

# **Aging by Design**

by

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for the degree of Master of Architecture

at

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**KEYWORDS:**

Seniors, Programming, Community, Independence, Aging-in-Place

**ABSTRACT:**

This thesis seeks develop a programmatic strategy that integrates seniors into existing communities by identifying the existing amenities and public services offered, understanding the gaps in services for seniors, and then filling those gaps through a new seniors congregate living facility. It also seeks to understand the impacts of retiring Baby Boomers on the seniors care industry, and to integrate new ideas about healthy living and aging-in-place.

Victoria BC, which has a significant seniors population, will be the testing ground for this proposed strategy.

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## CHAPTER 1: INTRODUCTION

### Thesis Question

How can a programming, healthy aging-in-place, and an integrated community strategy be used to develop a new housing model that responds to changing seniors demographics and new expectations around healthy aging?

Baby Boomers are the largest demographic in Canadian history and they are retiring. As Baby Boomers retire, they become seniors and place demands on the need for seniors housing and seniors care, placing additional pressure on a seniors care industry that is already straining to meet the current demands. The current seniors care industry has been slow to adapt to new ideas around healthy aging-in-place, and new demands and expectations from a new generation of seniors. Today's seniors are more diverse than any previous generation of seniors including education, career, and financial means. Today's seniors expect more agency over their lives and health as they age.

New ideas around healthy aging-in-place respond to both the financial pressure of a costly and reactive continuing and complex care approach to seniors care, as well as to the expectations for a more vibrant and healthy lifestyle that today's seniors are looking for. Community and independence are two key foundations for healthy aging, and this thesis proposes a much higher level of community integration for seniors than what existing models propose. A higher level of community integration supports independence for seniors, as well as mitigates the high costs associated with the current system by taking a preventative approach that benefits all members of a community, not just those in advanced stages of life.

This thesis breaks down aging-in-place into two choices, to age-in-place in an existing home, or to relocate into a new aging-in-place congregate facility. Many seniors choose, when able, to age-in-place in their family homes. However, without support most seniors will end up in a costly care facility. With support, a senior can remain in their home more much longer, sometimes forgoing the need to relocate into a care facility.

For seniors who relocate it is sometimes for a healthy more comfortable lifestyle, such as moving to the West Coast, often seen as a reward for a life of hard work. And once a

senior relocates, they are now aging-in-place in their new home. Whether aging-in-place or relocating, an aging-in-place with support strategy can mitigate health care costs and support a seniors desire to age with independence, dignity, and continued opportunities for learning and relationship.

An aging-in-place with support strategy is best idealized by leveraging the existing amenities provided by a community to support both current and relocated seniors, as well as by filling any service gaps through a congregate seniors facility that provides new seniors housing and programming that services both the residents of the proposed congregate facility, as well as all members of a local community.

## **CHAPTER 2: CONTEXT**

### **I. Who Are Seniors Today?**

Today's seniors are Baby Boomers. Born between 1947 and 1966, Baby Boomers grew up largely in the 60's and 70's, a time of hope and change in North American culture. That spirit was expressed politically through John F. Kennedy, Pierre Elliot Trudeau, the Civil Rights movement, the fight for women's rights, the public health care and education system, the Canadian Pension Plan, and the idea that government could be used to improve the lives of Canadians and Americans. Entertainment and sports culture also reflected that spirit with John Lennon's "Imagine," Team Canada's win over Team Russia, and Terry Fox's marathon against cancer. New technologies that were designed to improve people lives, from the VHS to the Apple computer, deepened the role of Baby Boomers as consumers, and were the first demographic group to be targeted by advertisers who coined the term "Baby boomer." Modernism in architecture also expressed the spirit of how design could be used to improve the lives and living conditions of users.

Today, those Baby Boomers are now transitioning into retirement and becoming seniors who have benefited from the hope and change of the 60's and 70's. They have benefited from public education with a broader range of professions and are more educated than previous generations. They have been shaped by the culture of the individual with an increased expectation around agency over one's own life, often expressed through consumerism and the expectations around choice and where and how money will be spent. Today's seniors are also more health conscious and aware of the benefits of an active and healthy lifestyle, and increasingly seek to make choices in those directions.

The diversity of professions, financial well being, and physical well being among Canadians means the transition into retirement is no longer as predictable as it once was. However 65 is still used to define seniors in publications, and is still the expected cultural and political norm, as reflected in the debate whether the retirement age should be raised to 67 or remain at 65.





**Baby Boomers Then, Seniors Today**

Figure 1: Baby Boomers grew up in the 60's and 70's, a time of hope and change, and are today's seniors, the most diverse generation of seniors.

## II. Canadian Demographics

Canadians are aware that demographics are changing as Baby Boomers age. However, the statistical research paints a much more dramatic picture than what most Canadians may be aware of. Even as Canadians, at an individual scale, are navigating the impacts of colleagues, friends, and parents retiring and increasingly in need of support as they age, there seems to be little discussion or awareness of the impact and consequences of the shift in demographics at a national scale. The statistical research provides an opportunity to understand and speculate on the impact these changes will have, not just on seniors housing, but to communities, the labour force, and the conditions within existing facilities that seniors increasingly have to navigate.

As of July 2015 there are now more seniors over 65 than youths under 15.<sup>1</sup> There are a growing number of towns, cities, and regions where seniors outnumber youth, as well as seniors populations that are greater than 20% of the population.<sup>2,3</sup> Combined with a trend towards smaller families, the overall Canadian population is projected to shrink as the number of seniors is increasing.<sup>4</sup> The Canadian labour force is shifting from seven workers for every senior prior to 2000, and dropping to as low as three workers for every senior in 2030.<sup>5</sup> As Baby boomer's retire in ever increasing numbers, there will be an increased need for support staff within the seniors care industry, and yet there will be an increasingly smaller pool of workers to draw from.<sup>6</sup>

1 "Economic and Fiscal Implications of Canada's Aging Population," Stats Canada, accessed July 10, 2016, <http://www.fin.gc.ca/pub/eficap-rebvpc/report-rapport-eng.asp>.

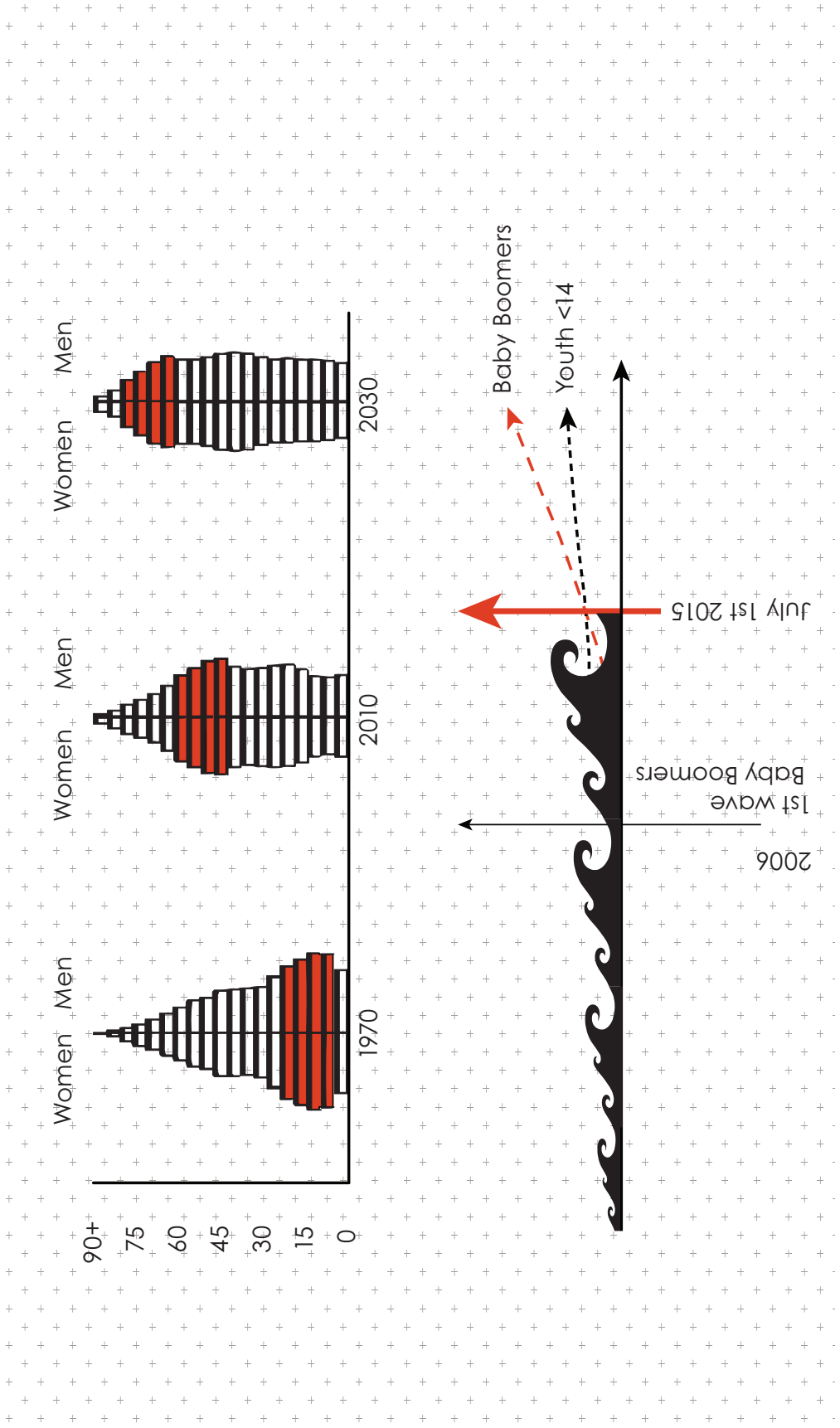
2 "The Youngest and Oldest Places in Canada," Macleans Magazine, accessed July 10, 2016, <http://www.macleans.ca/society/mapped-the-oldest-and-youngest-places-in-canada/>.

3 "Percentage of the population aged 65 years and over in 2011," Stats Canada, accessed July 10, 2016, [https://www12.statcan.gc.ca/census-recensement/2011/geo/map-carte/ref/thematic\\_download\\_as-thematiques\\_telecharger\\_as-eng.cfm?SERIES=B&MAPCODE=01](https://www12.statcan.gc.ca/census-recensement/2011/geo/map-carte/ref/thematic_download_as-thematiques_telecharger_as-eng.cfm?SERIES=B&MAPCODE=01).

4 "Economic and Fiscal Implications of Canada's Aging Population"

5 Ibid.

6 "Canada's seniors population to jump, workforce decline by 2063," CBC News, accessed July 10, 2016. <http://www.cbc.ca/news/business/canada-s-seniors-population-to-jump-workforce-decline-by-2063-1.2770359>.

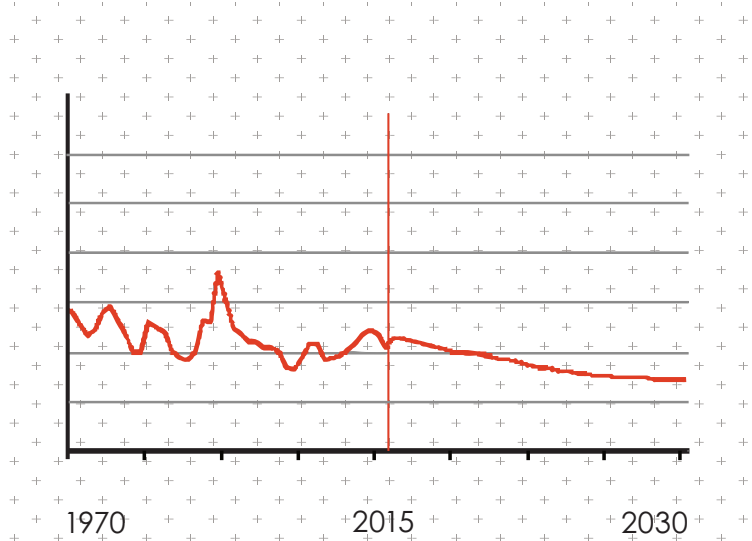


**The Silver Tsunami**

Figure 2: The demographic change within Canada from 1970 to 2030, when Baby Boomer's first started to retire, and when the number of Baby Boomers surpassed the number of youths under 14, data from "Economic and Fiscal Implications of Canada's Aging Population," Stats Canada.

**Canada's Population Growth**

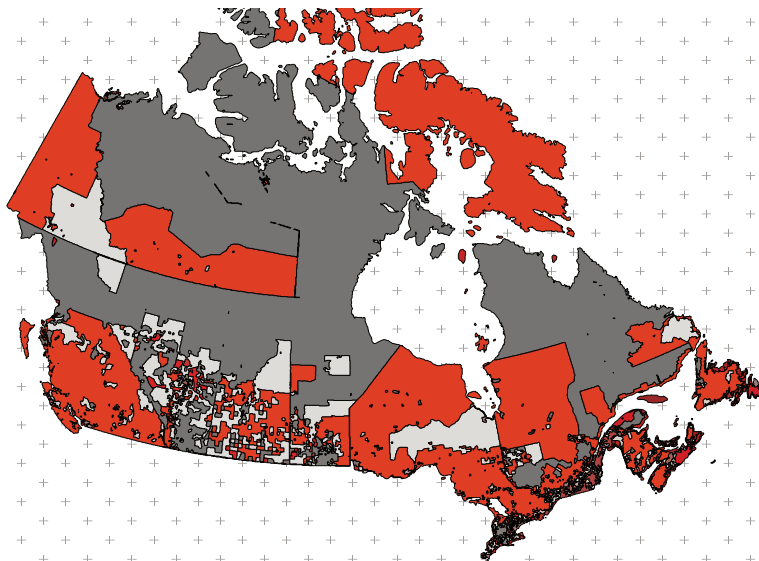
Figure 3: Canada's overall population is on the decline. Data from "Economic and Fiscal Implications of Canada's Aging Population," Stats Canada 2010.



**Seniors Out Number Youth**

- More people over 55 than 25
- More people under 25 than 55
- Balanced

Figure 4: Data from Maclean's Magazine, sourced from Environics Analytics.

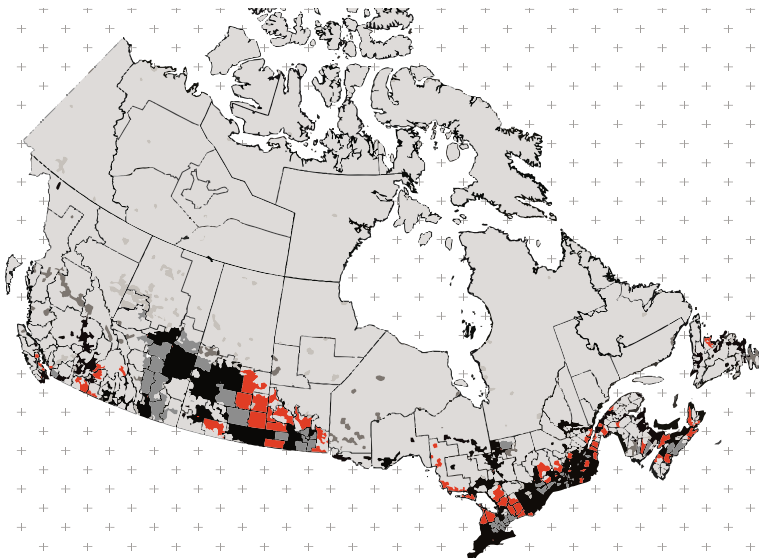


**Seniors Population Greater Than 20%**

National average 15%

- >20%
- 14%-20%
- 9%-13%
- <9%

Figure 5: Data from "Percentage of the population aged 65 years and over in 2011," Stats Canada 2011.



### Working Canadians per Senior

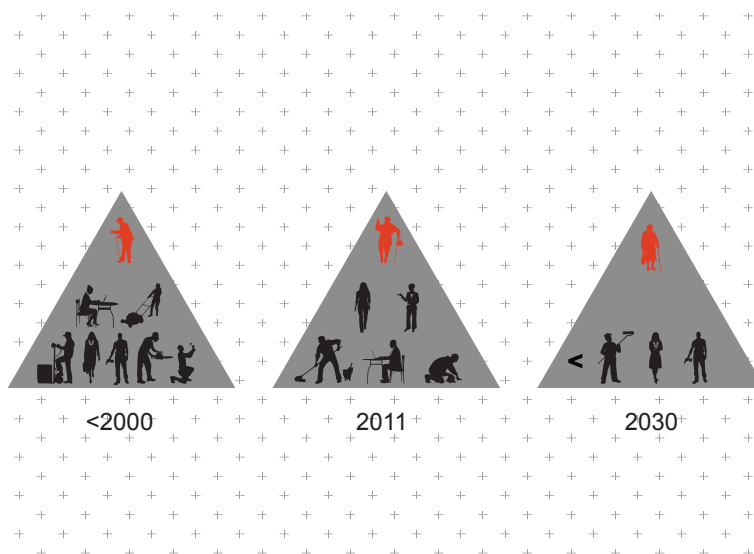


Figure 6: Number of working Canadians per senior. Data from “Economic and Fiscal Implications of Canada’s Aging Population,” Stats Canada 2010.

### III. Seniors, Wealth, and Poverty

Today’s seniors are arguably the wealthiest generation in history.<sup>7</sup>

Seniors being the largest demographic, also represent a diverse economic demographic, expressed by seniors wealth and poverty. What may be surprising to many Canadians, is that seniors are the wealthiest demographic in Canadian history, with seniors 75 years and older controlling 1/3 of the financial assets in the country, and Baby Boomers controlling over 1/2 of the wealth in the country.<sup>8,9</sup> Baby Boomers have benefited from the Canada Pension Plan, Retirement Savings Plans, employment pension plans, growth in stock markets, the dramatic increase in housing prices, and being a generation of money savers.<sup>10</sup> Government spending on seniors is 4x greater than what is spent on Children, and the Children of Baby Boomers carry average debts loads of 90% compared to 5% for Baby Boomers themselves.<sup>11,12</sup> As a result, many seniors have a greater disposable income than any previous generation as well as many current younger generations, and

7 “Seniors and the generation spending gap,” Maclean’s, accessed July 10, 2016, <http://www.macleans.ca/society/life/seniors-and-the-generation-spending-gap/>.

8 Ibid.

9 “Don’t call us seniors: the Baby Boomers at 65,” Environics Analytics, accessed July 10, 2016, <http://www.environicsanalytics.ca/blog-details/ea-blog/2014/07/23/don-t-call-us-seniors-the-Baby-Boomers-at-65>.

10 “Seniors and the generation spending gap.”

11 Ibid.

12 Ibid.

one survey found that 84% of respondents were more satisfied with their retirement than they had expected.<sup>13</sup>

Poverty among Canadian seniors is on the rise and that current pension safety nets may be inadequate to address the problem.<sup>14</sup>

As the seniors demographic increases so do the numbers of seniors who are represented by statistical percentages, and the wealth that many seniors possess only paints a partial picture. Poverty for seniors has dropped dramatically from 40% in the 1970's to as low as 5% in 2015.<sup>15</sup> The drop is due to the previously mentioned retirement saving programs and market forces that have helped many seniors live a more comfortable life. However poverty rates for seniors are expected to rise once again, and currently 1/3 of Canadian seniors do not have an employer's pension and do not have enough retirement savings.<sup>16</sup> Subsequently, many seniors are increasingly working past 65, 75, and even 80 because financially they need to, not because they want to. Many seniors rely on support expressed through activity centres and support services provided by provincial programs and community based support. Additionally, the BC provincial government offers a tax incentive to developers if they include low income housing options. As an example, a number of co-housing projects in BC have added a single low rental unit, increasing a typical project from 30 to 31 units.

Private retirement, long-term care, and prescriptions drugs can be quite costly for seniors. The wealth that many seniors have earned over the course of their lives, including family homes, is often used to pay for the costs associated with retirement homes and seniors care. As such, the transfer of wealth that seniors typically pass onto their Children is now being used to cover the costs associated with old age. This is particularly true of a family home that is often the primary asset a senior has.

13 "Seniors and the generation spending gap."

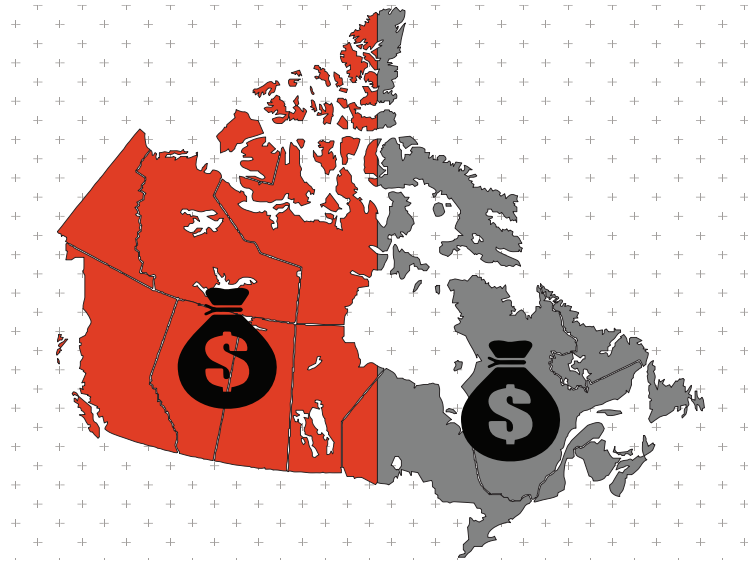
14 "Seniors Living in Poverty on the Rise in Canada," CBC News, accessed July 10, 2016, <http://www.cbc.ca/news/business/seniors-living-in-poverty-on-the-rise-in-canada-oecd-says-1.2440714>.

15 "Seniors and the generation spending gap."

16 "Seniors Living in Poverty on the Rise in Canada."

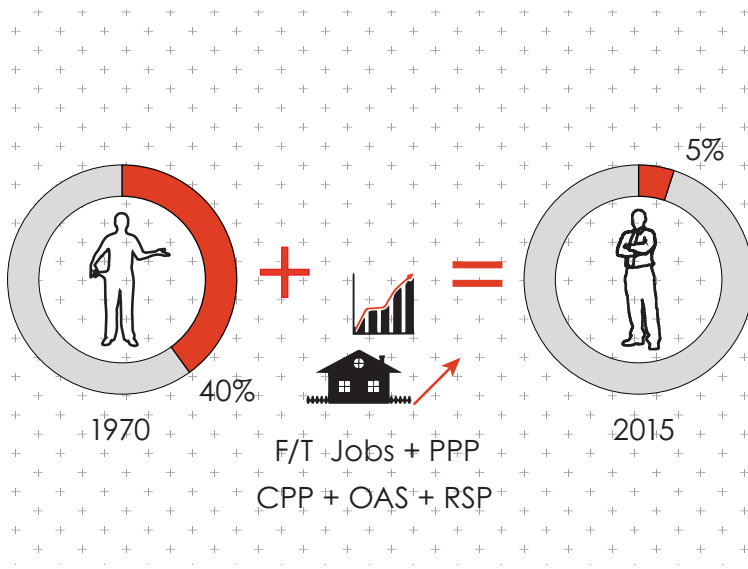
**Financial Assets**

Figure 7: Baby Boomers control over 1/2 of the wealth in Canada, and seniors over 75 control 1/3 of the financial assets in Canada. Data from “Seniors and the generation spending gap,” Maclean’s and “Don’t call us seniors: the Baby Boomers at 65,” Stats Canada.



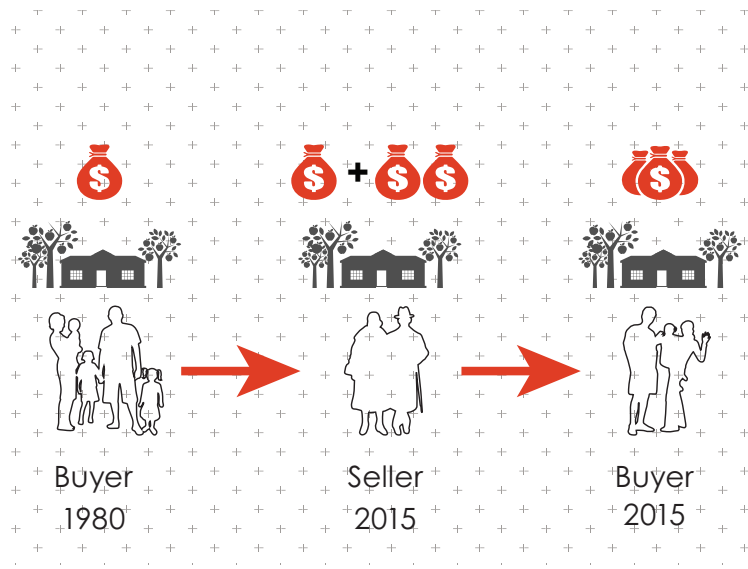
**Seniors & Poverty**

Figure 8: Baby Boomers have benefited financially from investment in stock markets, increased housing prices, full-time jobs with private pension plans, Canada pension plan, old age security, and retirement saving plans, data from “Seniors and the generation spending gap,” Maclean’s.



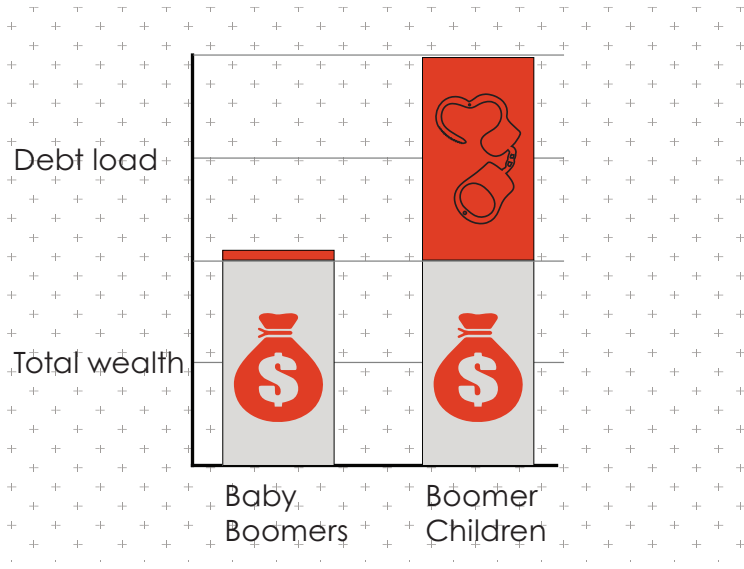
**Seniors & Real Estate**

Figure 9: Baby Boomers have benefited from dramatic increases in housing costs, while younger generations are faced with the challenge of entering the housing market with often out of reach housing costs.



**Senior Debt**

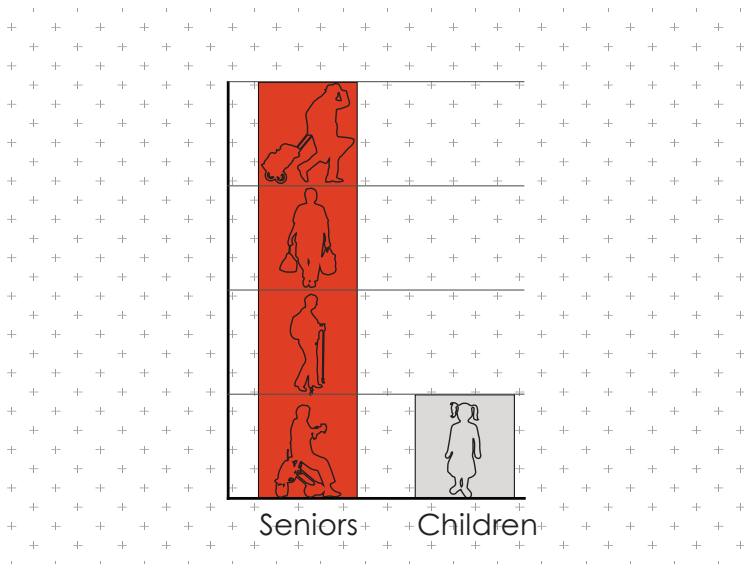
Figure 10: Debt load among Boomer Children is 9x higher than the debt load for Baby Boomers, data from “Seniors and the generation spending gap,” Maclean’s.



**Government spending**

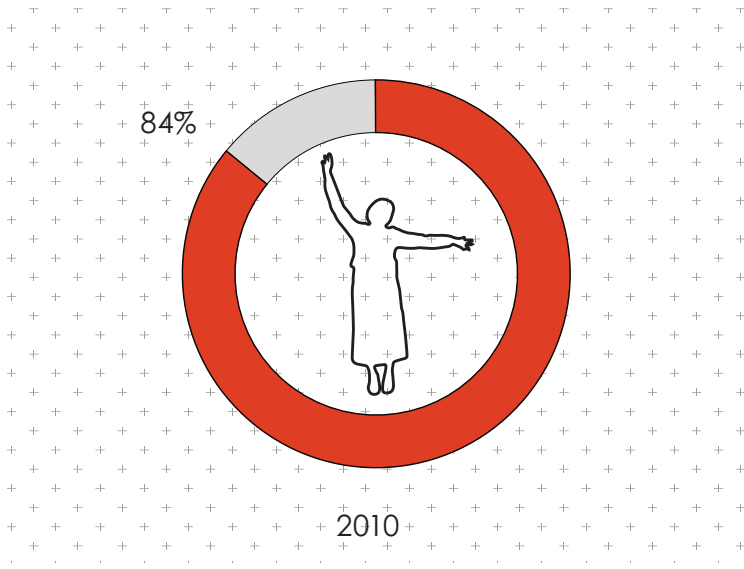
Seniors benefit from a political and cultural “elderly bias,” receiving much higher government spending than other demographic groups including Children.

Figure 11: Government spending on seniors is 4x higher than spending on Children, data from “Seniors and the generation spending gap,” Maclean’s.



**Living better in retirement than expected**

Figure 12: 84% of seniors report living better than expected in retirement, data from “Seniors and the generation spending gap,” Maclean’s.





## Poverty Trends

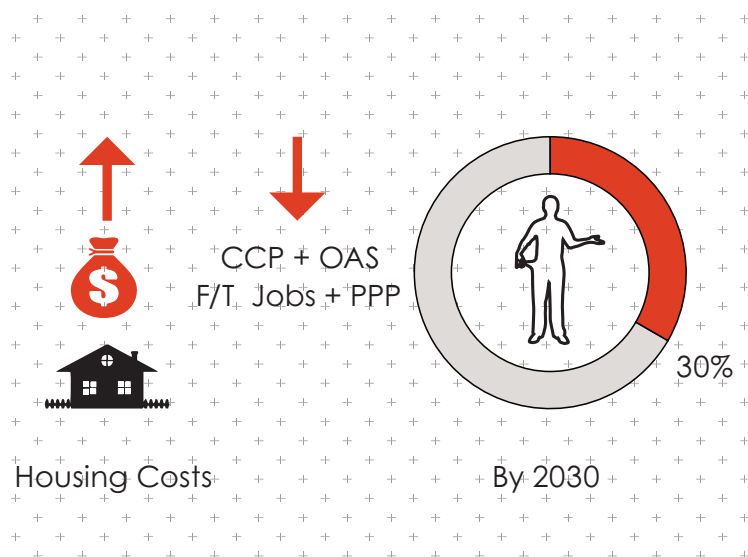


Figure 13: As existing social security programs are drained, and as housing costs continue to rise, poverty among seniors could rise back to historic levels.

