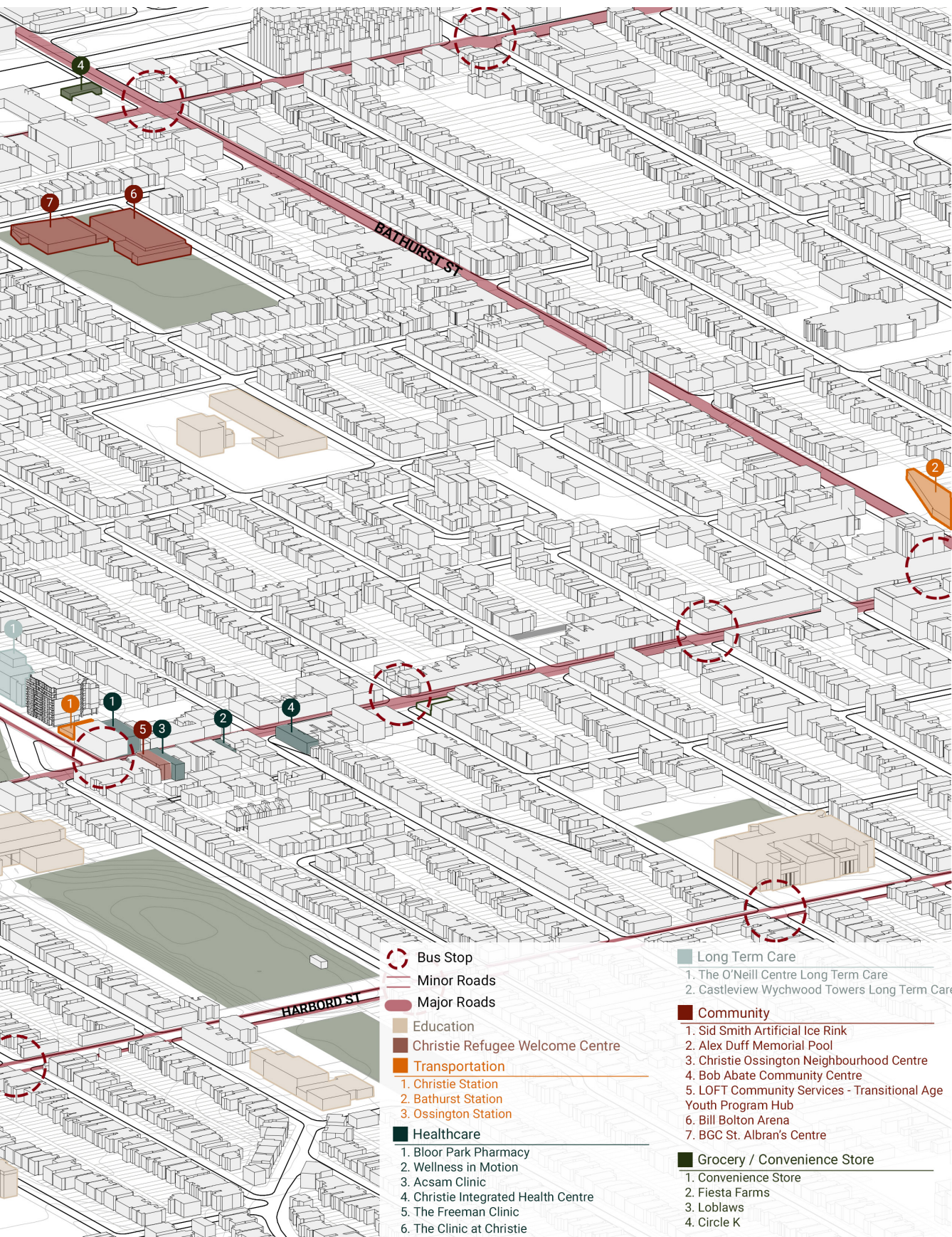


Figure 4.9. The map of the Christie Pits neighbourhood





- Bus Stop
- Minor Roads
- Major Roads
- Education
- Christie Refugee Welcome Centre
- Transportation
  - 1. Christie Station
  - 2. Bathurst Station
  - 3. Ossington Station
- Healthcare
  - 1. Bloor Park Pharmacy
  - 2. Wellness in Motion
  - 3. Acsam Clinic
  - 4. Christie Integrated Health Centre
  - 5. The Freeman Clinic
  - 6. The Clinic at Christie
- Long Term Care
  - 1. The O'Neill Centre Long Term Care
  - 2. Castleview Wychwood Towers Long Term Care
- Community
  - 1. Sid Smith Artificial Ice Rink
  - 2. Alex Duff Memorial Pool
  - 3. Christie Ossington Neighbourhood Centre
  - 4. Bob Abate Community Centre
  - 5. LOFT Community Services - Transitional Age Youth Program Hub
  - 6. Bill Bolton Arena
  - 7. BGC St. Albran's Centre
- Grocery / Convenience Store
  - 1. Convenience Store
  - 2. Fiesta Farms
  - 3. Loblaws
  - 4. Circle K

Method highlighting transportation and nearby amenities.

### 4.3 Building: Design Proposal for a Village for Older Adults, Families and Friends

When analyzing the precedents from Chapter 3, the more successful projects usually followed a village urban typology to allow for greater flexibility and adaptability for the housing for the residents. This is important because the quality of needs and capabilities of older adults is always different and dependant on personal biographies. Therefore, projects like the Zwei+plus Intergenerational Housing Project provide many opportunities and design solutions to encourage healthy aging and social interaction in the community.

When determining the direction for the design of this thesis, a village urban typology was chosen to provide residents with various buildings containing programs and services to encourage healthy aging within the overall urban block. As a result, the design consists of four diverse buildings. There are two community buildings: the community hub for the residents and the neighbourhood and the common building for the residents. Then there are two housing buildings: one with one-bedroom units for individuals that need greater assistance or wish to live alone and then a building with family and roommate units.

Based on the real estate analyses of building speculation and of preferable and developable building types in Toronto it is evident that the fastest-growing housing typology today in 2023 is apartment buildings with more than five storeys, while middle-density housing is some of the lowest number of housing available, demonstrating a need for this housing typology. Furthermore, in Christie Pits, most of the buildings are low or middle-density. The thesis design's expected low to mid-density goals of creating a more domestic scale environment matches the scale and the occupation of the existing housing and buildings in the neighbourhood, to not disrupt the scale of the neighbourhood.

Much of the surrounding neighbourhoods consist of single-family homes around six meters tall, built with stick frame construction and have a brick veneer on the exterior. When making design decisions about how the project would look, one aim was to blend the project into the surrounding context. The simple form of the buildings follows the same architectural language of the current context, such as the sloped roofs and the use of brick. Moreover, the project is built out of mass timber, using CLT floor panels and glulam columns and beams for two reasons: the sustainability aspect of using mass timber in a project and the warmth and feel it provides.

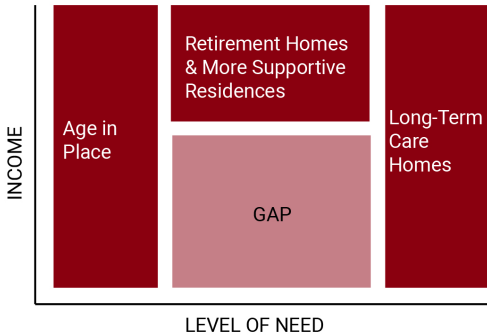


Figure 4.10. The graph visually shows where Canada highlights the gaps in senior housing is.

Demographics are also an important factor in the two main thesis project goals to promote different generations to live together and encourage broader social interaction. Therefore, four types of dwelling units are created in the thesis design, two senior-specific units based on needs and assistance being required, a family unit for multigenerational housing and a dual unit for co-living roommates between an older adult and another senior, or even a younger individual. By providing such a choice of various housing options, the design aims to encourage intergenerational interaction to combat the loneliness and social isolation that are commonly seen in the traditional older adult housing options reviewed earlier in the research. These issues bedevil almost all the options except the ones geared to higher incomes and more paid-for services. Furthermore, the program in the thesis design community hub is meant to provide older adult individuals with spaces to spend their free time or to volunteer in places like the daycare or the co-op grocery store to ensure intergenerational socialization and feeling of participation.

PERCENT OF DWELLING UNITS BY STRUCTURE TYPE IN TORONTO BETWEEN 2001-2021

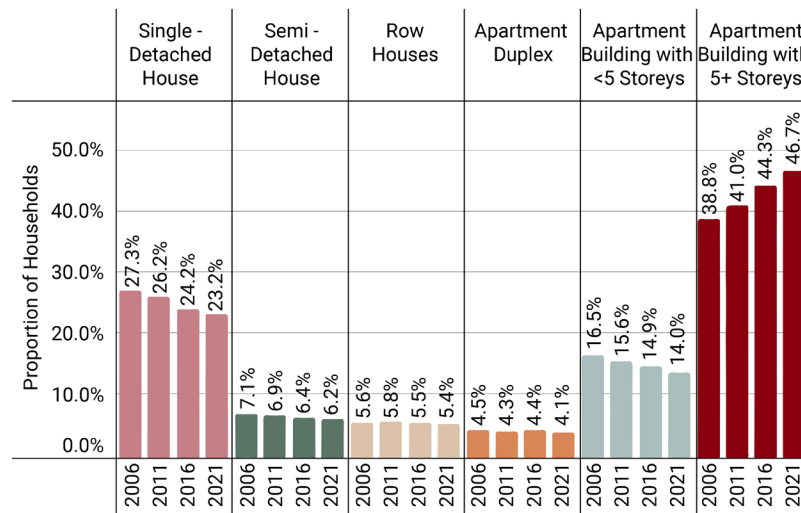


Figure 4.11. The graph shows the dwelling types in Dovercourt Village.

The proposed design moves away from the conventional care home to create a village-like housing project near Christie Pits. Rather than housing all residents in one tall building, the project examines ways to create a community in the block and with the surrounding context. The buildings were strategically placed on the site based on the current context. For instance, at the northwest corner of the laneway, there is an existing basketball court which is a great opportunity for both the children in the daycare and the children residing in the family units. While in the northeast corner of the laneway, there are existing rowhouses, creating a more residential feeling. Therefore, when determining where to place certain programs and buildings, it became evident that the left side of the project benefited more from community programs while the right side was more residential. As a result, the L-shaped community hub is in proximity to the basketball court so the children in the daycare can play there, while the L-shaped residence is closer to the existing housing to continue the same building typology and not disrupt existing residents. Moreover, the multi-unit residence was harder to place because of children living in the family units, but it was still a residence where adults might want to meet with other residents and promote interaction near the L-shaped building. The solution was to place the building at the back with entry points from both ends of the building to allow easy access to either corner of the site.



The outdoor amenities have been an important consideration in this project, to promote wellness and active living. The village has a pedestrian street in the middle of the project that goes from the community hub to the one-bedroom residence. At the community hub, there is an outdoor play area for the daycare and outdoor cafe seating. Furthermore, there are community garden across from the play area. Across the laneway, there was an existing basketball court that is now near the daycare for the children to access, but two pickleball courts have also been added to encourage older adults and younger individuals to play and stay active. Lastly, there are two outdoor seating areas added, one behind the common building for individuals to be able to eat outside, and the other between the multi-unit residence and the one-bedroom residence. The latter is near the laneway and rowhouses to invite residents and members of the community to the village.

Christie Pits Park is home to many recreational buildings like the swimming pool, baseball diamond, an ice rink, and many programs the city and neighbourhood hold. These spaces benefit both older and younger individuals by promoting physical activity and social interaction because they get residents in the neighbourhood involved. However, *Age-Inclusive Public Space* by Dominique Hauderowicz and Kristian Ly Serena lists issues such as walkable neighbourhoods, possible employment and volunteer opportunities, access to healthcare facilities, and intergenerational communication to make an age-friendly city.<sup>14</sup> When comparing this to what was present in the Christie Pits neighbourhood, the areas that were severely lacking were employment and volunteering options, walkability in terms of scale and ability, and access to healthcare. As a result, the design utilizes the program of the community hub and the organization of the buildings to introduce these requirements into the project.

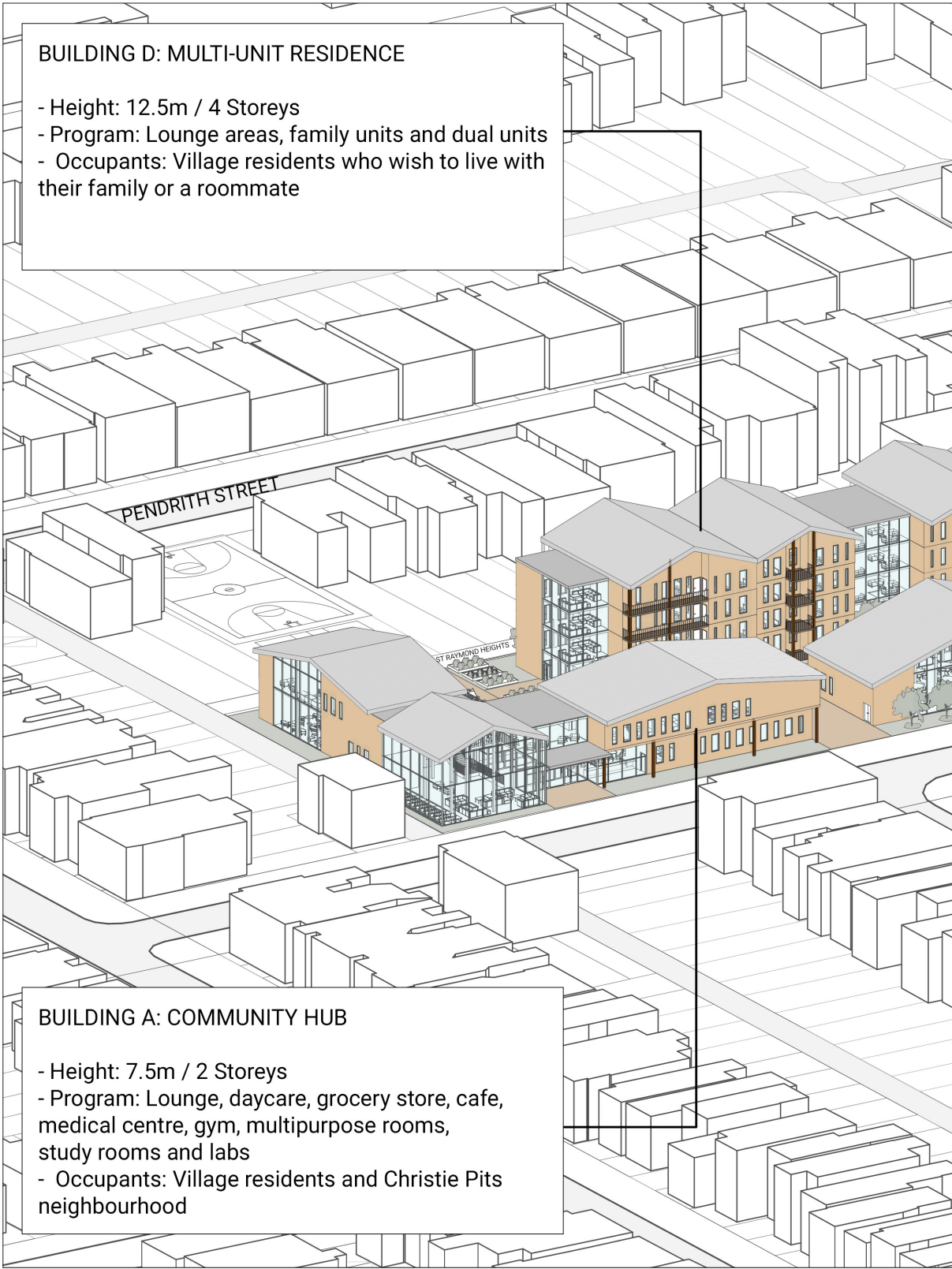
	Name	Program	Outdoor Amenities	Unit Types	# of Storeys / Height (m)	Gross Floor Area (m <sup>2</sup> )
Building A	Community Hub	Daycare, co-op grocery store, cafe, health services, gym, multipurpose rooms	Cafe Seating, daycare play area	N/A	2 Storeys / 7.5m	1799.51m <sup>2</sup>
Building B	Common Building	Common living, group dining and shared kitchen	Outdoor seating	N/A	1 Storey / 4.5m	434.32m <sup>2</sup>
Building C	One-Bedroom Residence	Admin offices, conference room, mail room, dwelling unit, lounge areas, nurses station	Bench seating	Single and double-bed assisted living, independent one-bedroom, staff units	4 Storeys / 12.5m	3808.78m <sup>2</sup>
Building D	Multi-unit Residence	Dwelling units, lounge area	Community garden, outdoor seating under pergola	Family units, dual room units	4 Storeys / 12.5m	4678.32m <sup>2</sup>

Figure 4.12. The chart summarizes the design's buildings and program.

14 Hauderowicz and Serena, *Age-Inclusive Public Space*.

The community hub houses programs that are missing in the Christie Pits neighbourhood, such as access to healthcare and places of employment or volunteering. There are healthcare services on the second floor of the community provided to both the residents and the surrounding community to provide access to health services closer to their homes. Also, as mentioned, older adults need programs that promote employment or volunteering. Therefore, the community hub aims to not only provide services to the residents and the neighbourhood but also provide an opportunity for older adults to work or volunteer in areas like the daycare, cafe, or running workshops. Overall, the programs in the community hub try to integrate the village design proposal into the community by creating spaces that are purposeful to signal the project as a neighbourhood landmark for social gatherings and wholesome activity to promote intergenerational interaction, meeting all four issues listed above resulting in a better age-friendly community.

Moreover, older adults can be divided into three subgroups that have different needs and mobility. Currently, Christie Pits Park satisfies fully autonomous individuals because they have the freedom and mobility to explore the entire neighbourhood. However, semi-autonomous individuals experience limited urbanity, and areas like a park, courtyard, or backyard are very important to these individuals because of their limited mobility. As a result, the buildings in the village proposal are divided and spread out to create a pedestrian walkway in the center with various outdoor programs. Likewise, much of the program facing Barton Avenue is communal or public spaces such as the grocery store, cafe, communal building, and administrative offices to create a buffer between the noisier Christie Pits park and the pedestrian walkway behind in the middle of the project, to create a safer area for semi-autonomous adults as it is fully pedestrianized with no traffic. The organization of the project helped make it more age-friendly by increasing the walkability around the Christie Pits neighbourhood for older residents whatever their needs are.

An architectural rendering of a residential development. The scene shows a grid of streets with various building footprints. Two buildings are highlighted with a black rectangular frame. Building D is a taller, multi-story structure with a modern facade, including large glass windows and balconies. Building A is a shorter, two-story structure with a more traditional facade. The surrounding buildings are shown in white line-art style. A street labeled 'PENDRITH STREET' runs horizontally across the middle. Another street labeled 'ST RAYMOND HEIGHTS' is visible in the background. Two text boxes provide details for Building D and Building A.