## IV. The Current System and Future Trends

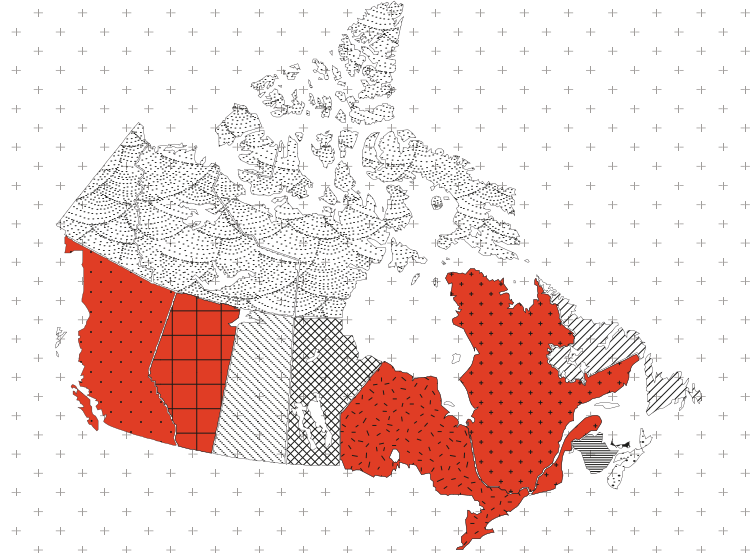
The public and private sectors have both different and complimentary roles in the seniors care industry. The Health Care Act ensures that Canadians who need health care receive it. For seniors that means a range of health care support as they age, from medication coverage to palliative care. Each province is responsible for setting its own health care policies, and subsequently each province has both its own terminology around different levels of care as well as its own long-term care regulations. The Health Care Act and provincial governments do not cover the costs associated with retirement homes and independent living. And given the significant costs associated with continuing care and the health care needs of seniors, it would not be possible for the provinces to cover the additional costs associated with retirement housing. Subsequently, the private sector is relied upon to offer a range of housing models for seniors who do not yet qualify for continuing care support, and to provide some services that compliment and mitigate the need for public health care services and costs. However despite this reliance on the private sector, only four provinces currently have retirement home regulations.<sup>17</sup> Furthermore, because the care of seniors falls within the responsibility of each province there is no

17 "Caring for Seniors," CBC Cross Country Checkup, accessed July 10, 2016, <http://www.cbc.ca/radio/checkup/caring-for-seniors-1.2520723>.

18 Ibid.

## A Patchwork System

Figure 14: Canada's senior care industry is separated into public and private care. The public system is underfunded with no national standards, and with each province having its own regulations. There is also inadequate staffing both in numbers and training, and there is a lack of community supports for aging in place. Data from "Caring for Seniors," CBC Cross Country Checkup.

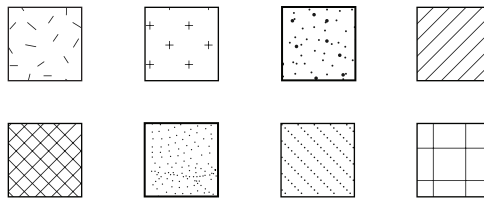


### Public care / federal funding

The public care system is governed by the health care act and provides support for seniors if a seniors health care needs qualify them for support.

- Personal care
- Long-term care
- Intermediate care
- Complex care
- Hospital care
- End of life care

Provinces have different long-term care regulations standards.



Personal Care

Intermediate Care

Hospital Care

\$42 / day

\$126 / day

\$842 / day



### Private care

The private care system is relied upon by the seniors care industry for retirement housing options. Private care options will sometimes provide health care support under regulation of the public system.

- Retirement home
- Independent living
- Assisted care
- Complex care

Provinces with retirement home regulations.



Independent Living

Assisted Care

Memory Care



### **Private Care Costs**

Average National and British Columbia Private care costs.<sup>18</sup>

	Independent living	Assisted care	Memory care
Alternate names	retirement living active adult communities 55+ communities retirement residence	supportive living retirement homes senior lodges	dementia care alzheimer care
	private pay	private pay	private pay
National average / per month	\$1,400 - \$3,500	\$1,500 - \$5,000	\$3,000 - \$7,000
British Columbia / per month	\$2,045	\$2,747	\$5,720

national strategy for safety regulations in retirement homes, and no national end-of-life strategy.<sup>19</sup>

The lack of a national strategy and differing provincial regulations leads to a disconnected system with no common language, and a system that can be difficult for seniors to navigate when making often difficult decisions about their housing and health care needs. For this thesis, the terminology used by the Vancouver Island Health Authority to define the different levels of seniors care and housing will be used: independent living, personal care, and complex care (see “seniors level of independence expressed through housing models”).<sup>20</sup>

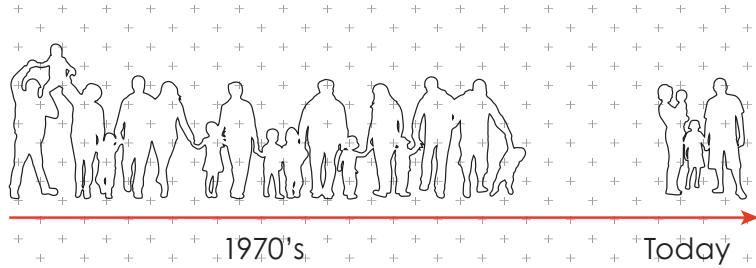
Seniors who need continuing care rely on formal support as provided by the public and private sector when their health needs either qualify them for support or if they can afford additional private support. However for seniors who’s personal care needs do not yet qualify them for public support, if they cannot afford private support, or if they need support beyond what the public and private systems offer, they must then rely on informal support from informal care givers where possible. Informal care givers can be friends, spouses, family members, and members of the community who can provide a range of support from

19 “How To Pay For Senior Housing In Canada” A Place for Mom, accessed July 10, 2016, <http://www.aplaceformom.com/canada/how-to-pay-for-senior-housing>.

20 Carol Turnbull, Administrative Manager Cook Street Activity Centre, interview with the author, January 12, 2016.

**Family Trends**

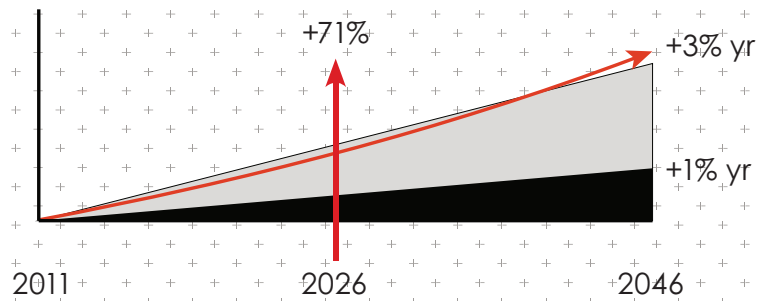
Figure 15: Baby Boomers have tended to have smaller families than previous generations, and subsequently there are fewer seniors co-residing with their Children. Additionally, it has become common for younger generations to relocate for employment.



**Support for Seniors**

- Seniors requiring continuing care.
- Growth of national labour force.
- Projected required labour force growth to support seniors.

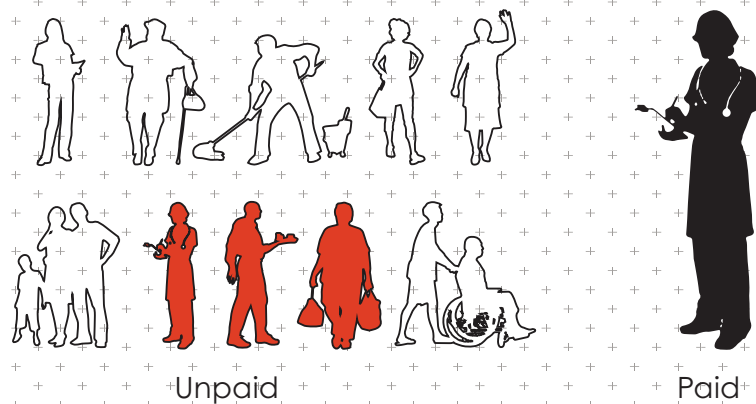
Figure 16: The labour force must grow at 3% /yr to support demand from retiring seniors, but the labour force is only growing by 1% /yr, data from "Care costs for seniors forecast to more than double by 2026," CBC News.



**Informal vs Formal Support Today**

- Informal care gives feeling distress, angry, or depression

Figure 17: There are 10 informal care givers for every 1 formal care giver, and 33% of informal care givers report feeling stressed, data from "Trends in Senior Living Communities."



daily care to help with carrying groceries. Traditionally seniors come from larger families with more siblings and more Children that they could rely upon for support, however with the trend towards smaller families there are fewer Children and fewer family members available for support, thus increasingly informal care givers are friends and neighbours. Currently there are ten unpaid informal care givers for every one paid care giver, and of the ten unpaid informal care givers, 30% report feeling distress, angry, or depressed in response to the demands of their support role.<sup>21,22</sup>

The current system of support for seniors, both formal and informal, is under stress and the strain will increase as seniors place more demand on the current system. By 2026, it is projected that 71% of seniors will require continuing care. However, while the growth of the national labour force is growing at 1% a year, it is projected that in order to support the increased demand for continuing care, the national labour force needs to grow by at least 3% a year.<sup>23</sup> One of the risks to seniors is the increased use of anti-psychotics and anti-depressants in the management of seniors in the absence of proper staffing, an already common practice that would likely become more prevalent.

An average Canadian will use more health care services as a senior than at any other time in their lives. Seniors currently use 45% of the total health care costs, and that will increase to 55% by 2030.<sup>24</sup> This increased demand will drive health care costs up from \$26 billion in 2011 to as much as \$177 billion in 2046.<sup>25</sup> As the seniors care industry struggles with labour shortages and costs that grow beyond tax revenue from a smaller taxable work force, the reliance on informal caregivers will increase. It is also possible that what qualifies a senior for public care support may become more stringent as increasingly

21 "Trends in Senior Living," seniorhomes.com, accessed July 10, 2016, <http://www.seniorhomes.com/p/senior-living-communities/>.

22 "Caregivers say they are too stressed to do it any longer," CBC News, accessed July 10, 2016, <http://www.cbc.ca/news/canada/thunder-bay/caregivers-say-they-are-too-stressed-to-do-it-any-longer-ontario-survey-1.3270510>.

23 "Care costs for seniors forecast to more than double by 2026," CBC News, accessed July 10, 2016, <http://www.cbc.ca/news/business/continuing-care-seniors-1.3301623>.

24 "Geriatricians call for controversial change to health care for seniors," CBC News, accessed July 10, 2016, <http://www.cbc.ca/radio/thecurrent/the-current-for-october-6-2015-1.3258246/geriatricians-call-for-controversial-change-to-health-care-for-seniors-1.3258261>.

25 "Care costs for seniors forecast to more than double by 2026."

**Seniors Share of Health Care Costs**

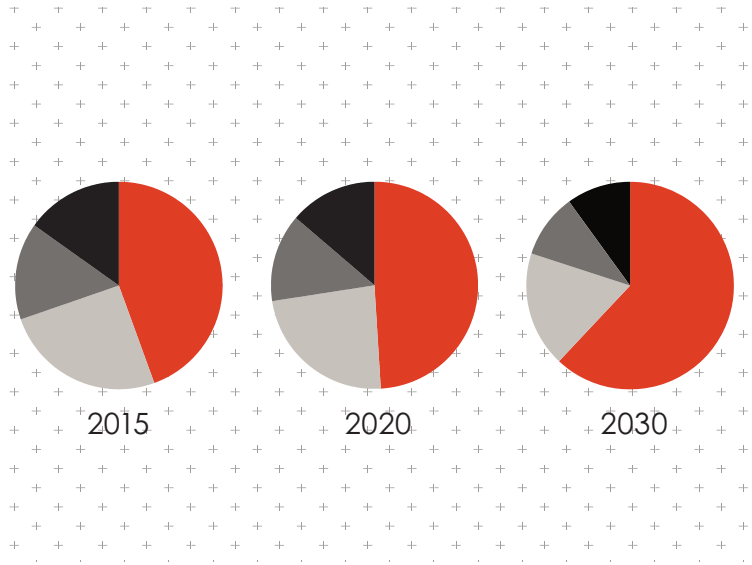
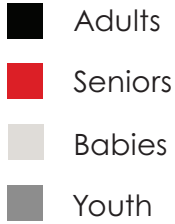


Figure 18: By 2036 62 per cent of health budgets in Canada will be spent on the elderly, data from “Geriatricians call for controversial change to health care for seniors,” CBC News.

**Continuing Care Costs**

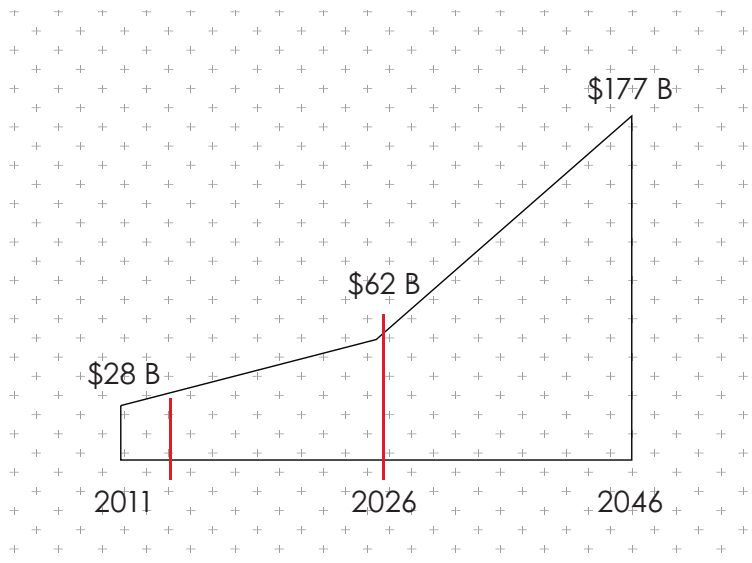


Figure 19: If current levels of continuing care is to be maintained, care costs will rise from \$26 billion in 2011 to \$177 billion in 2046, data from “Care costs for seniors forecast to more than double by 2026,” CBC News.

**Life time health care costs**

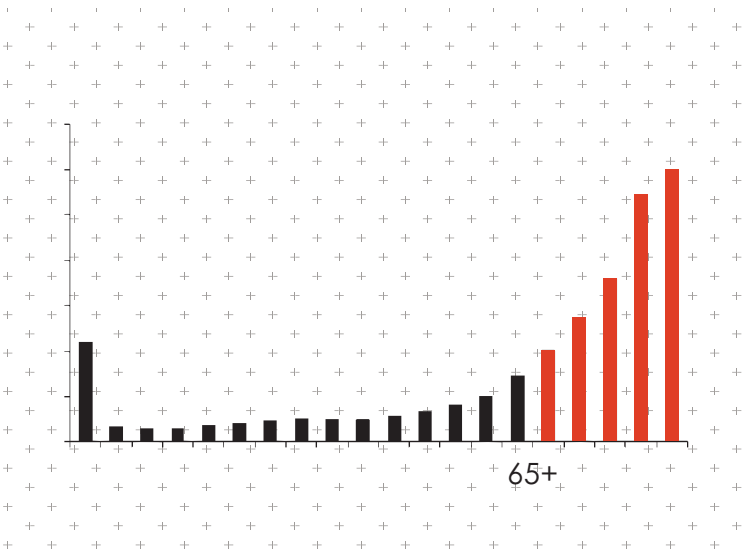


Figure 20: Seniors consume 44% of health care costs, data from “Geriatricians call for controversial change to health care for seniors,” CBC News.

limited resources are directed to those with the greatest need, and further more, private care services may increase in cost as supply is unable to meet demand.

What is often unexplored when examining the impact that Baby Boomers will have on the seniors care industry and programs like the CPP, is the impact it will have on younger generations and what resources will be available to them when they are seniors themselves. Canada is facing unique challenges as Baby Boomers become seniors, however the number of seniors fall when it is boomer Children who become seniors. What financial resources will be left for younger generations once the Canadian Pension Plan is exhausted from the demands placed on it by Baby Boomers? What level of cuts to health care industry will boomer Children experience as the health care system tries to recover? There is an opportunity to plan for future generations by leveraging the political clout and financial wealth that Baby Boomers represent to establish healthy aging-in-place communities that will support both current and future seniors.

## V. Aging-in-Place and Relocation

All seniors are aging-in-place by default when they retire, and there will be one choice that all seniors will face as they age, to continue aging-in-place or to relocate. More than 80% of seniors prefer to remain in their homes and communities, often due to a desire to stay close to family or because of financial limitations, with many having lived in their family homes for more than 30 years.<sup>26</sup> And 70% of seniors don't plan on moving, either by a conscious choice not to move or by a lack of future planning.<sup>27</sup>

However most seniors are forced to reassess the appropriateness of their housing as they begin to feel unsafe in their home as their health deteriorates and leads to a loss of independence.<sup>28</sup> This reassessment can happen at any stage and can **push** a senior to relocate into a care facility.<sup>29</sup> Further more, some seniors are forced to relocate multiple

26 Krout, John A., and Wethington, Elaine. Residential Choices and Experiences of Older Adults Pathways to Life Quality. New York: Springer, 2003. 10.

27 Ibid, 11.

28 Ibid, 12.

29 Ibid, 14.

times as their deteriorating health pushes them from assisted care, to intermediate care, to memory care, and then to palliative care, as can be the case with Alzheimer's disease and dementia. The relocation of seniors into continuing and complex care leads to much higher costs for the health care system and is not sustainable under the current system. For those seniors who are fortunate and able enough to maintain their independence long enough to avoid having to relocate into a care facility, it is largely due to maintaining a healthy lifestyle through both physical and social activity. That physical and social activity is the basis for healthy aging-in-place, and is tied to the amenities that existing communities already provide. Community amenities can act as health care support services, mitigating health care costs.

For seniors who do plan their future, they will often try to create and / or seek out the conditions for a more healthy lifestyle that will support their own healthy aging. A seniors ability to seek out and create those conditions is often a product of their financial means as well as having some education and / or awareness of health and aging. For seniors who plan to age-in-place, they may engage in house modification and seek to remain active in their communities. As accessing local amenities becomes more important, so to does reliable and accessible transportation. And support services that are immediately accessible through a walkable community and direct transit will increase the opportunity for the use and the benefits that comes with easy access.

For seniors who plan to relocate they may move in anticipation of, or respond to increasing frailty, often to be more proximate to formal and informal care. And for other seniors, they may be **pulled** to a more healthy lifestyle and environment, such as the West Coast, sometimes as a reward for a life of hard work.<sup>30</sup> Each senior develops their own criteria for moving, often considering hospitals, mobility, safety, and walkable communities where they can walk to yoga, public libraries, coffee shops, and other amenities that support and enrich daily life. When a senior does plan to relocate into a community that will support their needs as they age, it is often planned as a "final" move, with the hope they will not have to move again.



Seniors who plan relocation will assess each community for themselves whether it will support their lifestyle and aging needs, making comparisons, priorities, and sacrifices. If each potential community had a fuller range of aging-in-place services, then fewer sacrifices would have to be made and both existing seniors and new seniors to a community could benefit. And if each community had full range of services and amenities that support senior, then seniors throughout all communities within a city would be supported and relocating seniors could mix into a broad range of intergenerational communities rather than become concentrated within a few ideal settings.

## **VI. Aging-in-Place and Conditions in Existing Care Facilities**

Seniors who do not have access to a support network, support services, and activities that support a healthy life style are more likely to experience a sharper decline in health and subsequently require continuing and complex care sooner compared to if they had access to a healthy aging-in-place alternative.

Typically, most seniors start off living private dwellings, often as a couple. When one partner passes away, the surviving partner will move into a seniors residence where they live alone. Women tend to live longer than men, and there are more women than men in seniors residences and care facilities.<sup>31</sup>

Once seniors end up in continuing care facilities, there is a dramatic loss of independence and agency over one's life and a disconnection from local communities and social connections such as friends and family. There is often a sharp decline in health and many seniors pass away soon after entering a continuing care facility. Health needs often increase with more chronic illnesses emerging, and it can be difficult to maintain social networks once in a care home and as peers pass away leading to further isolation. These losses can lead to higher rates of depression in residential care, as high as 44%.<sup>32</sup> In addition to the risk of depression associated with isolation, seniors who lose their independence and agency over their life are also at greater risk for depression.

31 "Living Arrangements of Seniors," Stats Canada, accessed July 10, 2016, [https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-312-x/98-312-x2011003\\_4-eng.cfm](https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-312-x/98-312-x2011003_4-eng.cfm).

32 "Report on the Social Isolation of Seniors," National Seniors Council, accessed July 10, 2016, [http://www.seniorscouncil.gc.ca/eng/research\\_publications/social\\_isolation/page00.shtml](http://www.seniorscouncil.gc.ca/eng/research_publications/social_isolation/page00.shtml).

There is a shortage of publicly funded long-term care beds, and the cost of living in private facilities can leave seniors waiting for care, struggling to cope without the support they need.<sup>33</sup> Because of shortages and few affordable options, some seniors may have to accept beds in facilities outside their home community. The lack of regulations combined with the forced relocation can often mismatch the needs of seniors with the services of a care facility. This relocation into unsuitable care facilities often disconnects seniors from their local communities and loved ones, and increases the risk of social isolation.

The seniors care industry is also using anti-psychotics and anti-depressants to manage seniors, often as a replacement for proper staffing. 1/3 of seniors in long-term homes are on anti -psychotics.<sup>34</sup> In Ontario, some long-term homes were found to be higher at: 56%, 65%, and 73% of residents on anti -psychotics. There is an industry term, “snowing,” for the practice of using anti-psychotics as chemical restraints, often to compensate for inadequate staffing.<sup>35</sup>

It would be difficult to find any senior who looked forward to entering a traditional care facility. Often when seniors do agree to enter into a care facility it is because they do not wish to be a burden on their families and feel unsafe in their current home. Because of the difficult emotions associated with this difficult life transition, it is not often talked about or planned for, and many seniors leave the decisions about where and how they will age until it's too late and a relocation is a forced, having to move into a facility based on limited availability rather than thoughtful and considered support.

A planned healthy aging-in-place lifestyle can dramatically reduce the need to relocate into a care facility. Aging-in-place with support can extend a seniors independence beyond the need for continuing care, and can mitigate costs for seniors and the health care industry. More and more seniors are trying to take the initiative to adopt a healthy lifestyle regardless of where they are living, and having easy access to healthy aging-in-place services

33 “Conversation on Health,” BC Health, accessed July 10, 2016, [http://www.health.gov.bc.ca/library/publications/year/2007/conversation\\_on\\_health/PartII/PartII\\_ResidentialCare.pdf](http://www.health.gov.bc.ca/library/publications/year/2007/conversation_on_health/PartII/PartII_ResidentialCare.pdf).

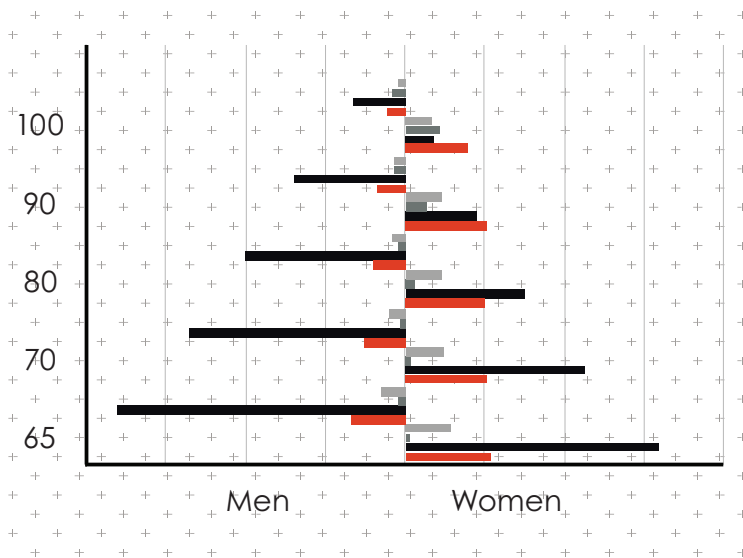
34 “Canadian nursing homes use restraints on a third of their residents,” [torontonursinghomes.com](http://torontonursinghomes.com), accessed July 10, 2016, <http://torontonursinghomes.com/news/4-news/47-canadian-nursing-homes-use-restraints-on-a-third-of-their-residents.html>.

35 “Caring for Seniors.”

### Living Arrangements in Private Dwellings

- Living alone
- In a couple
- In a collective
- Other

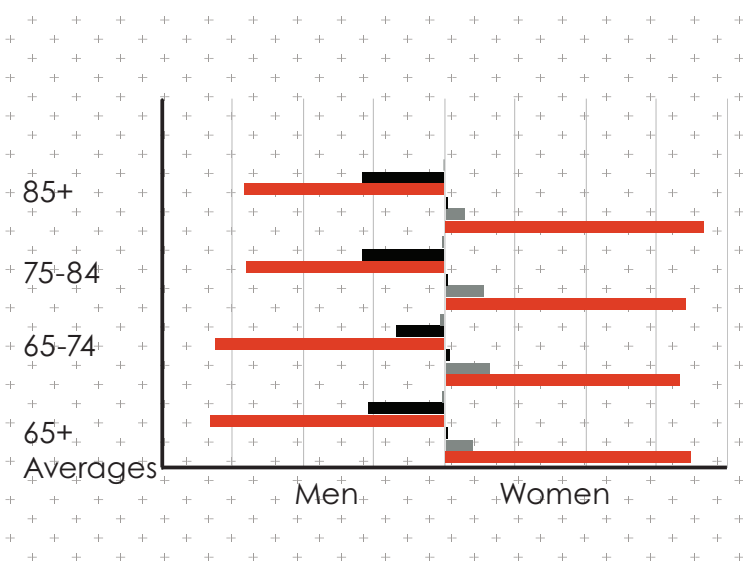
Figure 21: Seniors in private dwellings tend towards couples, data from "Living Arrangements of Seniors," Stats Canada 2011.



### Living Arrangements in Senior Residences

- In a couple
- Living alone
- With others

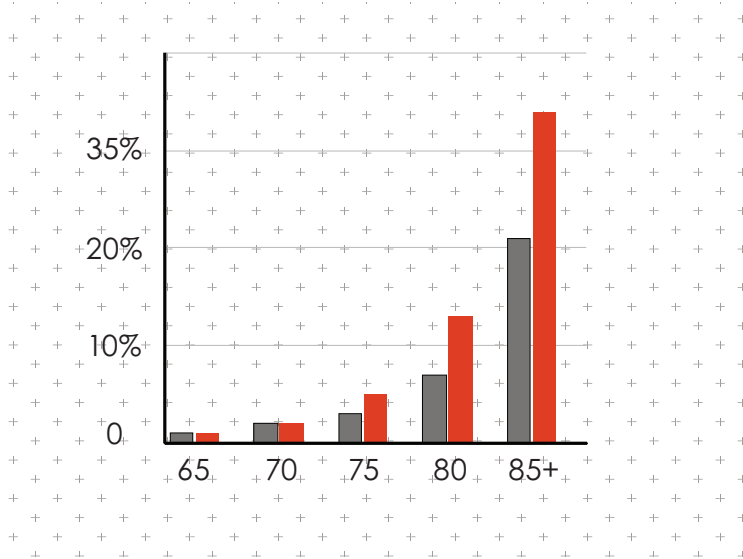
Figure 22: Seniors in senior residences tend towards living alone, data from "Living Arrangements of Seniors," Stats Canada 2011.



### Living in Special Care Facilities

- Totals
- Women
- Men

Figure 23: There are more women than men living in special care facilities, data from "Living Arrangements of Seniors," Stats Canada 2011.



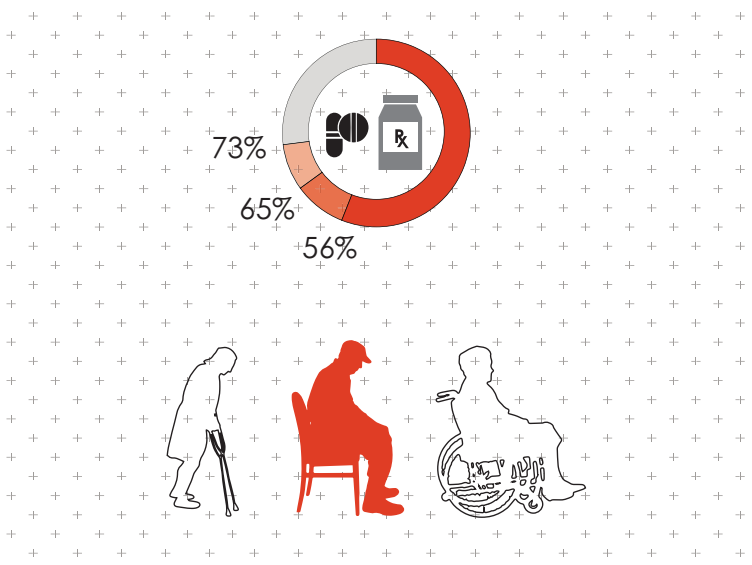
**Depression in Residential Care**

Figure 24: 44% of seniors living in residential care are diagnosed with depression or showed symptoms of depression without diagnosis, data from “The Report on the Social Isolation of Seniors 2013-2014,” The National Seniors Council.



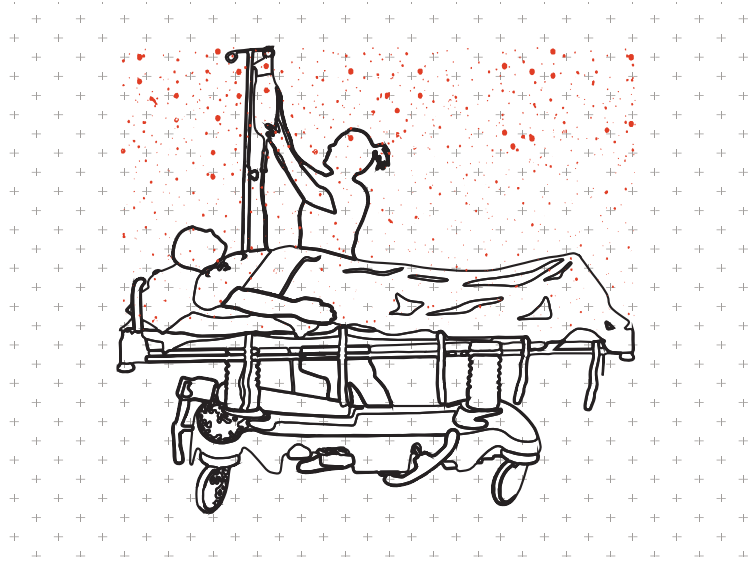
**Antipsychotic Usage in Long Term Care**

Figure 25: More than 1/3 of seniors in long-term care homes are on anti-psychotics, some as high as 73%, data from Siliva Salmon Arm “Caring for Seniors,” Cross Country Checkup CBC.



**“Snowing”**

Figure 26: “Snowing,” an industry term for chemically restraining seniors in long-term care homes, often due to inadequate staff, data from “Caring for Seniors,” Cross Country Checkup CBC.



supports seniors looking for a more healthy lifestyle, and ensures that those services will be used as intended and needed. If all communities had a full range of support services then all seniors in all communities would have access to the support they need. And by using existing community amenities, the health care system can mitigate their costs and staffing shortages by employing a more cost effective aging-in-place strategy.

## **VII. Isolation**

There are many factors that undermine a seniors health and well being as they age. With over 30% of seniors at risk for isolation, it is one of the most common factors that undermines the health and well being of seniors today.<sup>36</sup> Isolation is defined as having few social contacts and few social roles, along with the absence of mutually rewarding relationships, also defined as a low quantity and quality of contact with others.<sup>37</sup>

Life transitions that come with old age can often create the risk for isolation. Retirement from the work force is a common loss of a social network. As families become smaller and more geographically dispersed, today's seniors are at a greater risk of isolation than previous generations. And once a senior does become isolated, a self-reinforcing and reciprocal pattern of social isolation can develop further which can make it difficult for seniors to find the support they need as they are increasingly unable to support themselves.<sup>38</sup> Social isolation for urban seniors is often related to housing issues or community environments that do not provide opportunities for seniors to build relationships and find support from non-family members within the local community.

### ***Four risk factors that contributing to isolation:***

- Physical health
- Social health
- Mental health
- Community and housing

36 "Report on the Social Isolation of Seniors."

37 Ibid.

38 Ibid.

### ***Physical Health Factors Contributing to Isolation***

Physical health challenges can make it difficult to maintain social networks. Arthritis, diabetes, and chronic illnesses can lead seniors to require chronic care that often, which can lead to being house bound or bedridden. Worse for seniors is the risk for multi-morbidity, with approximately 30% of adults 65 to 79 years old and 38% of adults 80 years or older having two or more chronic conditions.<sup>39</sup> Similarly, physical disability can also lead to isolation. Disability is reported at 26% among individuals aged 65 to 74 and 43% among individuals aged 75 and older.<sup>40</sup> Negative health behaviours such as drinking, smoking, a sedentary lifestyle, and poor diet increase the risk of many chronic illness like diabetes, and leads to a 4 to 5 times greater risk for hospitalization and is a predictor for mortality from coronary heart disease.<sup>41</sup> Many seniors are at increased risk of falls as physically mobility become more limited, with recovery from falls then becoming isolating and with the risk of full mobility not returning.

Being physically active can stave of chronic illnesses and reduce the recovery time from acute illnesses, and maintain physical dexterity and mobility reducing the risk for falls. Having easy access to physical exercise and a walkable community for daily amenities both maintains physical health and is a foundation for independence, active participation in daily life, and is an opportunity to have shared experiences with other active seniors and other members of a community.

### ***Social Factors Contributing to Isolation***

Living alone does not necessarily lead to loneliness for seniors, however it is the ability to participate in and maintain social networks which is vital. That can be difficult with life transitions that disconnect seniors from existing social networks. Family structures change as younger generations migrate for work, and as seniors relocate to care facilities or to warmer climates. This can sometimes lead to little to no contact with Children and family members. A social network of peers can then become as, if not more, important as a family network. And for seniors who haven't previously developed a social network

39 "Report on the Social Isolation of Seniors."

40 Ibid.

41 Ibid.

beyond immediate family, trying to initiate a network of peers can be difficult without access to activities and programs that provide opportunities for shared moments between people.

Risk for social isolation can also increase as seniors act as informal caregivers to other seniors. When one becomes ill, it can lead to isolation for the caregiver as they become housebound while providing support. If they both become ill, they risk even further isolation. And as peers and family members pass away, seniors who do not have a more robust social network can end up living in neglect with no one aware of them.

Agism has been cited as a reason seniors do not feel comfortable participating in local communities.<sup>42</sup> Younger generations sometimes view seniors as weak and frail, and do not see the value in their life experience. As a result, seniors do not participate in communities as much as they would often like. This can lead to increased isolation, and seniors without more diverse social networks do not have the opportunity to enlist younger generations for support. Cultural and language barriers can also be factors in social isolation, making it difficult for seniors to connect to the local community and who may not be aware of available support services.<sup>43</sup>

As seniors are at risk for isolation from a number of compounding factors, they can then experience a loss of social skills which can make it more difficult to participate in social activities and accessing support services. This can lead to a downward cycle of isolation that can become increasingly difficult to break.<sup>44</sup>

### ***Mental Illness Contributing to Isolation***

Mental illness, like with any cohort, can be difficult to diagnose. And yet for seniors mental health is just as important as physical health, if not more so. Mental illness includes such devastating diseases as Alzheimer's and dementia, completely robbing a senior of their independence. Isolation can be a direct contributing factor to mental health challenges such as depression, social anxiety, loneliness, alcoholism, suicidal thoughts, and schizophrenia, and those effects can then become causes to further isolation.<sup>45</sup> 50% of people over the age of 80 report feeling lonely and men over the age of 80 have the

42 "Report on the Social Isolation of Seniors."

43 Ibid.

44 Ibid.

highest suicide rate of all age groups.<sup>46</sup> As many as 44% of seniors living in residential care in Canada have been diagnosed with depression or show symptoms of depression without diagnosis, and a lack of a supportive social network is linked to a 60% increase in the risk of dementia and cognitive decline, while socially-integrated lifestyles protects against dementia.<sup>47</sup>

### ***Community and Lifestyle Contributing to Isolation***

A lack of connection to local communities and poor community planning can lead to a number of risk factors for isolation. Seniors, more than most other user groups, rely on the built environment to safely support them while living their daily lives. It ensures they can participate fully in society, whether it is mailing a letter, going to a doctor's appointment, or meeting a friend for coffee. Access to those services is vital, and without access a senior can quickly become isolated in their homes.

Walkable communities, by default, are better for seniors than almost any other community structure. Commercial and professional services are clustered together within walking distance, and coffee shops are common acting as reliable social hubs. Many suburban communities by contrast are vehicle dependant, with seniors having to travel throughout a city to meet their various daily needs. And if a senior loses their drivers licence then they must rely on transit, taxi's, and neighbours to help maintain their independence. Mobility becomes a key factor in the ability for seniors to fully participate in programming, services, activities, while at the same time building and maintaining a social network. Mobility has both extrinsic barriers and intrinsic barriers. Long walking distances, steep slopes, poorly designed stairs and narrow sidewalks can all make mobility for seniors more difficult. Extrinsic barriers can lead to intrinsic barriers with seniors feeling unsafe due to fears of falling, or being hit by vehicle and cycling traffic. The safety of a community through crime, or the perception of crime can also act as intrinsic barriers, often expressed through inadequate lighting at night.

45 "Report on the Social Isolation of Seniors."

46 Ibid.

47 Ibid.



Incontinence is an challenge for seniors that is not often talked about. Incontinence can limit the duration and distance a senior can travel without easy access to a washroom. This can discourage a senior from leaving home, and can lead to limited circulation and walking distances, as well as limiting routine tasks and social engagement. Well placed and accessible public washrooms can then be a means of enhancing social integration by reducing anxiety about being out in public for extended periods of time.

Seniors who are isolated are not available to participate in communities and share their life experience. Communities that do not benefit from the unquantifiable life experience that seniors poses, suffer from a lack of social cohesion and have higher social costs. Similarly isolated seniors are less able to participate and contribute to their communities economically. Local community businesses are vital to keeping a community active, and the spending capital that Baby Boomers can bring benefits the entire community.

Support services for seniors can make the challenges of aging easier, and isolation can lead to a lack of awareness of support services and programs. Awareness of services can be advertised throughout a community or happen naturally as seniors share their experiences with each other. However for seniors who are not already active in a community and who are not participating in conversations, they may not be aware of and may not benefit from support services.

## VIII. Aging-in-Place with Support

The traditional assumption around aging is that decline, disability, and illness is an inevitable aspect of getting old. However, new research into healthy aging is challenging those assumptions. Decline, disability, and illness are not inevitable, but are often the result of poor physical and mental health stemming from a poor lifestyle and isolation. And conversely, a lifestyle that supports good physical and mental health can drastically reduce the risk for decline, disability, and illness. Good physical and mental health, expressed through physical activity, nutrition, independence, and robust social networks, can stave off the need for continuing and complex care.

Connecting seniors to existing communities with amenities offers a foundation that can support healthy aging. Walkable communities have an existing infrastructure that can support opportunities for daily physical exercise and connection to existing social networks. Local retailers can provide opportunities for a range of shopping and lifestyle choices that can support independence. Social networks develop and strengthen through members of a community sharing moments and space together. The addition of public support services aimed at keeping seniors safe, healthy, independent, and socially connected can further support a healthy lifestyle for seniors, preventing decline, disability, and illness.

The importance of healthy aging-in-place is not just a response to the goal of ensuring that seniors maintain their independence and age with dignity, but is also the only financially viable way forward with the dramatic shift in Canadian demographics and increased costs to the health care industry. There are growing concerns over a shortage of publicly funded long-term care beds and the cost of living in private care homes is often too costly for many seniors. By contrast, new aging-in-place models like the NORC SSP have been predicted to reduce health care costs by 10% if they were implemented nationally (projected in an American context).<sup>48</sup> And other user inspired models, like co-housing, show a clear desire from seniors for intentional community housing models. A healthy aging-in-place model is a preventive model that both reduces health care costs as well as supports the desire of seniors to age with dignity and independence.

48 Karen, B Elbert, "Indicators of a Successful Naturally Occurring Retirement Community: A Case Study," *Journal of Housing For the Elderly*, 24:322–334, 2010.

## IX. Seniors Level of Independence Expressed Through Housing Models

Today's seniors are the most diverse cohort of seniors, more than at any point in Canadian history. With an increased life expectancy and wide range of physical health and activity among seniors, it is no longer appropriate to consider all seniors as one universal group when determining the level of independence, care, and housing required.

Different methods of categorizing seniors have emerged to provide more effective ways of matching seniors with the appropriate level of support. The Clinical Frailty scale is a more recent and representational method of determining a seniors physical health and mobility.<sup>49</sup>

### Clinical Frailty Scale\*

- |   |  |
|---|--|
|  <p><b>1 Very Fit</b> – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.</p>   |  <p><b>7 Severely Frail</b> – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).</p>  |
|  <p><b>2 Well</b> – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.</p>  | <p><b>8 Very Severely Frail</b> – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.</p>  |
|  <p><b>3 Managing Well</b> – People whose medical problems are well controlled, but are not regularly active beyond routine walking.</p>   |   |
|  <p><b>4 Vulnerable</b> – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being “slowed up”, and/or being tired during the day.</p>   |  <p><b>9. Terminally Ill</b> - Approaching the end of life. This category applies to people with a life expectancy &lt;6 months, who are not otherwise evidently frail.</p>   |
|  <p><b>5 Mildly Frail</b> – These people often have more evident slowing, and need help in high order IADs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.</p> | <p><b>Scoring frailty in people with dementia</b></p> <p>The degree of frailty corresponds to the degree of dementia. Common symptoms in mild dementia include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.</p> <p>In moderate dementia, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.</p> <p>In severe dementia, they cannot do personal care without help.</p> |
|  <p><b>6 Moderately Frail</b> – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.</p>   | <p>* 1. Canadian Study on Health &amp; Aging, Revised 2008.<br/>2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.</p> <p>© 2007-2009. Version 1.2. All rights reserved. Geriatric Medicine Research, Dalhousie University, Halifax, Canada. Permission granted to copy for research and educational purposes only.</p>  |

49 “Clinical Frailty Scale,” Dalhousie University, accessed July 10, 2016, <http://geriatricresearch.medicine.dal.ca/pdf/Clinical%20Frailty%20Scale.pdf>.

The Vancouver Island Health Authority has three categories for identifying seniors and the level of independence and support may be needed:<sup>50</sup>

- Independent Living
- Personal Care
- Complex Care

How a senior fits within those categories is determined by their physical ability to support themselves. The level of physical independence is then expressed through different delivery models. Within BC it is:<sup>51</sup>

- Home and Community Care and Home Support
- Assisted Living
- Residential Care
- Residential Care Hospital Act

## **Housing Models**

The housing models for seniors that follow are organized by: independent living, personal care, and complex care, not all of which are found within BC, but rather are found in different regions within North America.

### **1. Independent Living**

Independent living is primarily defined as active or young seniors who do not need any formal or informal support. These seniors may often still be working, and are healthy, active, and fully able to physically care for themselves. Housing models can include any residential model that any adult may reside in, as well as a range of models that cater to seniors and attempts to plan for old age.

#### **- Self-contained**

Any typical bachelor, one bedroom, or two bedroom apartment or condo, along with any typical single dwelling unit. Either a family home that a senior has lived in for most of their working life, or a smaller more manageable dwelling that a seniors has downsized to.

- Apartments and condos may have additional facilities such as a fitness room that all residents have access to.

50 Carol Turnbull, Administrative Manager Cook Street Activity Centre, interview with the author, January 12, 2016.

51 "Caring for Seniors," SeniorsBC.ca, accessed July 10, 2016, <http://www2.gov.bc.ca/gov/content/family-social-supports/seniors>.

### **Adding Up the Seniors Population**

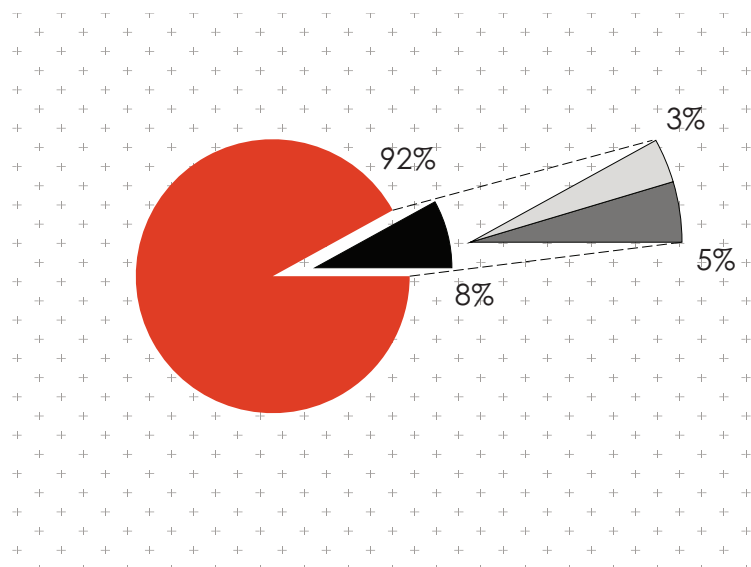
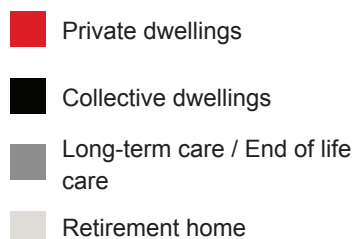


Figure 27: Most seniors today are living in private dwelling, data from “Living Arrangements of Seniors,” Stats Canada 2011.

### **- Age-Restricted Communities**

Retirement communities: similar to a gated community or a group of single dwelling units or an apartment sold exclusively to retirees, often with additional facilities such as a fitness room and in some cases a golf course.

- Planned active retirement community
- Healthy and independent seniors living with their peers
- Not designed for affordable housing
- Not necessarily located near support services
- No intergenerational mixing
- Not designed for frail elderly
- If a resident becomes frail they typically must relocate into a care facility
- A 55+ seniors apartment or condo building

### **- Shared Housing**

Seniors sharing an apartment or a single dwelling unit. Sometimes a family home that is owned by a seniors who then rents out a bedroom for additional income and social support.

- Tenants may be sought for companionship

- Affordable housing (both to the tenant and the renter for additional income)
- Increase feeling of security
- Mutual support
- Assistance from a younger tenant for informal support around the house
- There can be less privacy for seniors living as roommates, and is sometimes difficult to adjust to living with someone after having only lived their spouse more than 20 years

#### **- Independent retirement housing units**

Publicly funded self-contained apartments. Often targeted towards low income seniors and can be a mid-rise buildings with anywhere from 100 to 300 units (in the US), or a seniors housing complex.

- Congregate housing that may or may not have basic communal facilities, staffing and services
- Many privately funded congregate models have staffing, management, and services such as house keeping and prepared meals
- May have optional on-site personal care facilities

#### **- Co-housing**

A community driven model initiated by the end users, intended to create a supportive and independence living community. Can be an intergenerational or seniors co-housing group.

- Intentional neighbourhood, planned for and by the end users
- The future residents are involved in the planning and design process
- Community interaction and management is encouraged and design for
- Always has common house with a kitchen and dining
- The resident have their own self-contained private dwelling
- Residents pool resources: i.e.: lawn mowers, cost of a formal caregiver
- Not often an affordable option
- Difficult projects to initiate and complete: difficult to coordinate 40-50 people in a common goal, typical projects are 30 dwelling units plus land and a common house which is typically very costly, often challenge local city zoning bylaws

### **- Accessory Dwelling Units (ADU)**

ADU's are an addition to an existing home, often single dwelling residence. The ADU is either an addition, such as a secondary suite, or built separately in a backyard as a self-contained elder cottage.

- Can provide additional income, either by renting the new unit or by moving into the unit and renting the house to a younger family
- Can allow for the transfer of wealth within a family by having adult Children move into a house to provide support to parents
- The ADU can be rented to a caregiver
- Laneway housing
- There may be zoning restrictions when building ADU's

### **- Village Model**

A non-profit organization that seeks to provide services to local seniors through a membership program where the seniors pay a monthly / annual fee for services such as home food delivery, home care services, house keeping.

- Consumer / person-centred
- Services offered include medical, functional, emotional, and social support
- Non-profit / volunteers coordinate and administer the delivery of services
- Difficult sustaining professional staff to manage the system
- Fees may be inaccessible to fixed income residents

### **- NORC SSP naturally occurring retirement community with support services provided**

Communities that were not intentionally built for seniors, but have evolved to have a seniors population of more than 50%, Identified and termed as naturally occurring residential communities and then target with services to enable aging-in-place.

- Vertical / closed NORC - apartment complex
- Horizontal / open NORC - single-family neighbourhood
- Can be urban, suburban, or rural
- Services provided based on existing services

- An often dormant and overlooked form of seniors housing
- SSP: public and private services: case management, prevention programs, health care management, education, socialization, and recreational activities
- Seniors as partners in the program - volunteers
- Reduction of health care costs by 10%

## **2. Personal Care**

Personal care is offered when a senior needs assistance with looking after their physical needs. There are two delivery models, Home and Community Care and Assisted living.

Personal care assistance can be any combination of the following:

- Bathing
- Dental care
- Help going to the bathroom
- Meal preparation and nutrition

### ***- Home and Community Care***

Home and Community Care is to help seniors remain in their homes and in their community for as long as possible. Home and Community Care can be offered as short-term care for seniors recovering from a procedure or condition. It can also be offered as longer term care for seniors who need ongoing assistance.

- Home care
- Adult foster care
- CCRC (continuing care retirement community)

### ***- Assisted Living***

Assisted living is for seniors who can no longer safely and independently remain in their homes, but can still direct their own care. It is also for seniors with physical disabilities who need a safe environment to live and help with daily tasks. Assisted living facilities are limited to offering two services to seniors. If a senior requires more than two services then they are required to move into a residential care (complex care) facility which is more fully equipped with health care professionals. Publicly funded Assisted Living units are in high demand. Placement is based on the urgency of the individual's care needs.



### ***Assisted Living Services***

- Regular assistance with activities of daily living
- Assistance with the administration and maintenance of medication
- Assistance with the management of cash resources and property
- Monitoring of diet and therapeutic diets
- Structured behaviour management and intervention
- Psychological rehabilitation therapy or physical rehabilitation therapy

### ***- Assisted Living Models***

Housing that combines private units in apartment-style residences with support services: meals, housekeeping, personal care and help with medications

- Public, private, and non-profit options
- Subsidized and non-subsided options
- Full communal facilities
- On-site personal care facilities
- 24 hr supervision
- Range of care levels but not complex medical care
- No standard model

## **3. Complex Care**

Residential care facilities provide 24-hour professional nursing care in a protected, supportive environment to seniors with complex care needs. This model is meant for seniors with the highest level of care needs who can no longer live safely on their own. Publicly subsidized residential care is a limited resource, and placement in a residential care facility is based on the urgency of the individual's care needs. If a private care facility offers complex care, it is typically a blended service model with multiple levels of care.

Four aspects of care:

- Suitable accommodation
- Professional care
- Satisfying meals

- Program of activities

Publicly subsidized complex care services:

- Residential care (public / private)
- CCRC (continuing care retirement community)
- Memory care
- Palliative care / hospice / home hospice care
- Skilled nursing facility / nursing home
- Hospital care

Complex health need examples:

- Personal care: meals, nutritional support, housekeeping, activities
- Medical care: physician and 24-hour nursing supervision, emergency response, end-of-life care
- Physical care: physical therapy
- Mental care: social work

### **- Life Care Communities**

An example of a blended service model with multiple levels of care.

- Religious or private sector model
- 300 to 400 residents
- Combines all levels of support
- Independent
- Personal care
- Complex care

## X. Typology

Typology for seniors housing falls into two categories, residential and care facilities. Each typology responds to the level of support that the users require. For seniors who are independent and do not require any formal support, any residential housing typology that is used for non-seniors can also be used for seniors.<sup>52</sup>

- Row housing
- Slab
- Courtyard
- Towers
- Block housing
- Party-wall housing
- Single dwelling

For seniors requiring formal support; residential care, intermediate care, complex care, hospital care, then the typology often focuses on a centralized hub with central common services and central staffing services. This is often expressed through an alphabet typology.

Blended models of seniors housing can draw on either typological group, although they tend to favour centralized services.

<sup>52</sup> Ebner, Peter. *Typology+ : Innovative Residential Architecture*. Basel ; Boston: Birkhauser, 2010.

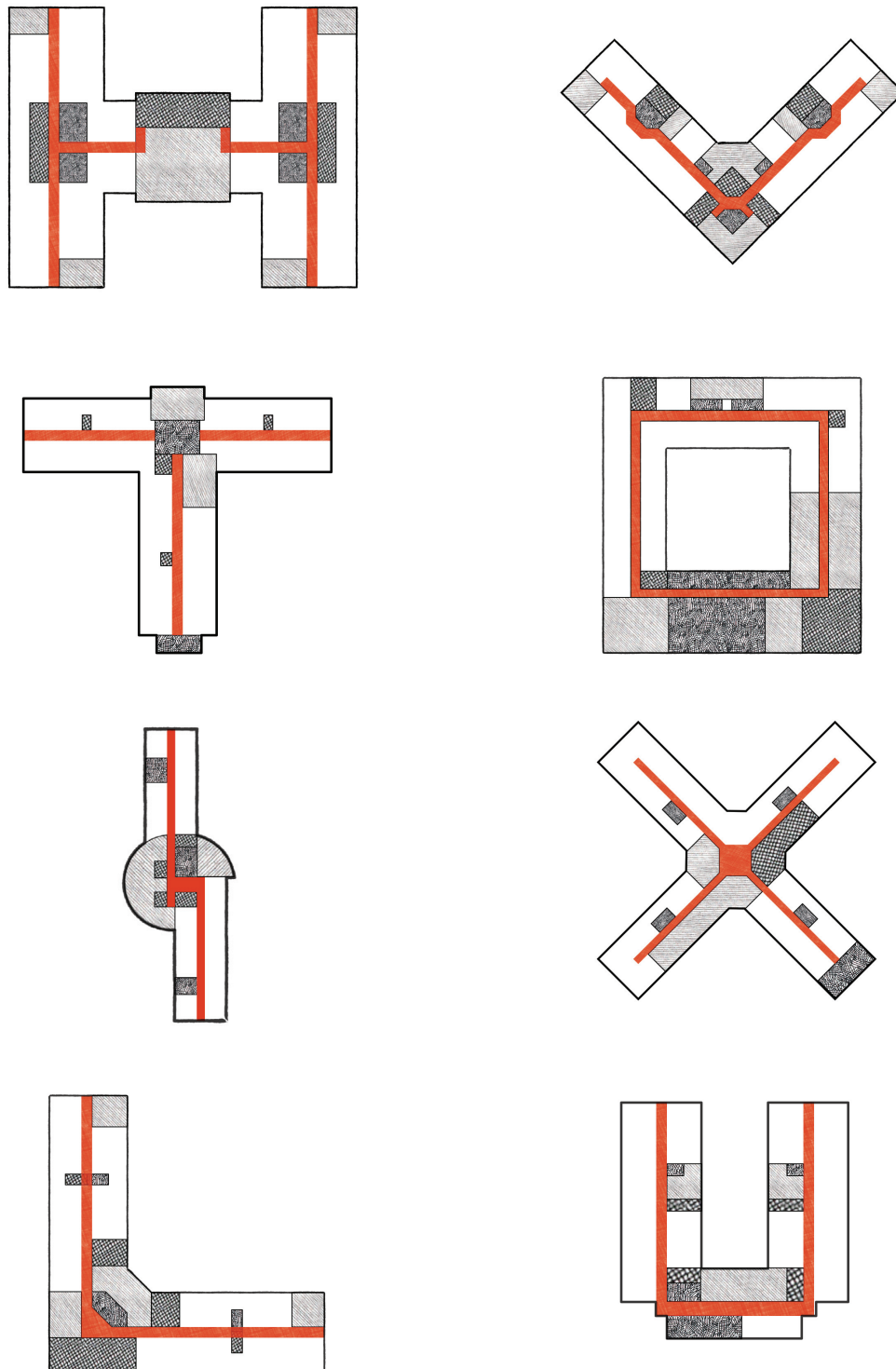


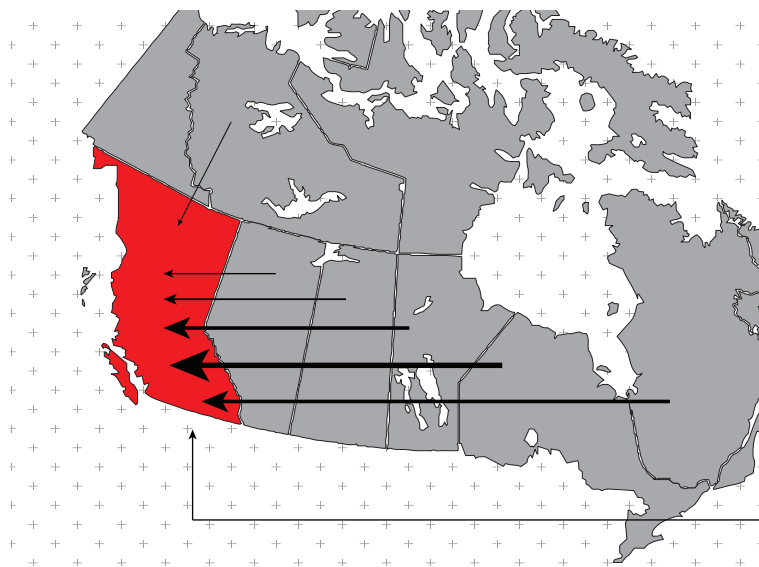
Figure 28: Examples of alphabet typology for formal seniors care facilities. Data from Building Type Basics for Senior Living pg. 122.

### CHAPTER 3: FOLLOWING THE DEMOGRAPHICS WEST

For seniors who plan their retirement, many of them move to the West Coast and Victoria. This trend has been a common one for a number of years, and any visit to any suburban neighbourhood within Victoria will produce anecdotal evidence of the high seniors population. The demographic evidence also bears this out. There is a net inflow of migration within Canada towards BC, and of western cities Victoria and Kelowna have higher than average seniors populations.<sup>53</sup> Within BC there is senior migration to Victoria, Vancouver Island, and the Okanagan Valley, and almost every neighbourhood in Greater Victoria along the coast has a seniors population greater than 20%.<sup>54,55</sup> There is no better city within Canada than Victoria to use as a testing ground for Seniors housing.

#### *Migrating to BC*

Figure 29: There is a net population movement towards British Columbia as more Canadians move to the West Coast than leave it, data from “Net Population Movement For British Columbia Demographic Analysis”, BC Stats 2015.



53 “Net Population Movement For British Columbia Demographic Analysis”, BC Stats, accessed 2015, Canada’s aging population expected to head west, <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Demography/Mobility.aspx>.

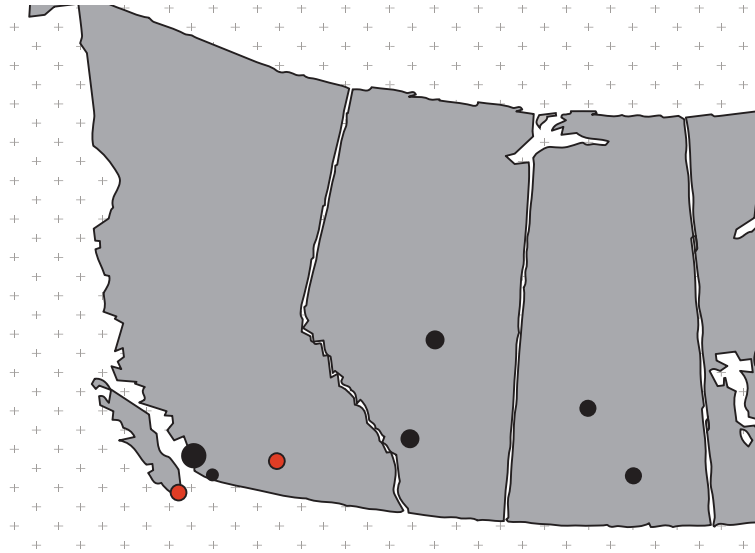
54 “Characteristics of British Columbia’s Senior Population,” BC Stats, accessed October 10, 2015, <http://starcanada.ca/wp-content/uploads/2012/07/Demographic-Characteristics-of-British-Columbias-Senior-Population-An-Environmental-Scan.pdf>.

55 Stats Canada 2011.

**Western Cities and Seniors**

- Cities with seniors populations below the national average.
- Cities with seniors above the national average.