**BUILDING D: MULTI-UNIT RESIDENCE**

- Height: 12.5m / 4 Storeys
- Program: Lounge areas, family units and dual units
- Occupants: Village residents who wish to live with their family or a roommate

**BUILDING A: COMMUNITY HUB**

- Height: 7.5m / 2 Storeys
- Program: Lounge, daycare, grocery store, cafe, medical centre, gym, multipurpose rooms, study rooms and labs
- Occupants: Village residents and Christie Pits neighbourhood

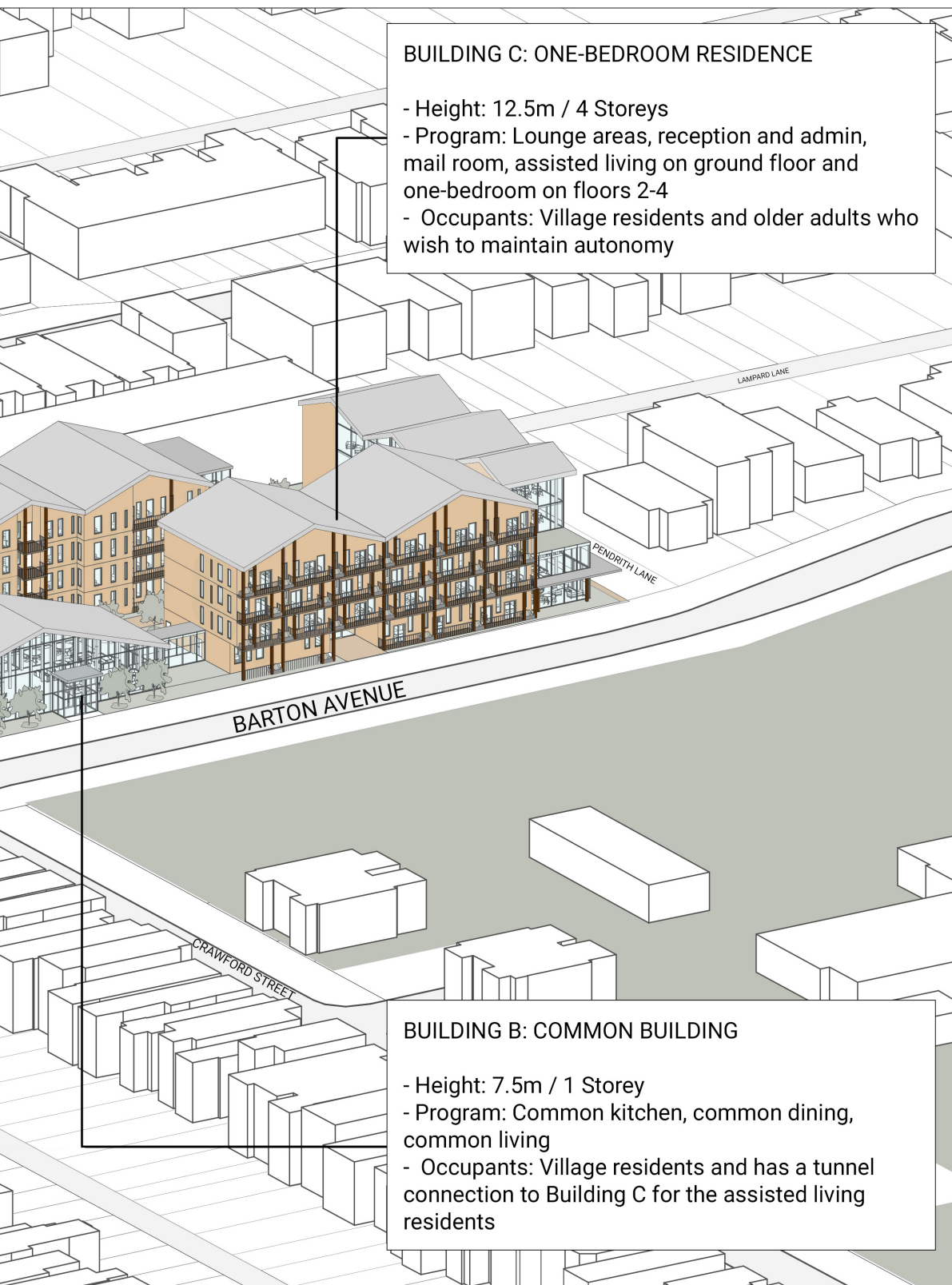
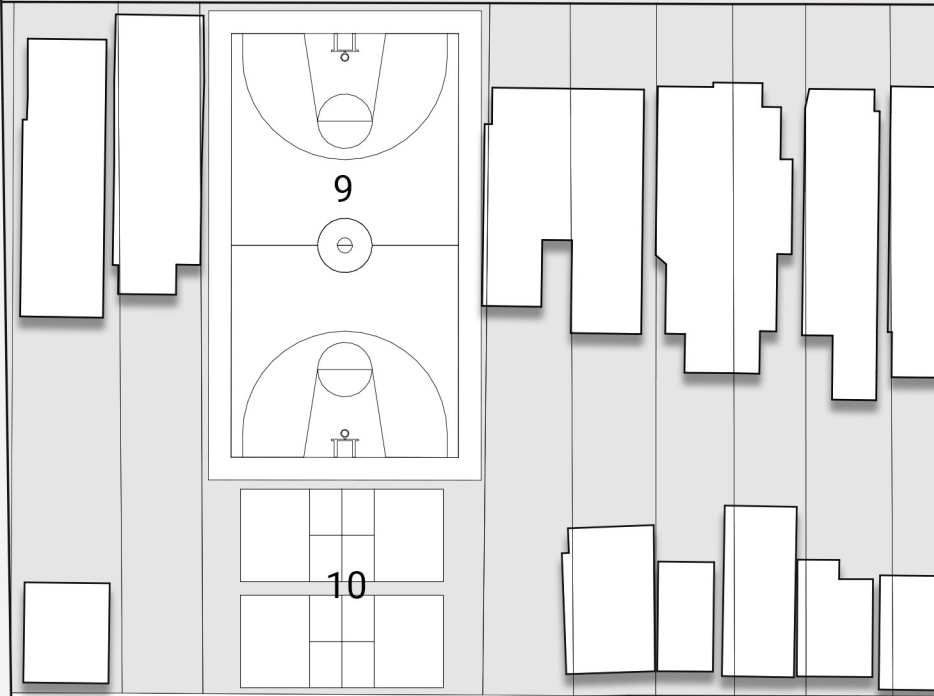
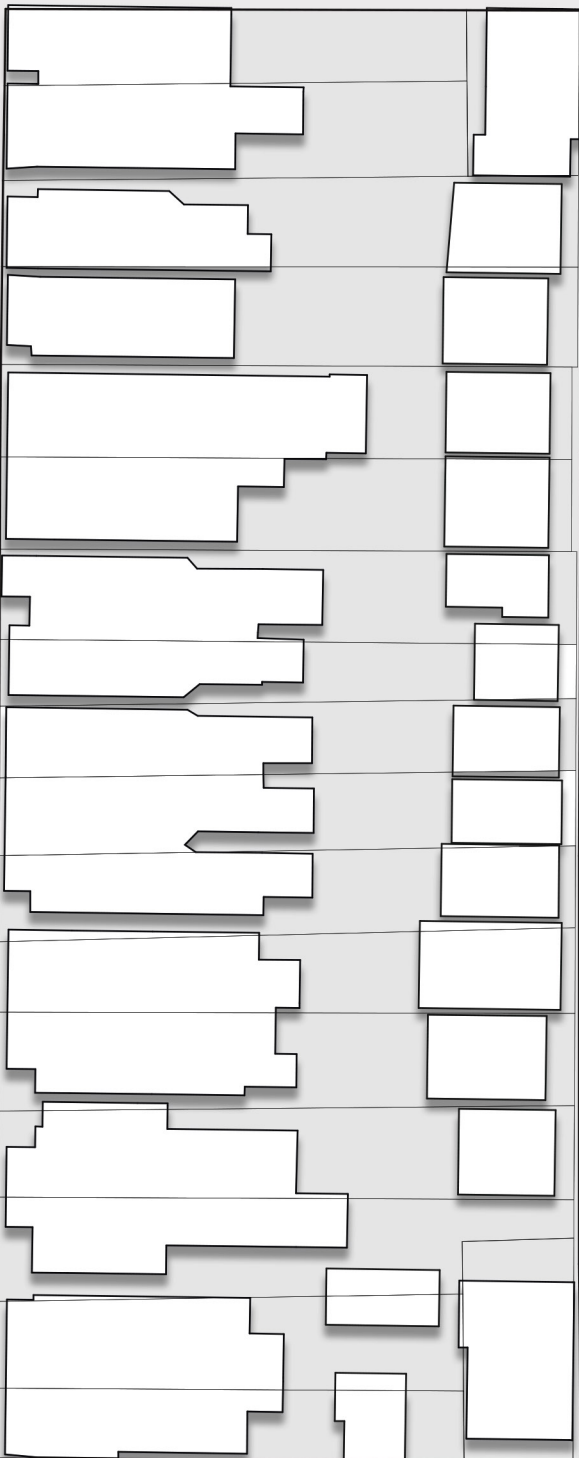


Figure 4.13. Axonometric of the proposed design.

The drawing summarizes each building in the project to provide a general overview of what is present in the design. This image also helps visualize the project within the surrounding neighborhood to understand the relationship between heights, access points, and site context. Overall, the axonometric shows the full design, helping to understand how it fits on the site.

PENDRITH ST

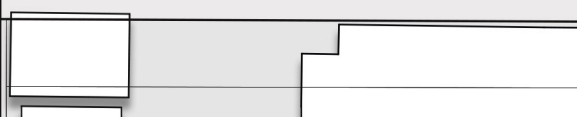
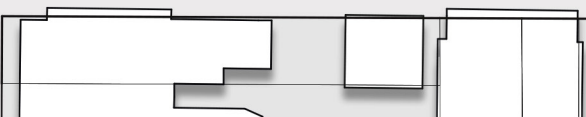


ST RAYMOND HTS



BARTON AVE

65





1. Building A - Community Hub
2. Building B - Common Building
3. Building C - One-Bedroom Residence
4. Building D - Multi-Unit Residence
5. Playground
6. Community Garden
7. Outdoor Cafe Seating
8. Outdoor Seating
9. Existing Basketball Court
10. Pickleball Courts



Figure 4.14. Site Plan | Scale: 1:500.

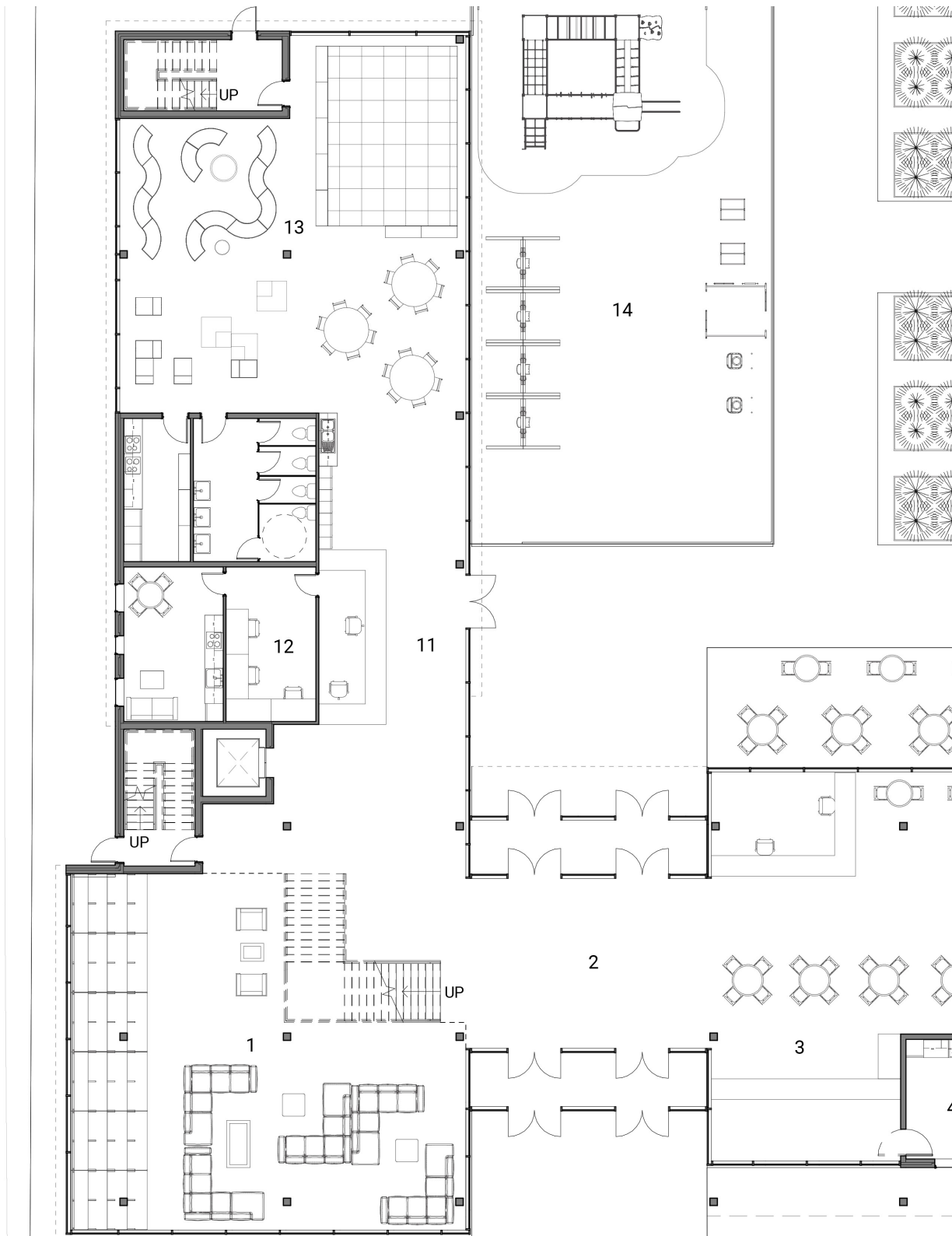






Figure 4.15. View of the Community Hub.

Looking at Buildings A and B from across the street, something interesting is the scale of the buildings. Like the residential buildings, these two structures are relatively low, following the same scale as the surrounding buildings. The design project was conceived as low to mid-rise in scale to prevent obstructing adjacent structures and to feel more like a part of the neighbourhood. Furthermore, the community hub and communal building are shown, and these were added to the program to encourage interaction among all members of the community, ensuring that older adults do not feel isolated or lonely.



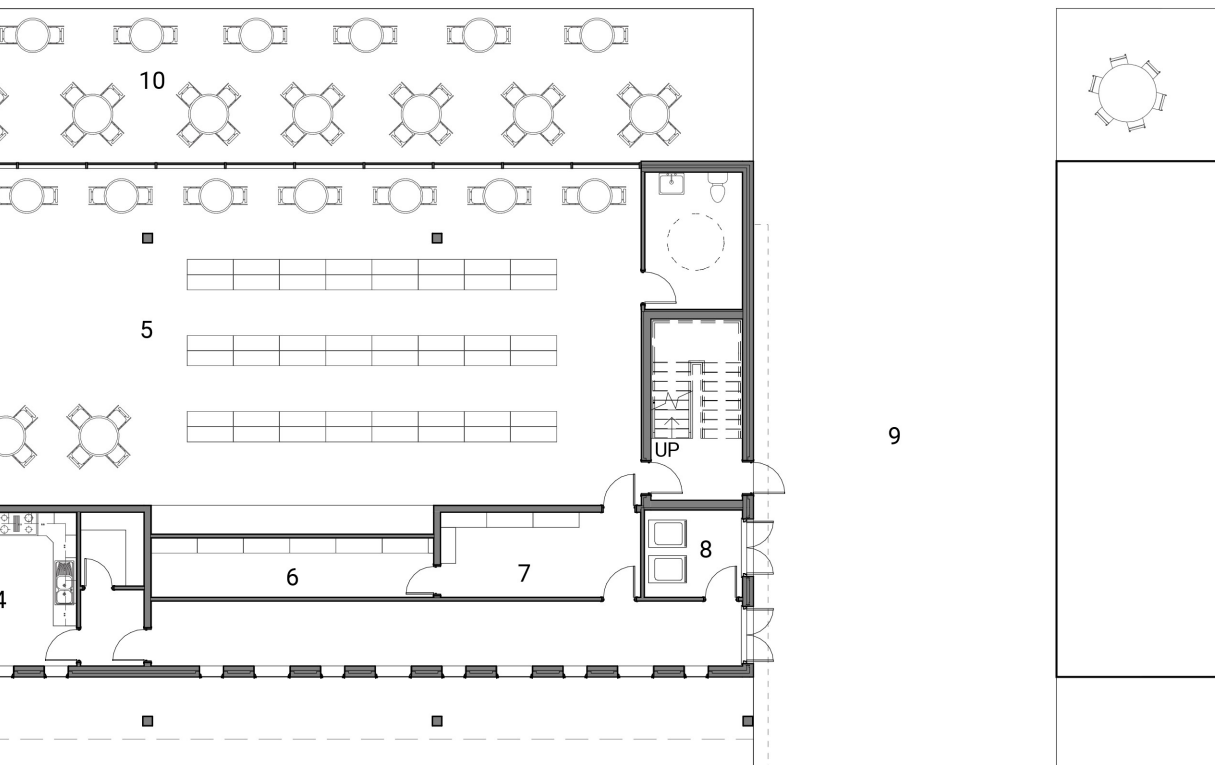
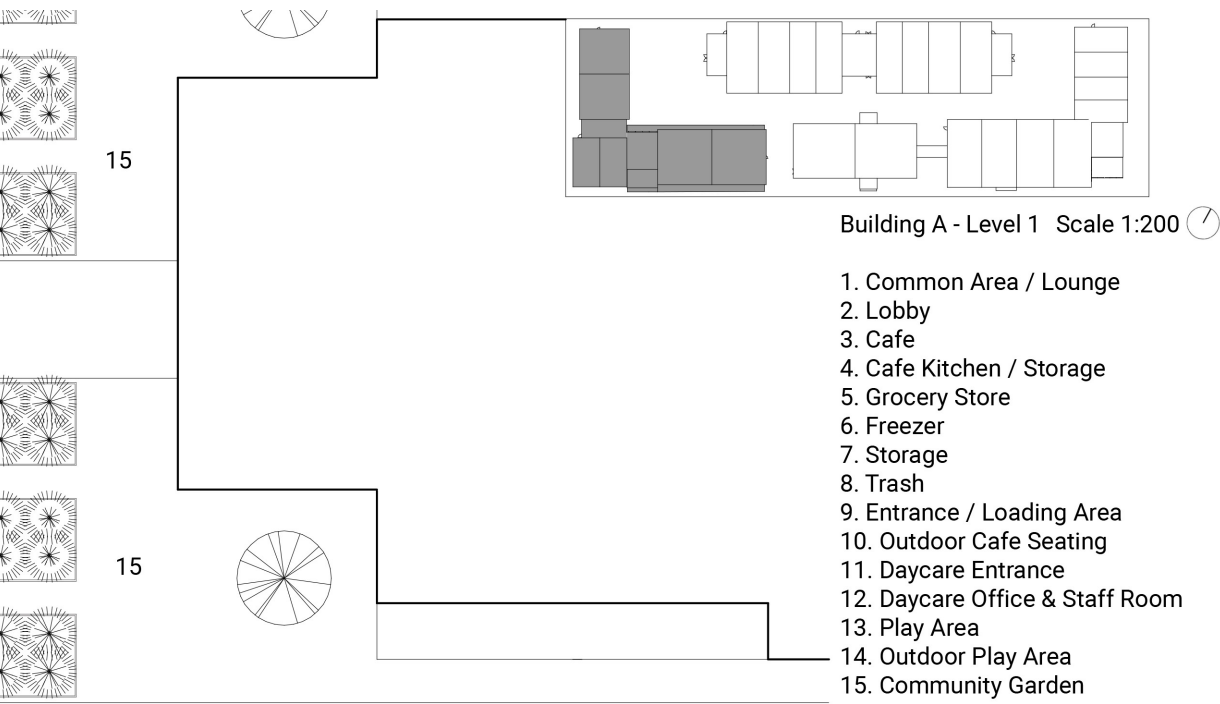
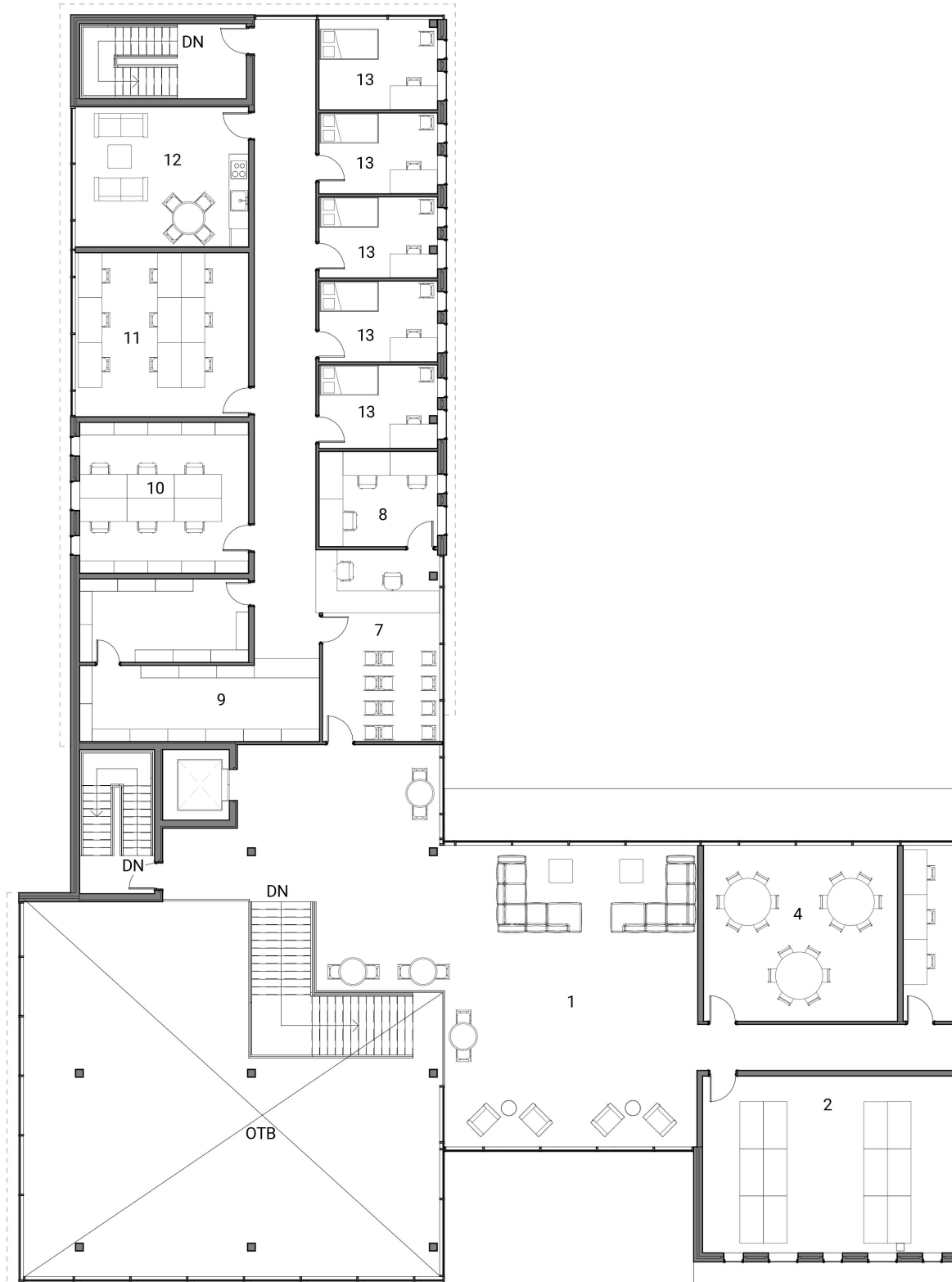


Figure 4.16. Building A: Community Hub-Ground Floor Plan | Scale: 1:200.

Looking at the ground floor plan for Building A, the program includes the daycare and the grocery store/cafe. There is a clear entrance that goes straight to the back pedestrian courtyard to provide users easy access to both the back amenities and access from the main street. This building is crucial to the design because both programs on the ground floor provide employment and volunteer opportunities for older adults and a community space for the neighbourhood.