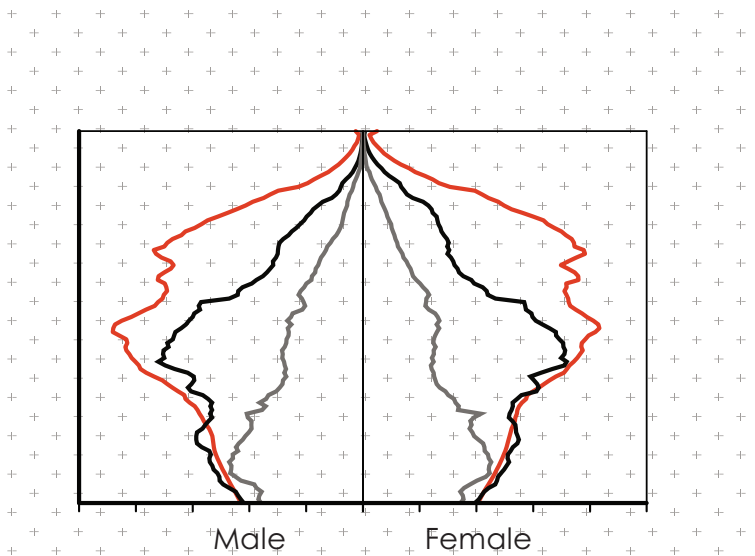
Figure 30: Victoria and Kelowna have seniors populations higher than the national average, data from Stats Canada 2011.



**British Columbia Population Pyramid**

- 2030
- 2000
- 1970

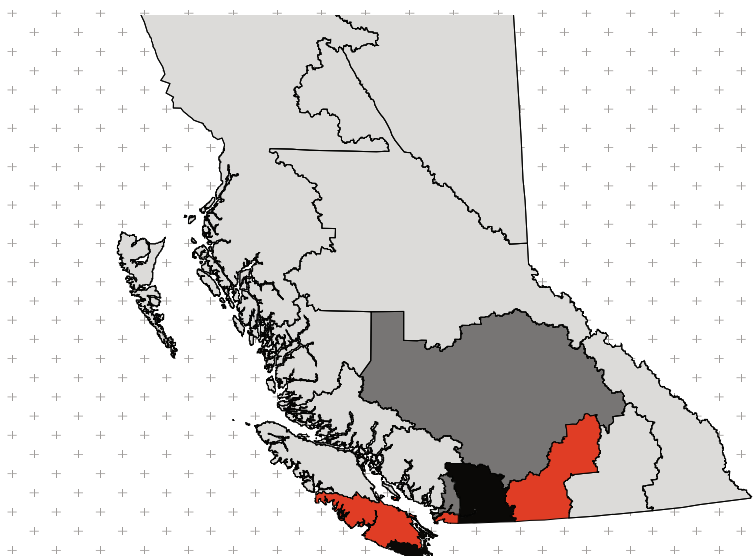
Figure 31: BC will continue to experience a population growth, data from "Demographic Characteristics of British Columbia's Senior Population," Stats Canada.



**Migration of the 55+ Population Within BC**

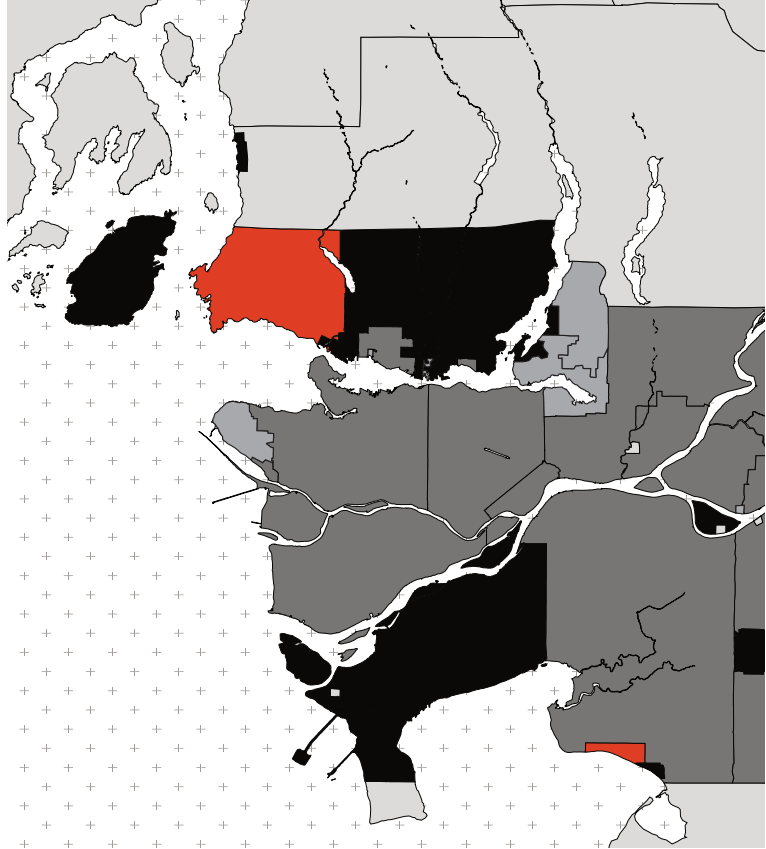
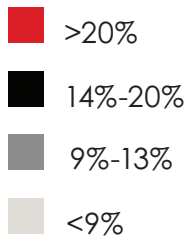
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Figure 32: Within BC, seniors migrate to Vancouver Island, and the Okanagan Valley, data from "Demographic Characteristics of British Columbia's Senior Population," Stats Canada.



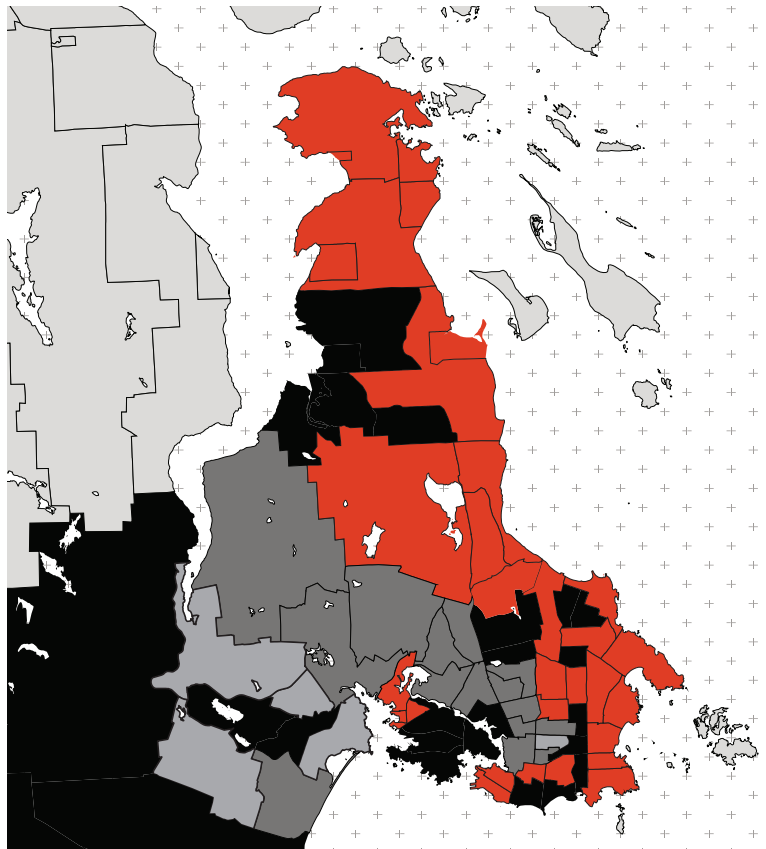
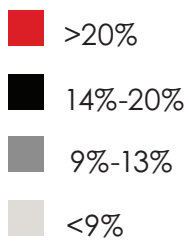
**Vancouver**

Population 65 yrs +



**Greater Victoria**

Population 65 yrs +



Figures 33 and 34: Seniors are much more likely to relocate to Greater Victoria than to relocate to Vancouver, data from Stats Canada.

## CHAPTER 4: THESIS STRATEGY

It is the goal of this thesis to develop a strategy that has a broader application than a single design response. The result of this strategy will be a blended model that both supports independent living for seniors, as well as a public facility that provides services to the community as well as the residents of the proposed independent housing. By using a programmatic approach driven by two key principles, community and independence, an existing community is used as an existing programmatic resource which is then built upon to provide a fuller range of amenities and support for seniors both within the proposed design as well as the local community.

For the initial development of this strategy, this thesis proposes three possible architectural interventions when responding to the concerns around seniors housing: aging-in-place, relocation, and end-of-life care. All seniors have one universal choice as they age: to age-in-place or to relocate. An aging-in-place intervention is focused on home modifications, accessory dwelling units, and design that supports a seniors health and independence within their existing home. A relocation intervention is focused on a new design that supports seniors in a new setting that supports health, independence, incorporates the ideals of healthy aging-in-place, and can be an independent living, personal care, complex care, or a blended model. End-of-life care is a stage where a senior has lost agency over their life, often due to dementia or Alzheimer's. This stage of intervention is designer as caretaker, minimizing discomfort and maximizing dignity in the final stages of life. This thesis will focus on relocation to develop a new blended model, primarily designed for independent living with an intermediate care component.

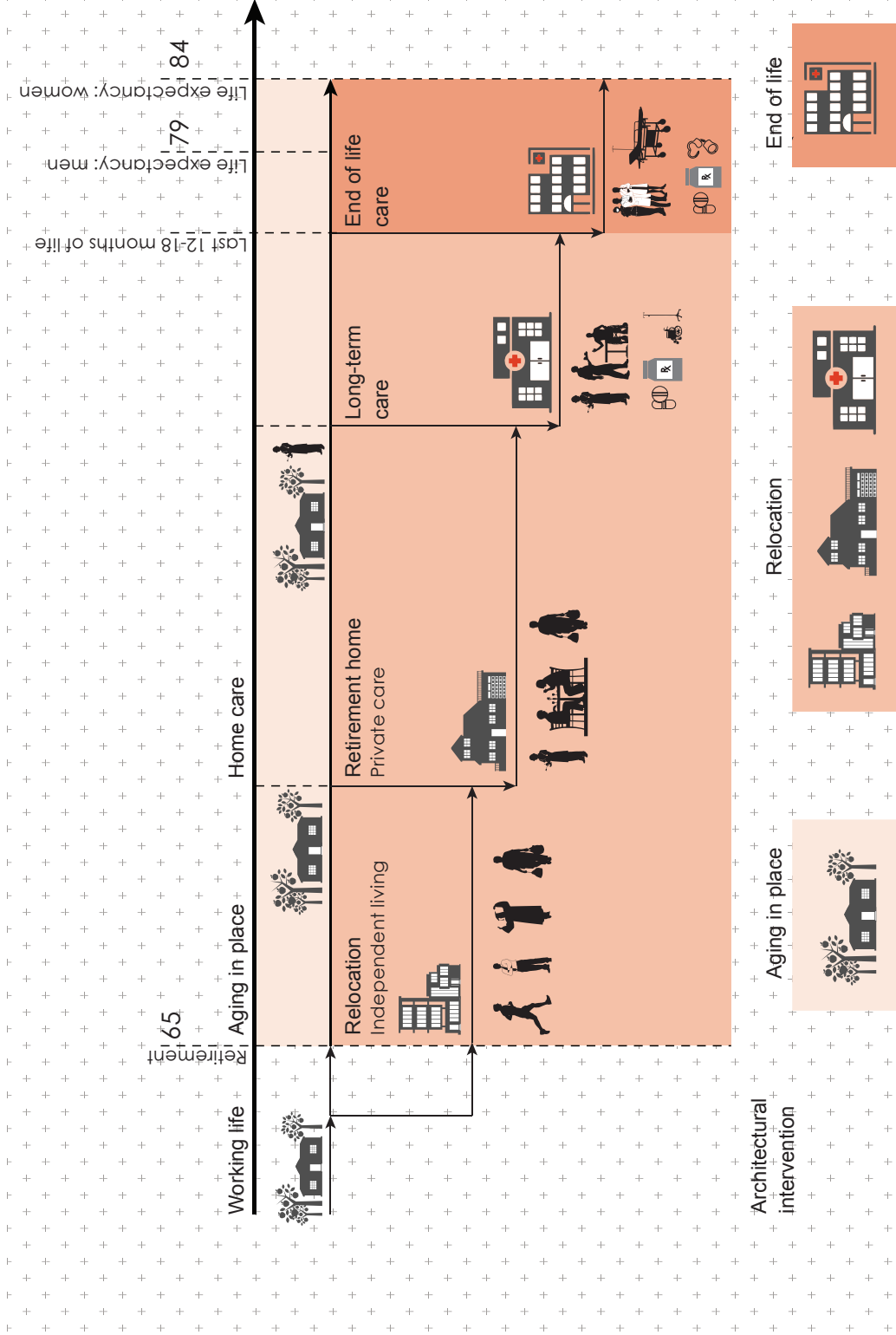
With the focus on relocation, the migration of seniors through the demographics, have been followed to Victoria. Once in Victoria, it has been established that there are high populations of seniors everywhere, and the focus shifts to identifying the existing walkable communities that can be used for an integrated community model. Building on the existing community and programmatic infrastructure is key to providing the fullest possible range of services to seniors. It also integrates seniors into an existing intergenerational community rather than concentrated communities of seniors without future proofing. Communities made up with significant seniors populations have increasing difficulty being



self-reliant when the majority of the community requires support at the same time. An intergenerational community ensures seniors can find younger generations for support as well as increasing the social capital of a community by contributing their life experience as active members of that community.

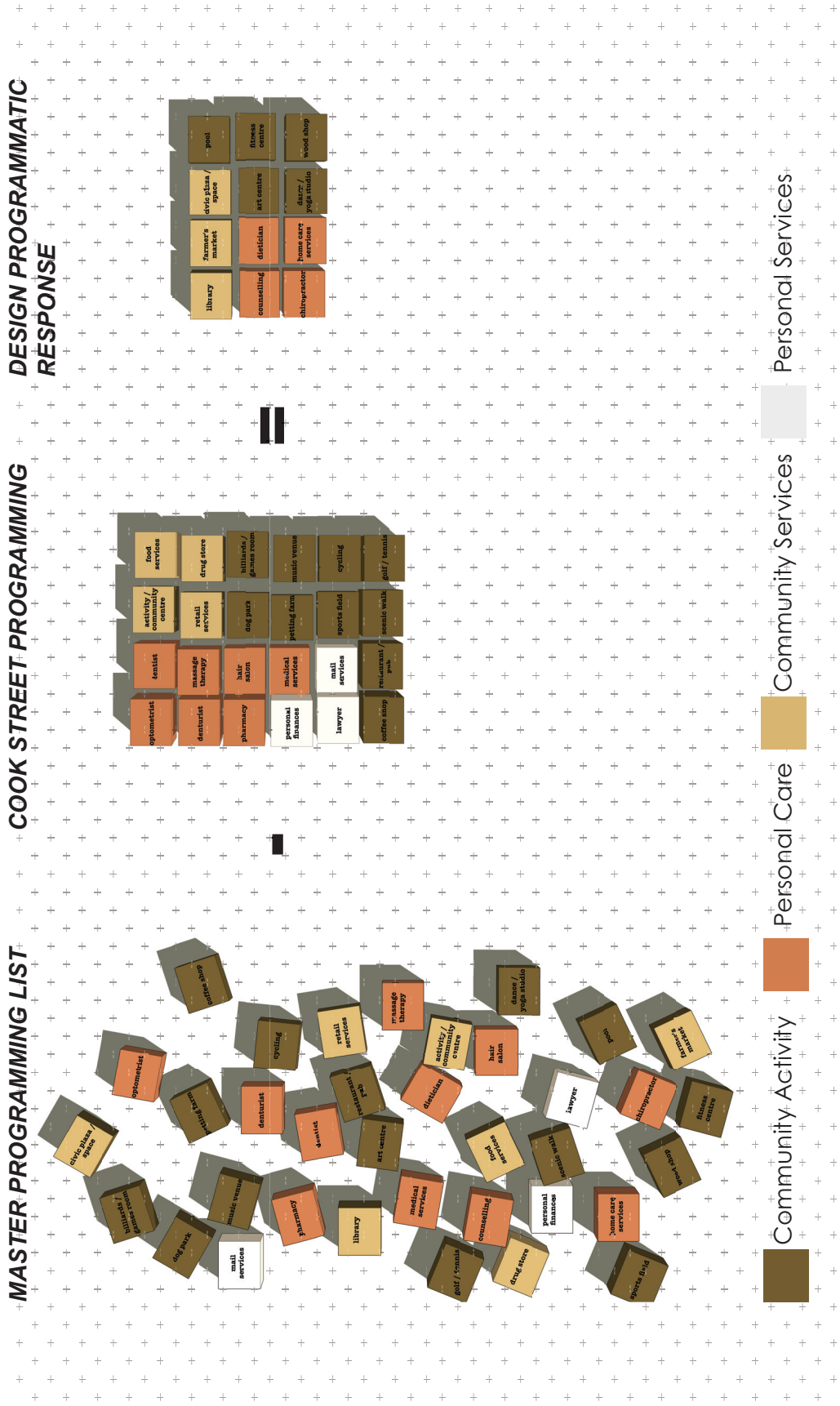
An initial assessment of walkable communities is made based on the existing services. “The programming block formula” is then applied. The existing services and programming of a community is subtracted from a master list of programmatic elements that would benefit seniors, the remainder becomes the programmatic response of the design. As this formula is applied to each community, each design response is different, and yet the sum total is that seniors in each community have access to a full range of services. Each community is strengthened by the inclusion of additional services that all members of the community can benefit from, and yet each community retains its own unique identity with each design response being unique. The inclusion of additional programming to each community builds a more self-reliant community and is the basis for healthy aging-in-place for both the current generation of seniors, and for future generations of seniors.

This programmatic approach to design is used to facilitate social networks among seniors by creating spaces where shared moments among all members of a community can take place. The programming also drives support for physical health through purpose built space such as a fitness centre and circulation that is visible and socially engaging. Programming is also used to support seniors choice, independence, and expression.



### I. Three Positions of Intervention

Figure 35: The author proposes three positions of architectural intervention within the topic of seniors housing: aging in place, relocation, and end of life care.



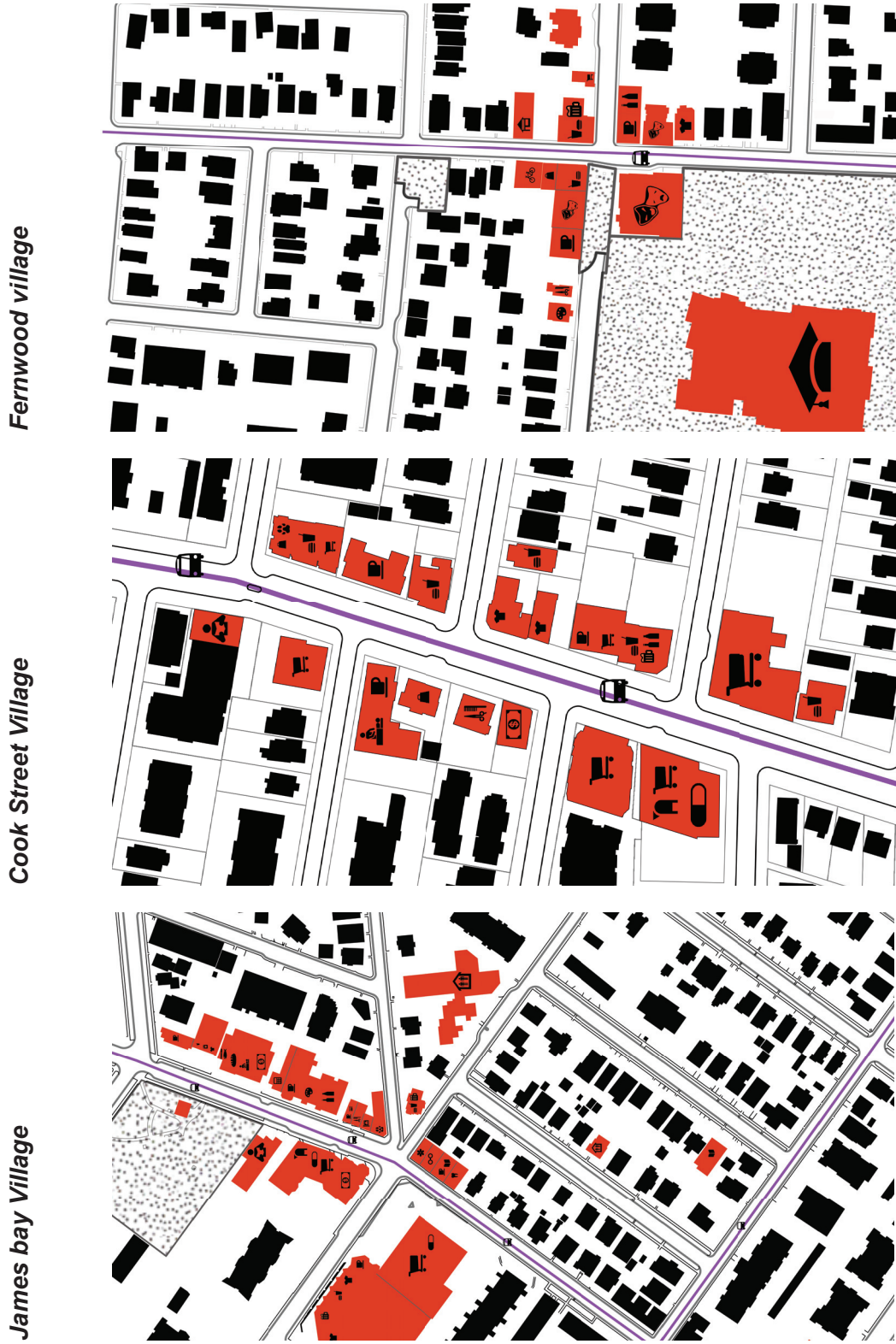
## II. "Programming Block Formula"

Figure 36: The author's proposed Programming Block Formula. Starting with a compiled master list of programming and amenities for seniors from multiple existing seniors housing projects, an existing community's amenities are subtracted from the master list, and what remains is the design response.



### III. Victoria Resources for Seniors

Figure 37: A survey of existing hospital and assisted housing resources for seniors within Victoria, as well as existing walkable communities.



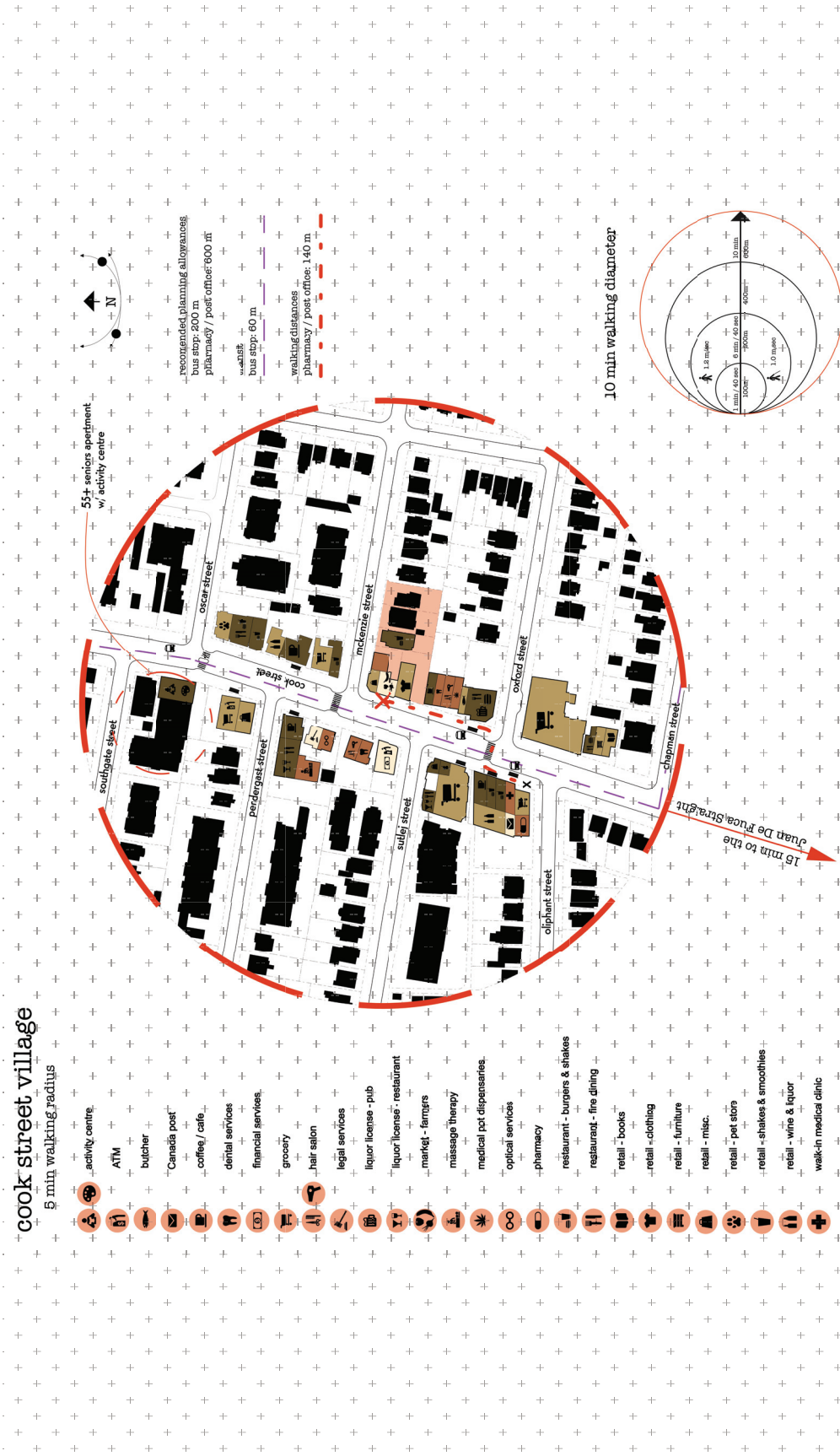
#### IV. Existing Site Amenities and Programming Comparison

Figure 38: A survey and comparison of existing amenities within three existing walkable communities.



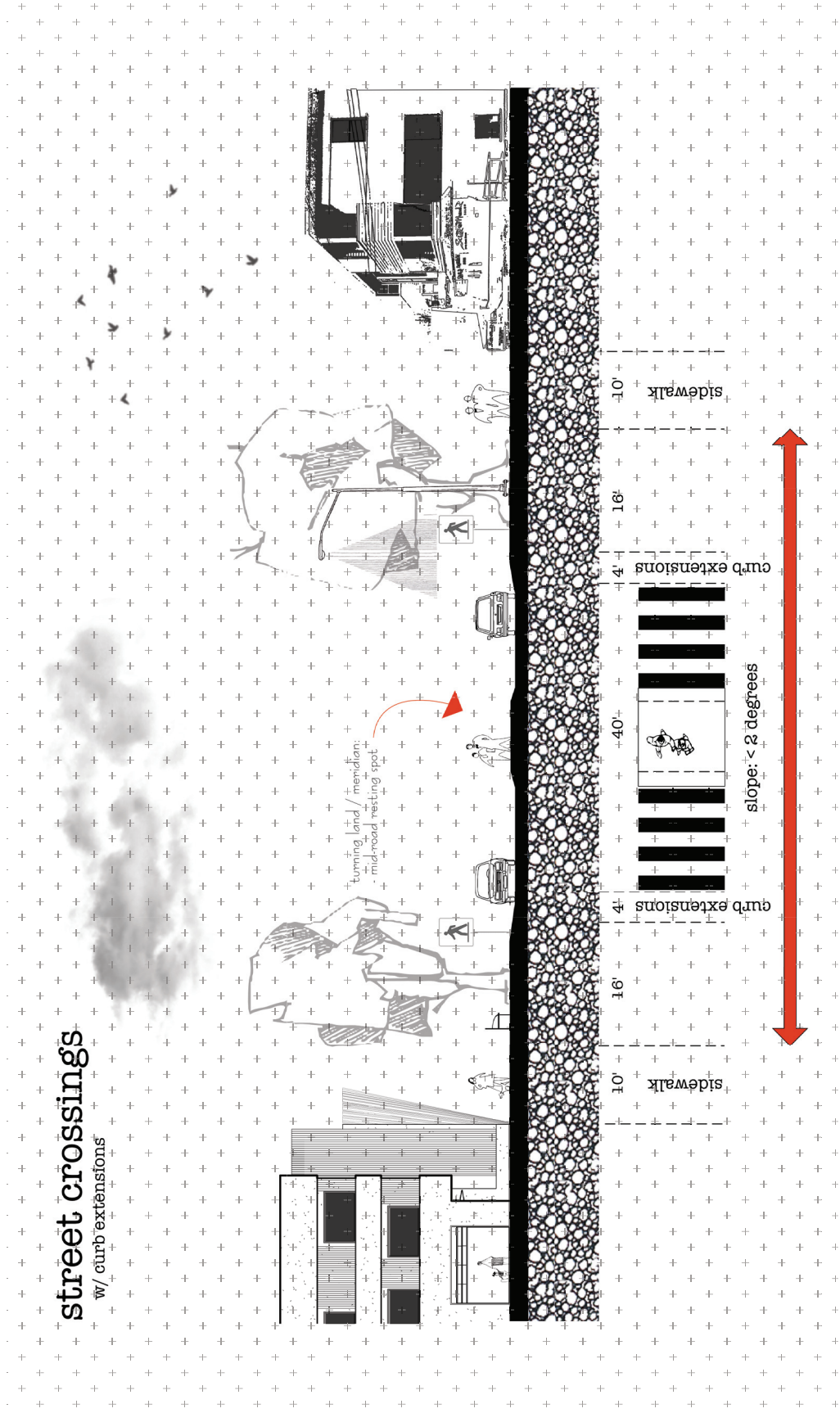
**V. Existing Beacon Hill Activities and Programming**

Figure 39: Beacon Hill is a 15 minute walk from Cook Street Village, and is a great resource of activity and programming.



### VI. Existing Cook Street Programming and Community Circulation

Figure 40: A more detailed look at Cook Street Village's programming and circulation. Services such as a pharmacy should be within 600m, and all services and activities within Cook Street Village are within 200m.



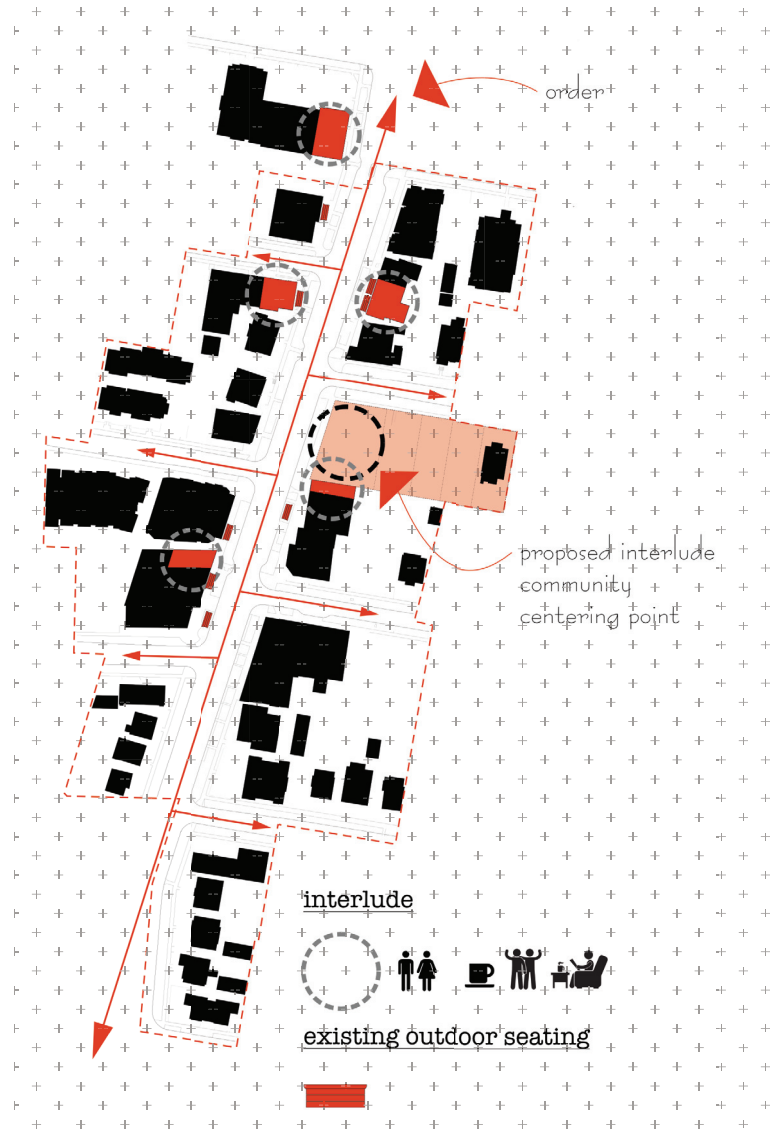
### VII. Cook Street Circulation and Analysis

Figure 41: Cook Street Village has a minimal to negligible slope which benefits seniors requiring mobility assistance. There is also a turning lane and three controlled cross walks which makes it safer for seniors to cross Cook Street to access the full range of services and programming.



## Order and interlude

Figure 42: Cook Street Village is organized on one main street, as such it is a very linear community. The opportunities to stop, rest, and socialize are primarily through coffee shops. A centralized space within the community that provides seating for rest and socialization, along with a public washroom, would give the community an anchoring point, and a space for interlude that is not dependant on commercialization where members of the community can rest and hangout for as long as they desire .



## Interlude



Figure 43: Community is built on individual social moments, shared spaces that facilitate shared moments between individuals.

## **CHAPTER 5: PRE-DESIGN**

### **I. Design Goals**

The research and investigation portion of this thesis generated a number of ideas that became design goals that shaped the initial design concept.

#### ***- Residential scale***

Cook Street Village falls within the neighbourhood of Fairfield. Fairfield is a residential neighbourhood dominated by single dwelling housing and three to four story apartment buildings. Any design proposal within Fairfield and at a residential scale should fall within those same limits. Those limits are also echoed in the City of Victoria zoning Part 3.10 R3-AM-1 and R3-AM-2. In order to further maintain a residential scale within the design, separate independent three story buildings were conceived rather than a solid block apartment building which then may have led to a more institutional feeling for the residents.

#### ***- Public and Private Funding of Seniors Housing***

The public and private sectors have different roles when it comes to seniors housing. Public funding falls within the Health Care Act and provides support to seniors when they require care: from personal care to end-of-life care. The private sector's role is housing for independent living and can include levels of assisted living. A design that responds to the changing health care needs of seniors should recognize the different roles the public and private sectors play, and a blended model that provides different levels of support and services should reflect those different roles.

#### ***- Parcels and Private Funding***

Any design that falls within an existing community is governed by existing lot sizes. This is equally true for Cook Street Village, an older community within Victoria. If private funding is involved, then it may come in stages and a design that reflects that can work with existing parcels to expand the project as additional funding becomes available. A project that expands according to parcels can also reflect a growing demographic and can grow

accordingly.

### **- Public Building**

Seniors care is directly connected to public funding through health authorities, and government programs. A public portion of a design facilitates the delivery of public services, and is a statement of commitment to aging-in-place and to existing communities. A public design that serves seniors both in the proposed seniors housing design as well as the local community can offer personal care through home care services, intermediate care units, a nursing station, and nutrition classes. Space for professional services that are not already offered in the community, like chiropractic, massage, dental, can also be offered through the design.

Government buildings are often an expression of authority and commitment through stone and concrete. Permanent public aging-in-place services expressed through a concrete materiality, representing the public commitment to communities and future generations. A material relationship between the public (concrete) and private (wood) aspects of the design.

A market space

- Farmers market for fresh fruits and vegetables (nutrition)
- Market stalls where seniors can sell their artwork, crafts, personal items (expression / independence)
- Market stalls where seniors and members of the community can shop (consumer choice and participation)
- Tables for sitting and resting (socializing)
- Public washrooms (incontinence)

A civic space

- Theatre events: professional or amateur music and performance (social entertainment)
- Civic events: community meetings (seniors participation adds social capital / wisdom)
- Civic centre as a space for seniors so participate in civic / community

decisions / share wisdom / physical space for elders

### **- Private**

A private housing model for independent living, with some of the design principles of co-housing projects.

- Common house
- Common shared activities
- Fitness centre, dance / yoga studio: physical and social activity and expression
- Art studio, work / wood shops: independence through expression and creativity, development of skills and learning, art and wood craft sold through the market
- Residential scale and a wood materiality
- Guest rooms to facilitate visiting family

### **- Courtyards and Single-Loaded Corridors**

Many co-housing project are centred around courtyards. Courtyards allow for easily accessible common space that act as an open invitation to the residents. Single-loaded corridors allow for an “eyes on the street” approach where the residents are always aware of the social activities that are taking place within the courtyard.

### **- Circulation as Social Space**

Single loaded corridors that is a circulation between units and an open courtyard act as circulation as social space. Visible circulation allows for direct and indirect social contact between the residents.

### **- Trees and Green Space**

Victoria is a popular relocation destination in large part because of the natural environment and green space. Research has demonstrated strong preferences for green space among users, and has demonstrated that connection to nature supports healing. Trees as focal points, and gathering space, and green space that support connection to nature through gardening can be used to support socialization and physical activity. Seniors can express

their agency through gardening, choosing how to manage a personalized garden plot.

### **- Scales of Community**

Spaces that support community can build on each other to create social networks. Shared space between paired units, shared circulation space, shared programmatic space, shared courtyard space, shared public space, and shared community space.

### **- Blended Model**

Drawing upon aspects of Co-housing, CCRC, NORC SSP, and Village model, this blended model seeks to improve upon those existing models.

- A central common house with shared kitchen and dining area (independence, social health)

- Resident run independent housing community, no support staff (independence)

- Shared programming for the residents: dance / yoga centre, fitness centre, art studio, work / wood shop (independence, social network, expression, physical and mental health)

- Resident run membership for seniors in the local community to access programming. Source of income for the residents, and a shared resource for seniors in the local community (social network, financial support, independence)

- Public building provides services to the local community, including home care services that can be used by the residents and seniors in the surrounding community / public services for seniors that serve seniors the larger community including those with limited resources / publicly funded services and shared.

### **- Labour Shortage**

- Connect seniors to intergenerational communities as a source of informal support from younger generations.

- An independent living community where seniors participate and manage their own shared spaces, and support each other

- Residents responsible for their own gardening, shared dining / kitchen duties

### **- Independence**

- Opportunities to participate in the local economy through spending / shopping, and through selling arts, gardening, wood craft through the market

- Expressed through a choice of programming and activity

- Job / volunteer opportunities through community participation
- Social / choice incentives to draw seniors out into the community
- Private units with personalization space: patio as extension of units, residents can personalize the space, expressing who they are, formed shelves into the concrete walls incentivizing personalization
- Opportunities for life long learning and skills building
- Create and express through gardening, dance, art, wood craft, personalized space

## **II. Design Process**

It is the author's belief that there is a spectrum of design process. At one end, the designer begins the design process with a clear idea of where they want to go, and the process itself is an expression of that idea. The design process in this case may clarify and reenforce the initial idea, with the design being a representation of the initial design idea. Or, more commonly, it may push and pull the initial idea in different directions with the final design being a merge of the initial idea and the process. This clear visual or idea may be a late night epiphany, or in the case of an architectural thesis is generated from months of research that layers ideas upon each other until there is a clear idea of what the design needs to be. At the other end of the spectrum the designer may have no clear visual or idea about what the design should be, with the process in this case being one of exploration and discovery. The process becomes iterative, with each exploration building on the next leading the design and the designer into unexpected territory. An example of this process could be a project being given to a designer with little more information than the site itself. Designers, sculptors, painters all work within this spectrum, with some consistently working at particular ends, while others move within the spectrum depending on the project.

This design process was a merge of research driven ideas, physical sketch models, and Revit.

### **- Research Driven Ideas**

The foundation of the design for this thesis was generated primarily through ideas stemming

from the research. The author also has a pre-existing familiarity with the site and Victoria, and the author also had a initial understanding of some of the challenges seniors face, and was familiar with the co-housing model.

As example, a courtyard was a central idea and key component early on. The author is familiar with co-housing models where courtyards are common features. It was also determined early on that single loaded corridors were an important aspect of connecting residents with the activity within the courtyard. Once the site was confirmed, the only decision became was the courtyard loaded toward the front, back, or middle of the site. The move to situate the courtyard in the middle of the site created a central social space that the buildings could enclose, giving the residents a greater sense of community, privacy, and security. Many design ideas and decisions fell similarly:

- The placement of the public portion to align with the amenities of Cook Street Village, and the private portion to align with the residential housing.
- The overall building height to align with the building heights of neighbouring buildings, Cook Street zoning, and site orientation to the south sun and natural light.
- The residential unit sizing corresponding with parcel widths and the overall site length and research of typical one bedroom sizes being 20'-24'.

#### ***- Physical sketch models***

Physical sketch models were used to explore the initial idea, the formal relationships of the components, the courtyard, and more importantly introduced a curved element. The curved element was an expression of the social energy of the project and became a formal element itself. The sketch models were also the first expression of the roof as circulation, and expressed the initial ramp idea. And the initial ideas of both the public portion and the common house were not as clear as the residential components, and the sketch models were critical in adding greater clarity to their form and orientation.

#### ***- Revit***

Revit, within the industry, is a production tool. As architecture students anticipate graduation and the future of the industry Revit is increasingly being used as a design tool within design programs. The author, at this time, is not clear on whether Revit is an effective design tool.

Within this project, there were clear initial ideas and Revit was advantageous in expressing those ideas. It was also useful in designing space through furniture. The combination of furniture models with universal design guidelines helped create room layouts and subsequently the overall room sizing. Revit is also advantageous in understanding the relationship between plan, section, and elevation a 3D digital model is built and understood through different views. Revit is also useful in the design development portion, exploring different unit layouts, circulation and other spacial relationships at human scale. Revit, being a production tool, is good for expressing ideas and well as grounding a deign in the real world.

The final design is an expression of all three ways of working. What's interesting to the author, is that there is a tension between the curved element and the more formal residential elements, one coming through the physical design process and one coming from abstract ideas and Revit. Subsequently the design is very much a reflection of the author's own tension around how to be in design and the relationship between working physically and digitally and how those two different ways of working can be resolved when combined, or whether they should be separated into different stages of the design process.



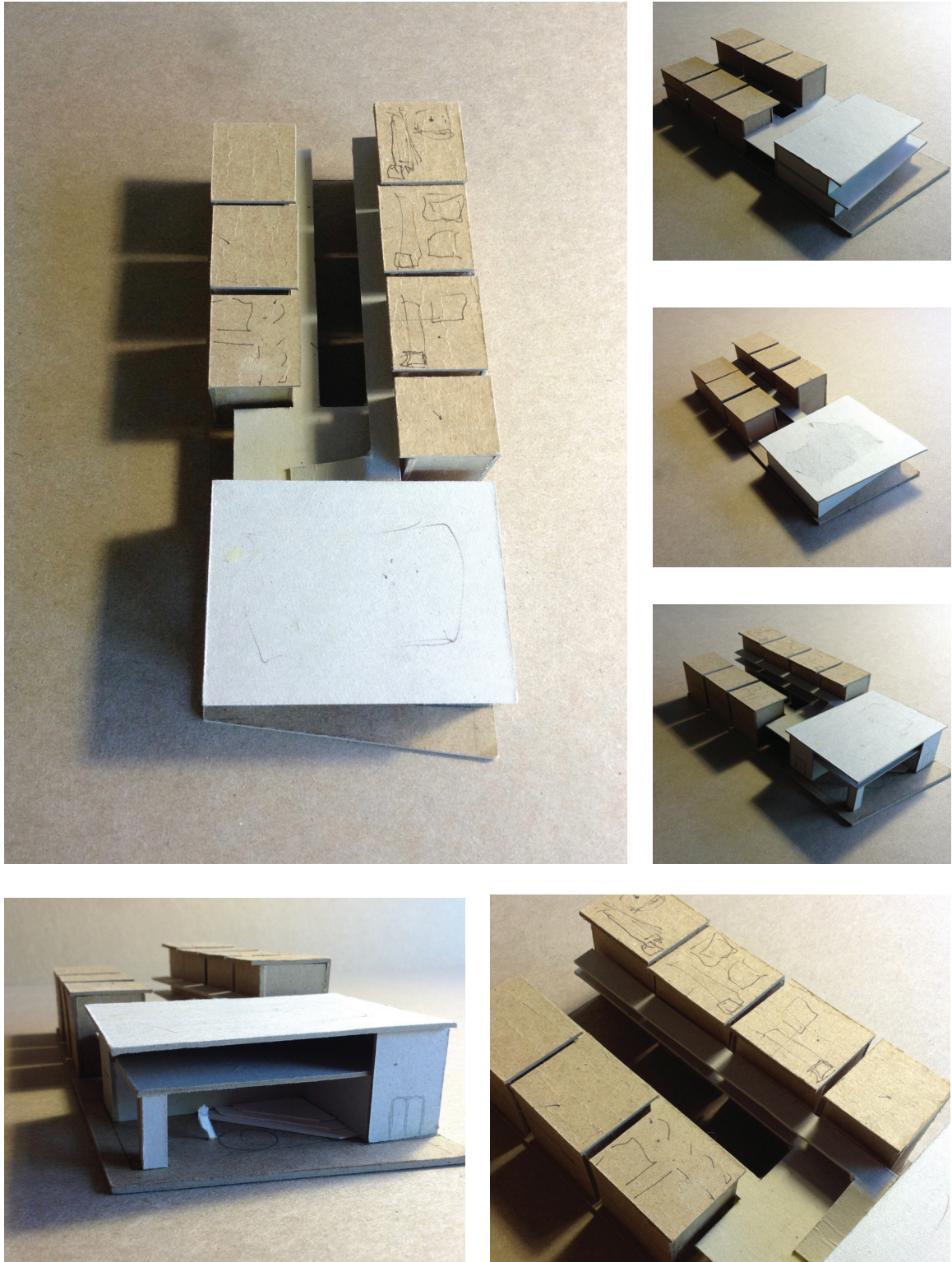


Figure 44: Initial sketch models of the design concept stemming from the research and pre-design phase.

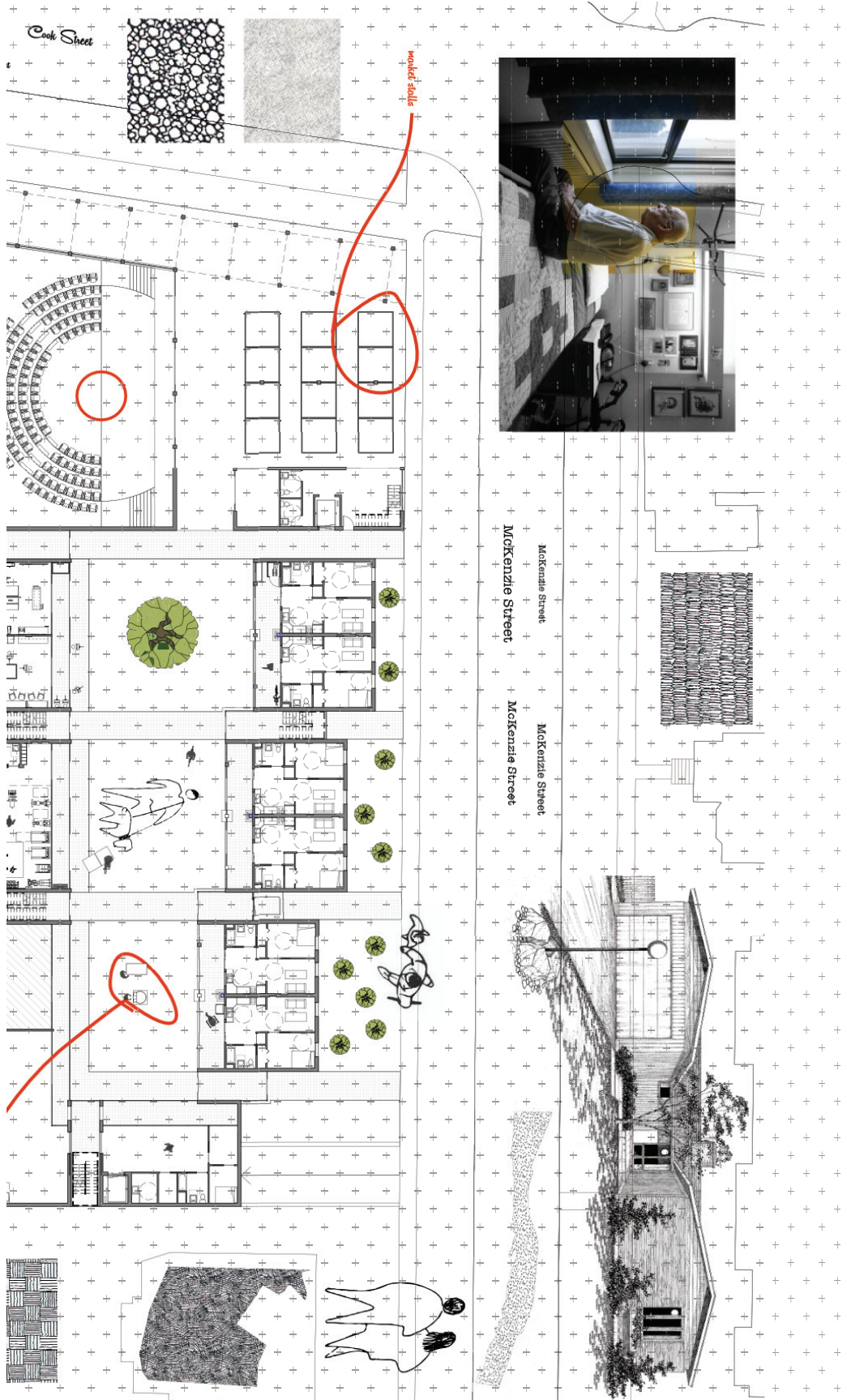


Figure 45: An example of an initial Revit model is response to the initial sketch models.

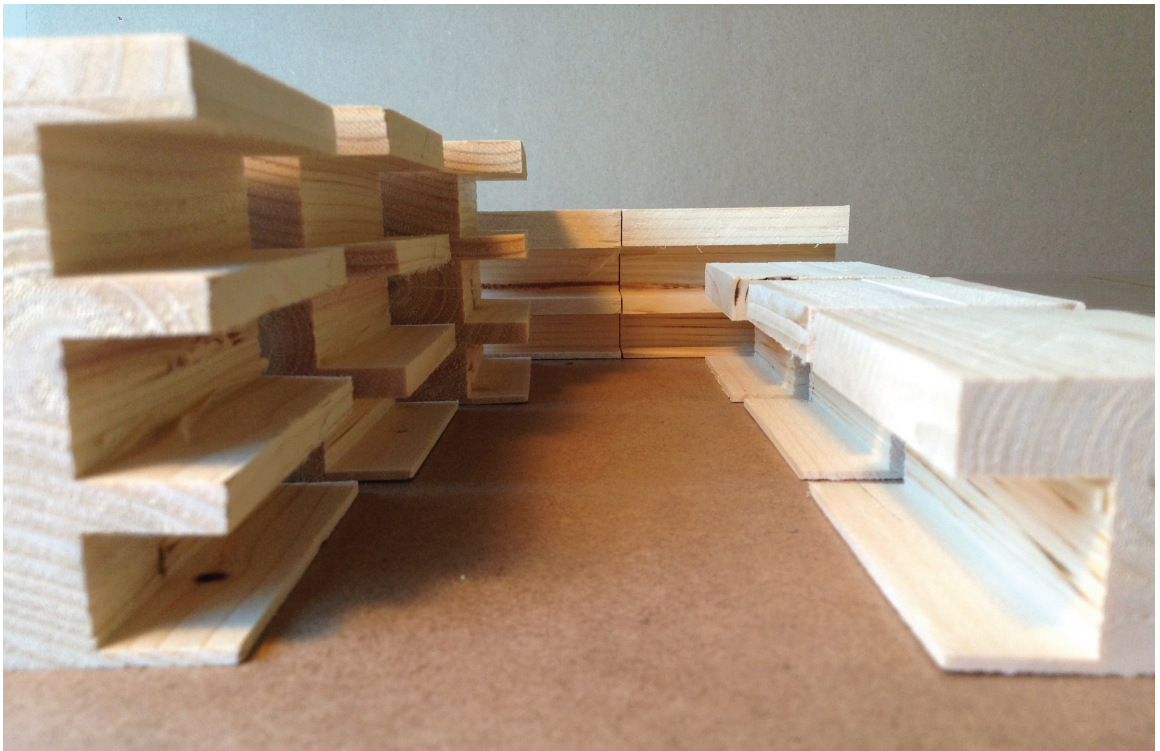


Figure 46: Wood sketch models exploring site and form.

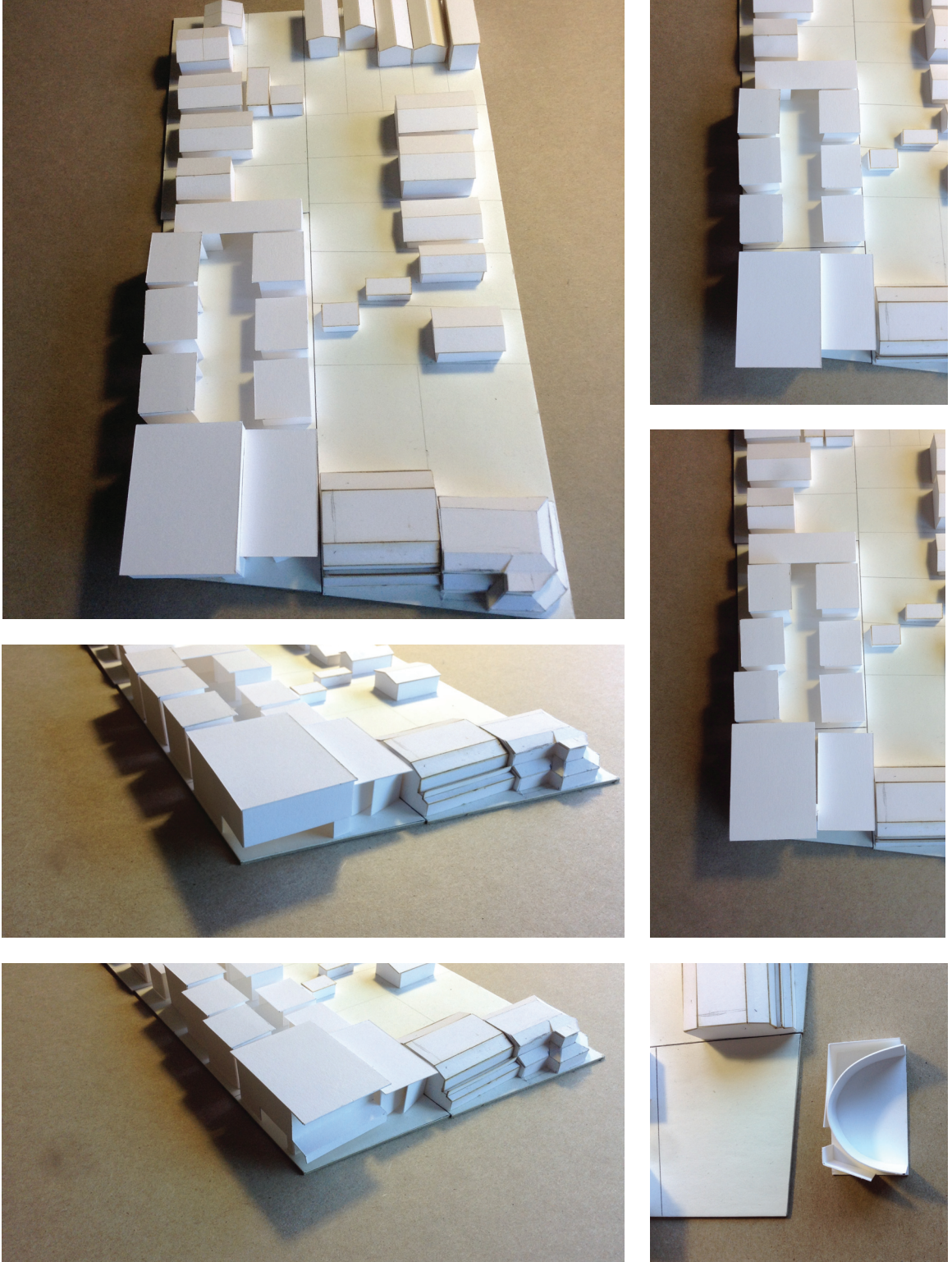


Figure 47: Different sketch model explorations with site context.



Figure 48: Different sketch model explorations with site context.

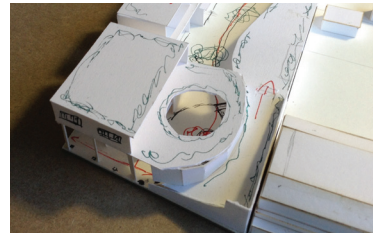
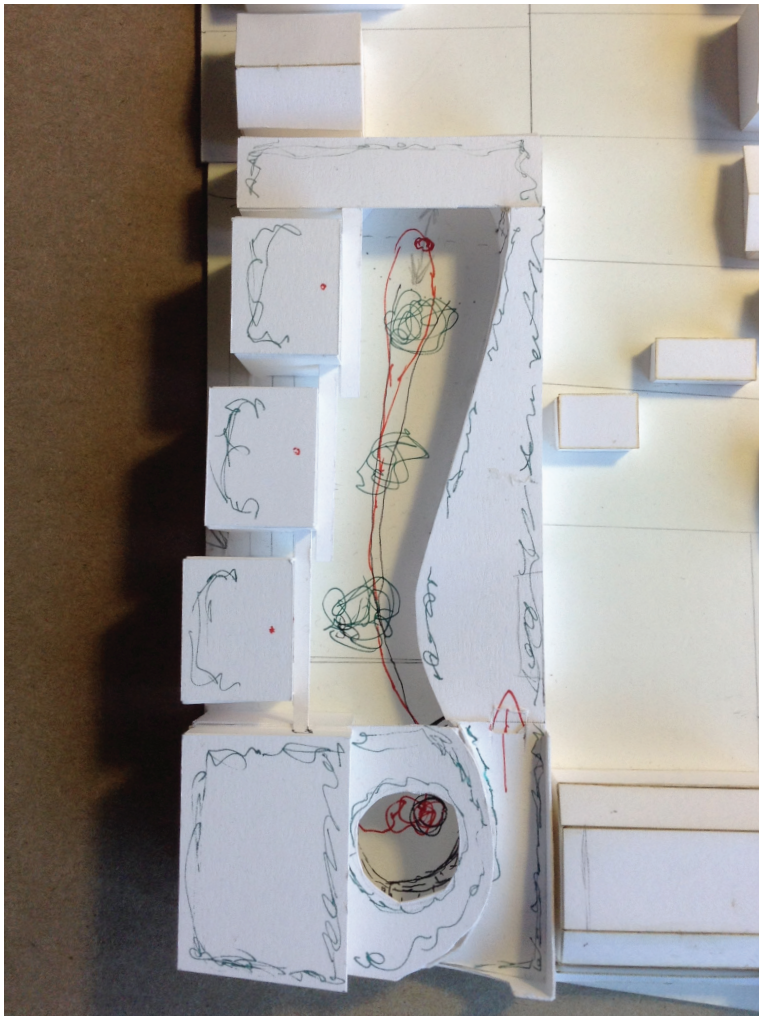
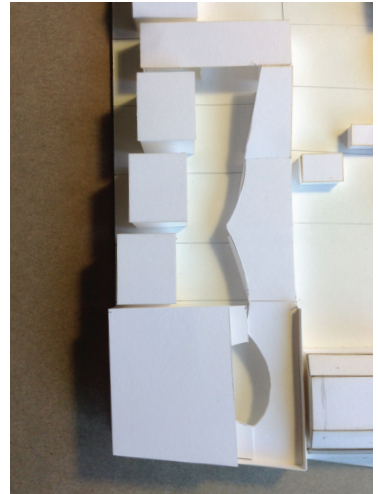
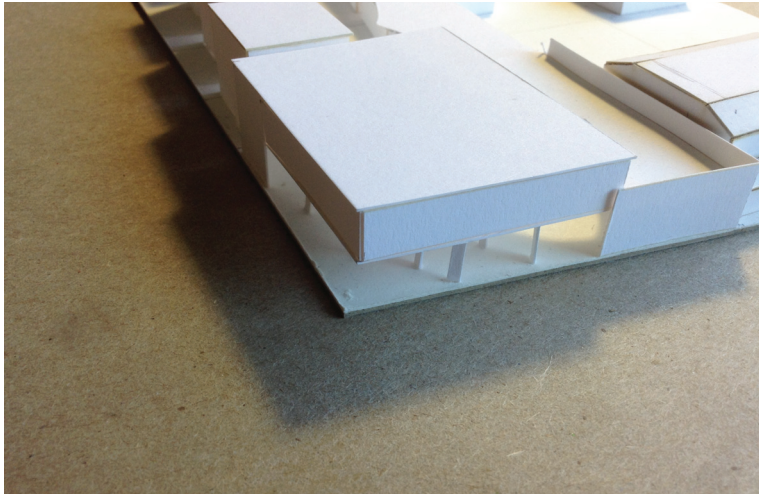


Figure 49: Different sketch model explorations with site context.