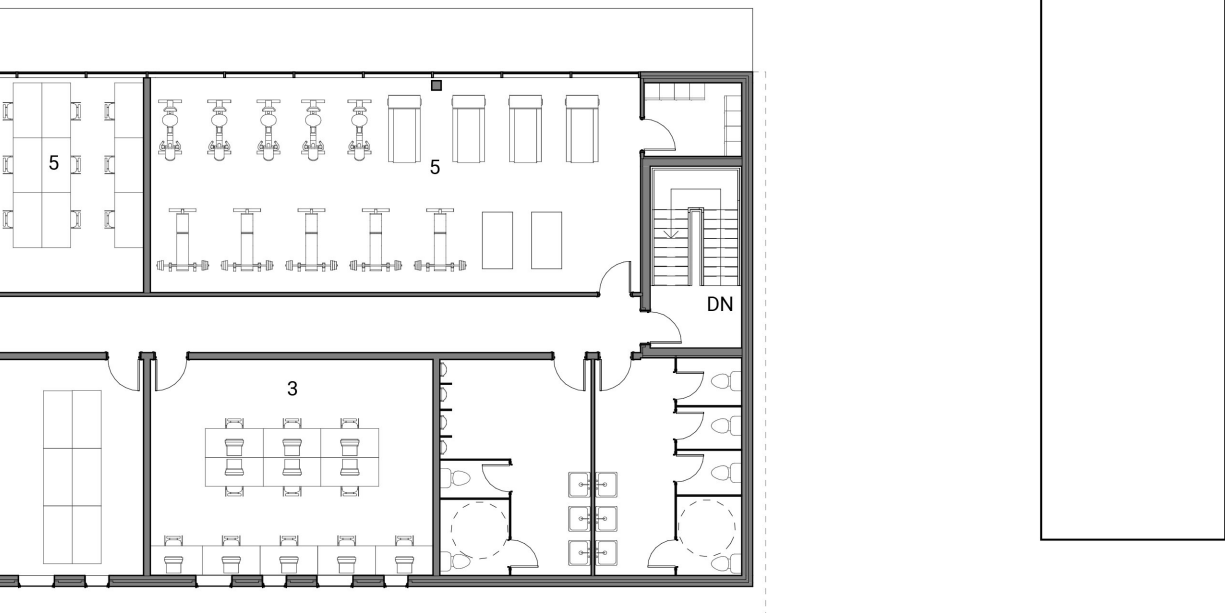
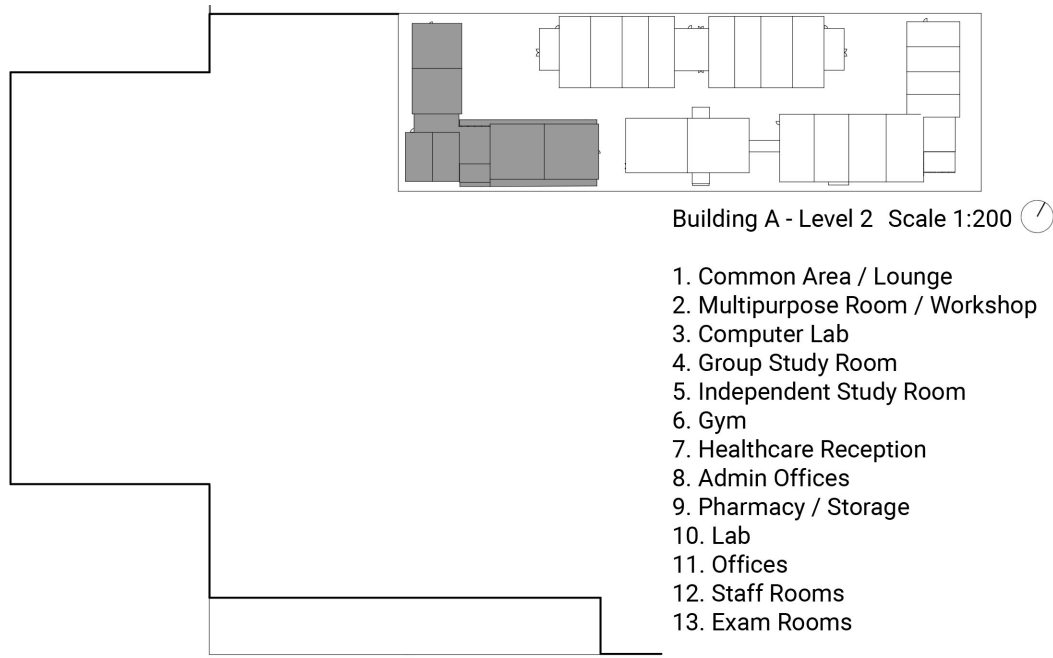


Figure 4.16. Building A: Community Hub-Ground Floor Plan | Scale: 1:200.

Now looking at the second floor of the community hub, this is where the gym, multipurpose rooms, and healthcare facilities are located. The second floor is important to the design because it promotes physical activity and learning and provides health services onsite to create an age-friendly community. To encourage healthy aging, providing different means of physical activity, such as the indoor gym, gives older adults the flexibility of choice to encourage activity year-round.







Figure 4.18. View inside of the grocery store and cafe.

Looking at the cafe and grocery store area of the community hub, various individuals of different generations are utilizing the space to get groceries or read while enjoying a coffee. This view aims to show how the community hub could be utilized as a point to encourage interaction and socialization within the community. Furthermore, it is essential to the overall design because it presents an opportunity for older adults to find employment or buy groceries nearby to maintain their autonomy and perform daily activities.

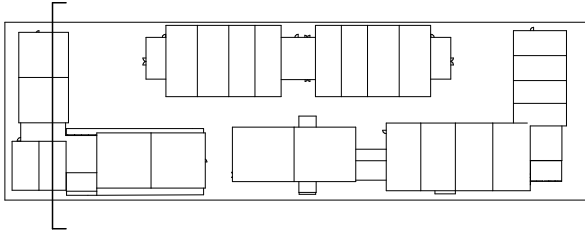




Figure 4.19. Section cutting through community hub | Scale: 1:250.

The section cuts through Building A to illustrate how the daycare, healthcare service, and double-height lounge space all connect. For the daycare, the section cuts through the reception and play area, showing an older adult with children seated around, while the healthcare area displays the exam rooms and reception area. The program offers access to employment and volunteer opportunities for older adults, while also providing onsite health services to ensure the safety of everyone. This section exemplifies how the community hub can be an asset not only to the residents but also to the whole neighbourhood.









Figure 4.20. A view looking towards Building C: One-Bedroom Residence.

The image is taken from Building A, looking towards Building C, to illustrate the relationship between the outdoor daycare area, the community garden, and the cafe seating area concerning the buildings and pedestrian walkway. The view also highlights the smaller scale of Buildings A and B in comparison to Buildings C and D. Numerous instances demonstrate how various generations can utilize the space, while also providing an area for individuals who are semi-autonomous to walk and be active in the design.



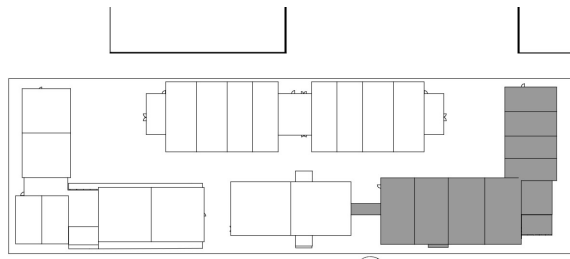






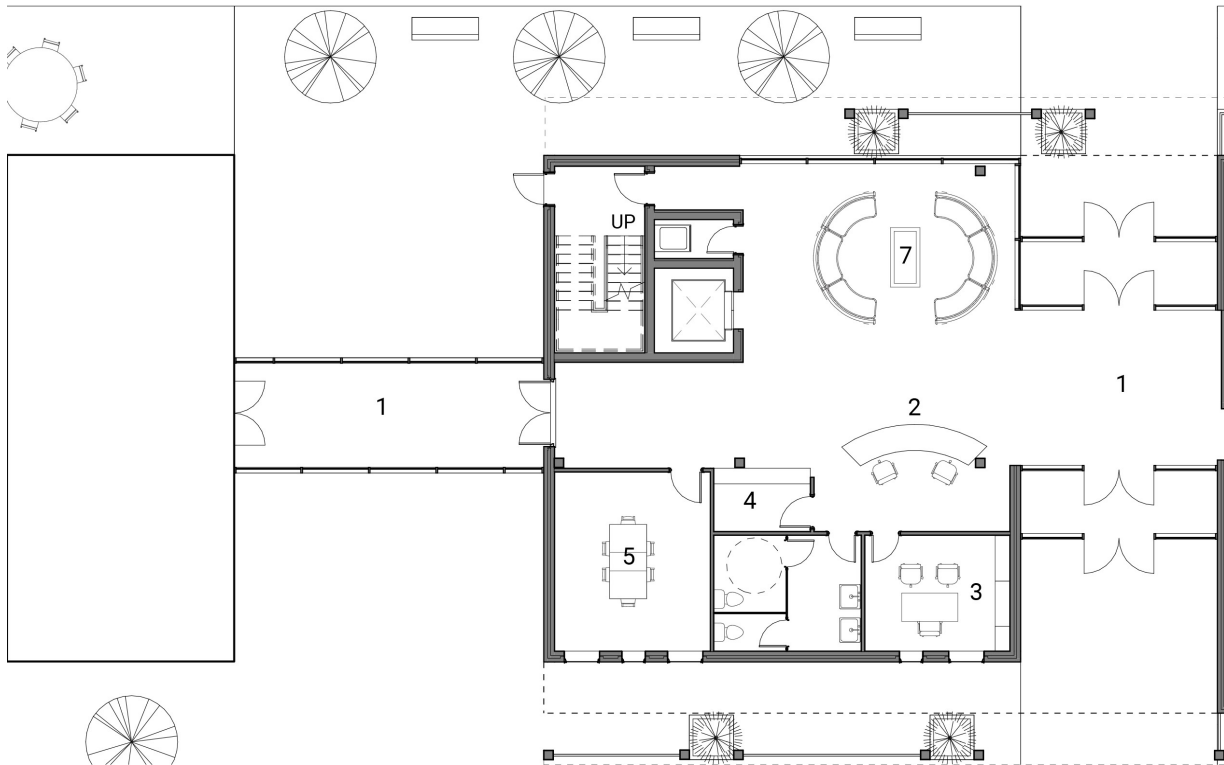
Figure 4.21. View of Building C: One-Bedroom Residence.

This is a view of Building C from across the street at Christie Park. Being the tallest building on the block, it wraps around the laneway to continue the balcony facade. At the corner, there are main lounge spaces designed to encourage interaction between residents and provide a space for visitors and residents to sit down. This building is integral to the thesis because it is the most senior-focused and institution-like building in the project. It is meant to provide spaces for older adults who need care or assistance to have one building on the site while still having access to other communal buildings and individuals, preventing them from feeling isolated or lonely.

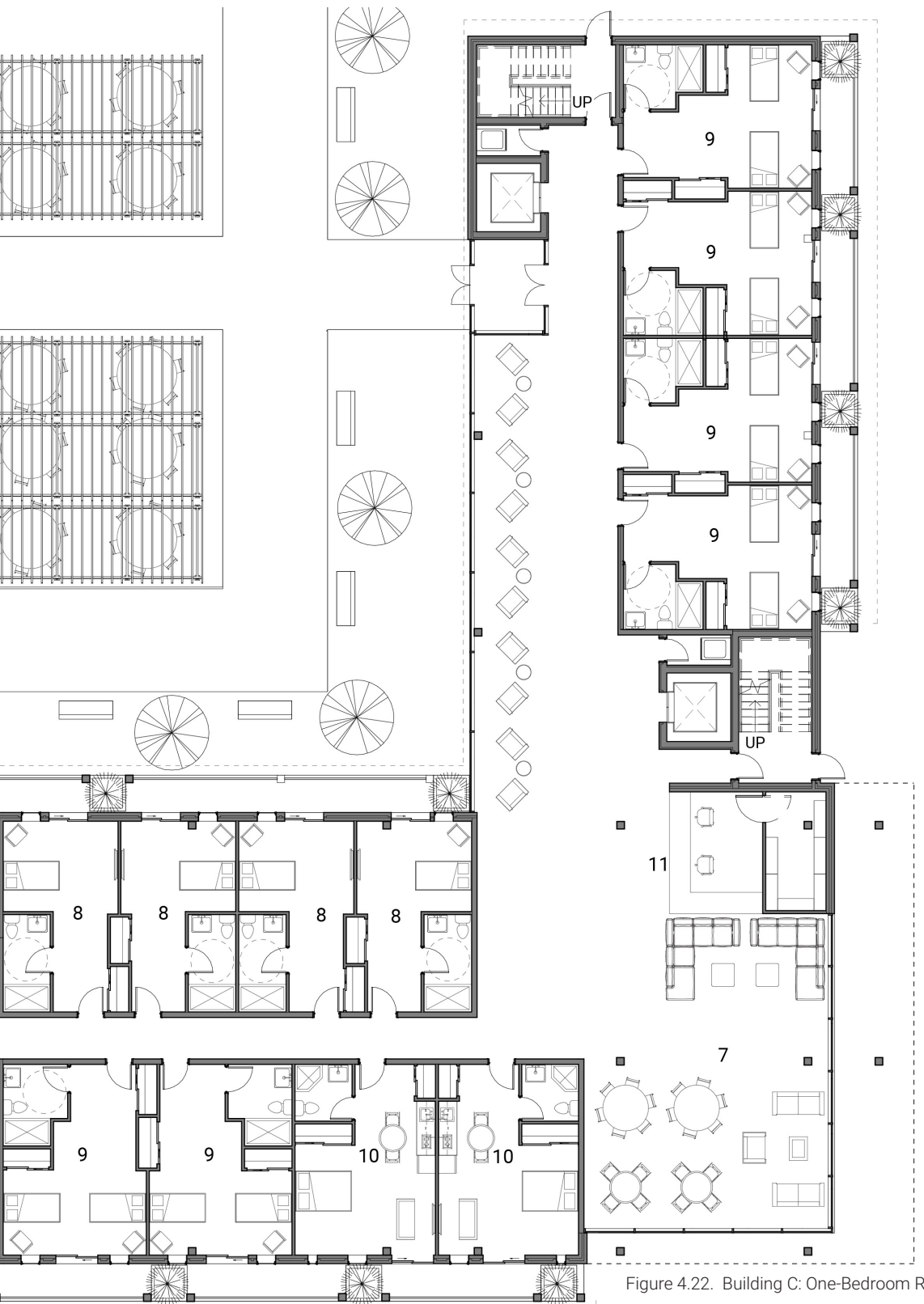


Building C - Level 1 Scale 1:200

- 1. Lobby
- 2. Reception
- 3. Admin Office
- 4. Mailroom
- 5. Conference Room
- 6. Path to Building B
- 7. Lounge Area
- 8. Single Assisted Living Unit
- 9. Double Assisted Living Unit
- 10. Staff Unit
- 11. Nursing Station
- 12. Outdoor Seating Area



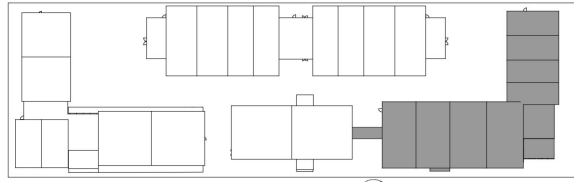




Pendrith Lane

Figure 4.22. Building C: One-Bedroom Residence-Ground Floor Plan | Scale: 1:200.

The ground floor of Building C is somewhat institutional as it houses assisted living units. To encourage aging and transitioning in place, the floor provides housing for older adults as they become semi-autonomous. The goal is to prevent loneliness and isolation since the residents remain part of the community and can live near their families, with the option of daily visits.



Building C - Level 2 Scale 1:200

- 1. Lounge Area
- 2. One Bedroom Unit

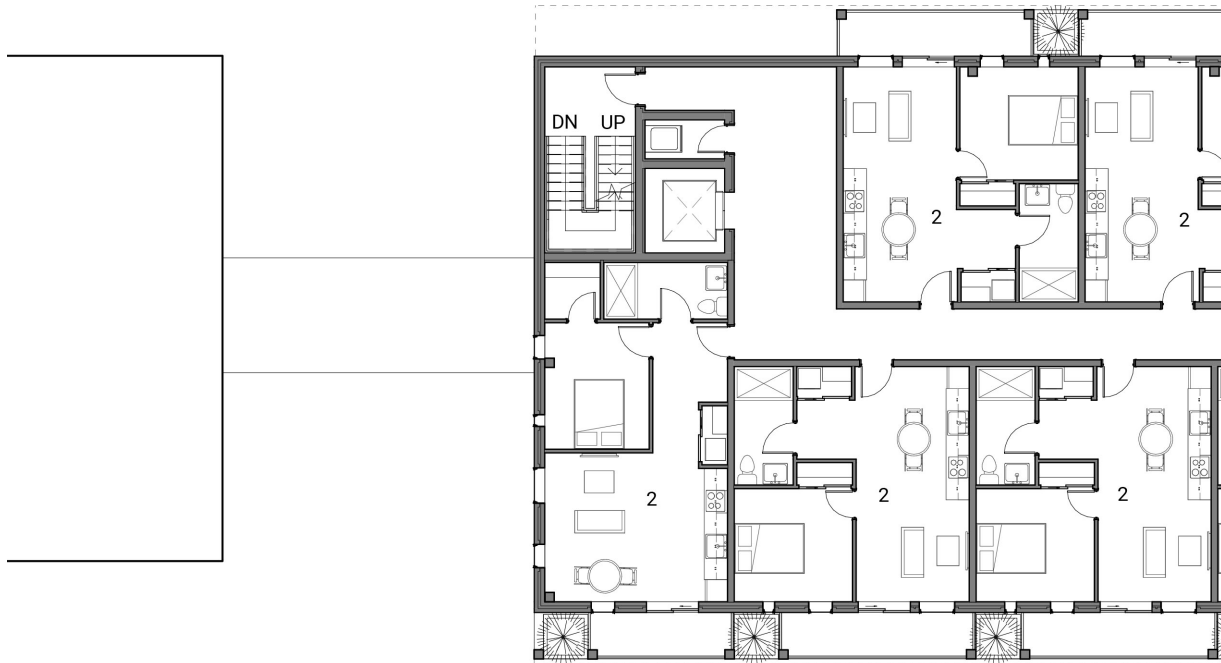
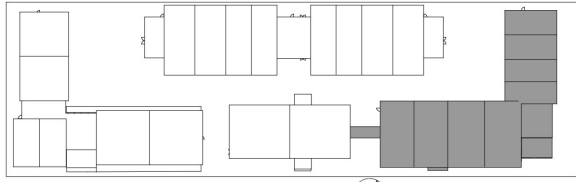




Figure 4.23. Building C: One-Bedroom Residence-Second Floor Plan | Scale: 1:200.

The second to fourth floor of Building C contains one-bedroom apartments for autonomous individuals. Additionally, there is a lounge space on every floor for socializing or meeting visitors. This plan follows a traditional senior housing scheme to provide housing for older adults who wish to live alone but desire to be in a community to prevent the isolation or loneliness experienced at a seniors' home.



Building C - Level 3 Scale 1:200

- 1. Lounge Area
- 2. One Bedroom Unit

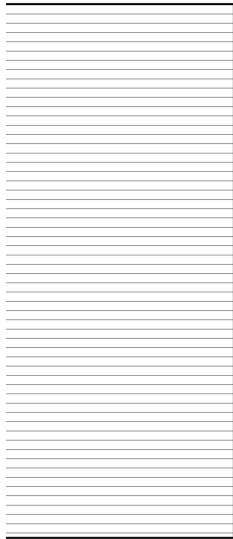
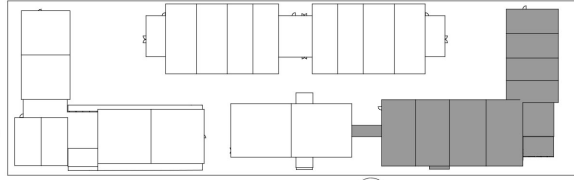




Figure 4.24. Building C: One-Bedroom Residence-Third Floor Plan | Scale: 1:200.

Similar to the second floor, there are two main areas to sit and interact with others, one facing towards the pedestrian walkway and another at the corner of the building. The provision of seating areas on every floor is essential for the thesis and design to encourage residents to leave their rooms and engage with the community.



Building C - Level 4 Scale 1:200

- 1. Lounge Area
- 2. One Bedroom Unit

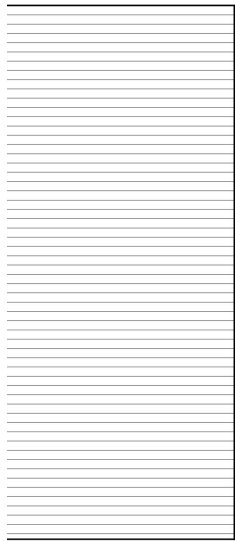
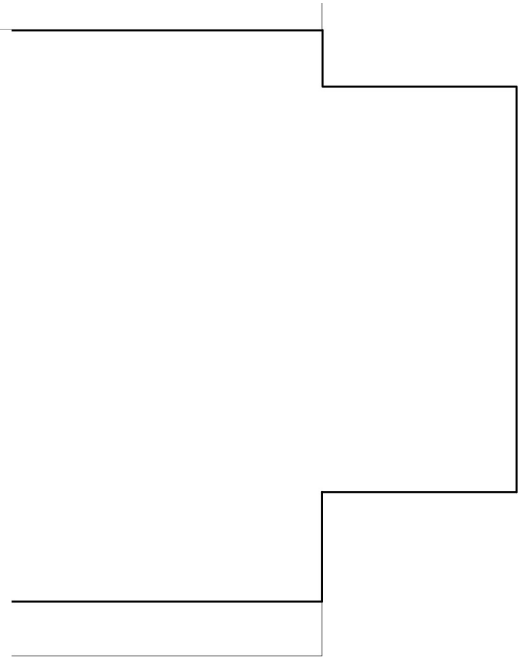




Figure 4.25. Building C: One-Bedroom Residence-Fourth Floor Plan | Scale: 1:200.

Looking at the fourth floor, the purpose of this floor plan is to demonstrate how the balcony and unit layouts change to create a dynamic green facade on the exterior. This change enhances the overall design by providing additional greenery for both aesthetic and health purposes, as well as creating a division between the balconies for semi-privacy.









Figure 4.26. View looking towards community hub.

Looking at the pedestrian walkway from Building C towards the Community Hub, it is evident that the project provides many opportunities for interaction. There are benches, seating, or even spaces for communicating from one's balcony. Additionally, the mid-rise scale of the project offers a human level, ensuring that the buildings do not feel like towers overshadowing each other. Instead, there is ample light to enrich and liven the space. The image depicts various individuals of different ages and backgrounds to illustrate how the design could potentially look and promote a sense of community.