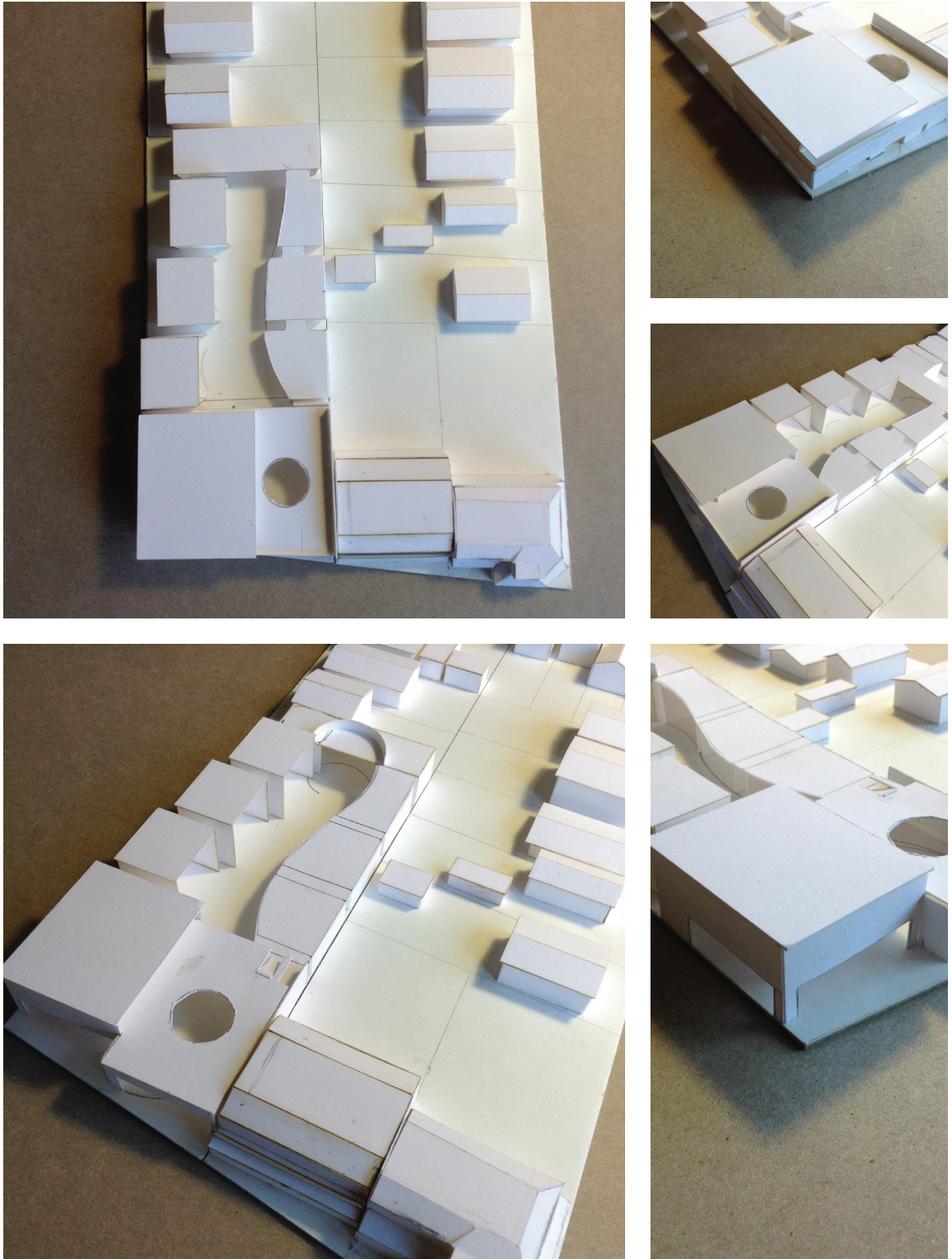


Figure 50: Different sketch model explorations with site context.



Figure 51: Different sketch model explorations with site context.



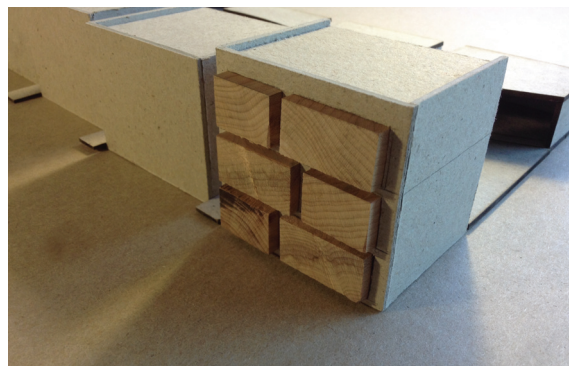
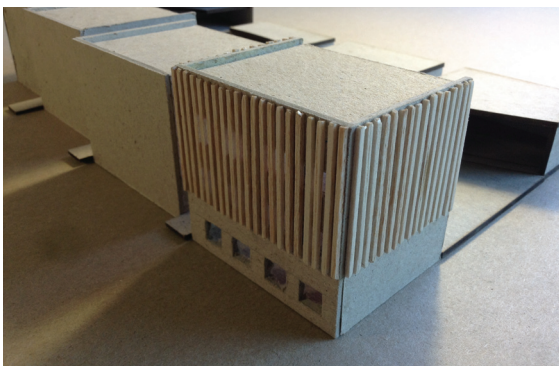
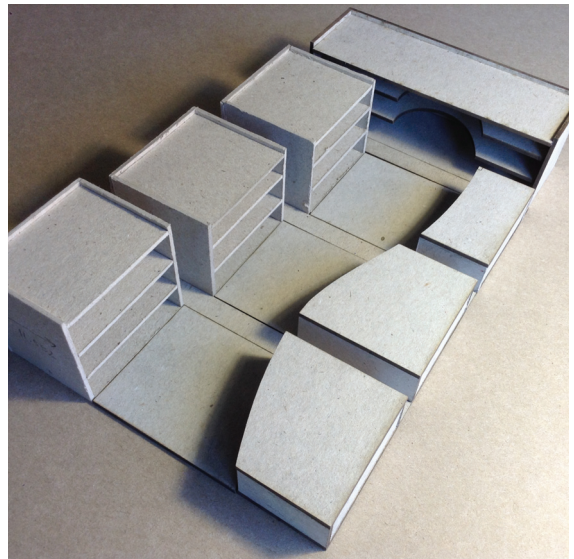
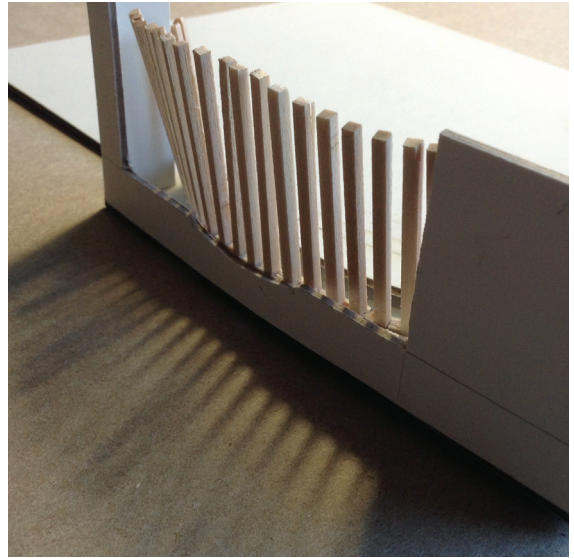
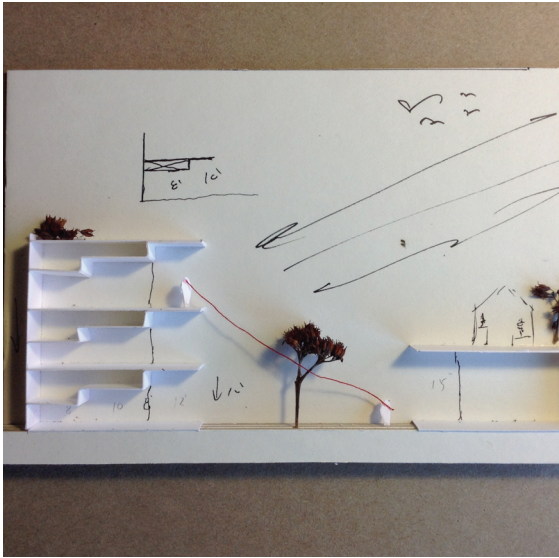


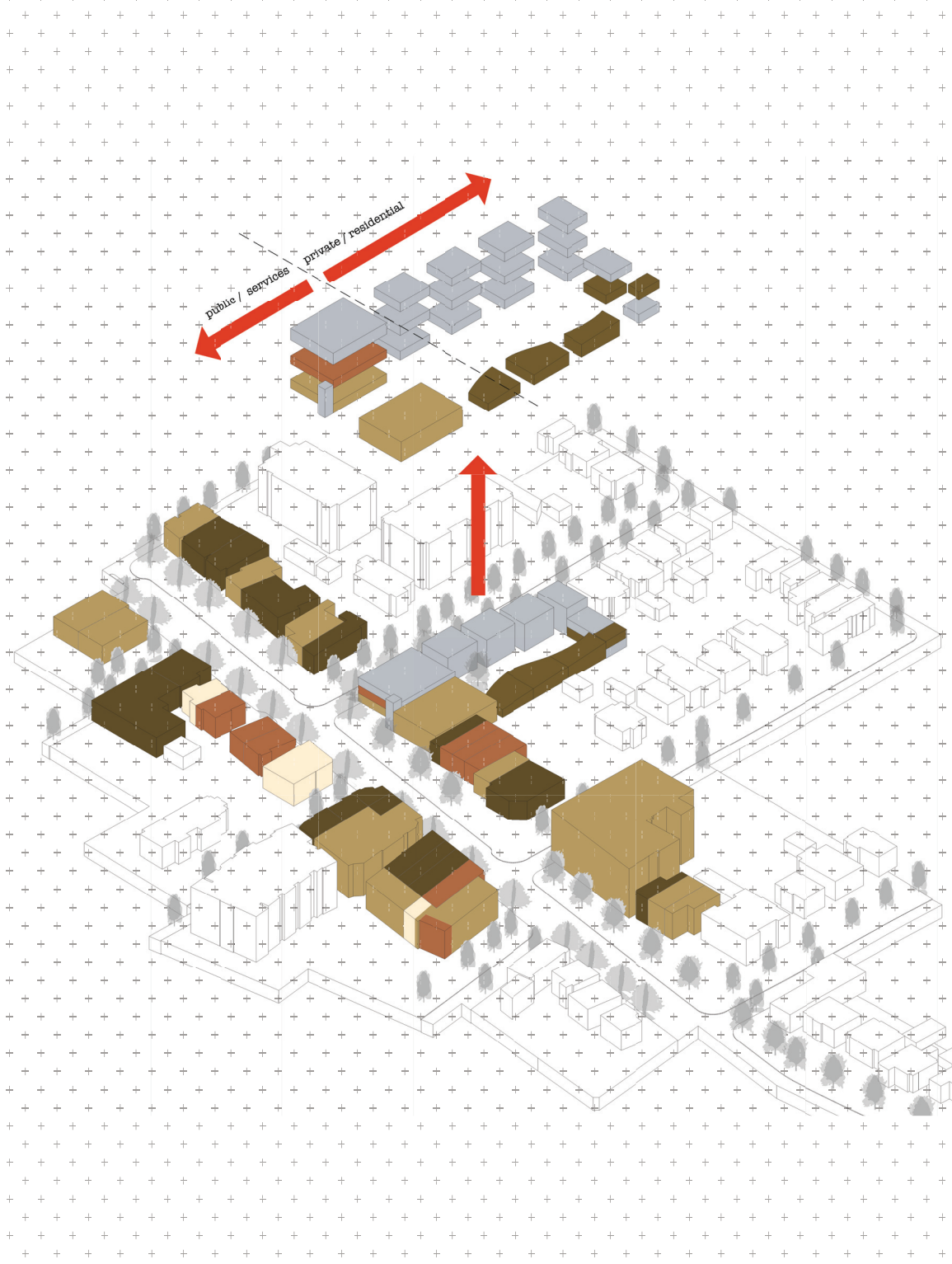
Figure 52: Different sketch model explorations.

# CHAPTER 6: DESIGN PROPOSAL



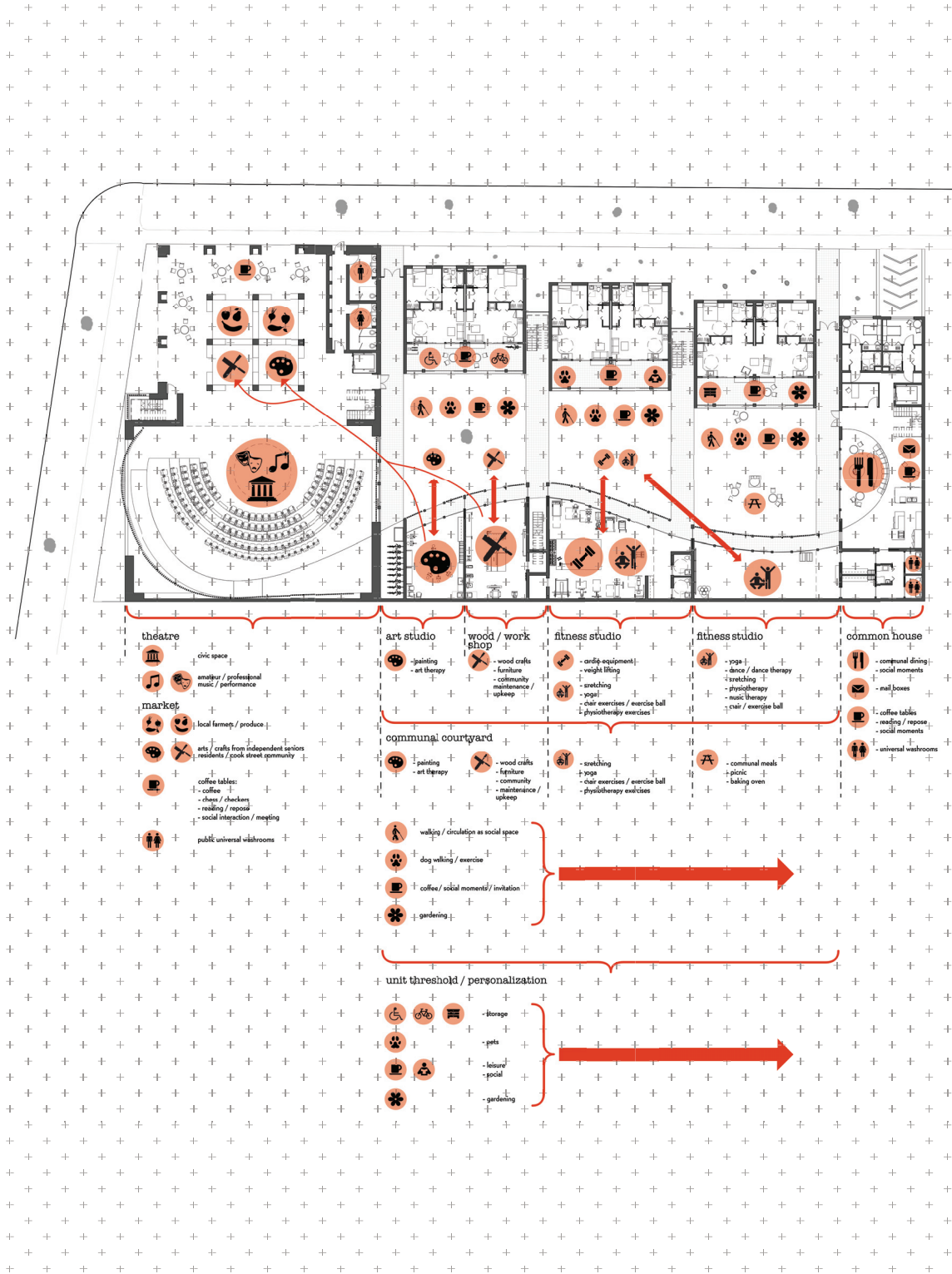
## I. Proposed Cook Street Programming

Figure 53: The full range of services and programming after the proposed design.



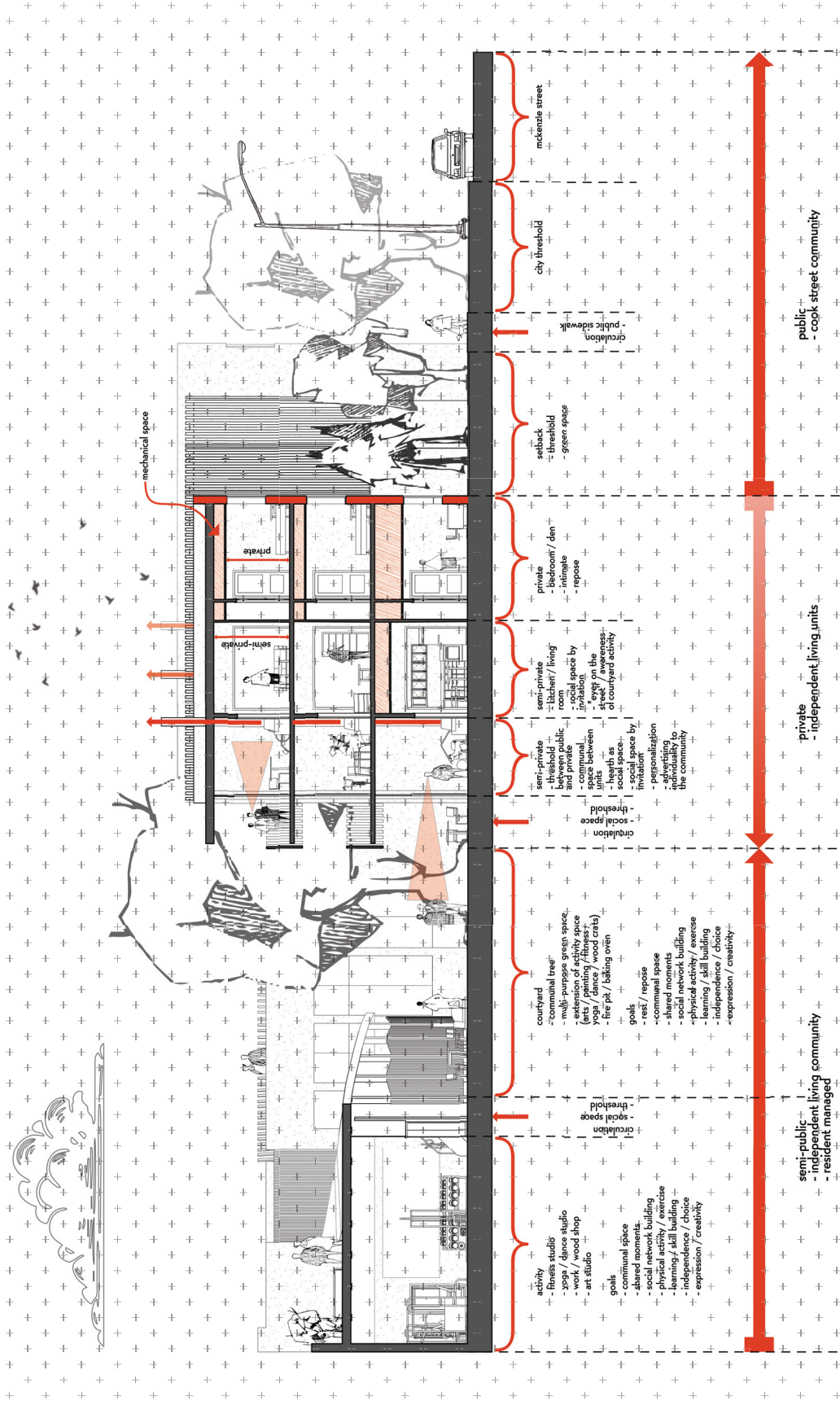
## ***II. Proposed Design Programming***

Figure 54: Exploded isometric of the proposed designs programming.



### III. Main Floor Programming

Figure 55: Main floor programming and activities.



#### IV. Section Public and Private Space

Figure 56: Independent living community's public and private space.



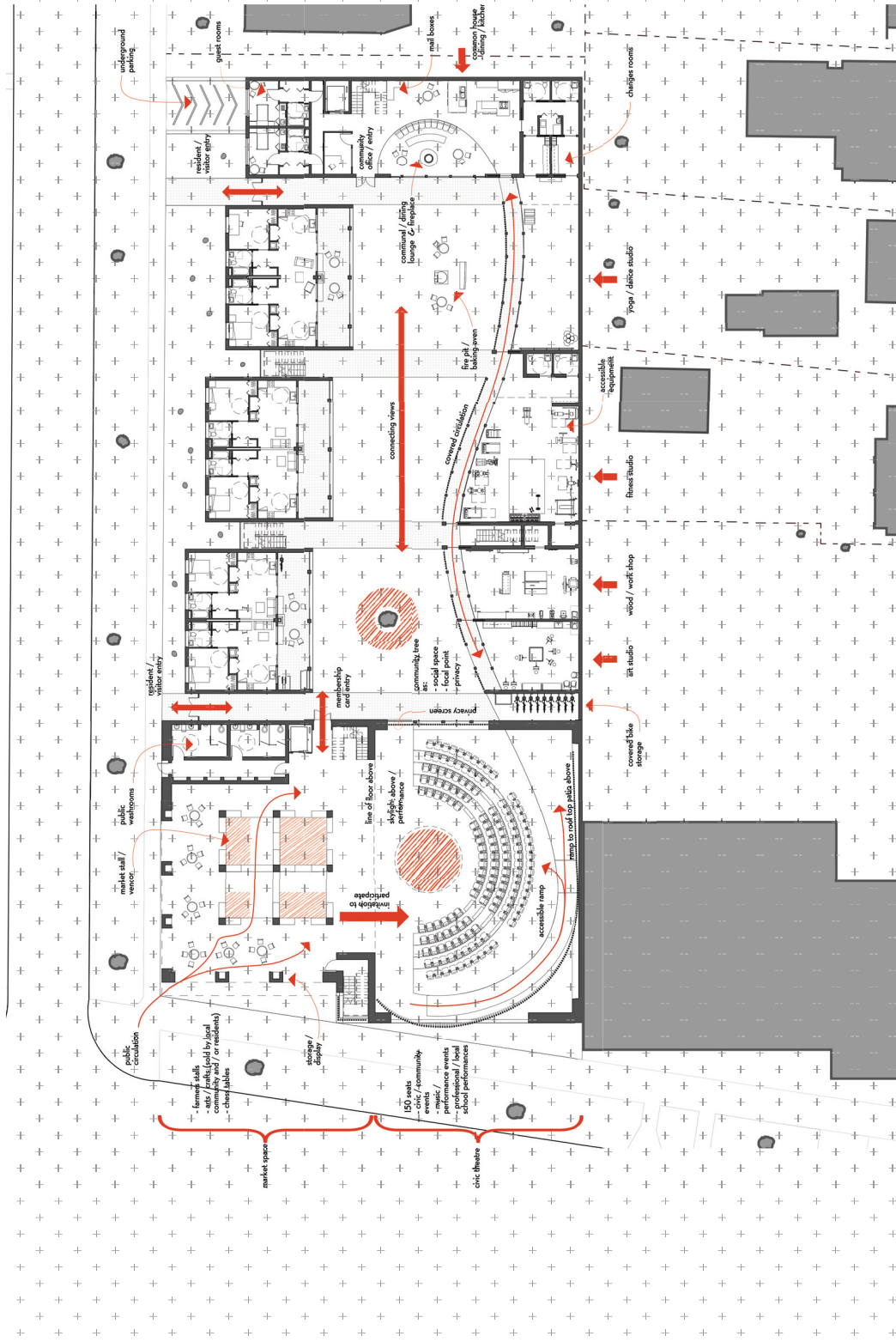
### V. Social Energy

Figure 57: Social energy hot spots and movement, plan and section.



**VI. Courtyard**

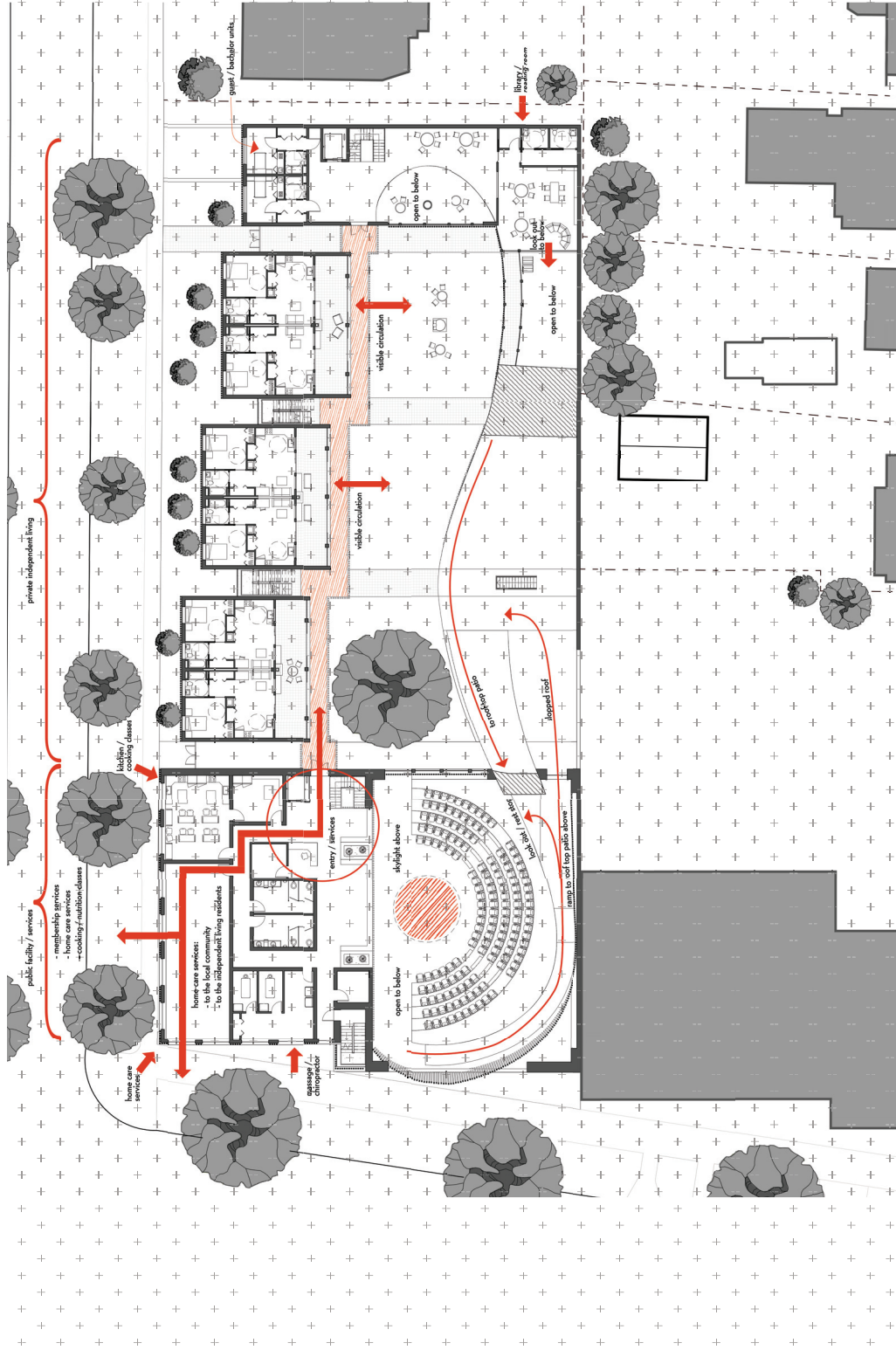
Figure 58: Courtyard social life and activity.



**VII. Main Floor**

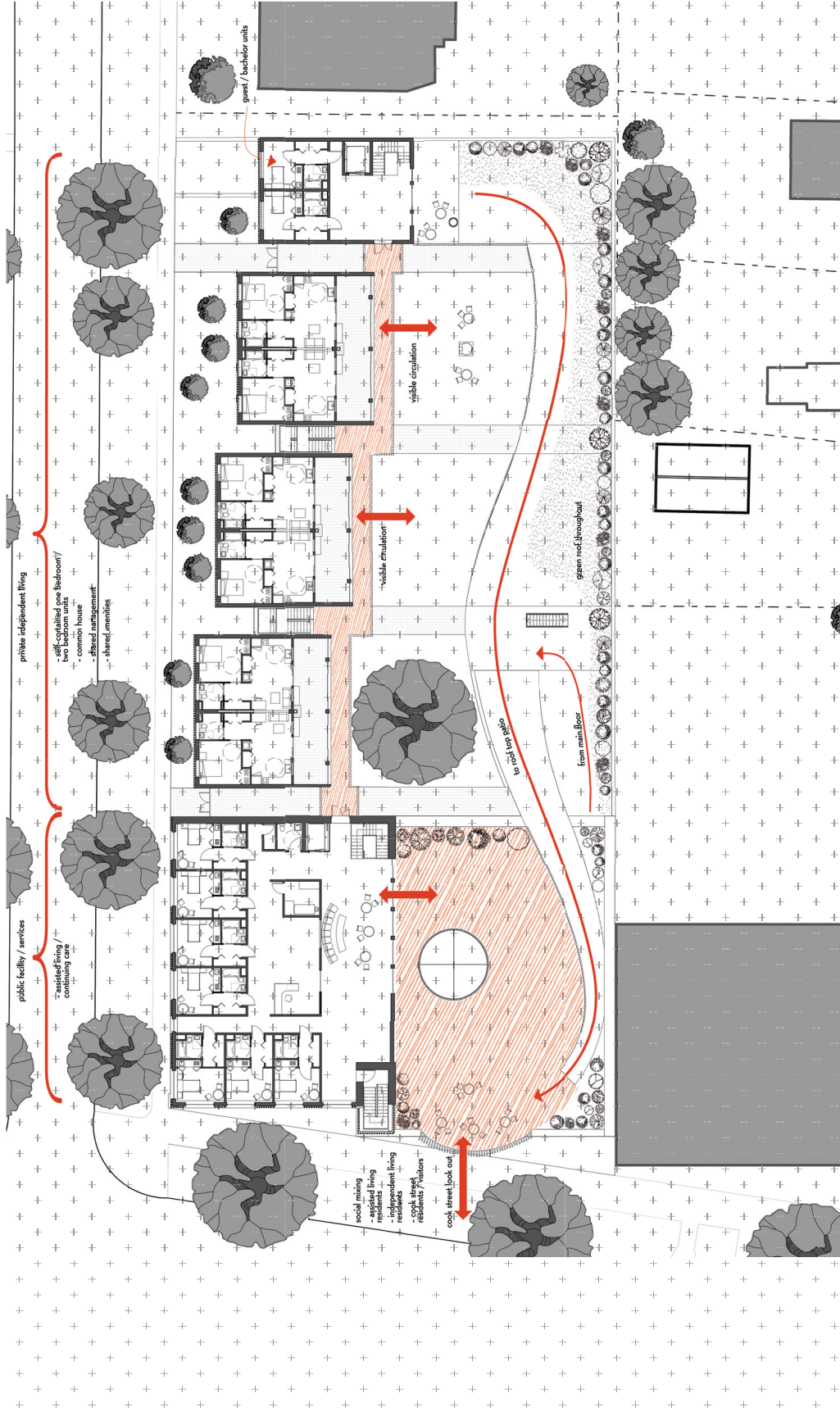
Figure 59: Main floor plan.





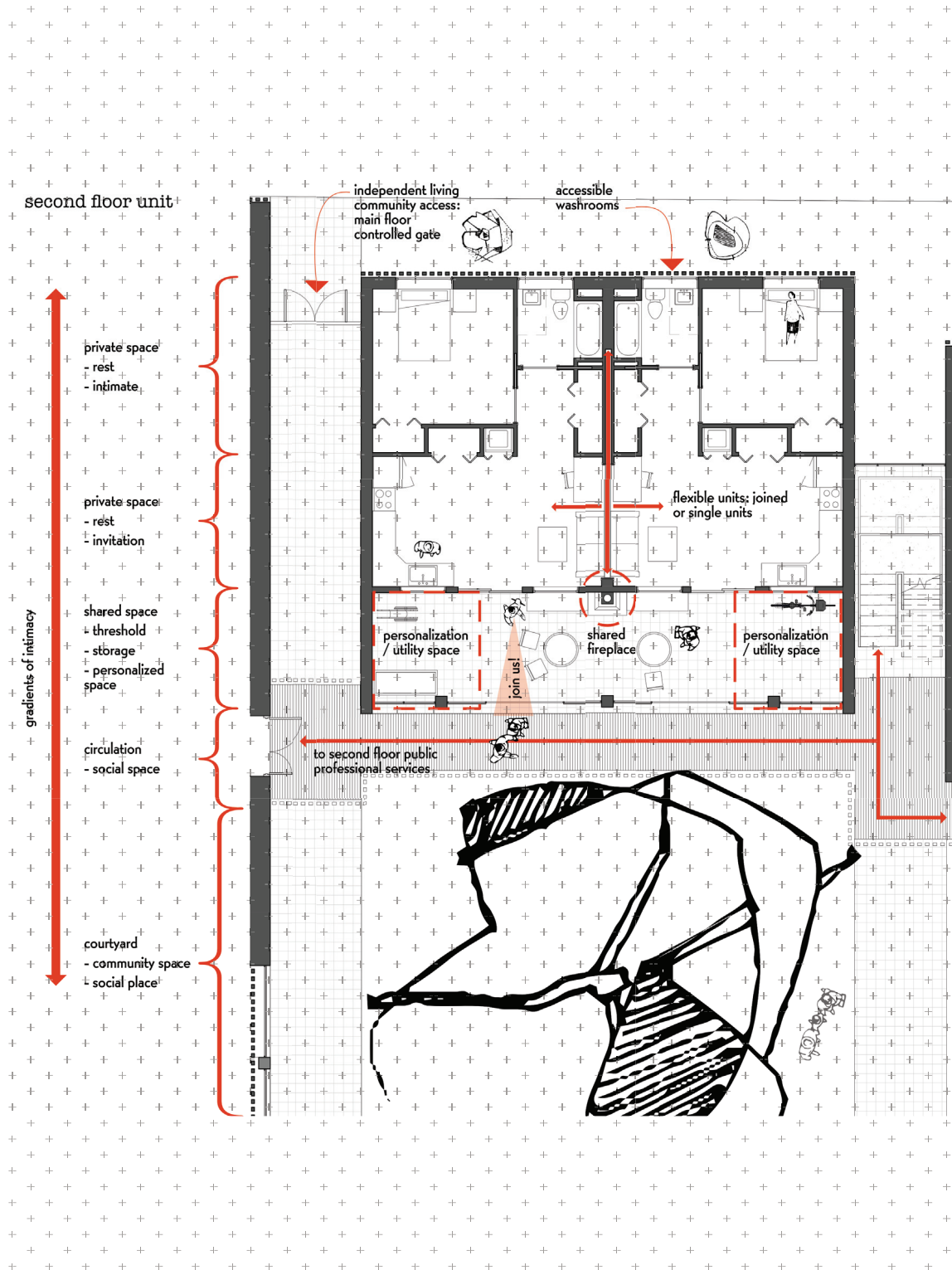
VIII. Second Floor

Figure 60: Second floor plan.



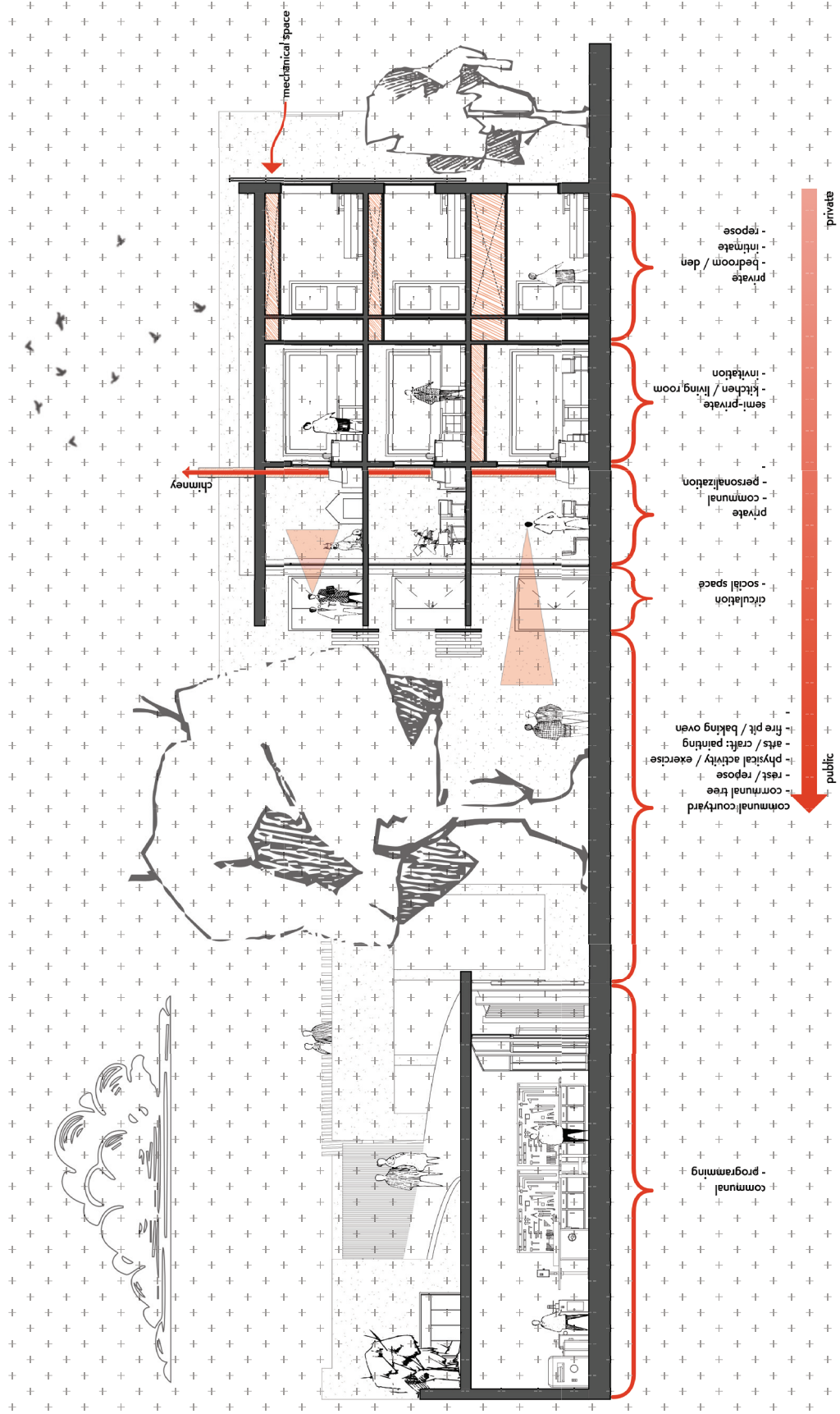
**IX. Third Floor**

Figure 61: Third floor plan.



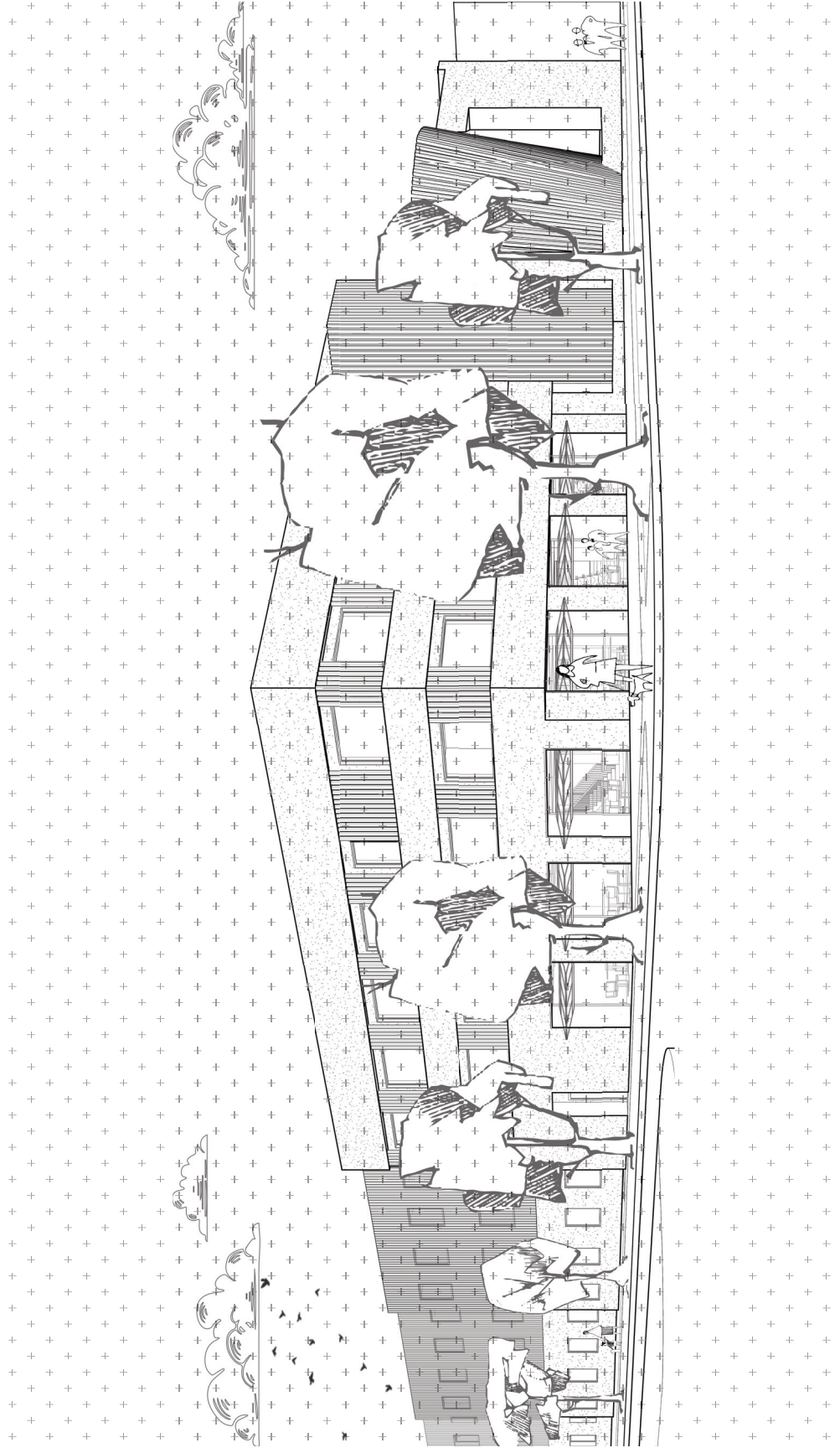
### X. Independent Living Unit - Plan

Figure 62: Example of a second floor independent living unit. Units are two one bedrooms with a partition that can recede into wall for conversions into a two bedroom unit.



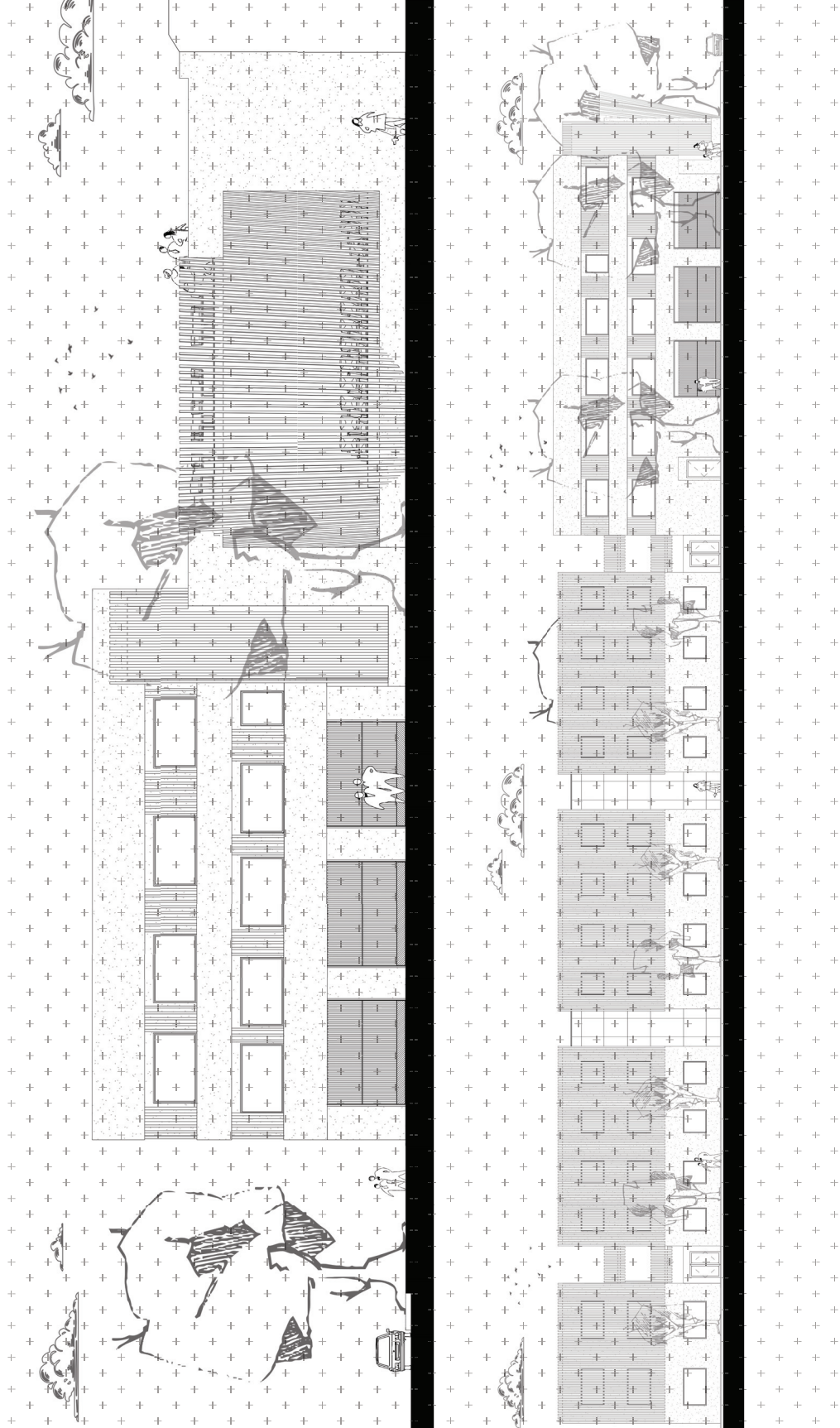
**XI. Independent Living Unit - Section**

Figure 63: Independent living unit section showing threshold and gradients of public and private space.



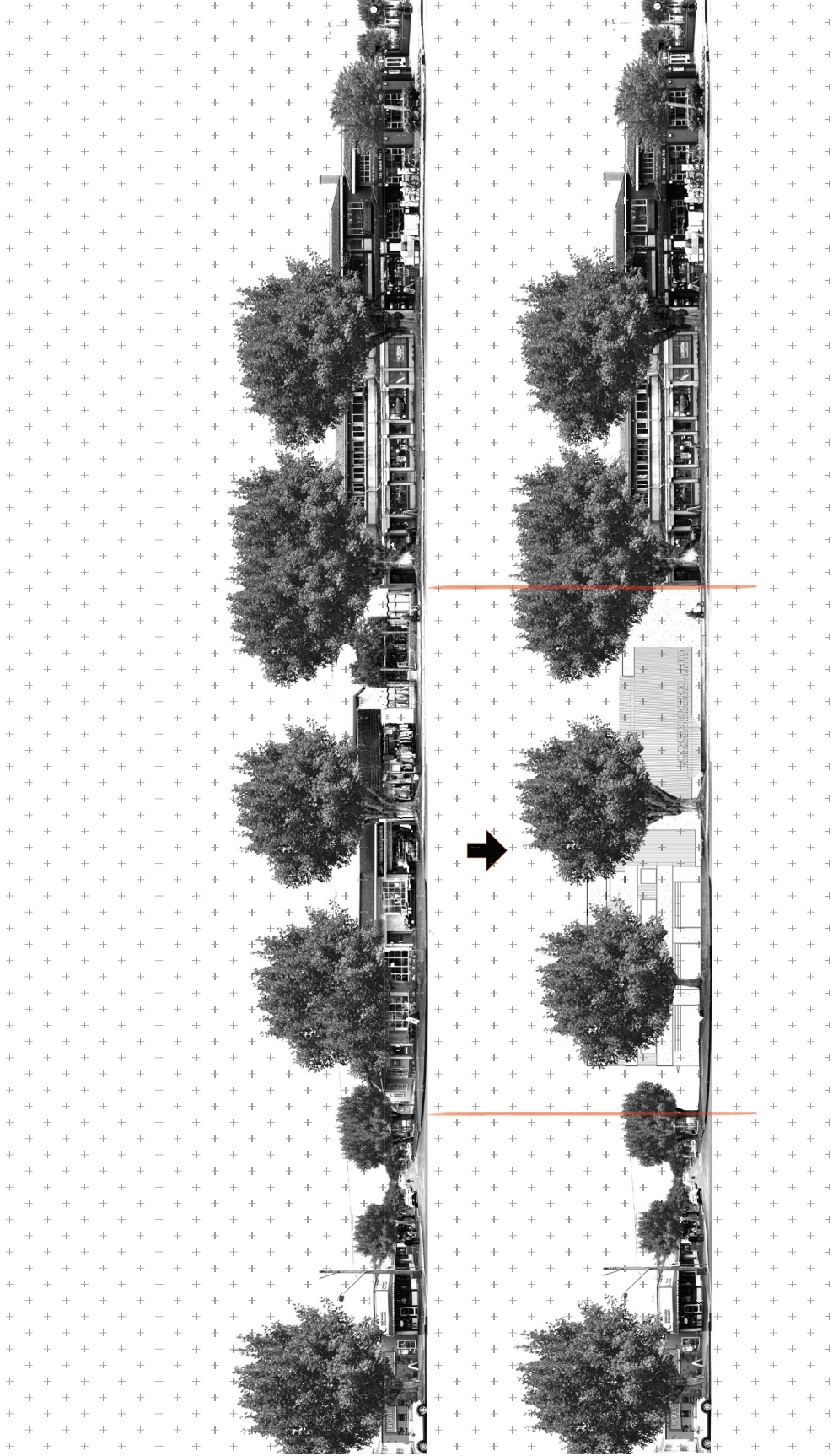
**XII. Perspective**

Figure 64: View of the proposed design from a community members perspective.



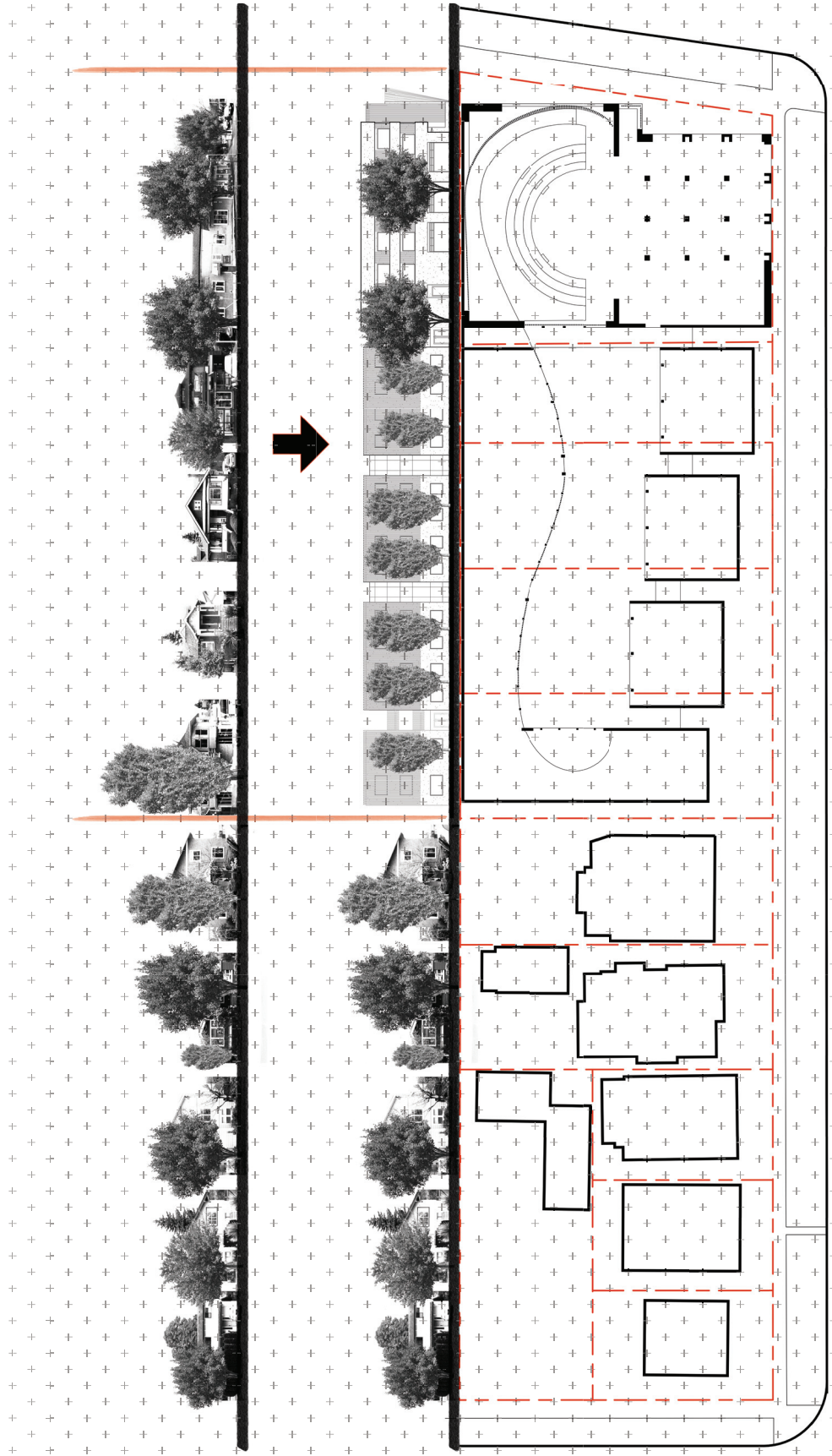
**XIII. Elevations**

Figure 65: North and East elevations.



***XIV. Existing and Proposed East Elevations***

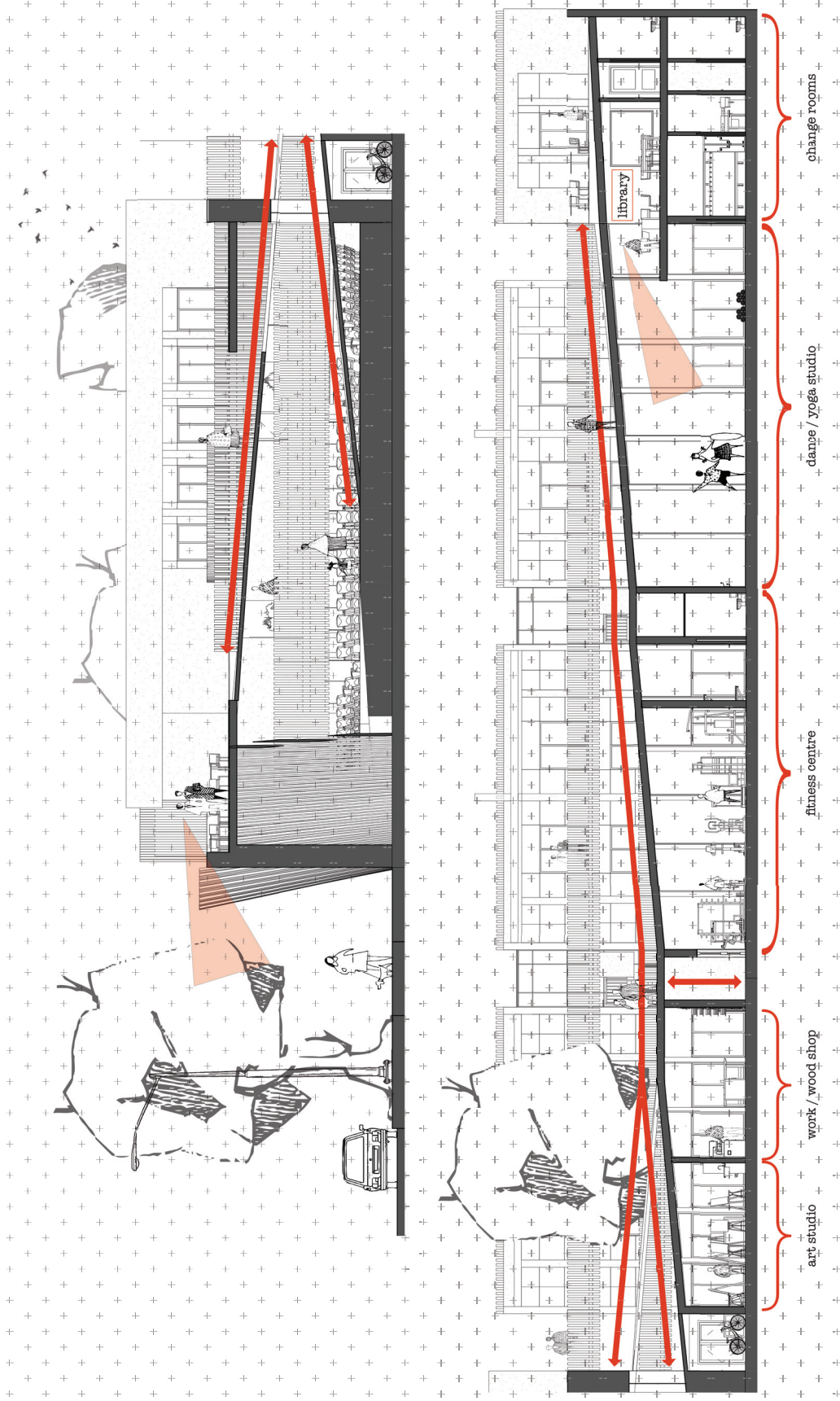
Figure 66: Before and after east elevations.



**XV. Existing and Proposed North Elevations**

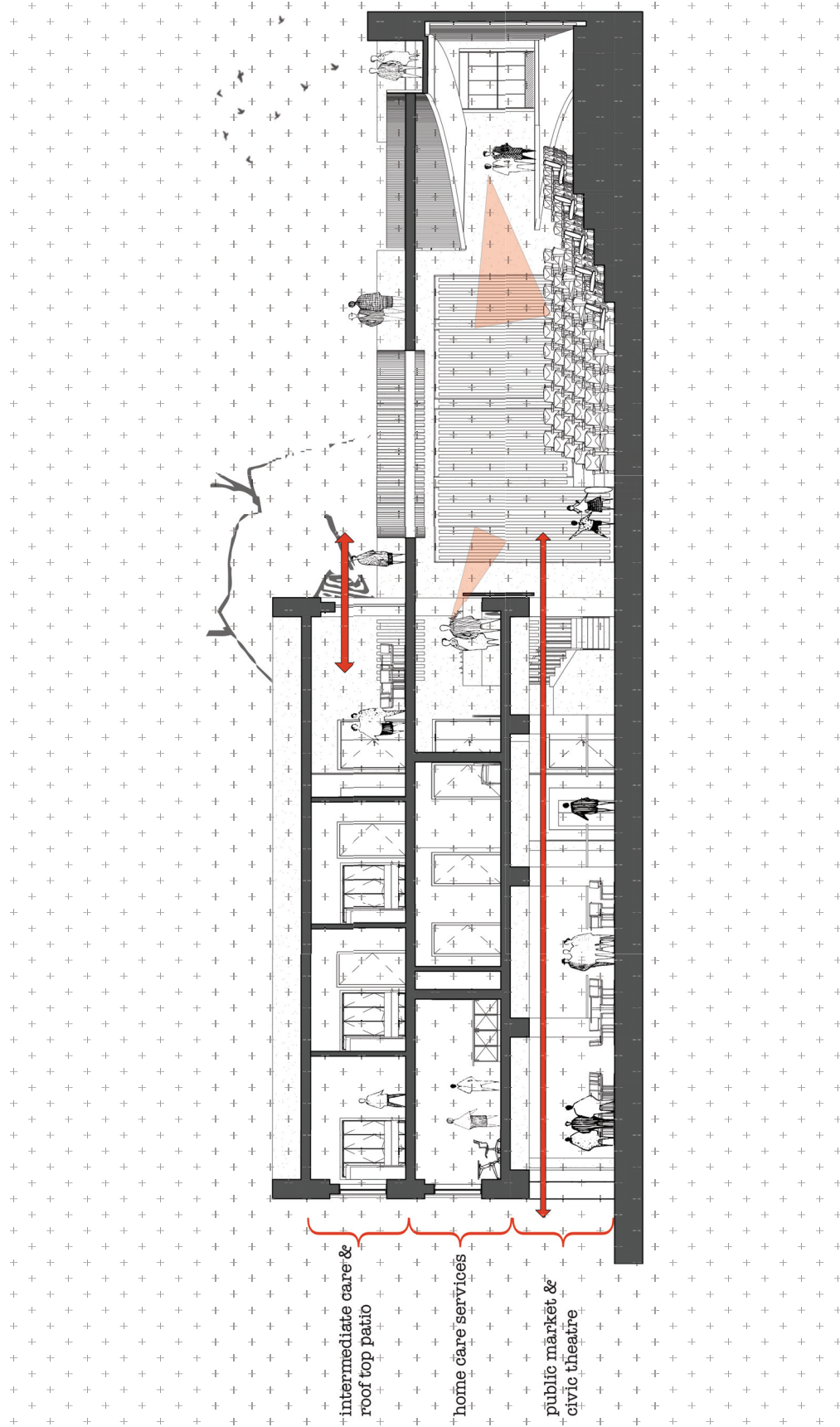
Figure 67: Before and after north elevations.