Figure 4.27. View from the laneway looking towards Building C: One-Bedroom Residence.

Something critical to this project is ensuring that the design does not merely sit on the site but also integrates itself. As a result, the pedestrian walkways open into the laneway, allowing other individuals, such as the rowhouse residents, to access the amenities and community hub. Therefore, it was important to present a viewpoint from the laneway to understand how the site is open and welcoming to the entire neighbourhood. When designing the facades, this became a crucial factor to ensure that the elevations were not dark, blank walls but promoted vitality to encourage a sense of community.

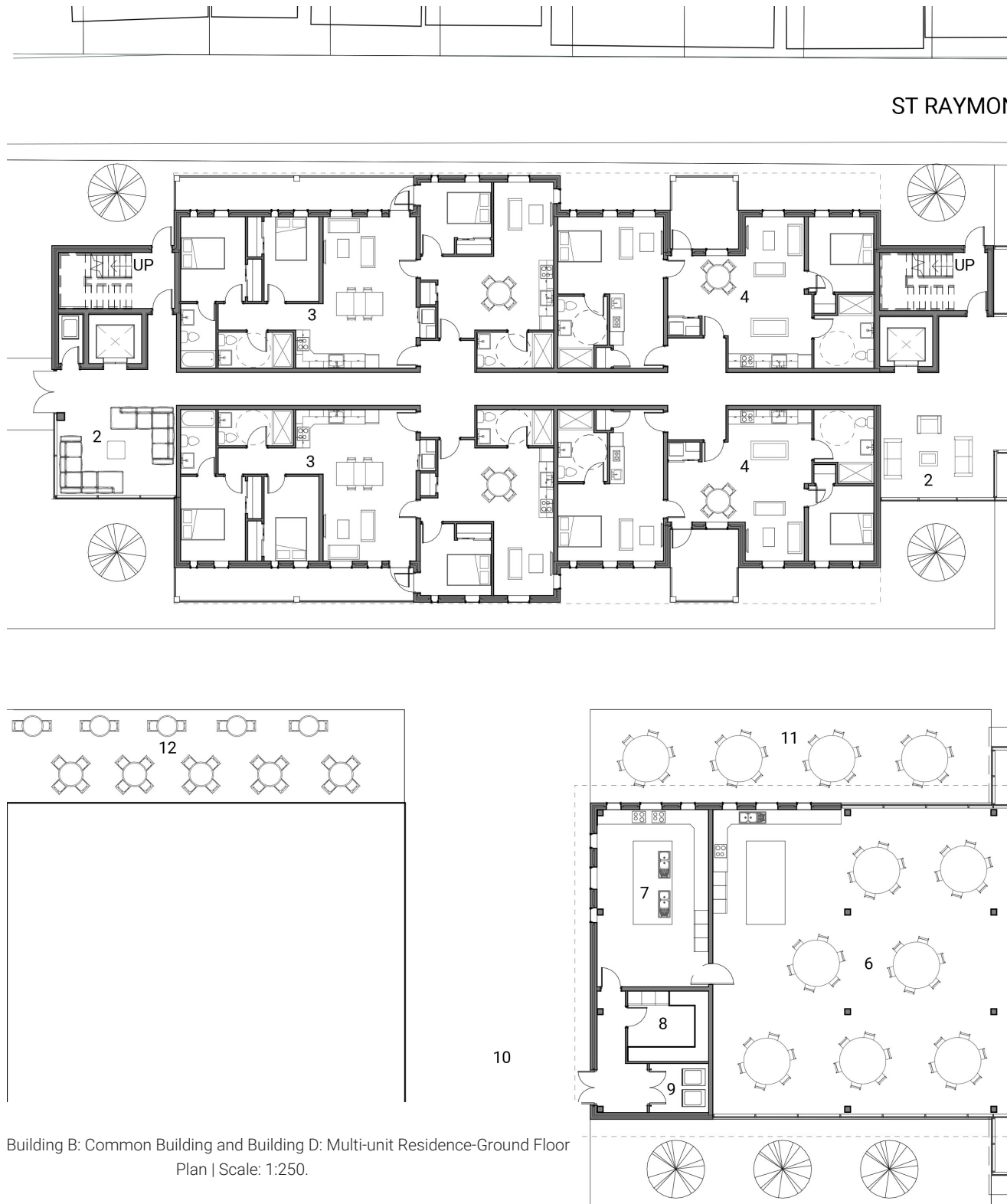
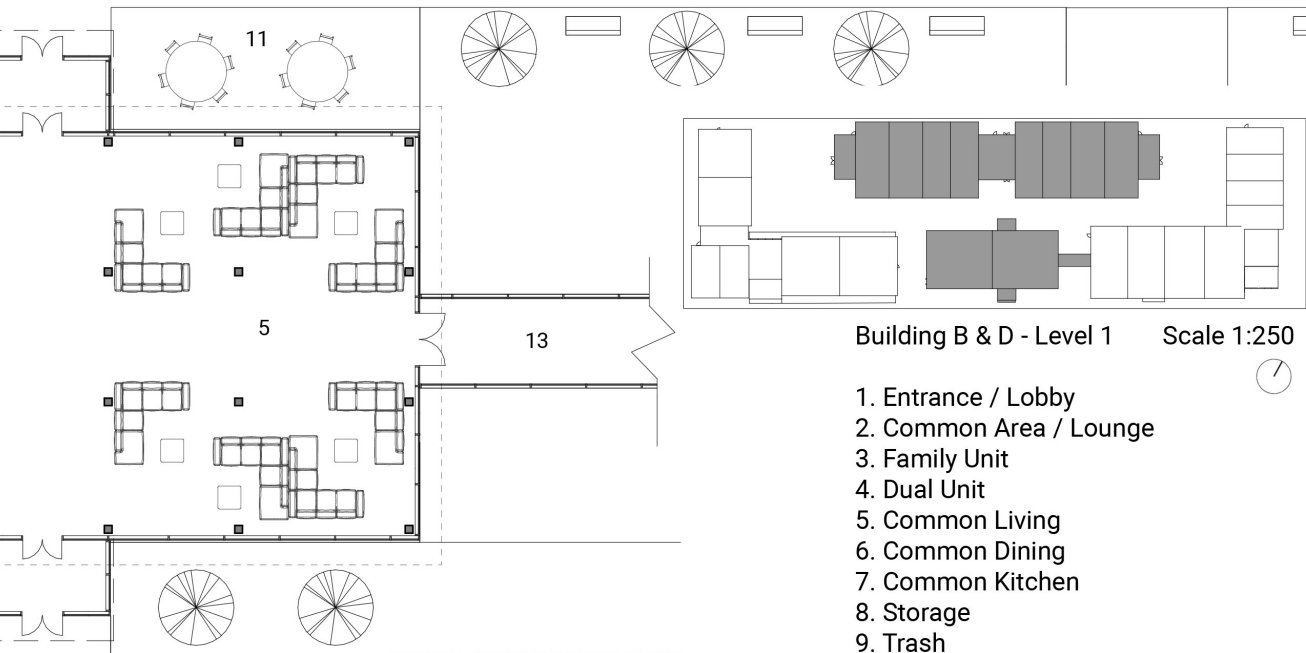


Figure 4.28. Building B: Common Building and Building D: Multi-unit Residence-Ground Floor Plan | Scale: 1:250.

The common building is at the centre of the project and is directly aligned with Building D, connected to Building C by a covered walkway for wheelchair access and protection from the elements. The building's location underscores its importance to the overall design and community, serving as a central gathering place where residents can come together for dinner, socializing, or various activities, similar to a cohousing project.



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Building B & D - Level 1 Scale 1:250

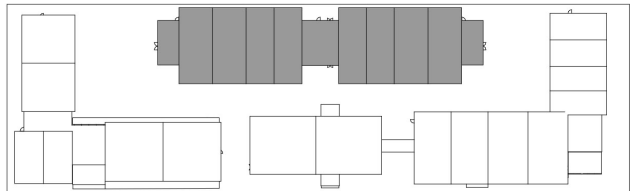
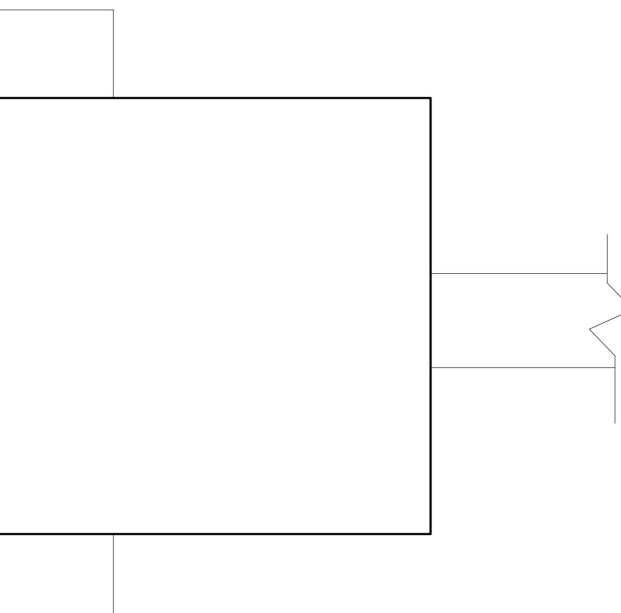
- 1. Entrance / Lobby
- 2. Common Area / Lounge
- 3. Family Unit
- 4. Dual Unit
- 5. Common Living
- 6. Common Dining
- 7. Common Kitchen
- 8. Storage
- 9. Trash
- 10. Entrance / Loading
- 11. Outdoor Seating
- 12. Cafe Seating
- 13. Path to Building C

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Figure 4.29. Building D: Multi-unit Residence-Second-Fourth Floor Plan | Scale: 1:250.

The floor plan illustrates the arrangement of the second to fourth floors of Building D. The building is divided into three blocks. The first block on either side of the building contains lounge spaces, and the second block contains units with two family units and two dual units in each block. The third block in the middle has larger lounge spaces. The design aims to be straightforward for easy wayfinding and accessibility while still providing areas for interaction and socialization. The building follows the same pattern as the overall project, featuring a clear walkway in the centre and units on either side, creating a consistent architectural language similar to the pedestrian walkway.



Building D - Level 2-4      Scale 1:250

- 1. Common Area / Lounge
- 2. Family Unit
- 3. Dual Unit



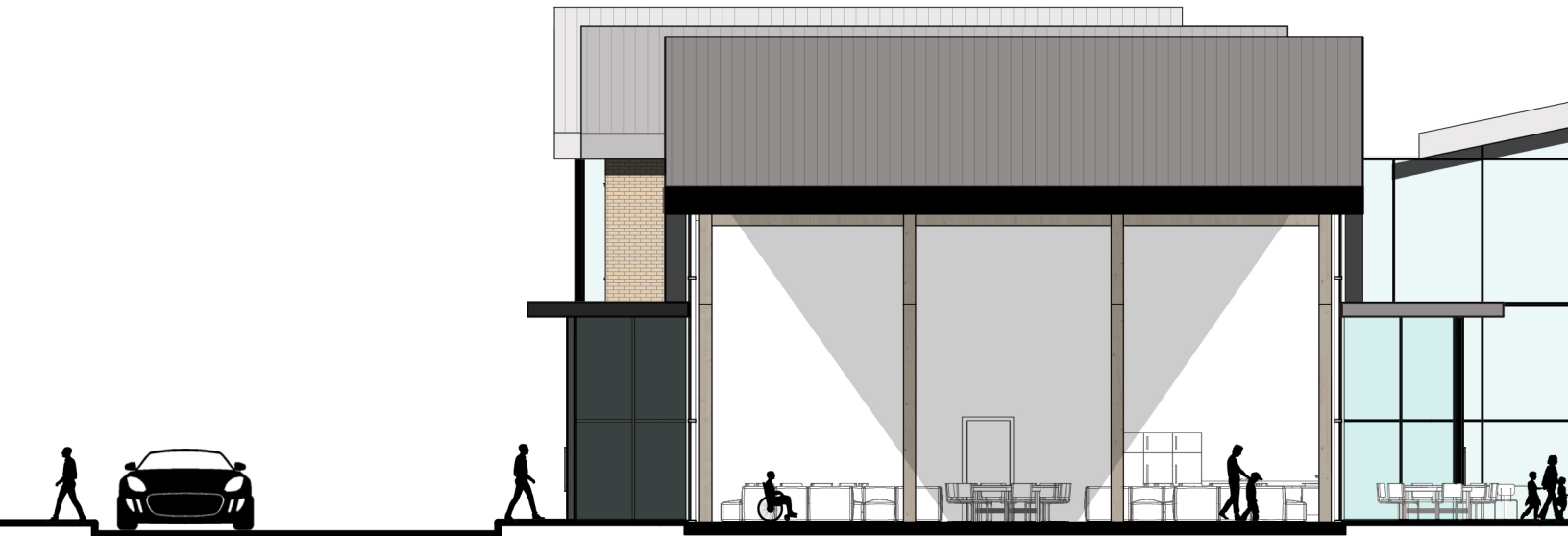
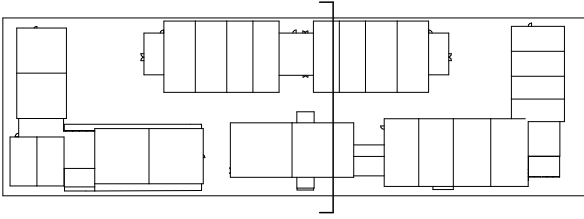






Figure 4.30. Section cutting through multi-unit residence and common building | Scale: 1:250.

This section cuts through the common building and the multi-unit building. The purpose of this drawing is to illustrate the relationship between the buildings, the pedestrian walkway, and the site. As seen from the section, there is a pattern of having a street between buildings, whether it be Barton Avenue, the laneway, or the pedestrian walkway. There are various pathways and access points to promote walkability and movement. This image also demonstrates how the pedestrian walkway allows the two buildings to access light, even though they are near each other, contributing to making the design bright and welcoming.







Figure 4.31. View inside Building B: Common Building.

The common building consists of a program very similar to cohousing, allowing residents to come together and eat or socialize. This image demonstrates how this can be achieved, whether individuals are sitting together on the couch and working or different age groups are passing through the building. The image starts to show how the residents can come together in this building as a hub for all of them. The building is a large open space to provide ample light and warmth, making it feel welcoming and inviting to the residents to encourage frequent gatherings.









Figure 4.32. View looking towards daycare and community garden.

The view towards the daycare, community garden, and basketball and pickleball courts illustrates how different generations can come together and interact with each other. For instance, older adults are volunteering at the daycare and playing with the kids, or women and children are maintaining the garden. This thesis aims to encourage interaction between generations and promote employment and volunteerism, as seen in this image. It also helps to understand the outdoor amenities the design provides and how they could be used.

## 4.4 Design: The Unit

At the scale of the unit, there are seven different unit types. Type 1 and 2 are located in Building C - The One-Bedroom Residence. They are the assisted living units that are located on the ground floor; type 1 consists of a single bed, while type 2 has two beds. Type 3, also located on the ground floor in Building C, comprises the staff units, which are studio apartments with a small kitchenette, living room, and bathroom. Type 4 and 5, located in Building C on levels 2 to 4, are independent one-bedroom units that include a full kitchen, barrier-free bathroom, bedroom, and living room. Type 6 represents the dual units located in Building D - Multi-Unit Residence and includes a studio apartment connected to a one-bedroom. The studio apartments have a small kitchenette, barrier-free bathroom, bedroom, and living room, while the one-bedroom units include a full kitchen, barrier-free bathroom, bedroom, and living room. Finally, Type 7 represents the family units, also located in Building D, and includes a two-bedroom unit connected to a one-bedroom unit. The two-bedroom unit has a full kitchen, one bathroom, one barrier-free bathroom, a living room, and two bedrooms, while the one bedroom includes a full kitchen, a barrier-free bathroom, a living room, and a bedroom.

The units vary in size to allow for variation and living options depending on the needs and preferences of older adults. Additionally, areas like dining rooms and living rooms adhere to the minimum sizes according to the Ontario Building Code to encourage residents to socialize and interact with others in the various community and lounge spaces.

The following images in this chapter will break down each unit and type. The images feature the unit plan at a 1:75 scale to understand the unit layout and flow in each unit. Furthermore, the unit axonometrics are shown on the right to help visualize the room and spatial arrangements, similar to Chapter 2. The axonometrics are color-coded to highlight where the bedroom, kitchen, living, and dining rooms are located, similar to Chapter 2. Overall, these drawings are important to understand how the traditional unit looks compared to the proposed design. For example, type 1 and type 2 are similar to long-term care home units where the unit only has a bedroom, whereas most of the other units are similar to an independent bedroom unit. These images are meant to help break down the overall design to better understand how residents will be living in the Village and the unit features to provide autonomy and connection between residents.





## Type 1 and Type 2: Assisted Living Units

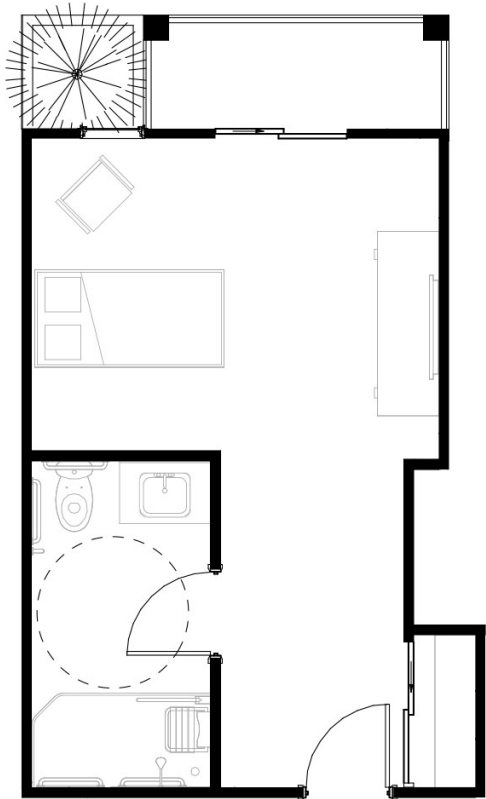


Figure 4.33. Unit Type 1 Floor Plan | Scale: 1:75.

Type 1: One Bedroom Assisted Living

Size: 28.21m<sup>2</sup> / 303.6 SF

Location: Building C - Ground Floor

Total Number: 4 Units

Occupant: Individuals needing care

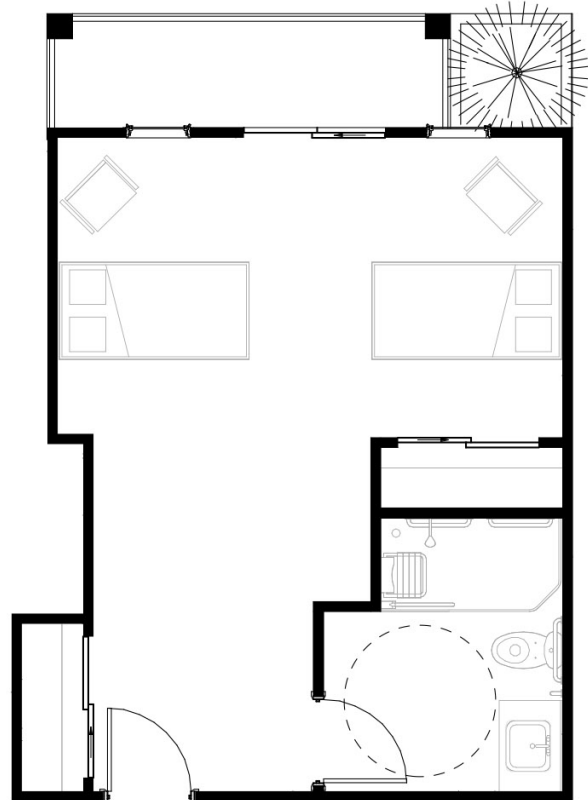


Figure 4.34. Unit Type 2 Floor Plan | Scale: 1:75.

Type 2: Two Bedroom Assisted Living

Size: 34.88 m<sup>2</sup> / 375.5 SF

Location: Building C - Ground Floor

Total Number: 6 Units

Occupant: Individuals needing care

- Bedroom
- Living
- Kitchen
- Dining

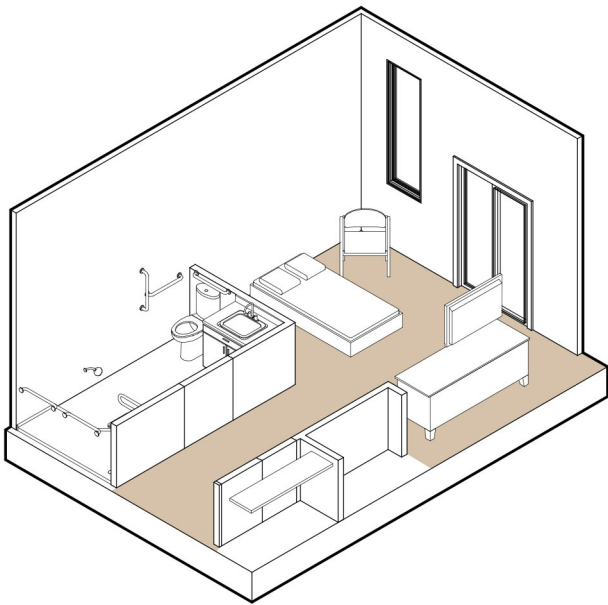


Figure 4.35. Unit Type 1 Axonometric.

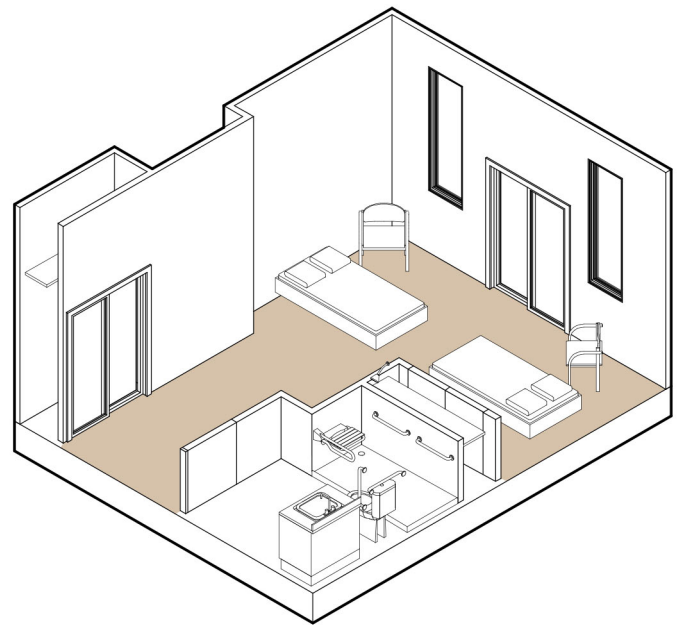


Figure 4.36. Unit Type 2 Axonometric.

## Type 3: Staff Unit

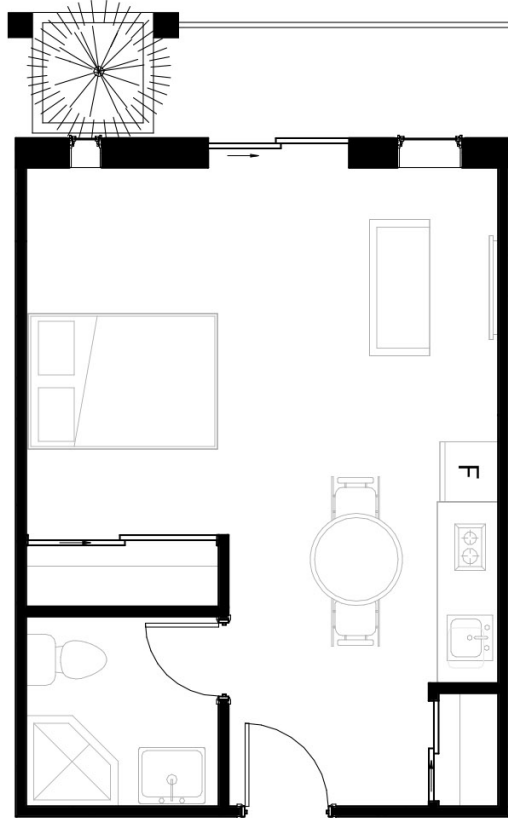


Figure 4.37. Unit Type 3 Floor Plan | Scale: 1:75.

### Type 3: Staff Unit

Size: 32.89m<sup>2</sup> / 354.0 SF

Location: Building C - Ground Floor

Total Number: 2 Units

Occupant: Nurses, PSW, etc.

- Bedroom
- Living
- Kitchen
- Dining

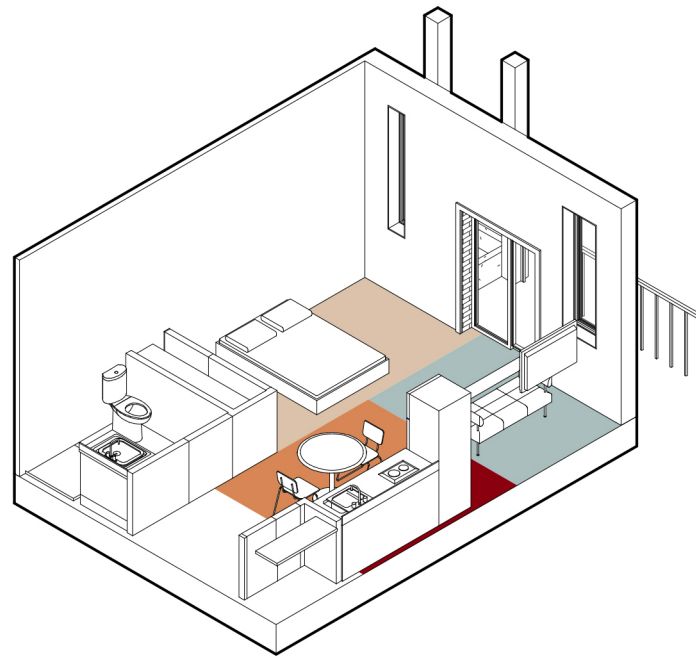


Figure 4.38. Unit Type 3 Axonometric.

## Type 4 and Type 5: One-Bedroom Unit

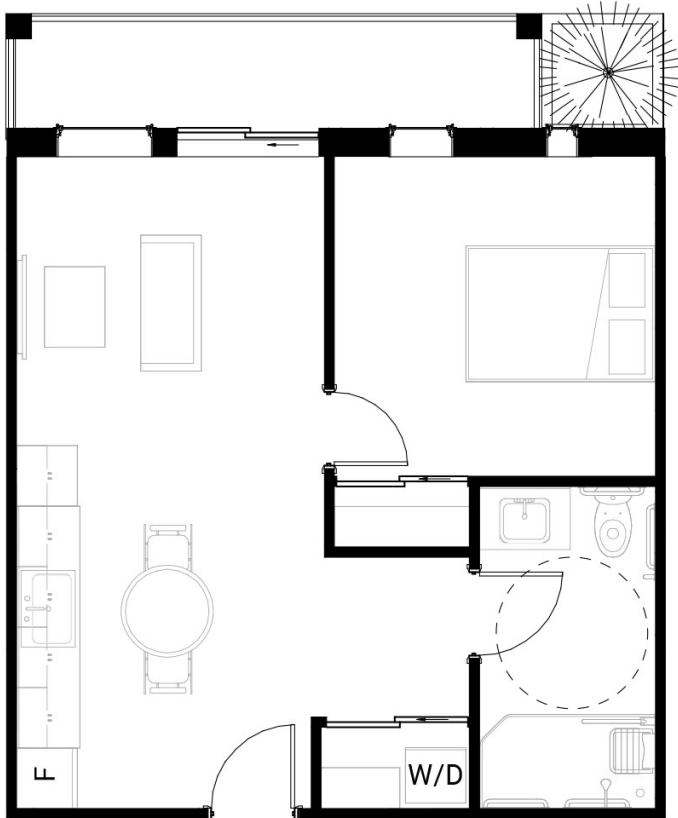


Figure 4.39. Unit Type 4 Floor Plan | Scale: 1:75.

### Type 4: One-Bedroom Unit

Size: 44.77m<sup>2</sup> / 481.9 SF

Location: Building C - Level 2-4

Total Number / Floor: 12 Units / Floor

Total Number: 36 Units

Occupant: Individuals wanting to maintain their autonomy

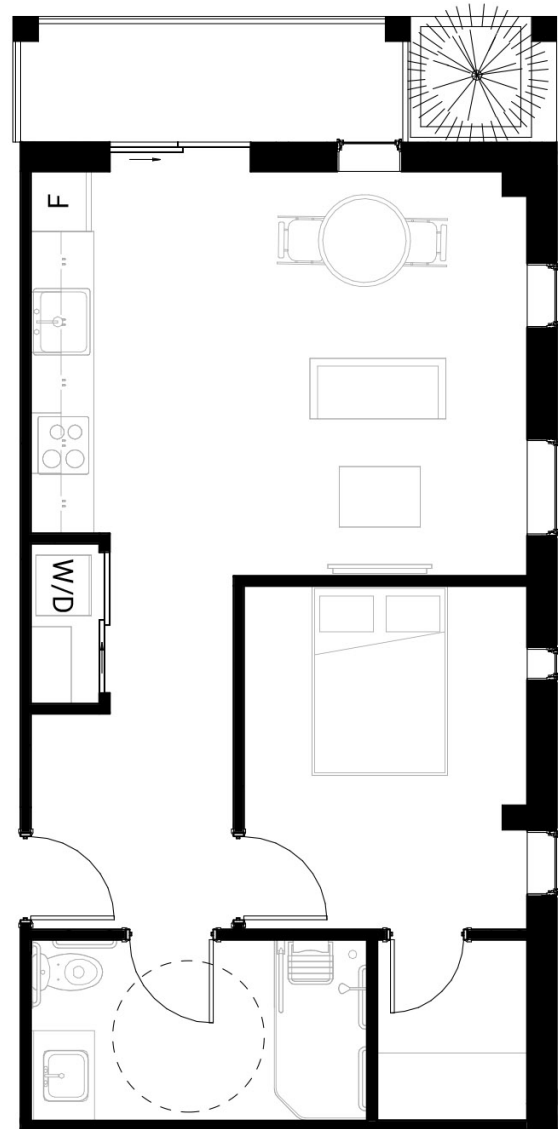


Figure 4.40. Unit Type 5 Floor Plan | Scale: 1:75.

### Type 5: One-Bedroom Corner Unit

Size: 52.16 m<sup>2</sup> / 561.5 SF

Location: Building C - 2-4

Total Number / Floor: 1 Units / Floor

Total Number: 3 Units

Occupant: Individuals wanting to maintain their autonomy



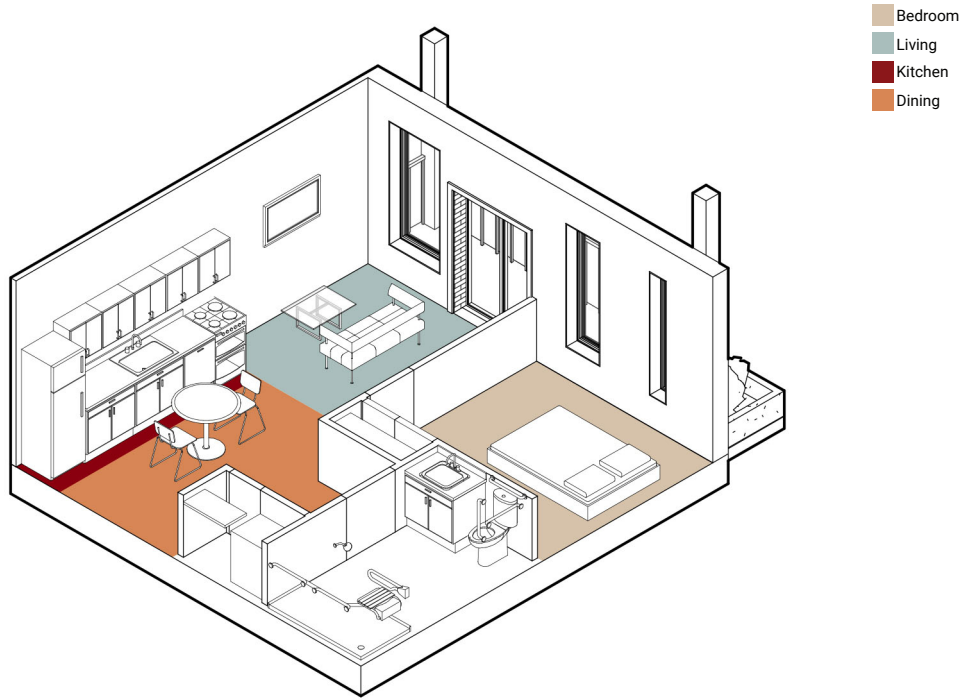


Figure 4.41. Unit Type 4 Axonometric.

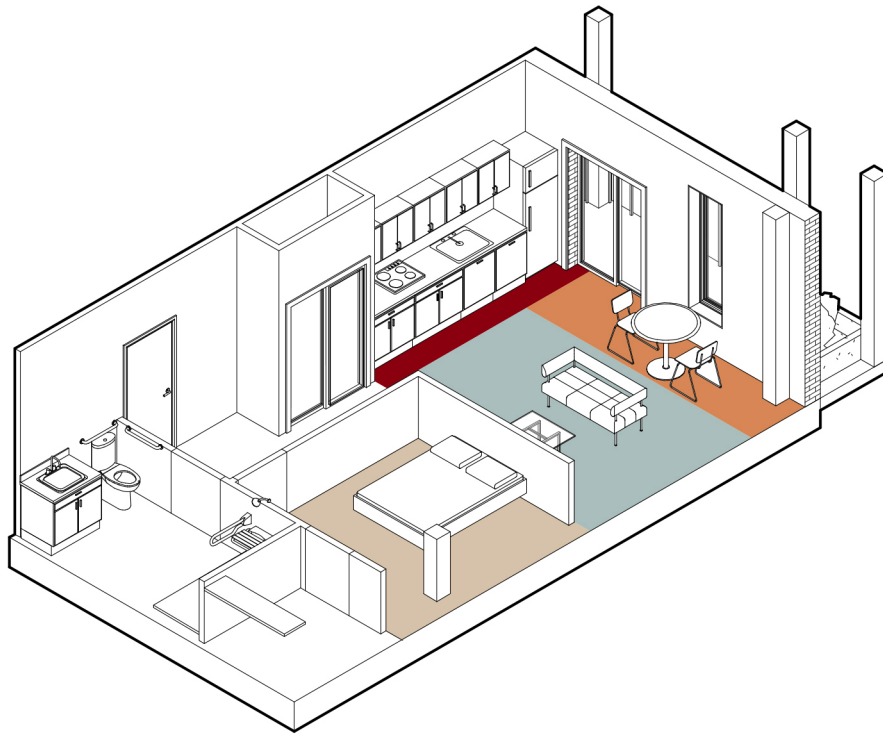


Figure 4.42. Unit Type 5 Axonometric.

## Type 6: Dual-Unit

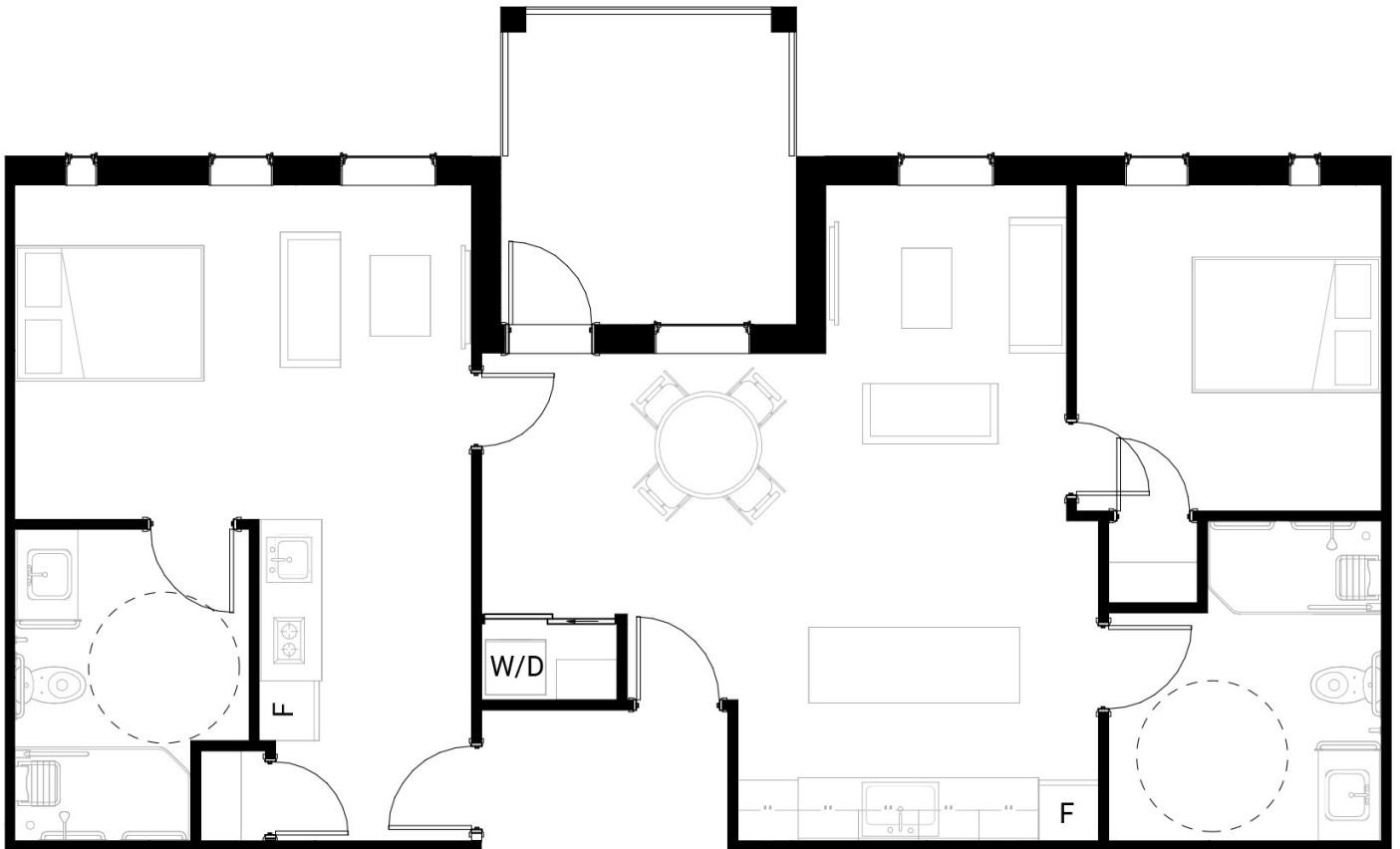


Figure 4.43. Unit Type 6 Floor Plan | Scale: 1:75.

### Type 6: Dual-Unit

Size: 87.09m<sup>2</sup> / 937.4 SF

Location: Building D - Level 1-4

Total Number / Floor: 4 Units / Floor

Total Number: 16 Units Occupant:

Occupant: Older adult with roommate  
(i.e. student, younger couple, another  
older adult)

- Bedroom
- Living
- Kitchen
- Dining

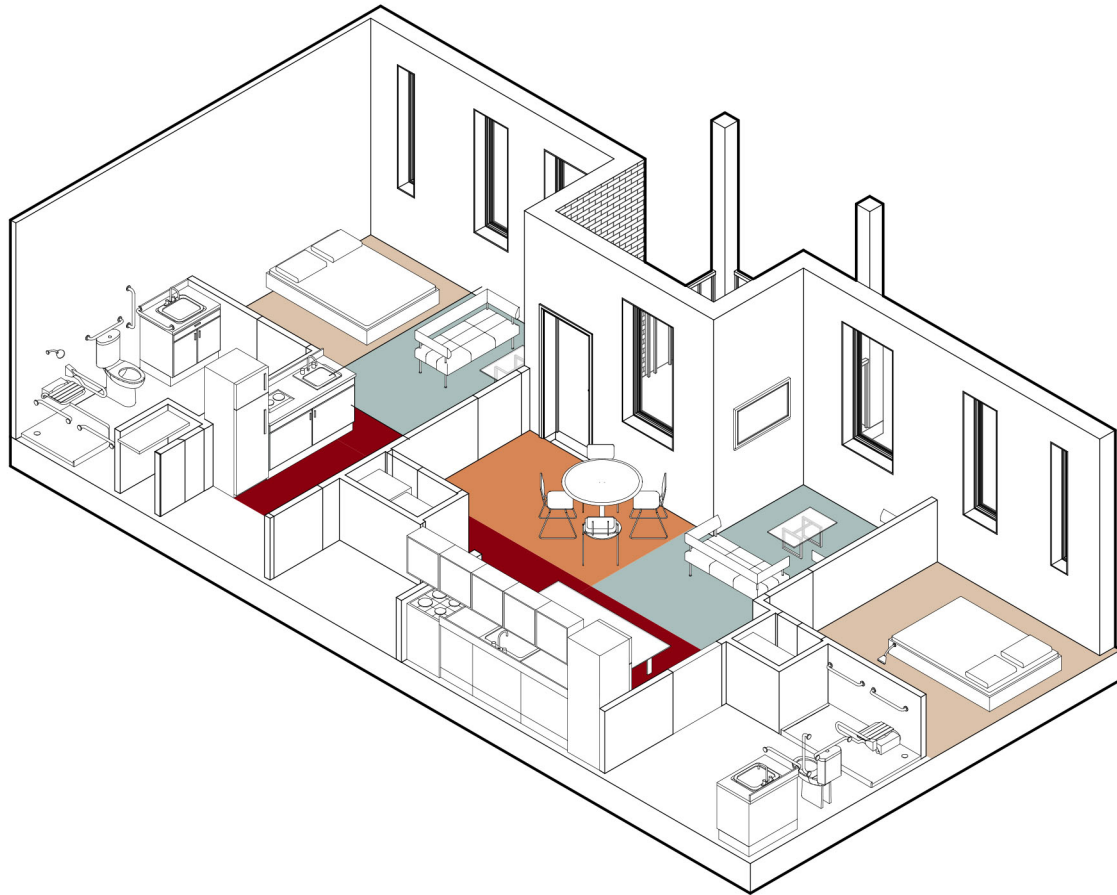


Figure 4.44. Unit Type 6 Axonometric.