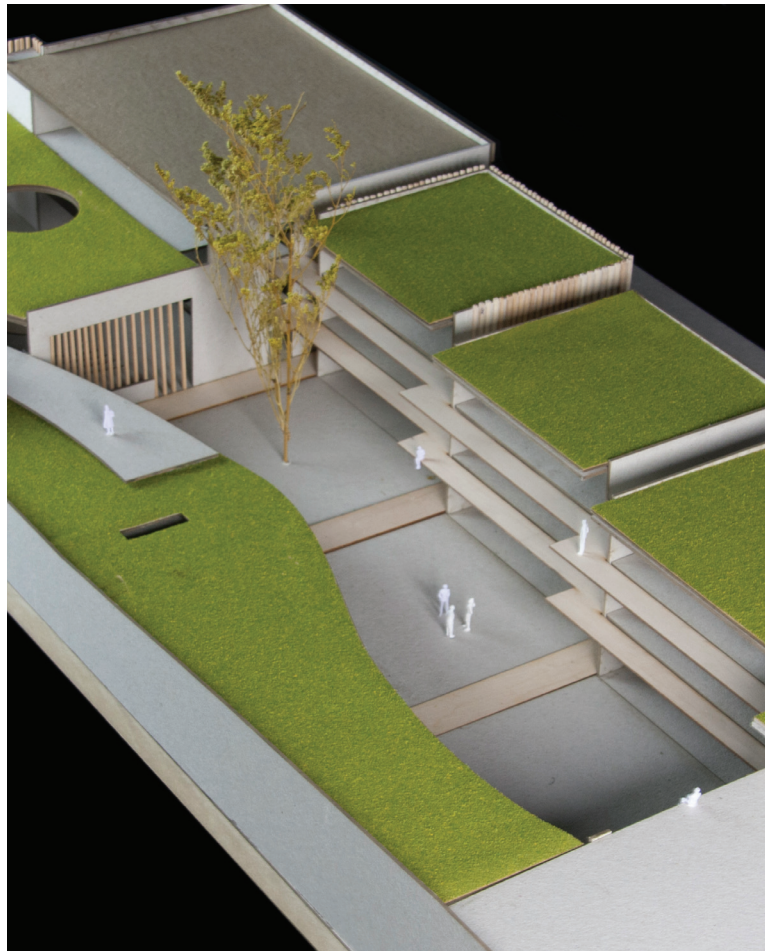
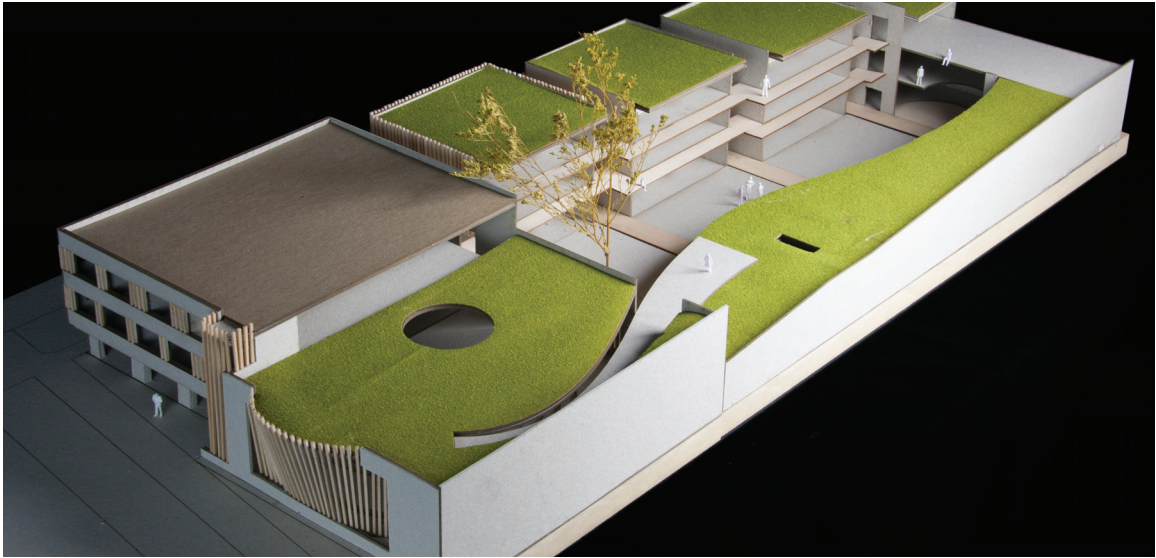
**XVI. Section - Public to Private**

Figure 68: Longitudinal section, divided by public and private showing the circulation and programming.



**XVII. Cross Section - Public**

Figure 69: Cross section of the public building, showing the relationship between the civic space and market, and the roof top patio with intermediate care.



### ***XVIII. Final Model***

Figure 70: 1:100 final model showing circulation, roof top green space, and exploring materiality.

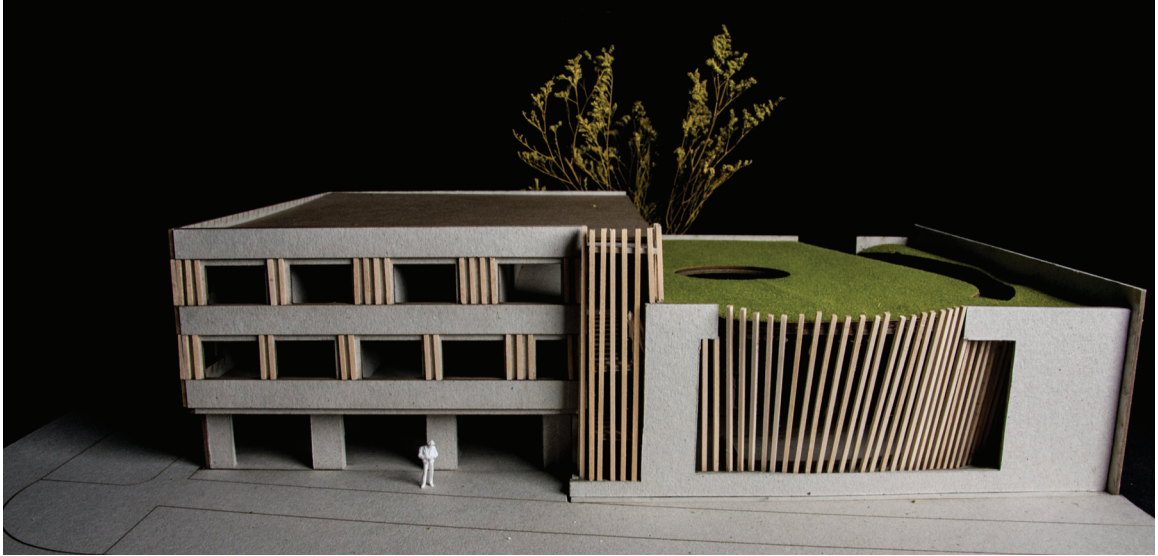


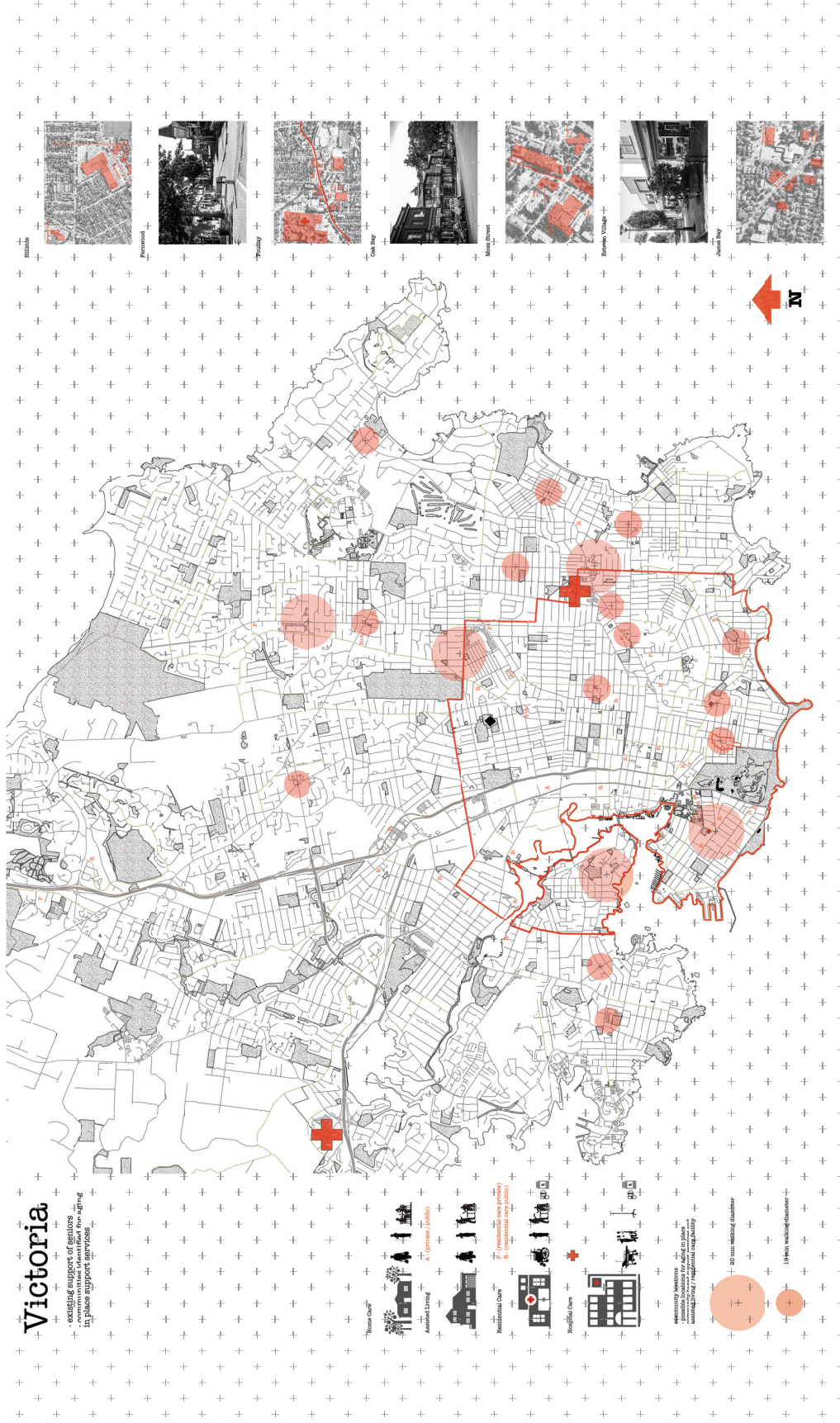
Figure 71: 1:100 final model showing circulation, roof top green space, and exploring materiality.

## CHAPTER 7: CONCLUSION

The goal of this thesis was to develop a programmatic strategy that integrates seniors into existing communities by both identifying and building on the existing amenities in a community, as well as by identifying gaps in a community's public facilities and networks, and filling those gaps through a new seniors congregate living facility. It has attempted to understand and respond to the economics of seniors care and integrate new ideas about healthy living and aging-in-place, and has tried to use two key principles: community and independence, as supports to healthy aging.

As much as the design has tried to be as successful as possible in meeting the goals of this thesis, the success is limited by scale. In order to fully support all seniors, not just those within Cook Street Village, the thesis strategy has also tried to be scalable and can be applied to any North American city, and even any internationally located walkable community. The next step in the development of this thesis strategy is to apply it to a city, creating an interconnected network of walkable communities that are hubs for aging-in-places services.

And as much as the design has tried to support seniors through the built environment, it is understood that design does not **guarantee** behaviour or that space will be used as intended. However it is the belief of the author that thoughtful well designed accessible space increases the **probability** that space will be used as intended, supporting the intentions of anyone, not just seniors, who have an urge for a healthy lifestyle.



**Ideal Victoria Seniors Network**

Figure 72: A full expression of the design strategy would create a network within Victoria of “hubs” that provide a full range of amenities and support services for seniors throughout the city. Circulation corridors between those hubs would further support seniors by facilitating their access to the “seniors service hubs.”

## APPENDIX: CASE STUDIES

### Berwick - Royal Oak

“When you choose Berwick Retirement Communities, you will enjoy an unparalleled standard of living. With all of the comforts of home plus so much more, our senior housing options relieves you of stress and maintenance and provides you with the freedom to simply live life and enjoy.”



Victoria, BC: Chow Fleischauer & Low Architects

Project type: - multi-level care / continuing care retirement communities

Site location: - suburban

Capacity:- 200 independent living / - 20 intermediate care

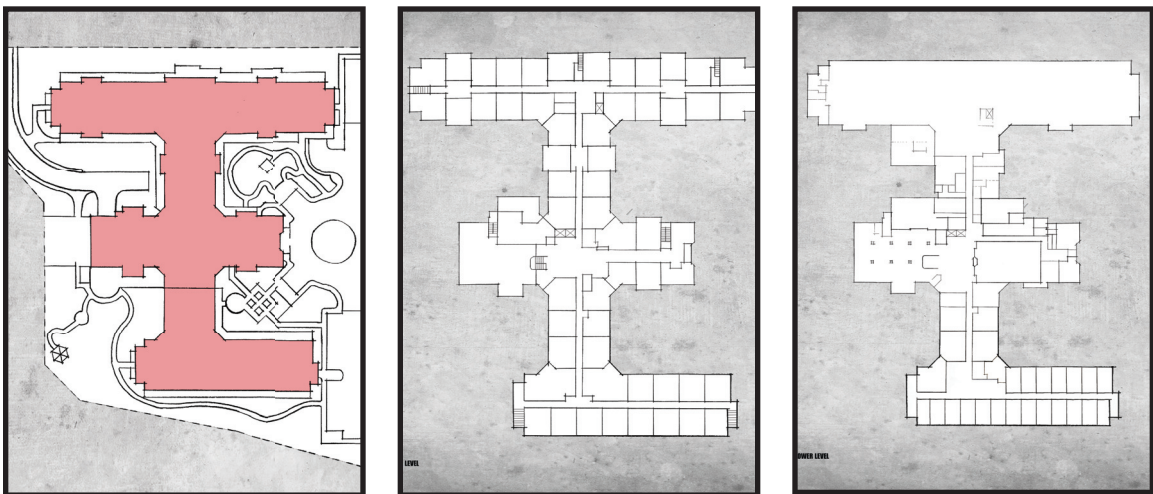


Figure 73: Berwick Royal Oak: site, main floor, second floor.

## Wolf Creek Lodge

### Owner's statement

"The residents of Wolf Creek Lodge are a group of independent active adults who have come together to create a supportive community in which they can age safely and live fully with dignity and humor."



Grass Valley, California: Wolf Creek Lodge LLC / McCamant & Durrett Architects

Project type: - active senior / independence living residence, community-based services

Site location: - small town

Capacity: 30 one and two bedroom independent condominiums

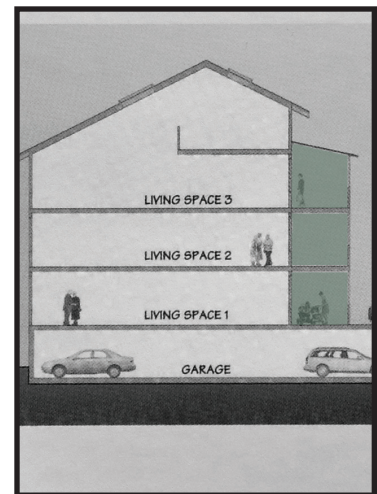
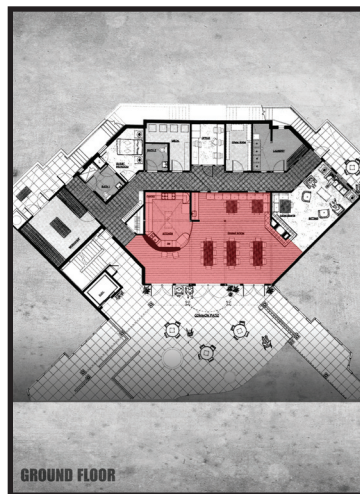
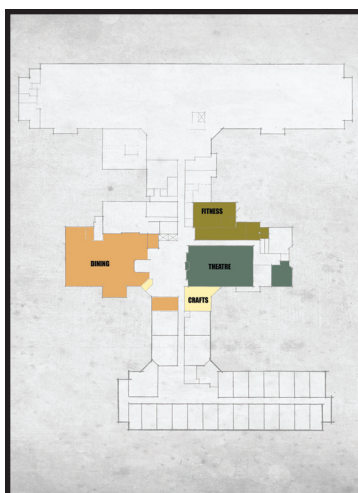
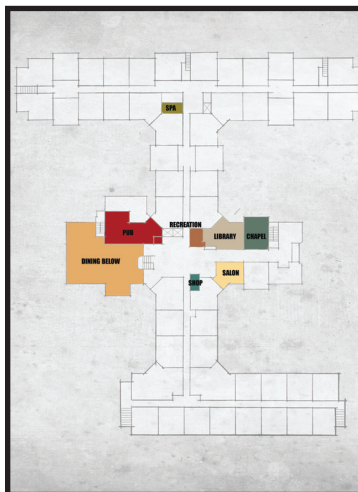


Figure 74: Wolf Creek Lodge: site, main floor, section.



## Berwick - Royal Oak

## Wolf Creek Lodge

**Programming**

## Activities of Daily Living

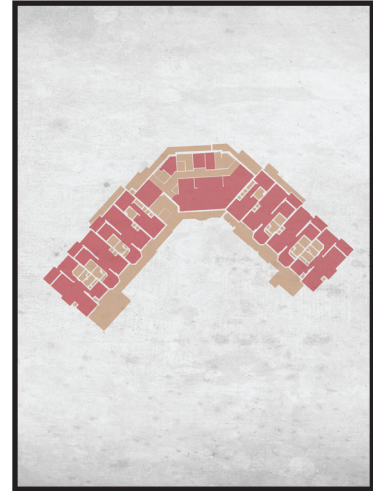
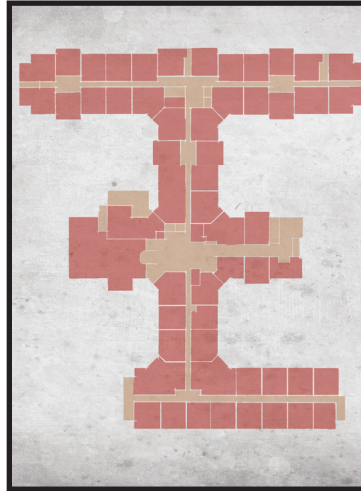
- Assistance with dressing
- Personal care (bathing and grooming)
- Assistance with personal laundry
- Daily bed making
- Eye drop administration
- Coordination with outside health agencies
- Escort to appointments
- Medication Management
- Medication reminders and monitoring

## Activities of Daily Living

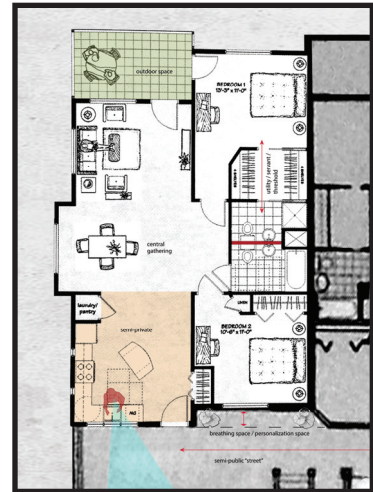
- Guest rooms, one of which may be used as a caregiver quarters
- A caregiver would provide whatever individual care a particular resident may need such as is provided by full time staff at Berwick. Further, the residents would provide similar services to each other.

Figure 75: Comparing the programming between Berwick - Royal Oak and Wolf Creek Lodge.

**Served vs Servant**



**Suite Comparison**



One bedroom: 600 sq.. ft / starting at \$3,400.

One bedroom + den 880 sq.. ft.  
Two bedroom 910 sq.. ft.

Figure 76: Comparison of served vs servant space, and a typical suite.

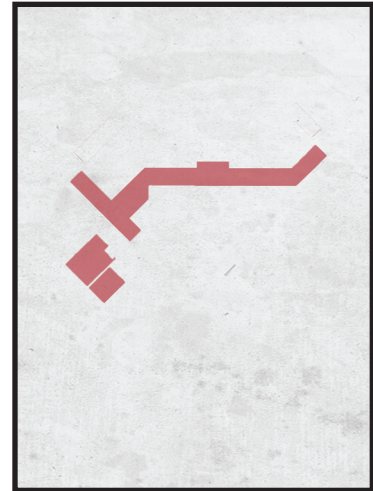
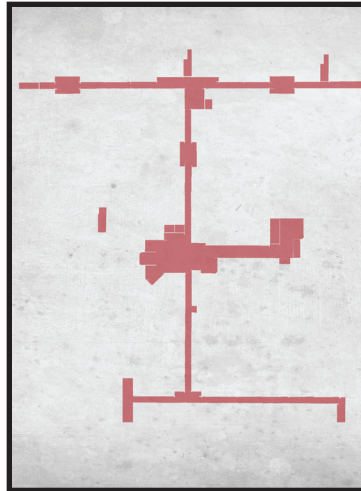
## Pattern language

## Berwick - Royal Oak

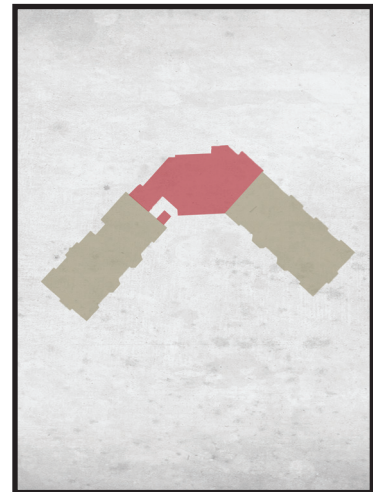
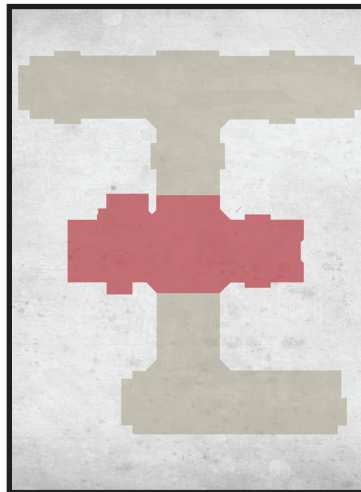
## Wolf Creek Lodge

**98 Circulation Realms**

Conflict: In many modern building complexes the problem of disorientation is acute. People have no idea where they are, and they experience considerable mental stress as a result.

**99 Main Building**

Conflict: A complex of buildings with no center is like a man without a head.

**106 Positive Outdoor Space**

Conflict: Outdoor spaces which are merely "left over" between buildings will, in general, not be used.

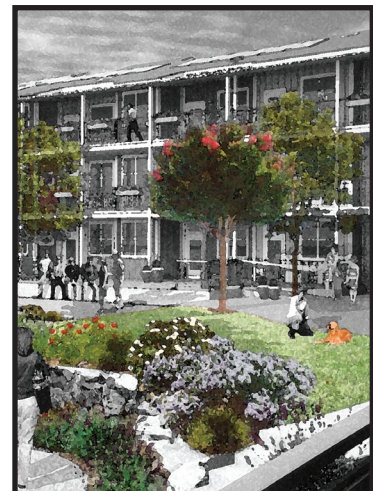
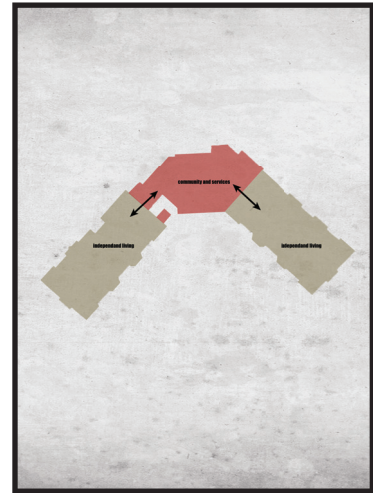
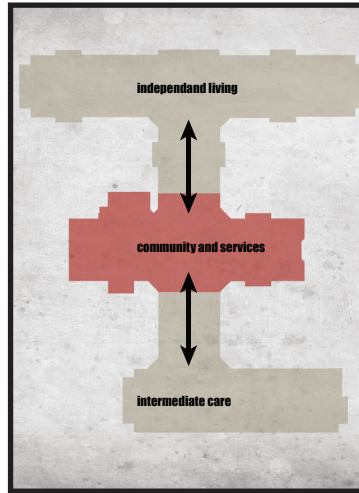


Figure 77: Comparison using principles from Pattern Language.

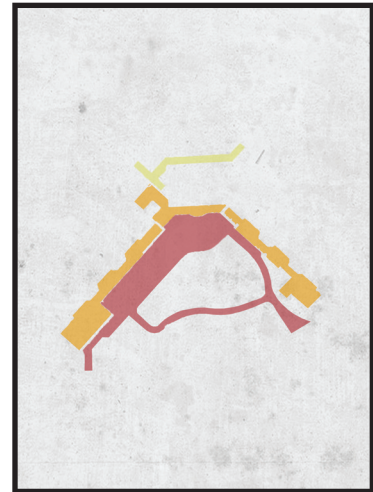
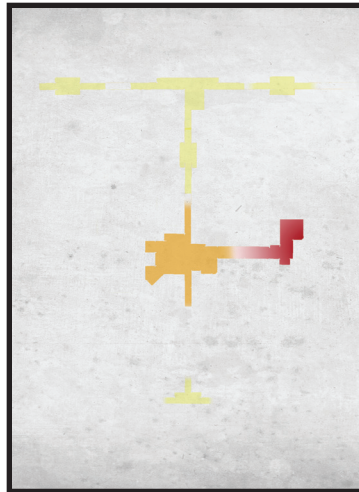
**108 Connected Buildings**

Conflict: Isolated buildings are symptoms of a disconnected sick society.



**127 Intimacy Gradient**

Conflict: Unless the spaces in a building are arranged in a sequence which corresponds to their degrees of privateness, the visits made by strangers, friends, guests, clients, family, will always be a little awkward.



**133 Staircase as a Stage**

Conflict: A staircase is not just a way of getting from one floor to another. The stair is itself a space, a volume, a part of the building; and unless this space is made to live, it will be a dead spot, and work to disconnect the building and to tear its processes apart.

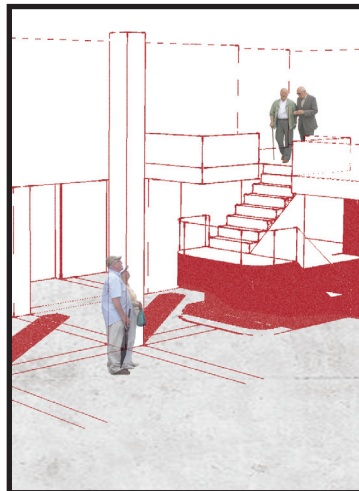


Figure 78: Comparison using principles from Pattern Language.

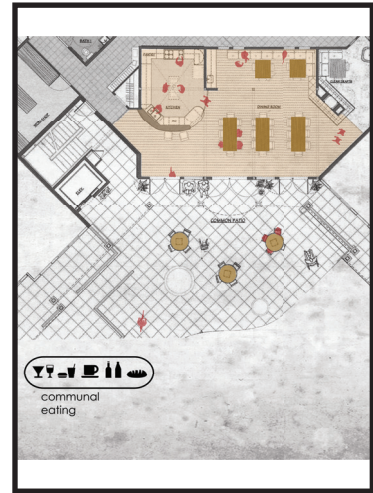
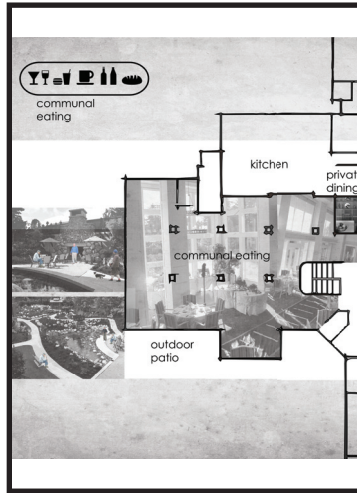
Pattern Language

Berwick - Royal Oak

Wolf Creek Lodge

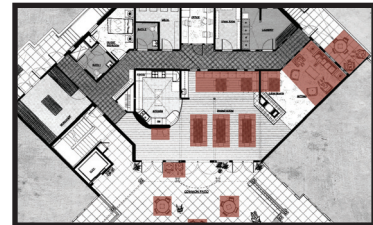
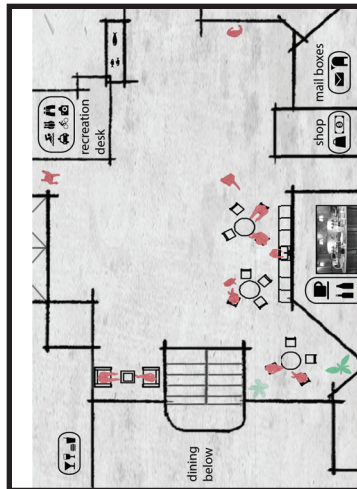
**147 Communal Eating**

Conflict: Without communal eating, no human group can hold together.



**150 A place to Wait**

Conflict: The process of waiting has inherent conflicts in it.



**181 The Fire**

Conflict: There is no substitute for fire.

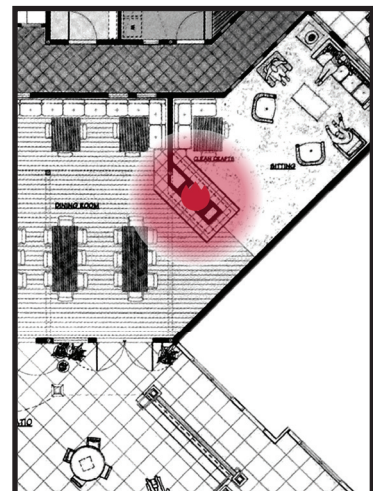
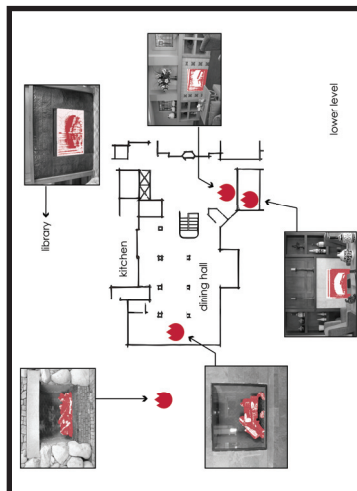


Figure 79: Comparison using principles from Pattern Language.

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