## Type 7: Family-Unit

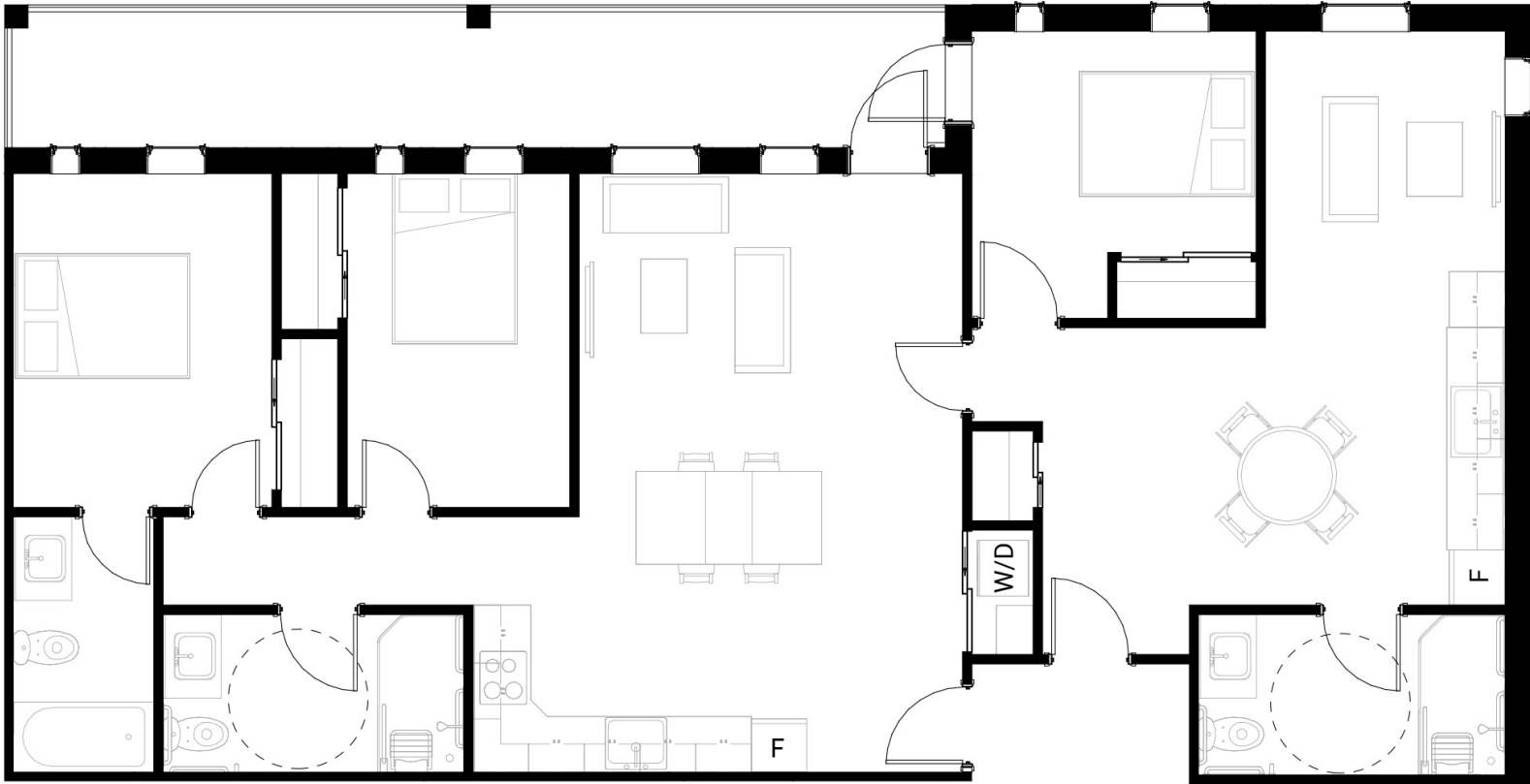


Figure 4.45. Unit Type 7 Floor Plan | Scale: 1:75.

### Type 7: Family-Unit

Size: 119.29m<sup>2</sup> / 1284.0 SF

Location: Building D - Level 1-4

Total Number / Floor: 4 Units / Floor

Total Number: 16 Units

Occupant: Multi-generational families

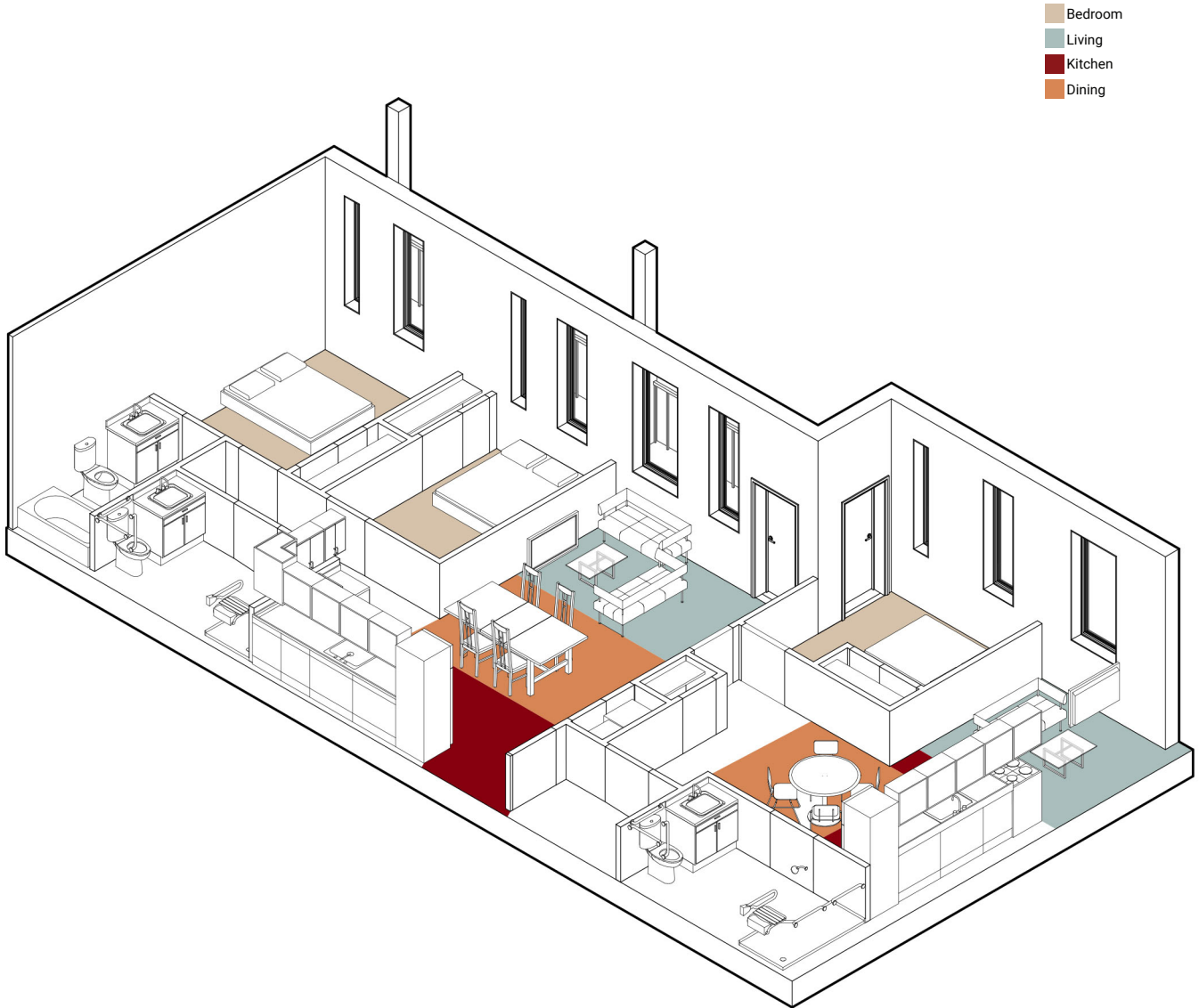


Figure 4.46. Unit Type 7 Axonometric.



## 4.5 People: Narratives

The following images illustrate how a family can evolve and grow in the family units over time. The narrative follows Emma and Oliver as their family grows and adapts to the unit.

The image to the right is a diagrammatic breakdown of the unit configurations over time. It demonstrates who would reside in the units as individuals age and wish to age in place or transition in place. The family unit type is broken down into two units (the one-bedroom and the two-bedroom) to show how ownership would be passed on over time, while the type of residents in the dual units would potentially stay the same. This is important because it breaks down how the units would be used to promote an intergenerational community and encourage interaction between the generations. Furthermore, it shows how the design can evolve with the residents.

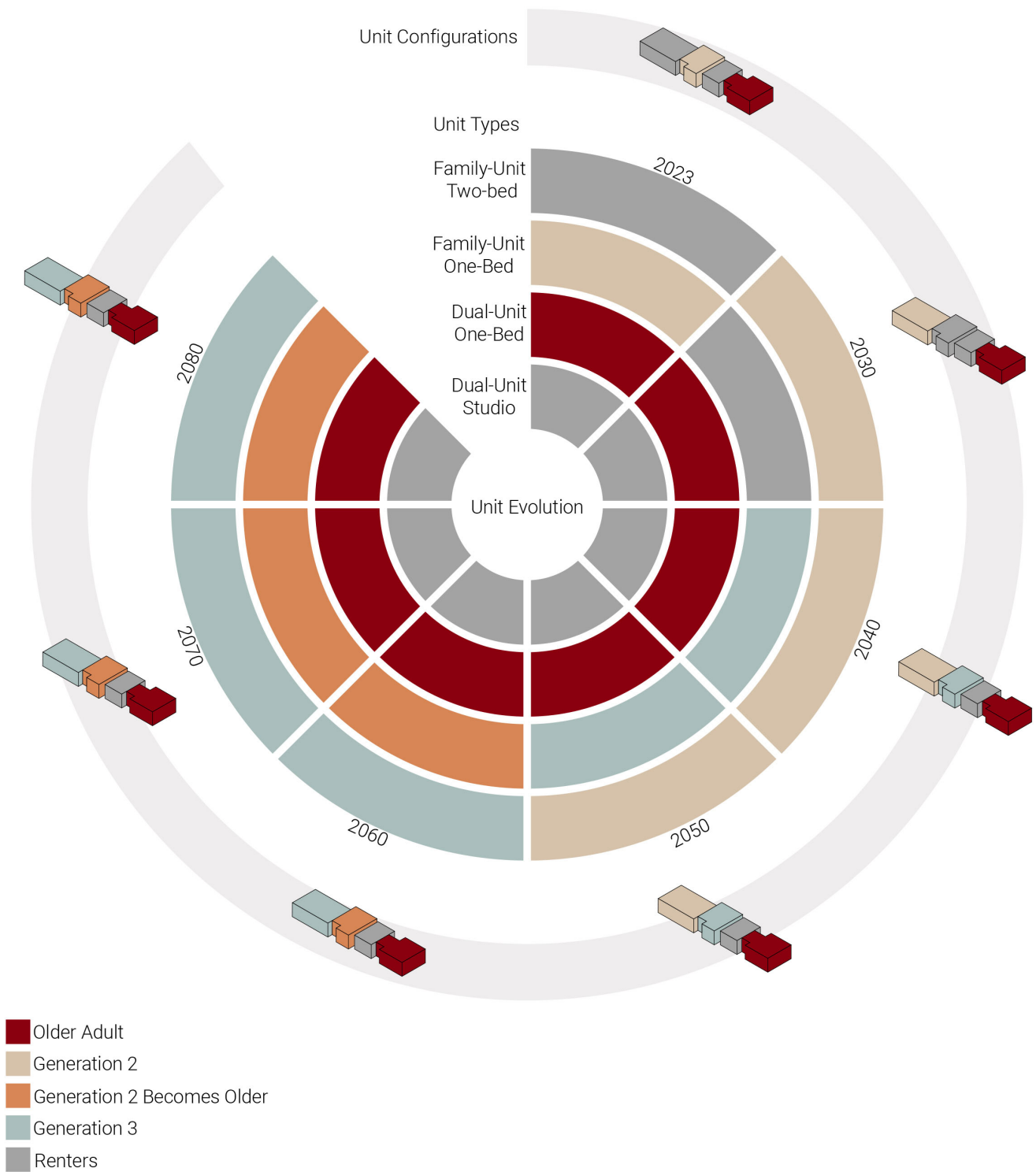


Figure 4.47. A timeline showing how the units evolve as people age and families grow.

To begin, in 2023, Emma and Oliver move into a one-bedroom unit and rent out the connected two-bedroom unit to generate income.

The image illustrates that when Emma and Oliver initially move into the unit, they do not require a lot of space. Therefore, the blacked-out two-bedroom apartment shows that the unit would not be utilized by the couple but instead rented out to others. This is important because this test situation is meant to demonstrate how a family can evolve in these units and the village without having to worry about moving somewhere new in the future. Therefore, the young couple would own the units for the future when their family grows, portraying how residents do not have to be a certain age when they move in, unlike traditional senior housing, but can transition in place.

2023

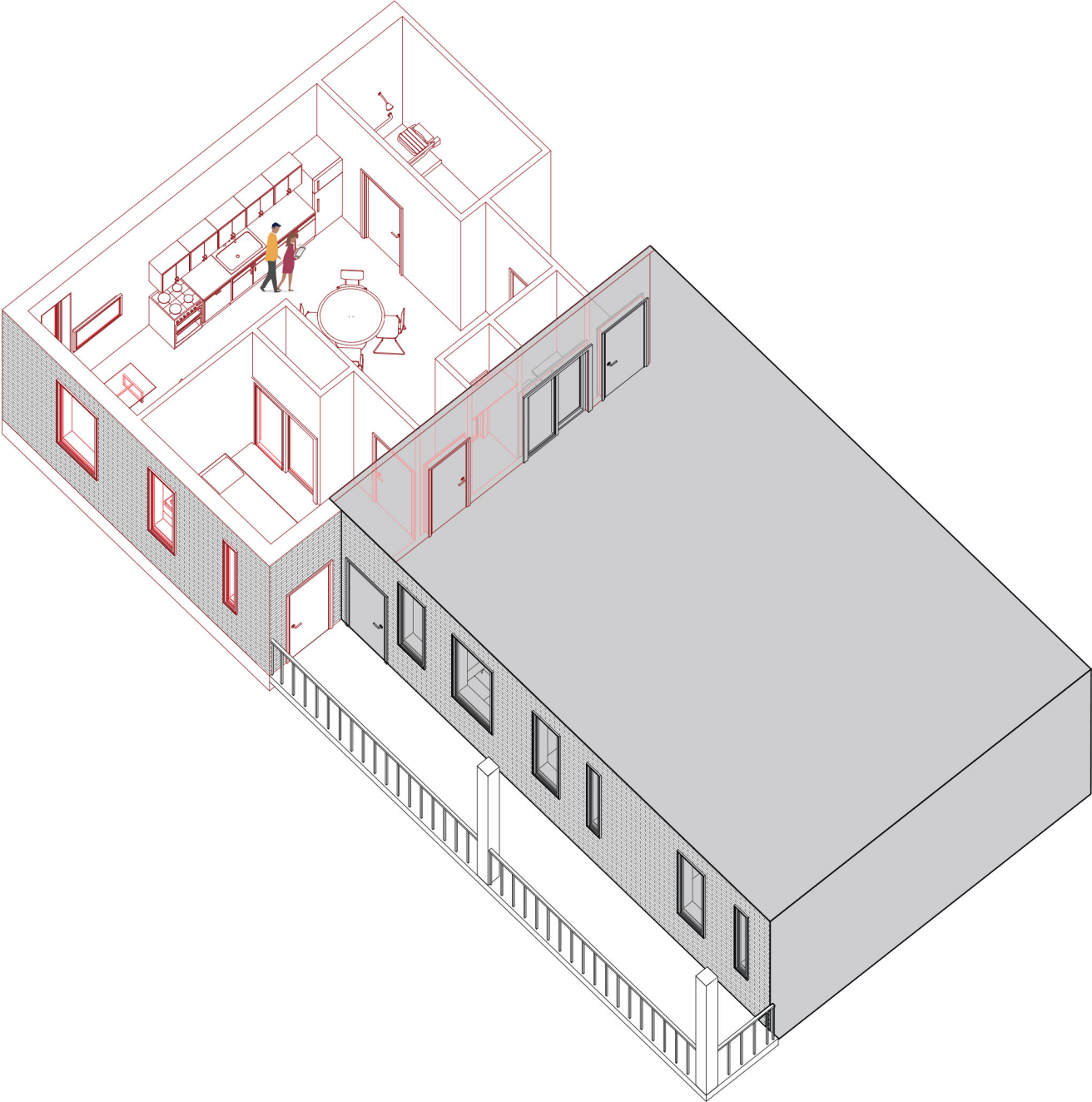
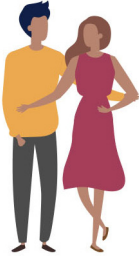


Figure 4.48. Emma and Oliver live in the one-bedroom unit.

In 2030, Emma and Oliver expanded their family by welcoming Sophia, resulting in their move into the two-bedroom unit and the decision to rent out the one-bedroom instead.

In the next phase of life, the image shows a reversal of the previous stage, where Emma and Oliver needed more space due to their growing family, so they moved into the two-bedroom unit and chose to rent out the one-bedroom apartment instead. This allows the family to have a steady flow of income for several years while also maintaining ownership of the units for their future years as they grow older. This point is critical because it shows the beginning of how a family can evolve and grow in their home, adjusting to their needs by easily moving to the next unit to accommodate the family. It also highlights the realization of the unit layout and how it could potentially work in the overall design.



2030

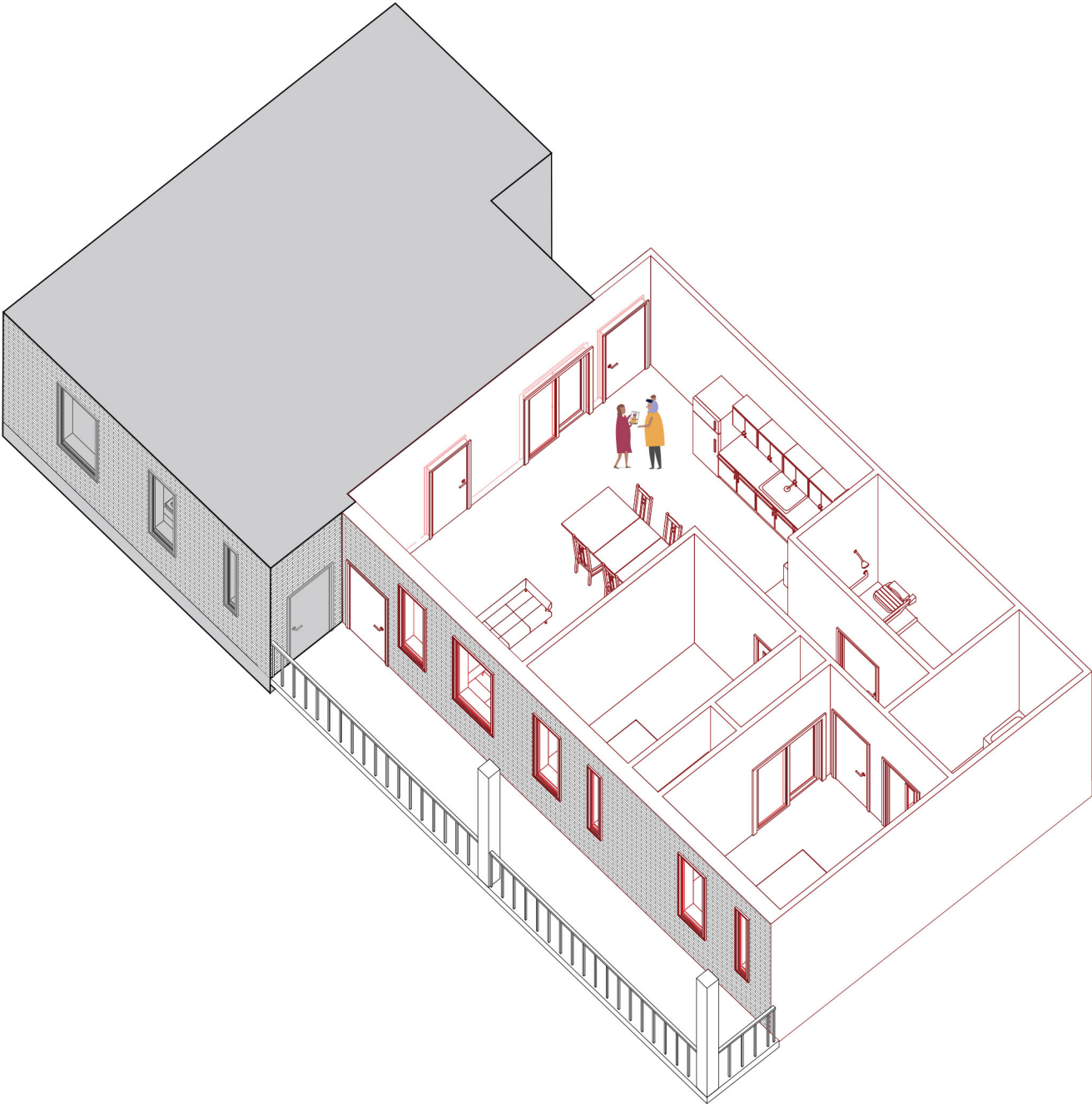


Figure 4.49. Emma and Oliver move into the two-bedroom when they welcome Sophia.

In 2048, Sophia, now eighteen years old, wanted her privacy, so she moved into the one-bedroom apartment while remaining close to her parents. The door is left open to allow easy access to both units and act as a three-bedroom unit.

The image highlights how, at this point, both units are being fully utilized by the family, with the parents in one unit and their adult child in the other. This is critical because it starts to show how different generations can live together in close proximity while still maintaining their autonomy and privacy. It demonstrates how the overall design can bring together different generations to interact with each other and live together in a common place, preventing isolation and loneliness in the future.

2048

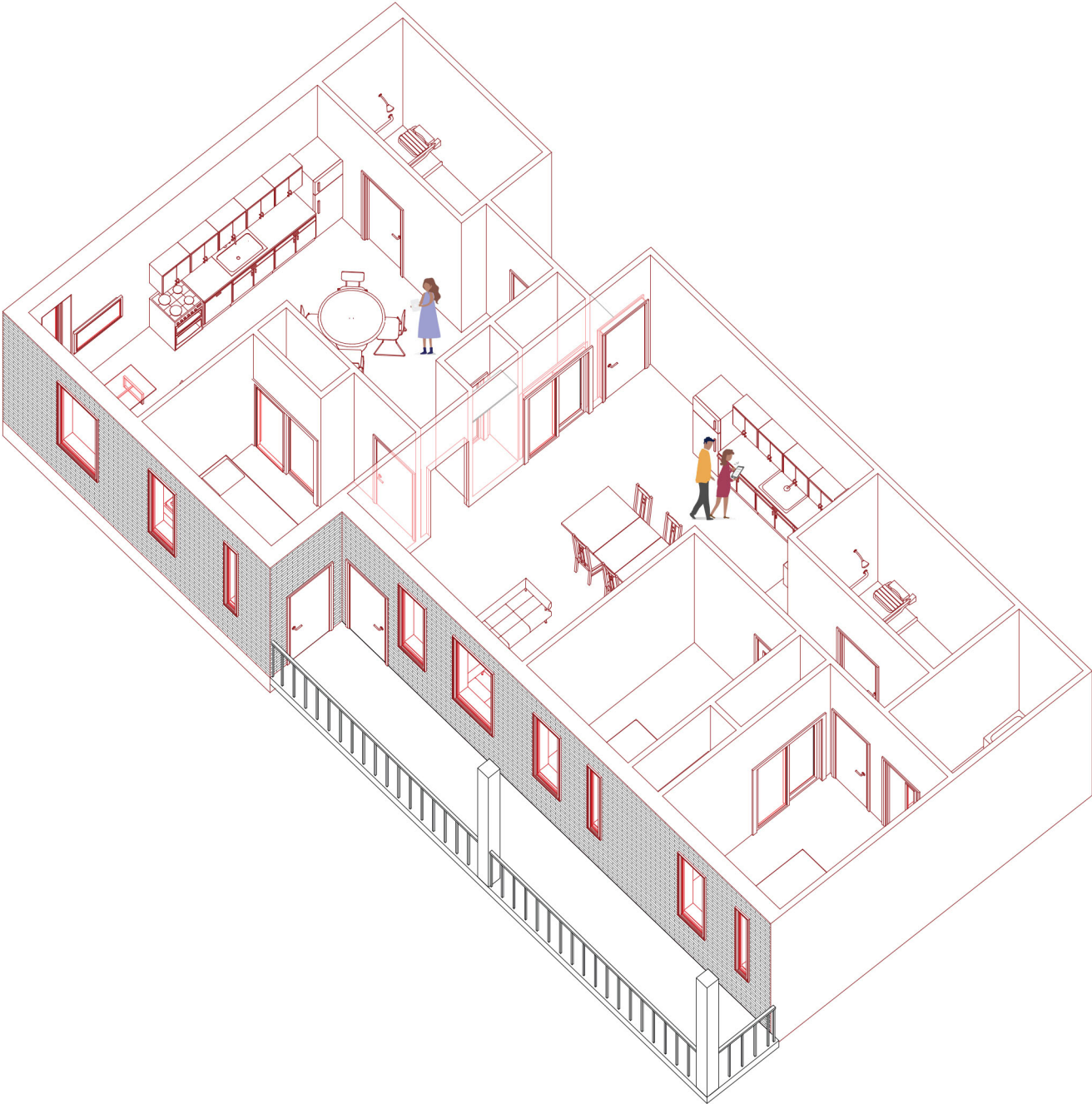


Figure 4.50. Sophia lives in the one-bedroom unit while Emma and Oliver remain in the two-bedroom unit.

Moving forward 12 years, Emma and Oliver are now older and want to downsize to the smaller one-bedroom apartment, while Sophia is now married and expecting her first child, resulting in her and her husband moving into the two-bedroom unit. The door is now closed to allow more privacy for both units and limit movement between the two units.

From the image, it can be seen that both units are continually being used; however, the door was added between the units to allow both couples privacy. This way, both units can still feel autonomous while remaining connected so the families can get together whenever they wish. This is important to the overall design because it demonstrates how, in the multi-units, there can be a sense of privacy and semi-privacy maintained depending on preferences and the level of interaction wanted between the residents.

2060

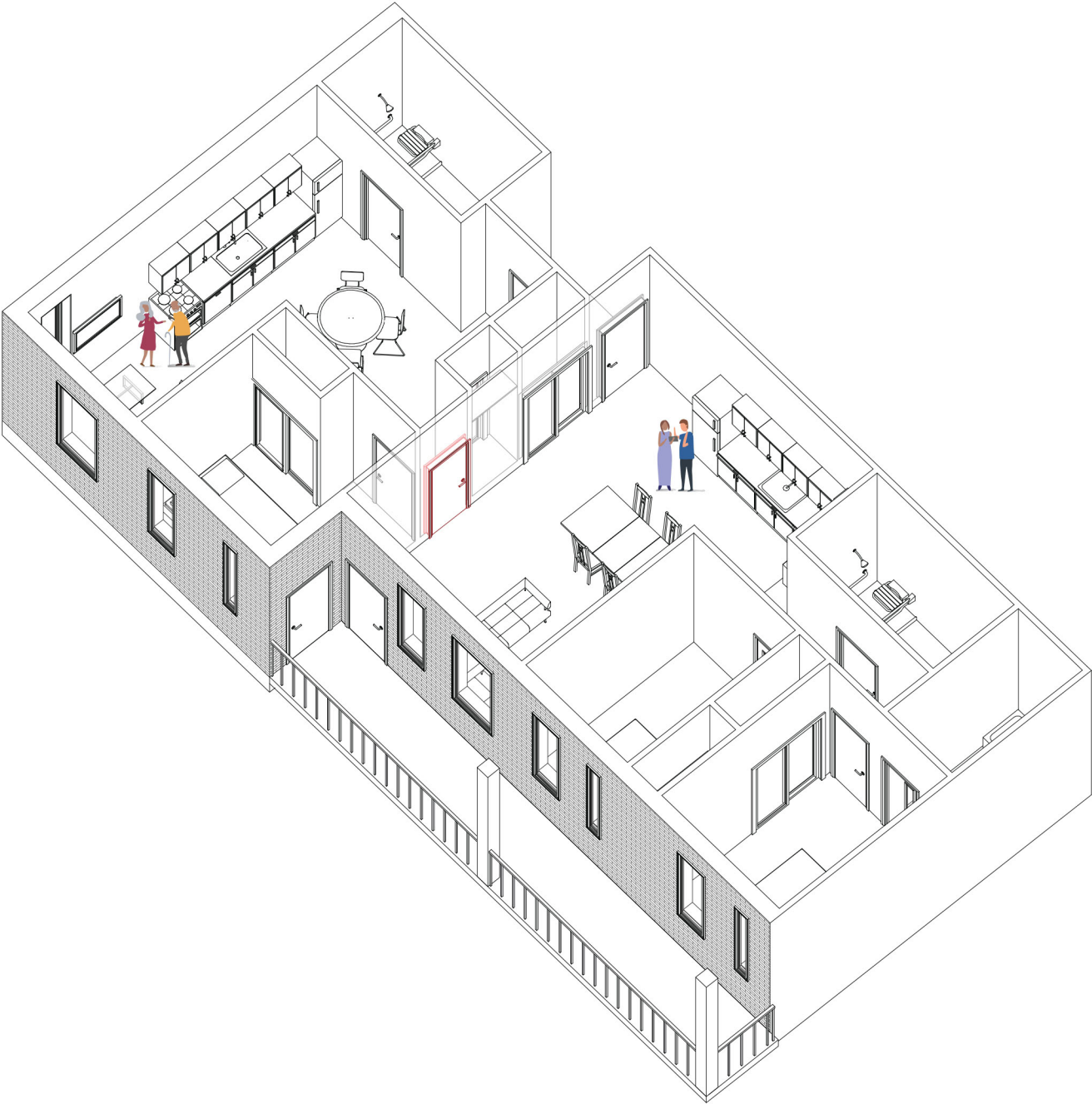


Figure 4.51. Sophia and her husband now live in the two-bedroom unit while Emma and Oliver live in the one-bedroom.



Fifteen years later, Sophia and her husband reside in the two-bedroom unit with their two kids, while Oliver transitions to the assisted living units in Building C as he requires more support. Emma continues to live in the one-bedroom apartment to be close to her grandchildren while still being able to visit Oliver every day.

In this option, Oliver requires supervision and specific support, so he chooses to live in the assisted living units in Building C where there is on-site staff to support him, knowing his family is nearby. However, there are many options and solutions for older adults in this design. For example, Oliver could choose to live at home with his wife Emma to have family help to take care of him while having an occasional nurse visit. The design lends itself to provide different options based on the needs of the individual because everyone ages differently and has different needs or requirements. As a result, the flexibility of the project allows individuals to choose how they wish to live and the type of support they receive and at what scale.

The figure demonstrates how, in the final phase, both units are lived in—Emma, the grandmother, in the one-bedroom, and her children and grandchildren in the two-bedroom—while Oliver lives in another building but is still often visited by his family. This demonstrates how the overall family unit could be used to encourage multi-generational housing in the design project and how individuals can transition in place and not have to worry about being isolated from friends and family. The purpose of this test was to demonstrate how someone can evolve in the Village and not worry about whether they need access to health services or care but just focus on living happily.



# CONCLUSION



This thesis seeks to understand current living options for older adults in Toronto, Ontario, and to propose an expanded solution to their shortfalls, one set in a broad urban and architectural framework. The older, plus 65, population in Canada, Ontario and the City of Toronto is growing and is predicted to overtake the younger generation in numbers in the next decade. Therefore, more consideration should be made towards how we can house these older adults and to provide community-based resources for their good life. Presently, many older adults want to continue living at home and seek to age in place. Though meant to support family life, many single-family homes, however, were not specifically built with the consideration of older adults' physical and psychological needs in mind. As a result, it can be difficult to move or adapt older homes to ever-growing needs as people age in their homes. Despite the more collective living arrangements of bigger buildings, adults who choose to live in grouped arrangements like long-term care homes also face similar problems of loneliness and social isolation. Furthermore, treatment of care can be variable and even subpar in some homes as they fall between the cracks in care, places where, as discovered in the COVID pandemic, older adults can be left in unorganized and unhygienic conditions. With these issues in mind, this thesis set out to understand what the living framework for older adults might be, and what other solutions exist. The second part of the thesis seeks to propose in a demonstration design study of a community for older adults in a central city area in Toronto, and showing how housing for older adults can be re-imagined, to promote healthy aging, and to provide an integrated place for daily life in a broader community.

The research for this thesis first began by discussing the current housing options for older adults in Ontario, options which can be divided into five categories: aging in place, active living communities, independent living, assisted living and long-term care. As noted earlier in this work, many individuals wish to age in place, however, few homes built today or as a legacy from the past are adapted to the growing needs of older adults. Furthermore, when analyzing typical solutions such as active living communities, there are many different housing options offered, and in a variety of building types. Home types vary with examples such as bungalows, townhouses or apartments that offer more normative living options with some support and recreational services on site. Active living communities are a great option for individuals who are still mobile, personally healthy and wish to do daily activities themselves, while still having the security of knowing that there is support when needed. However, as private offerings with a larger body of service offerings, they can be very costly and restrictive on visitors, limiting interaction between generations and family members in the same dwelling. As a result, although they provide ideal living environments for those who can afford the costs and are very healthy, the social interaction between others can even make these communities isolated from society at large.

Other independent living options were also examined. Unlike active living communities, where people live largely as before in their personal homes, independent living housing alternatives also provide specific social and recreational programs (but not as strenuous and active outdoors), cleaning services, food preparation and on-site healthcare in the form of nurses and regularly visiting physicians. Independent living options offer their residents more opportunities and options but, like active living communities, can be restrictive and isolated from interacting with other generations, potentially making them unideal for some. Next on the scale of care levels, assisted living provides assistance and services to older adults who require much more personal assistance and can no longer maintain their physical and intellectual autonomy. Likewise, on the scale of increasing care, long-term care homes provide 24-hour supervision and care for individuals who require complete assistance with everyday activities. Both of these latter housing options offer extensive services to those older adults who need more assistance with mobility,



medication and other physical and intellectual challenges. This situation has its problems because staff can be overworked and tired, and there have been situations where residents were misidentified or were left in problematic living conditions.<sup>1</sup> After the lessons of the COVID pandemic, more consideration and care should be taken when deciding how to house older adults because of the limitations and issues that surround the existing housing options.

Additionally, in the thesis research, this thesis looked at innovative design solutions such as intergenerational housing, senior cohousing, dementia villages, intentional elderly communities and flexible and adaptable homes. The purpose of this overview was to determine how other architects have responded to those seemingly universal issues of isolation, loneliness, and housing older adults to provide better housing options. Pairing this analysis with the previous chapters on standards and options of care helped to understand possible program and housing features that could be added to the proposed thesis design to make it successful. Lessons learned were incorporating a place for on-site daycare, healthcare, grocery and cafe services, a gym to promote physical activity and multipurpose rooms to promote recreation and continued learning. Different unit layouts were considered to provide options not just for older adults but also for their families or family members, for roommates or friends to help provide more shared living options, and opportunities for social interaction between residents depending on their preferences.

The thesis design project is located in the Christie Pits neighbourhood of the City of Toronto. In the city, there are only ten government-run long-term care homes, and there are proposals to demolish and rebuild new homes on the sites of five of these facilities. This will result in the displacement of many older adults and some of the new designs will have fewer beds than before, meaning some residents would have to be permanently relocated to another location, possibly another new facility. Many people of every generation still choose to move to the suburbs or even rural villages and areas because of the lower costs and space available. This situation, however, becomes a problem for cities and the safety of older adults. First, many cities are designed for younger adults as, up to today, have made up the greatest population cohort. As the entire Canadian population ages, however, there will be a demographic shift where there will be more older adults than younger individuals. How are cities expected to adapt to the aging population if they are only designed for younger adults?

Therefore, by placing the proposed thesis design into the context of Toronto, the aim of the thesis proposal was to begin to think about what role and place older adults have in the central city and how the city can be more welcoming to individuals who want to stay in the city. Secondly, as mentioned before, the suburbs can impose safety problems for older individuals because those more affordable suburban and rural areas are car dependent. As individuals get older it can be harder to drive, or some may have their driver's license taken which means they will struggle to get to doctors' appointments, amenities, social events or simply visiting friends and family. Furthermore, the suburbs can be unsafe because streets are much wider than in the city, making it harder to cross the street in a limited time. Likewise, more lighting and benches would need to be added in the suburbs to create safer and more accessible streets for older individuals. Cities like Toronto already have many of these issues solved, parks like Christie Pits have many benches for older adults to relax and they are well-lit and populated to make areas feel safer. In addition, access to public transportation such as the bus and subway are nearby to provide individuals with a variety of means to get around the city, and city people do not heavily rely on cars. The Christie Pits neighbourhood

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1 Brewster and News ; "Military Alleges Horrific Conditions, Abuse in Pandemic-Hit Ontario Nursing Homes."

of Toronto was chosen as the thesis design proposal site because it solved many of the problems the suburbs still face. This allows the design work to focus on the urban and building design itself and the development of the broadened community for older adults in a neighbourhood 'village' proposal.

The thesis design site is bordered by urban central Toronto streets on its sides, Barton Avenue, St. Raymond Heights, and Pendrith Lane are all typical of the closely placed homes of the single-family house neighbourhoods of the city. The site itself used to be home to an elementary school that was demolished as it aged out of its generation of post WW2 children. It thus offered an already assembled and appropriate site for a new opportunity to design a new neighbourhood institution, a 'village' for older adult housing to reflect today's demographics. South of the site is Christie Pits Park and Bloor Street beyond the park where many amenities such as healthcare clinics, restaurants and grocery stores are located.

As noted in the previous chapter, there are existing private long-term care facilities on Christie Street and, due to the proximity of the long-term care home, living situations for older adults with dementia or Alzheimer's, who require much more care and specific housing options were not considered for the thesis design because there is already the support and services available near the site. There is a whole other thesis to do in the future regarding the best design for such specialized facilities, how to create a better quality of life for those with intellectual and cognitive challenges like dementia or Alzheimer's.

The thesis design site itself already has many recreational resources surrounding it but also has the potential to service many people of varied generations. For example, there are still two elementary schools nearby to cater to the younger generation, however diminished in numbers. There is Christie Pits Park itself which has amenities like an ice rink, and baseball diamond for children's leagues and even high-quality semi-professional league play. Overlooking the park is also a rebuilt pool for all generations. Overall, with the many stakeholders and generations living in this neighbourhood, there are many existing amenities and resources to ensure a positive atmosphere for everyone.

Likewise, this design aims to give back to the community. The Province of Ontario defines a community hub as a central access point which responds to the needs of the community and provides services in collaboration with agencies and providers. Hubs are a location where residents can access health, social, cultural, recreational and other services in one location which can be a physical building or a digital service.<sup>2</sup> In the proposed design, the community hub is a physical building set inside the 'village' grouping. The program of this building is broad and is intended to cater to the different needs of all the generations living in both the 'village' and neighbourhood surrounding it. For example, Christie Pits is a very multi-generation community so offering programs such as a daycare center onsite helps the residents of the 'village' and the Christie Pits neighbourhood to provide childcare but also an opportunity for older adults residing there to volunteer and have more multi-generation interaction that is not usually available at a long-term care facility or retirement home. The purpose of incorporating a community is to decrease isolation and loneliness by providing older adults with an opportunity to interact with different people.

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2 Government of Ontario, "Community Hubs | Ontario.Ca."

As previously mentioned, the design looks at creating a small set of village-style residences on the site. The design itself consists of four buildings, two buildings are four stories high and contain dwelling units for older adults, their families, and sharing options people of different generations. The third building is a community hub which is two stories high and the final building is a one-storey, double-heighted communal kitchen, dining and living area. Overall, the scale of the project is low to mid-rise to ensure the project feels very home-like and fits into the existing neighbourhood context. The units can be broken down into the following:

Unit Type	Unit Size (sf)	Unit Count (#)	Unit Distribution (%)	Target Demographic
Single Bedroom (Assisted Living)	251	4	5	Older adults who need assistance
Double Bedroom (Assisted Living)	314	6	8	Older adults who need assistance
One Bedroom	433	36	45	Older adults who do not require much assistance
Family Unit	1220	16	20	Multi-generation families who want to live together
Double Units	892	16	20	Older adults and students, older adults and older adults
Staff Suite	320	2	3	PSWs, nurses, staff workers

Figure 5.1. A summary of the unit breakdown for the full project.

Building A is an L-shaped building on the southwest side of the site which acts as a community hub. The offered program includes a daycare, a co-op grocery store and cafe, health services, a gym and many multipurpose rooms for independent studying, group studying, classes, and a computer lab. This building intended to create a place that would promote wellness and learning for everyone in the community while also providing nearby services and amenities for the residents. Furthermore, the building is a community hub for interaction and socialization between the residents and the neighbourhoods.

Building B is the smallest building, programmed as a communal living, dining and kitchen area for the older adult community. This building aims to bring together all the residents and generations to provide a sense of community. The building is connected to building C to provide easy access for older residents who need more assistance so they can access the kitchen and dining area any time to have a place to come together and socialize. The program in this building is very similar to a cohousing communal kitchen, dining and living area as it serves a similar purpose to bring the community together.

Building C at the southeast corner is programmed for individual residents. The ground floor consists of long-term care and assisted living units for individuals who require more care. Therefore, there are also two staff units and an area to administer medication and assistance as needed. However, for individuals with challenges like dementia, it is proposed that they should reside in The O'Neill Centre Long Term Care on Christie Street because of the complex design considerations to avoid potential confrontations with other less challenged residents and building security (like extensive door locks and coded access) that need to be made to house and take care of those individuals. Such a mixing of residents at differing stages of cognitive challenges is often typical of long-term care homes that are struggling with patient loads. Therefore, the ground floor in Building C is dedicated to individuals who need assistance with some daily activities or may have mobility issues but not dementia patients and the like. On the left side of the L-shaped building is the main administration area for all the residents with staff on-site such as security and there are offices, a mail room, and a waiting area. Levels two to four house individual living units for older adults who do not require 24-hour supervision or assistance with their daily tasks and wish to maintain their autonomy. In addition, there is a common living area on each floor to encourage socialization between the residents.

Building D, located on the north of the site, provides dwelling unit solutions for families, friends and roommates. The building consists of two unit types: the family units and the double units. The family units consist of connecting a two-bedroom unit and a one-bedroom unit to provide families with the opportunity to live together and age transition on-site. The double unit consists of connecting a one-bedroom unit and a studio unit for friends or roommates. For example, if there are older adults who wish to maintain their autonomy but would still like the option to live with someone else this is the living situation for them. The units can vary on who lives here, for example, it can be a student and an older adult to provide affordable housing to the student and support and interaction for the older adult or it can be two friends who wish to live together but still maintain their privacy.

An important consideration to make when designing the village and community was ensuring there was a good grouping of individuals between the generations while still ensuring that older adults were housed appropriately. As an example, three scenarios were evaluated to determine the number of people that could reside in the community at any moment and the demographics at that time. The first scenario considers the minimum number of people where one-bedroom units would only accommodate one person, therefore there would be no couples living in these units. In addition, it is assumed the family units have two parents and one child living in them and the double units have only one roommate. The total number of people in this scenario would be approximately 150 people and 84 of those individuals would be over the age of 65 and 66 people would be under the age of 65. This breakdown demonstrates that the focus of the demographics would still cater towards older adults but there is a goodly amount of younger generations that could live within the community as well.

Unit Type	Living Situation	Number of Beds per Unit	Number of People Living in Unit	Youngest	Oldest	Total Number of People under 65	Total Number of People aged 65+
Single Bedroom (Assisted Living)	Individual	1	1	-	65+	-	4
Double Bedroom (Assisted Living)	Shared Units		2	-	65+	-	12
Individual	Individual	1	1	-	65+	-	36
Family Unit	Split	3	4	0	65+	48	16
Roommate	Split	2	2	18	65+	16	16
Staff Units	Individual	1	1	25	55	2	-

Figure 5.2. Unit Breakdown Scenario One: Minimum Population.

The second scenario looks at the maximum potential number of older adults, in this situation it considers that all one-bedroom units could have a couple living in them rather than one individual. As a result, this scenario increases the total number of residents to approximately 218 people. As a result, this would increase the number of individuals 65 and over to 152, while residents under the age of 65 would remain at 66 people. This is because in this scenario only changing the number of people in one-bedroom units was considered not increasing the number of people in the family or double units, they were left with the same demographics of two parents and one child in the family units and one roommate in the double units.

Unit Type	Living Situation	Number of Beds per Unit	Number of People Living in Unit	Youngest	Oldest	Total Number of People under 65	Total Number of People aged 65+
Single Bedroom (Assisted Living)	Individual	1	1	-	65+	-	4
Double Bedroom (Assisted Living)	Shared Units	2	2	-	65+	-	12
Individual	Individual	1	1	-	65+	-	72
Family Unit	Split	3	5	0	65+	48	32
Roommate	Split	2	3	18	65+	16	32
Staff Units	Individual	1	1	25	55	2	-

Figure 5.3. Unit Breakdown Scenario Two: Maximum Number of Older Adults.



Finally, the third scenario looks at maximizing the potential number of people. In this situation, it adds to the second scenario by considering that the family units have two parents, two children, and two grandparents living in the units. Then the double units have a young couple in the studio unit and an older couple in the one-bedroom unit, creating a total of four residents in those units. Likewise, all bedrooms would have a couple living in them rather than one person. As a result, this scenario increases the total number of residents to approximately 250 people. The number of people over the age of 65 would remain the same from scenario two, as those statistics were not changed, resulting in 152 people, while residents under the age of 65 would increase to 98 people. This scenario analyzes the population if all units were maximized to house as many residents as possible.

Unit Type	Living Situation	Number of Beds per Unit	Number of People Living in Unit	Youngest	Oldest	Total Number of People under 65	Total Number of People aged 65+
Single Bedroom (Assisted Living)	Individual	1	1	-	65+	-	4
Double Bedroom (Assisted Living)	Shared Units	2	2	-	65+	-	12
Individual	Individual	1	1	-	65+	-	72
Family Unit	Split	3	6	0	65+	64	32
Roommate	Split	2	2	18	65+	32	32
Staff Units	Individual	1	1	25	55	2	-

Figure 5.4. Unit Breakdown Scenario Three: Maximum Population.

Overall, whether it is 150 or 250 people living in this community village, this thesis aims to demonstrate how senior housing can be designed to promote intergenerational socialization and interaction to create a community within the context of Toronto. The housing project still focuses on methods to house older adults, but by introducing programs like the community hub and family and double units, there is a new level of community added to encourage a new typology of a senior housing community. Furthermore, due to the selected location for this thesis, the project is not only limited to seeing how the village can grow but how the neighbourhood and community of Christie Pits can grow as well. As the different stakeholders and residents continue to age and grow in the community, there are now many amenities and services provided to encourage healthy aging for the population. Moving forward, this project could even extend out to the existing neighbourhood and into the laneways to grow as the population ages by acquiring houses as they go on sale to encourage an adaptable community and allow individuals to age in place successfully. In conclusion, this thesis looked at new design solutions to house older adults within the context of Toronto in a way that would promote social interaction and community that are uncommon in current senior housing options.



**LETTER OF COPYRIGHT PERMISSION**

*Name of Project: zwei+plus Intergenerational Housing*

*Architect: trans\_city TC*

*Location: Wien, Austria*

*Year of Completion: 2018*

**AW: Copyright Image Use Request**

Mark Gilbert <m.gilbert@trans-city.at>

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To: Khana Daniyal <kdaniyal@uwaterloo.ca>

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Do please mention trans\_city as architect and author, and please credit the photographers Hertha Hurnaus and Lukas Hilzensauer– their names are given on the jpeg files.

Best of luck with your thesis!

Mark Gilbert



**Mark GILBERT**

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**Re: Copyright Image Use Request**

Hertha Hurnaus <hehu@hurnaus.com>

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<https://we.tl/t-8Svx5PwIFn>

As photocredit you can mention just my name:

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Best

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[hehu@hurnaus.com](mailto:hehu@hurnaus.com)

<https://www.world-architects.com/de/hertha-hurnaus-wien/projects>



*Name of Project: Vindmollebakken Housing*

*Architect: Helen & Hard*

*Location: Stavanger, Norway*

*Year of Completion: 2019*

**FW: Copyright Image Use Request**

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Arkitekt & PR, Helen & Hard Oslo

Mob: 947 34 606

**Arkitektfirma Helen & Hard AS**

Stortingsgata 12, 7 etg, 0161 Oslo

Tel: 930 10 737 // [www.helenhard.no](http://www.helenhard.no)

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Sindre Ellingsen <mail@sindreellingsen.com>

Thu 2023-09-28 6:24 AM

To: Khana Daniyal <kdaniyal@uwaterloo.ca>

📎 5 attachments (7 MB)

Vindmøllebakken-003.jpg; Vindmøllebakken-002.jpg; Vindmøllebakken-001.jpg; Vindmøllebakken-005.jpg; Vindmøllebakken-004.jpg;

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Regards

Sindre

Sindre Ellingsen

+4791777387

sindreellingsen.com

Instagram @ellingsensindre

Name of Project: De Hogeweyk

Architect: Molenaar&Bol&VanDillen

Location: Weesp, Netherlands

Year of Completion: 2009

**RE: New submission from Contact**

Jannette Spiering <jannette@bethecareconcept.com >

Thu 2023-09-28 3:27 AM

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Dear Khana,

Feel free to copy past images and plans from our website for your thesis and I appreciate you asking permission in advance.

Kind regards,

Jannette Spiering  
senior managing advisor/ founder The Hogeweyk®



[jannette@bethecareconcept.com](mailto:jannette@bethecareconcept.com)

+31 6 222 41 912

office at The Hogeweyk® Heemraadweg 1, 1382 GV, Weesp, the Netherlands

<https://www.bethecareconcept.com/en/>



Part of



[www.hogewey.nl](http://www.hogewey.nl)

*Name of Project: Eltheto Housing and Healthcare Complex*

*Architect: 2by4-architects*

*Location: Rijssen, The Netherlands*

*Year of Completion: 2015*

**RE: Copyright Image Use Request**

info@2by4.nl <info@2by4.nl>

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Kind regards,

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denk even aan het **MILIEU** voordat je deze mail print

*Name of Project: Unite(s) Experimental Housing*

*Architect: Sophie Delhey Architecture*

*Location: Dijon, France*

*Year of Completion: 2018*

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Contact Sophie Delhay <contact@sophie-delhay.fr>

Tue 2023-10-03 4:36 AM

To: Khana Daniyal <kdaniyal@uwaterloo.ca>

Hello,

You can use the diagrams on our website for the Unité(s)+ project in Dijon.

Don't forget to give credit.

Kind regards,

Edith Chevillot

**sophie delhay architecte**

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# REFERENCES

- Adams, Annmarie, and Sally Chivers. "Deception and Design: The Rise of the Dementia Village," September 2021. <https://www.e-flux.com/architecture/treatment/410336/deception-and-design-the-rise-of-the-dementia-village/>.
- Ahn, Mira, Hyun Joo Kwon, and Jiyun Kang. "Supporting Aging-in-Place Well: Findings From a Cluster Analysis of the Reasons for Aging-in-Place and Perceptions of Well-Being." *Journal of Applied Gerontology* 39, no. 1 (January 1, 2020): 3–15. <https://doi.org/10.1177/0733464817748779>.
- AMICA. "Public vs Private Senior Living in Ontario - Amica Senior Living." AMICA. Accessed October 14, 2023. <https://www.amica.ca/conversations/public-vs-private-senior-living-in-ontario>.
- ArchDaily. "Eltheto Housing and Healthcare Complex / 2by4-Architects." ArchDaily, September 29, 2015. <https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects>.
- ArchDaily. "STA | Zwei+plus Intergenerational Housing / Trans\_city TC." ArchDaily, June 27, 2020. <https://www.archdaily.com/940835/sta-zwei-plus-plus-intergenerational-housing-trans-city-tc>.
- ArchDaily. "Unité(s) Experimental Housing / Sophie Delhay Architecture," December 12, 2019. <https://www.archdaily.com/929995/unite-s-experimental-housing-sophie-delhay-architecture>.
- Architizer. "STA | Zwei+plus Intergenerational Living by Trans\_city Architecture / Christian Aulinger, Mark Gilbert." Architizer, January 31, 2021. <https://architizer.com/projects/sta-zweiplus-intergenerational-living/>.
- Baltes, Paul B, and Jacqui Smith. "New Frontiers in the Future of Aging: From Successful Aging of the Young Old to the Dilemmas of the Fourth Age." *Gerontology* 49, no. 2 (April 2003): 123–35.
- Battams, Nathan. "Sharing a Roof: Multigenerational Homes in Canada." The Vanier Institute of the Family / L'Institut Vanier de la famille, July 28, 2022. <https://vanierinstitute.ca/sharing-a-roof-multigenerational-homes-in-canada-2021-census-update/>.
- Bosman, Caryl. "Boomer Housing Preferences: Active Adult Lifestyle Communities versus Aging in Place." In *Housing in 21st-Century Australia: People, Practices and Policies*, 105–19. Ashgate, 2015. <https://doi.org/10.4324/9781315587110>.
- Bowes, Jeremy, Maya Desai, Neal Prabhu, Lucy Gao, Kashfia Rahman, and Riley McCulloch. "Exploring Innovation in Housing Typologies." *OCAD University*, 2018.
- Brewster, Murray, and Vassy Kapelos · CBC News · "Military Alleges Horrific Conditions, Abuse in Pandemic-Hit Ontario Nursing Homes." CBC, May 26, 2020. <https://www.cbc.ca/news/politics/long-term-care-pandemic-covid-coronavirus-trudeau-1.5584960>.
- Bronswijk, J.e.m.h van. "Healthy Housing for Active Aging." *Gerontechnology* 15 (December 12, 2016). <https://doi.org/10.4017/gt.2016.15.4.001.00>.
- CADTH. "Dementia Villages: Innovative Residential Care for People With Dementia," October 2019.
- Canada Mortgage and Housing Corporation. "Housing for Older Canadians: The Definitive Guide to the Over-55 Market - Understanding the Market," 2020.

- Canadian Cohousing Network. "Senior Cohousing." Canadian Cohousing Network. Accessed October 3, 2023. <http://cohousing.ca/about-cohousing/senior-cohousing/>.
- Carou, Barbara. "Advancing Opportunities for the Delivery of City Operated Long-Term Care Beds," June 24, 2021.
- City of Toronto. "2021 Census: Age, Sex at Birth and Gender, and Type of Dwelling," April 29, 2022. <https://www.toronto.ca/wp-content/uploads/2022/04/9654-City-Planning-2021-Census-Background-Age-Sex-Gender-DwellingType.pdf>.
- City of Toronto. "About City-Operated Long-Term Care Homes." City of Toronto. City of Toronto, November 15, 2017. Toronto, Ontario, Canada. <https://www.toronto.ca/community-people/housing-shelter/rental-housing-tenant-information/finding-housing/long-term-care-homes/all-homes/>.
- City of Toronto. "CareTO." City of Toronto. City of Toronto, June 29, 2022. Toronto, Ontario, Canada. <https://www.toronto.ca/community-people/housing-shelter/rental-housing-tenant-information/finding-housing/long-term-care-homes/careto/>.
- City of Toronto. "HousingTO 2020-2030 Action Plan," December 2019.
- City of Toronto. "Long-Term Care Homes & Services Capital Renewal Plan," October 5, 2015.
- City of Toronto. "Toronto Seniors Strategy 2.0," 2018.
- Crawley, Mike. "How Ontario's 'hallway Medicine' Problem Has Become an Everyday Reality | CBC News." CBC, January 22, 2020. <https://www.cbc.ca/news/canada/toronto/ontario-hospital-hallway-medicine-healthcare-beyond-capacity-1.5420434>.
- DeClerq, Katherine. "Military Report Details 'horrifying' Conditions at Two Toronto Long-Term Care Homes." CTV News, May 10, 2021. <https://toronto.ctvnews.ca/military-report-details-horrifying-conditions-at-two-toronto-long-term-care-homes-1.5422006>.
- Deschamps, Tara. "Roommates, Multi-Generational Homes Rising amid Increasing Costs, Immigration: Census." CTVNews, July 13, 2022. <https://www.ctvnews.ca/canada/roommates-multi-generational-homes-rising-amid-increasing-costs-immigration-census-1.5985740>.
- Engineer, Altaf, Esther M Sternberg, and Bijan Najafi. "Designing Interiors to Mitigate Physical and Cognitive Deficits Related to Aging and to Promote Longevity in Older Adults: A Review." *Gerontology (Basel)* 64, no. 6 (2018): 612–22.
- EUMiesAward. "'Unité(s)'+ - 40 Modular Social Dwellings," 2022. <https://www.miesarch.com/work/4851>.
- Gilleard, Chris, and Paul Higgs. "The Third Age and the Baby Boomers: Two Approaches to the Social Structuring of Later Life." *International Journal of Ageing and Later Life* 2 (April 3, 2008). <https://doi.org/10.3384/ijal.1652-8670.072213>.
- Glass, Anne P. "Aging in a Community of Mutual Support: The Emergence of an Elder Intentional Cohousing Community in the United States." *Journal of Housing for the Elderly* 23, no. 4 (2009): 283–303.

- Glass, Anne P. "Resident-Managed Elder Intentional Neighborhoods: Do They Promote Social Resources for Older Adults?" *Journal of Gerontological Social Work* 59, no. 7–8 (2016): 554–71.
- Glass, Anne P., and Rebecca S. Vander Plaats. "A Conceptual Model for Aging Better Together Intentionally." *Journal of Aging Studies* 27, no. 4 (December 2013): 428–42. <https://doi.org/10.1016/j.jaging.2013.10.001>.
- Godwin, Beatrice. "Hogewey: A 'home from Home' in the Netherlands." *Journal of Dementia Care* 23 (May 1, 2015): 28–31.
- Government of Canada, Statistics Canada. "A Portrait of Canada's Growing Population Aged 85 and Older from the 2021 Census," April 27, 2022. <https://www12.statcan.gc.ca/census-recensement/2021/as-sa/98-200-X/2021004/98-200-X2021004-eng.cfm>.
- Government of Canada, Statistics Canada. "Profile Table, Census Profile, 2021 Census of Population - Toronto, City (C) [Census Subdivision], Ontario," February 9, 2022. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>.
- Government of Ontario. "Castleview Wychwood Towers | Long-Term Care | Ontario.Ca," 2023. <https://www.ontario.ca/locations/longtermcare/homes/M510-castleview-wychwood-towers>.
- Government of Ontario. "Community Hubs | Ontario.Ca," August 17, 2022. <http://www.ontario.ca/page/community-hubs>.
- Government of Ontario. "Guide to Programs and Services for Seniors in Ontario," 2022.
- Government of Ontario. "Supportive Housing Options | Ontario.Ca," February 13, 2023. <http://www.ontario.ca/page/supportive-housing-options>.
- Gurung, Apil, Sam Edwards, Michele Romeo, and Alison Craswell. "A Tale of Two Generations: Case Study of Intergenerational Living in Residential Aged Care." *Caring for Older People* 29, no. 6 (December 1, 2022): 809–15. <https://doi.org/10.1016/j.colegn.2022.08.002>.
- Hauderowicz, Dominique, and Kristian Ly Serena. *Age-Inclusive Public Space*. Age-Inclusive Public Space. Berlin: Hatje Cantz, 2020.
- Koehn, Sharon D., Atiya N. Mahmood, and Sarah Stott-Eveneshen. "Quality of Life for Diverse Older Adults in Assisted Living: The Centrality of Control." *Journal of Gerontological Social Work* 59, no. 7–8 (November 16, 2016): 512–36. <https://doi.org/10.1080/01634372.2016.1254699>.
- Krier, Damien, Bram de Boer, Mickaël Hiligsmann, Jérôme Wittwer, and Héléne Amieva. "Evaluation of Dementia-Friendly Initiatives, Small-Scale Homelike Residential Care, and Dementia Village Models: A Scoping Review." *Journal of the American Medical Directors Association* 24, no. 7 (2023): 1020-1027.e1.
- Kropf, Nancy, and Sherry Cummings. "Future of Aging: Senior Cohousing as Antidote to the Loneliness Epidemic." *Blue Zones* (blog), November 6, 2019. <https://www.bluezones.com/2019/11/new-senior-co-housing-communities-cater-to-needs-of-expanding-aging-population/>.
- Lewinson, Terri, Vanessa Robinson-Dooley, and Kathryn W. Grant. "Exploring 'Home' Through Residents' Lenses: Assisted Living Facility Residents Identify Homelike Characteristics Using Photo-voice." *Journal of Gerontological Social Work* 55, no. 8 (2012): 745–56.

- Luck, Shaina Luck · CBC. "What the Design of Long-Term Care Homes Can and Can't Do." CBC, June 16, 2020. <https://www.cbc.ca/news/canada/nova-scotia/design-long-term-care-homes-1.5606576>.
- Malek, Jan. "Seniors' Care Was in Crisis before COVID-19." *The Council of Canadians* (blog), April 14, 2020. <https://canadians.org/analysis/seniors-care-was-crisis-covid-19/>.
- Marshall, Mary, Erika Duarte, and Rose Tran. "The Who, Why, Where, and How of Moving into Assisted Living: Older Adults' Decision-Making Process for Relocation." *Journal of Aging and Environment* ahead-of-print, no. ahead-of-print (2022): 1–16.
- Martínez, Laura, Raza Mirza, Andrea Austen, Lynn McDonald, Christopher Klinger, Jessica Hsieh, Tonya Salomons, et al. "More Than Just a Room: A Scoping Review of the Impact of Homesharing for Older Adults." *Innovation in Aging* 4 (December 16, 2020): 51–52. <https://doi.org/10.1093/geroni/igaa057.168>.
- Morgan, Elise. "Why Cohousing Is Beneficial for Older Adults." THE COHOUSING COMPANY, August 12, 2019. <https://www.cohousingco.com/blog/2019/8/12/why-cohousing-is-beneficial-for-older-adults>.
- Nanda, Upali, and Grant Warner. "Flexible and Enriched Environments for Senior Living and Aging-in-Place in Dense Urban Environments." In *(Re)Designing the Continuum of Care for Older Adults: The Future of Long-Term Care Settings*, edited by Farhana Ferdous and Emily Roberts, 301–8. Cham: Springer International Publishing, 2023. [https://doi.org/10.1007/978-3-031-20970-3\\_16](https://doi.org/10.1007/978-3-031-20970-3_16).
- National Institute on Aging. "What Do We Know About Healthy Aging," August 2022.
- OLTCA. "Building and Redevelopment." OLTCA. Accessed September 30, 2023. <https://www.oltca.com/advocacy/building-redevelopment/>.
- OLTCA. "The Data: Long-Term Care in Ontario." OLTCA. Accessed September 30, 2023. <https://www.oltca.com/about-long-term-care/the-data/>.
- ORCA - Ontario Retirement Communities Association. "Types of Care." *ORCA - Ontario Retirement Communities Association* (blog), June 2, 2017. <https://www.orcaretirement.com/types-of-care/>.
- Osman, Laura. "'It's Going to Affect Everyone': Number of Seniors over 85 Expected to Triple in next 25 Years." CTVNews, April 27, 2022. <https://www.ctvnews.ca/politics/it-s-going-to-affect-every-one-number-of-seniors-over-85-expected-to-triple-in-next-25-years-1.5877962>.
- Oswald, Frank, Hans-Werner Wahl, Oliver Schilling, Carita Nygren, Agneta Fänge, Andrew Sixsmith, Judith Sixsmith, Zsuzsa Széman, Signe Tomson, and Susanne Iwarsson. "Relationships Between Housing and Healthy Aging in Very Old Age." *The Gerontologist* 47, no. 1 (February 1, 2007): 96–107. <https://doi.org/10.1093/geront/47.1.96>.
- Pedro, Catarina, Mariana Duarte, Beatriz Jorge, and Daniela Freitas. "440 - Dementia Villages: Rethinking Dementia Care." *International Psychogeriatrics* 32, no. S1 (2020): 158–158. <https://doi.org/10.1017/S1041610220002926>.
- Pintos, Paula. "Vindmøllebakken Housing / Helen & Hard." ArchDaily, June 4, 2021. <https://www.archdaily.com/962820/vindmollebakken-housing-helen-and-hard>.

- Puplampu, Vivian, Elise Matthews, Gideon Puplampu, Murray Gross, Sushila Pathak, and Sarah Peters. "The Impact of Cohousing on Older Adults' Quality of Life." *Canadian Journal on Aging / La Revue Canadienne Du Vieillessement* 39, no. 3 (2020): 406–20. <https://doi.org/10.1017/S0714980819000448>.
- Revera. "Retirement Living vs Long Term Care | Revera." Accessed September 30, 2023. <https://www.reveraliving.com/why-senior-living/long-term-care-vs-retirement-living/>.
- Rossen, Eileen K., and Kathleen A. Knafl. "Women's Well-Being After Relocation to Independent Living Communities." *Western Journal of Nursing Research* 29, no. 2 (2007): 183–99.
- Sagan, Aleksandra. "Dementia Villages: Is Getting Patients to Believe a False Reality OK?" CBC, May 3, 2015. <https://www.cbc.ca/news/health/canada-s-version-of-hogewey-dementia-village-recreates-normal-life-1.3001258>.
- SE Health. "The Periodic Table of Housing Models for Aging Canadians," n.d.
- Seasons Retirement Communities. "Independent Living Ontario." Seasons Retirement Communities. Accessed October 13, 2023. <https://seasonsretirement.com/independent-living-on/>.
- Simpson, Deane. *Young-Old : Urban Utopias of an Aging Society*. Zürich: Lars Müller Publishers, 2015.
- Sisson, Patrick. "Boomers Are Poised to Change the Housing Market." *Curbed*, April 25, 2017. <https://archive.curbed.com/2017/4/25/15420592/nursing-home-independent-living-senior-housing-aging-in-place>.
- Social Development, Finance & Administration. "Neighbourhood Profiles," October 6, 2023. <https://open.toronto.ca/dataset/>.
- Suleman, Raiya, and Faizan Bhatia. "Intergenerational Housing as a Model for Improving Older-Adult Health." *BC Medical Journal*, May 2021. <https://bcmj.org/articles/intergenerational-housing-model-improving-older-adult-health>.
- Wilson, Alley. "A Care Revolution: Inside Canada's First Dementia Village," May 6, 2023. <https://global-news.ca/news/9663849/dementia-village-canada/>.
- Wong, Daniel. "Toronto Is Turning Into A Retirement Village As The Senior Population Explodes Higher." *Better Dwelling*, January 14, 2022. <https://betterdwelling.com/toronto-is-turning-into-a-retirement-village-as-the-senior-population-explodes-higher/>.
- World Health Organization. "DECADE OF HEALTHY AGEING BASELINE REPORT," 2020.
- Yang, Zan, and Yuqi Fu. "Physical Attributes of Housing and Elderly Health: A New Dynamic Perspective." *International Journal of Environmental Research and Public Health* 16, no. 24 (December 6, 2019). <https://doi.org/10.3390/ijerph16244961>.
- Zhong, Sinan, Chanam Lee, and Hanwool Lee. "The Role of Community Environments in Older Adults' Intergenerational and Peer Social Interactions." *Cities* 129 (2022): 103785. <https://doi.org/10.1016/j.cities.2022.103785>.



